

IVC

SECOND YEAR

Dairying

**DAIRY
ECONOMICS
EXTENSION AND
ENTREPRENEURSHIP**

**STATE INSTITUTE OF VOCATIONAL EDUCATION
DIRECTOR OF INTERMEDIATE EDUCATION
GOVT. OF ANDHRA PRADESH**

Telugu Academy Publication : Vocational Course

**INTERMEDIATE
VOCATIONAL COURSE
SECOND YEAR**

**DAIRY ECONOMICS EXTENSION AND
ENTREPRENEURSHIP**

*FOR THE COURSE OF
DAIRYING*



**STATE INSTITUTE OF VOCATIONAL EDUCATION
DIRECTOR OF INTERMEDIATE EDUCATION
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2005**

1- DAIRY ECONOMICS

1.1 SCOPE AND IMPORTANCE OF PRINCIPLES OF ECONOMICS IN DAIRYING

Farm production economics is concerned with the choice of production pattern and resource uses in order to maximize the objective function of the farm operator, their families, the society or the nation, within a frame work of limited resources. The laws of production economics explain the conditions under which the quantities can be maximized (profit, output, national income) or minimized (cost, use of physical input).

The main objectives of production economics are.

1. To determine and define the conditions, which provide for optimum use of resources.
2. To determine the extent to which the existing use of resources deviates from the optimum use.
3. To analyze the factors or forces which are responsible for the existing production patterns and resources use.
4. To delineate means and methods for changing the existing use of resources to the optimum level.

In India the dairy farming is still existing as a subsidiary to the agriculture, which gives additional income to agricultural labours, small and middle farmers. In India growing atleast one or two dairy animals by farmers have many advantages of economic importanc

1. Dairy animals fits well in any diversified farming programmes i.e. it can be clubbed with agriculture, fisheries, horticulture, etc., which helps to give additional source of income.
2. In agriculture different types of roughages as paddy straw, Jawar straw, Wheat straw etc., are bulky fetching less amount and also not possible economical to transport them to long distances. Dairy animals are efficient

convertors of roughage to produce milk.

3. The prices of most of the agricultural produce show great fluctuation where as milk will not have such fluctuations in price.
4. The income from agriculture is seasonal and the farmer receives income on harvesting crop only) where as dairy animals gives money daily and it is distributed throughout the year. The economics can be calculated daily also.
5. Normally farmers will not take milk by spending money. But the family members will consume certain amount of milk invariably, which improves the family diet in terms of nutrition.
6. Legumes and grasses are grown on farm providing fodder to the animals. These crops are soil conserving and soil building crops. The manure produced will be utilized as natural fertilizers for growing agricultural crops economically.

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7. The male animals are utilized for draft purpose: In India still most . of the agricultural operations are carried by use of bullocks power: In India the size of the land holdings are small and it is becoming still smaller portions by divisions and they cannot afford for mechanical farm operations.
8. Even after death, the carcasses are utilized for meat meal production, bone meal production, blood meal production etc., skin is used as hides.

In dairy farming the cost feed accounts for roughly 60-65% of the cost and so the economic milk production mainly depends upon the economic feed formulations. There are other factors also which contribute to the economics of dairy farming. The economic factors in a successful dairying one.

1. The effective breeding policy: Selection of high yielding animals for dairy farming. For breeding high record site or good sites semen for. All should be

utilized. Unless the animal have high productive nature, even heavy feeding of balanced nutrition cannot improve the milk production much.

2. Economic feeding practices are important which can alone decrease the cost of production milk appreciably. Feeding of ad libitum of green forages will decrease the feed cost and ultimate less cost of milk production. Feeding of certain amount of leguminous fodders still improve the milk production.

Feeding of certain 'amount of dry roughages will improve the butter fat content, which again adds to the high payment for the milk.

Among the concentrate feed ingredients, most of the traditional ingredients are competed by human beings, so the cost is increasing resulting high feed cost making dairy farming uneconomical. Use of unconventional feeds which are available at throw away price or less price will decrease the feed cost resulting low cost of milk production.

3. The managerial conditions are cardinal in maintaining the optimum level of production and also to keep up the animal health. III health reduces the milk production drastically and, it take more time to reach original production.

4. The optimum use of land, manure resources to produce fodder with less investment, which ultimately affects the economic milk production.

5. The ability to direct and make use of labour efficiently after the economics of milk production.

6. Efficient disposal of milk plays half of the economic role in dairying. Even a small price increase in the sale price of milk, will have much impact on the economics of dairy farmings.

7. Sound business practices appropriate to dairy farming is important at all levels. Le. purchases of inputs, and also disposal of products and by products.

The main theme of dairy economics rests on maximum reduction in feed cost producing high level of milk production economically and proper disposable of milk.

Postproduction of milk, milk processing and preparation of milk products also comes under dairying. A medium or big size dairy farm simultaneously they can have either processing of milk or production of many dairy products. Some times more profit can be obtained in the sale of processed milk / dairy products. Simultaneous establishment of processing plant will increase the income of dairying 30-40% and establishment of products factory will increase the profit by 40-50 % over dairy farming. If these processing or products factories are established within farm premises it reduces the cost of raw material i.e. milk collection and transportation costs. Further the quality of milk produced in own dairy farm will be superior as it is processed immediately without lapse of time, limiting less processing problems, uniform quality of milk is obtained which troubles less in products preparations compared to wide variation is collected milk from various sources.

1.2 ECONOMIC VIABILITY FOR DIFFERENT SIZE OF DAIRY AND ENTERPRISE.

1. Economic planning : The following factors requires considerable attention when one decides to go for milk production on a farm.

- Suitability of the farm
- Suitability of farm, buildings and other fixed equipments.
- Supply of right type of labour.
- Availability of capital Capability of the farmer.
- Physical condition of the soil.
- Climate
- Water supply

The basis of economic planning of dairy farm depends upon the following factors.

- a) Size of the herd
- b) Level of milk yield
- c) Feeding policy and stock density
- d) Farm area devoted to dairy farm and stocking density
- e) Housing facilities

- f) Seasonal production policy
- g) Raising replacement stock.
- h) Watching milk yield
- i) Check on food quantity and quality
- j} Labour utilization.

a) Size of the herd : The result of National investigation of milk i shows that upto the a certain point, herd size has an important infiu on the profitability of milk production. No appreciable improveve profitability was noted with a level of cows above 40. Infact a distinc in profits seemed to result above that level. The greater part of variati profits was found to be due to reduction in costs of labour percent increase in herd size. The size of herd depends upon the folic factors.

- Method of milking
- Milking of shed facility
- Milk yield
- Cow shed layout
- Labour efficiency
- Area under forage

Most of the farmers appear to find that herds of 30 cows with a cowshed layout and 40 with parlour system can be handled conveniently and efficient ly. It is assumed that a producer in his interest maintain normally a herd of 130 animals consisting of 40 milking animals, 40 dry animals and 2 bulls and rest comprising followers.

The number of cows to be handled efficiently and conveniently is dictated by the acreage of farm and cow shed accommodation. Every farmer should ascertain periodically whether his herd size could be increased, at the same time, carry out culling process with discretion.

b) Level of milk yield : Statistical evidence appear to favours high yielding herd. The upward tendency in profit with the increasing in milk yield is what one should expect but upto certain limit only, because the food cost per cow- also increases due to extra concentrate with the increase in milk yield

- c) Feeding policy and stock density :** It is observed that feed accounts for 61% in cost structure of milk production in buffaloes, therefore attempts to lower the feed cost will reduce the cost of milk production, which can be achieved by use of less of concentrates and use of more green fodder.
- d) Density of stocking and farm area devoted to dairy farm :** Dairy unit of 3 cows and followers can be maintained on one acre fertile and fully irrigated land.
- e) Housing facilities :** The yard and parlour system requires less capital investment per cow and less labour /cow compared to conventional cow shed.
- f) Seasonality in milk production :** Milk plants offer incentive in the form of or by way of higher price for milk during lean period of summer months so that the farmer may obtain more milk in those months of higher prices.
- g) Raising replacement stock :** Most dairy farmers prefer rearing most of their heifers on their farm to maintain required number because to avoid risk of buying poor quality stock and also it is proved that use of by products and unconventional feed stuff heifer can be raised cheaply.
- h) Watching milk yield :** The dairy milk yield record of an individual cow can be used as a guide for rationing, an indication of status of health on faulty feeding and as a basis culling.
- i) Check on Feed Quantity & Quality :** Depending upon the milk yield and requirements of an animals, farmers must work out the ration for each cow and write it on the chart against the animal. It helps to ensure the supply of right quantities of concentrates, from time to time depending upon the quality and quantity of roughage.
- j) Labour Utilization :** Cost of labour is second to cost of feed in the annual cost of keeping of a cow. Loose housing system saves labour because cows come to milking parlour instead of man going to cow. Manure loader can be used in the loafing area. It is also suggested that labour requirement by following yard and parlour system is less compared to cow shed system.

Viability for small size farms : For a family(2) members having 2-5 acres of land for crop production the economically size of dairy farm is 2-5 animals, depending upon their interest, capability, availability of fodder and marketing facilities. These two family members can work for 2-5 animals without engaging any extra labour and also without affecting the routine farm operations. The dairy farming will act as side employment to the main agriculture work. These small farms will be more economical than larger farms due to :

- a) No dependence on external labour to work.
- b) Agricultural by products I wastes can be utilized to produce more profitable milk item.
- c) It helps to increase the fertility of agricultural lands in the way of manure.
- d) It gives more income which is daily cash crop to the farmer without waiting for a season to get money.
- e) More supervision on the individual animals as animals are less and also the owner will have more enthusiasm and love with animals.
- f) No problem with marketing of milk, as the quantity.is not bulk.

Viability for large farms :

The farms having more than 25 animals comes under large/commercial farms and 5-25 animals will come under medium farms. The economic viability of large farms depends on .

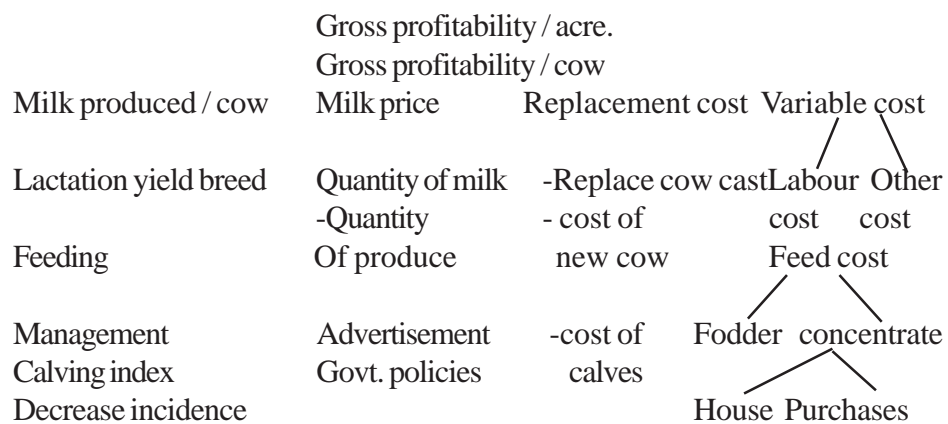
- a) Effective Management/ supervision on materials and animals.
- b) Individual animal feed requirements calculation and feeding.
- c) Effective labour use and management.
- d) Production of green fodder required.
- e) Preparation of nutritive concentrate mixture.

- f) Effective breeding management.
- g) Effective health control measures.
- h) Effective marketing of milk and milk products.
- I) Culling and replacement of animals in the farm.

When comparative to small farms, survivability of large farms will be difficult as over head charges will be more in all aspects, in addition to lack of individual responsibility and care on the animals.

1.3 ECONOMIC PRINCIPLES INVOLVED TO ENHANCE BENEFITS IN DAIRYING:

The various factors that can influence the dairy farms profitability can be enlisted and linked as given below.



By detailed study of the above factors that influence profitability of a dai farm, the following principles can be drawn to maximize profits.

1. **Selection of good animals :** A good lactating breed and also good animal is that breed will yield more milk production.
2. **Balanced feeding :** Feeding of animals with standard DCP al TDN content of required quantity will increase / maintain the m production.

3. **Green fodder feeding :** Feeding of ad libitum green fodder v decrease the use of concentrates which ultimately decrease the cost production of milk.
4. **Conservation of greens :** The green fodder will be excess duriv flush season. It should be converted into silage / hay which preserve tl nutritive value of green fodder and it can be used during summer in plai of green fodder which will reduce the cost of milk production.
5. **Formulation of concentrates with unconventional ingredients:** Certain unconventional feed ingredients are not used for any purpose which can be conveniently used in concentrates formulation to decrea the cost of concentrate, as the cost of concentrates place an import2 role in the cost of milk production.
6. **Uses of agricultural by products :** The use of agricultural t products like straws etc will decrease the cost of milk production.
7. **Effective utilization of labour :** The cost of labour ranks second after feed cost in dairy farming. The effective use of labour depends on
 - Proper planning of cattle housing unit
 - Loose housing system saves labour and energy
 - Proper grouping of buildings. in layout for saving time of labour.
 - System of tying is conventional housing system

Tail to tail tying will decrease the labour requirement as 'it is man time is spend in back of the animal for cleaning, which space in tail to tail'system.

8. **Replacement of the herd :** After few lactation's, the animals are culled to remove uneconomical animals, which should be replaced by growing own calves or by purchase. It is scientifically proved that replacement of dairy stock by growing their own calves is more economical and also have the information about the animal.
9. **Milk price :** The profitability of dairy farming mainly depends upon the sale price of milk. Even a marginal extra price per litre of milk will have higher profitability per year. It is better to practice home / Institution delivery of milk to get more price for milk, even a considering the distribution costs.

10. **Advertisement :** Advertisement about the quality and benefits of the milk will give more demand and price ever, after deducting the advertisement costs.
11. **Conservation in to milk products :** During flush season more milk will be produced and also the factories will pay less price. To get maximum profits some milk can be converted into products like cream, ghee, butter, paneer etc., which will also solve the problems of marketing of milk and also gives 30-50% extra profits over the cost of milk.
- 12 **Good -management practices** : Clean environment will produce more milk, when compared to uncleanliness in the” sheds. Proper protection of animals against environmental conditions like heat and cold will helps to maintain the production, other wise drastic fall in production is not protected. Maintenance of proper timings of feeding and milking will help in maintaining the optimum production. Maintenance of cattle health by proper vaccination and treatment will definitely helps in production of more milk.

1.4 ECONOMIC INSTITUTIONS SUPPORTING DAIRY DEVELOPMENT PROGRAMMES.

PROGRAMMES.

For starting any business, the foremost important resource one should give prime importance is finance. One cannot start any business / industry on their own money. The rural people are poor or middle income people and so they cannot afford to invest large amounts for establishment of any size of dairy farms. Several institutions are concerned either directly or indirectly in the activities or providing finance to establish dairy farm, milk collection centres, dairy plants etc. They are

1. Indian Dairy Corporation : Earlier it is the financing agency for all the dairy developmental activities i.e. establishing dairy plants, chilling centre, progeny testing farms, formation of dairy cooperatives under Anand pattern. Now there is no- Indian dairy corporation and it is merged with NDDB.

2. National Dairy Development board : Earlier it is only implefientation agency implementing all the dairy developmental programmes throughout the

country. After merging of Indian dairy corporation, now it is acting as financial as well as implementation of dairy developmental activities in the country. It provides finance to all the state owned milk cooperative federations, for the establishing and or increasing the capacity of milk processing of dairy products factories; chilling centers, feed factories, establishing progeny testing farms, improving Artificial insemination centers. The NDDB also acts as agent for international business / loan for the development of dairy industry. NDDB will provide finance to the state federations Or cooperative society by taking guarantees from the respective state government. The finance will be different types i.e. with nominal interest, no interest and repayment of one scheme to investment for other scheme. NDDB also involved in the research activities of dairy+ng. Eg : Embryo transfer Technology, cross breeding programme, indigenous dairy processing equipment development.

3. National bank for agriculture and Rural development (NABARD).

This is the apex bank for refinancing for all types agricultural operations for the commercial banks. at less interest. Earlier this is a wing in reverse bank as agricultural refinance wing of reserve bank. NABARD will not directly finance to the dairy farms, -dairy factories or allied business, but only through commercial banks. For community / social schemes like water shed, small irrigation schemes, tanks rural roads etc., it will finance directly to the state government to provide basic amenities to agriculture and related fields. For community work the interest rate is very low.

4. Commercial Bank : In-our country there are 28 nationalized banks and many private banks who are financing for dairying. These banks will finance for small to large dairy farms, dairy factories, feed mixing plants other dairy based business. The amount of finance will vary from 75-85% of the cost of project depending upon scheme or non scheme projects. For dairy farms one should have their own land and no loan will be given for land. The interest rates charged will be 12-15.5% P.A. depending upon the amount of loan.

5. Cooperative bank : In each state apex cooperative bank will be there, in each district cooperative bank which will have branches throughout the district in rural areas. Just like commercial banks, cooperative banks will give for all dairying projects for both short term and long term loans, the rules and regulations are almost commercial banks with little less interest rates.

6. Village cooperative societies : For a cluster of villages cooperative

societies will be there, which will give loans for small scale animal husbandry activities. The finance for these societies will be by cooperative banks. The interest rates will be less compared to commercial banks.

7. State Financial Corporation : Each state will have state financial corporation (SFC) which will also finance for dairy projects. The interest rates are almost equal to commercial bank: In our state Andhra h state financial corporation is located at Hyderabad and it is branches in all district head quarters.

8. Dairy Development Cooperative federation and district milk producers cooperative societies: The state dairy development cooperative federation will get some loans from NDDDB and other agencies for development of dairying, which will be provided to district unions, who will inform will give loans to milk producers. They will not give loans directly to the beneficiaries, but they will procure good genetic high milk producing animals and distributed to the beneficiaries. Part of the amount will be subsidy and the remaining amount will be treated as loan with less interest rates.

9. District Rural Development agencies : In each district one DRDA will be there which will operate most of the centrally and state sponsored schemes. DRDA will assist programmes like

- a) Draught 'prone area programmes (DPAP)
- b) Small farmers development agencies (SFDA)
- c) Marginal farmer and Agricultural labour development agency
- d) Integrated rural development programmes.

The (IRDP) DRDA will sponsor the above schemes by sanctioning loans by commercial, banks and provide subsidies from 25-50% depending upon the classes of people involved in the schemes.

10. B.C and SC corporation : SC and BC corporations will arrange loans for dairy programmes of respective class of people through milker commercial / cooperative banks and provide subsidy of 25-50% .

11. Tribal development: agencies : For the development of tribal areas, the government has established tribal development agencies which will give subsidies and arrange loans through financial institutions.

1.5 PROJECT REPORTS TO BE SUBMITTED FOR FINANCIAL INSTITUTIONS FOR 2,10,50 AND 100 ANIMAL DAIRY FARMS'

Salient features :

1. Project report should be submitted to the commercial bank / cooperative / scheduled bank for getting loan which in turn is refinanced by NABARD.
2. Margin money : The share of the entrepreneur will be 5-25% depending upon the level of predevelopment return of resources.
3. Bank loan 75 to 95 % of the total cost of the project.
4. Interest rates
 - Upto 25,000 loan amount- 12% p.a
 - 25001 to upto 2 lakhs - 13.5 p.a
 - Over 2 lakhs - As determined by the bank approximately 15% PA.
5. Repayment period of loan will be 5 years on monthly / quarterly installment.
6. Insurance : The present rate of insurance premium for scheme and non scheme animals are 2.25% and 4.0% respectively. The animals may be insured annually or on long term master policy *(8.4% for 5 years).
7. The average milk yield of buffalo is 8-10 liter /day
8. Lactation period of buffalo - 280 days.
9. Dry period - 120 days.
10. Sale price of milk Rs. 11/litre
11. Veterinary aid / animal / year Rs. 300/
12. Labour : Family labour for small size and one worker and one milker for every 12 animals.

13. Cost of electricity and water / animals / years - Rs. 200/
14. Income from sale of gunny bags 20 bags / tonn @ 5 /- per bag
15. Sale of manure : Rs. 4001- animal / year
16. Closing stock value Rs. / animals = 6000/
17. Depreciation 5% P.A. for sheds & buildings 10 % PA on equipment
18. Animals will be purchased in two batches at an interval of 6 months at 1 month after calving.
19. It is assumed that expenditure on calf rearing will nullify the sale value of calf/heifer.
- 20 Feeding cost per animal / day.

Feed Item	Price	Lactation period Quantity	Cost	Dry period Quantity	Cost
	I kg				
Green fodder	0.50	25	12.50	25	12.50
Dry fodder	1.00	5	5.00	5	5.00
Concentrate	4.00	4.5	18.00	2	4.00
Total			Rs.35.50		Rs. 21.50

A. PROJECT REPORT FOR 2 ANIMAL UNIT :

1. Capital Cost

@ Cost of animals @ 20,000 x 2	40,000 /-
	3,360 /-

	43,360 /-

Margin money @ 15 %	Rs. 6500 /-
Bank loan @ 85 %	Rs 36,860/-

II. Lactation money

	Y	R	A	R	S	
	1	2	3	4	5	
1. Lactation days						
@ First animal	250	280	280	270	240	
b) Second animal	180	240	240	240	240	
Total	430	520	520	510	480	
2. Dry days						
@ First animal	110	80	80	90	120	
b) Second animal	--	120	120	120	120	
Total	110	200	200	210	240	

III. Cash flow Analysis (Rupees) Recurring costs

		Y E A R S			
a) Feeding during lactation period	15265	18460	18460	18105	17040
b) Feeding during Dry period	2365	4300	4300	4515	5160
c) Veterinay aid & breeding cover	450	600	600	600	600
d) Cost of electricty& water	300	400	400	400	400
Total - A	18,830	23,760	23,760	23,620	23,200

IV BENEFITS

1.sale of milk	42570	51480	51480	50490	47520
2.Sale of gunny bags	200	250	250	200	200
3) sale of manure	600	800	800	800	800

4) Closing stock value-	--	--	--	12000
Total returnsB)	43370	46810	46810	45880
Gross profit (B-A)	24990	23050	23050	22260
				32040

V. Repayment of load

	10355	10355	10355	10355	10355
Equated annual installment Value of margin money With 15% PA interest--	---	---	---	---	13000
Total repayments	10355	10355	10355	10355	23355

VI Net profit:

(Gross profit - Total repayments)	14635	12695	12695	11905	8685
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B. Project Report for 10 Buffaloes :

1) NON RECURRING COST :	
1. Cost of Animal @ 20,000/-	2,00,000 /-
2. Cost of construction fo shed @ 45 sqft. Animal Rs 100/sft 450 x 100	45,000 /-
3. Cost of store cum office 200 sq. ft @ Rs 200 /- sq. ft 200 x 200	40,000 /-
4. Equipment (Chft cutter, milking pails Cons etc) @ 1500 /- per animal	15,000 /-
	3,00,000 /-
Bank Loan 85 % -	2,55, 000 /-
Margin money -	45,000 /-

II. Lactation chart

Particulars	Y E A R S				
a) Lactation days					
First batch 5 animals	1250	1400	1400	1350	1200
Second batch 5 animals	900	1200	1200	1200	1200
Total	2150	2600	2600	2550	2400
b) Dry days					
First batch 5 animals	550	400	4000	450	600
Second batch 5 animals	--	600	600	600	600

III. CASH FLOW ANALYSIS :**Recurring costs**

a) Green fodder raising expenses	10000	10000	10000	10000	10000
b) Feeding during lactation(5 kg of dry fodder @ 1.00kg 4.5 kgs of concentrate @ 49450 59800 59800 58650 55200 4.0 / kg) Rs. 23 / animal / day)					
c) Feeding during dry period (5 kg dry fodder 1 kg concentrate). @ Rs 9. / day / animal)	4950	9000	9000	9450	10800
d) Veterinayr aid & breeding services @ 300 /- animal /- yr	3000	3000	3000	3000	3000
e) Cost of electricity & water @ Rs.300 /- per animal / .year	3000	4000	4000	4000	8000
f) Insurance 4 % 8000	8000	8000	8000	8000	8000

g)	Labour cost Rs. 2000 /- month	24000	24000	24000	24000	24000
	Total A	103900	120800	120800	120100	118000

IV Benefits

1.	Sale of Milk	212850	257400	257400	254450	237600
2.	Sale of gunny bags	2000	2500	2500	2000	2000
3.	Sale of manure	6000	8000	8000	8000	8000
4.	Closing stock	----	----	----	----	60000
	Total(B)	220850	267900	267400	262450	307600
	Gross profit (B-A)	116950	147100	147100	142350	189600

V. Repayment:

Loan principle	60000	60000	60000	60000	60000
Loan interest	35000	36000	27000	18000	9000
Margtin money with int. 15 % PA	---	----	----	----	79000
Total	95000	96000	87000	78000	148000

VI Net profit.

Gross profit - Net Payment	21950	51100	60100	64350	41600
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C. PROJECT REPORT FOR 50 BUFFALOES :**1. Non Recurring (Rupees)**

1.	Cost of animal @ 20000 x 50	10,00,000 /-
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2.	Buffalo shed @ 40 sft / animal Rs 100 / sqft. 2000 x 100	2,00,000 /-
3.	Calf shed @ sqft animal @rs 50 /- sqft 1000 x 50	50 ,000 /-
4.	Calving shed @ 50 sqft / animal for 2 animals @ Rs 100 /- sqft . 100 x 100	10,000 /-
5.	Sick animal shed @ 40 sqft. / animal for 2 animals @ Rs. 100 sq.ft 80 x 100	8,000 /-
6.	Animal padlocks @ 70 sqft/ animal @Rs 15 /- sqft. 3500 x 15	52500 /-
7.	Calf padlock @ 70 sqft/ animal for 50 Calves. 50 x 20 = 1000 sqft @Rs. 15 / sqft.	8000 /-
8.	Chaft cutter shed open shed 200 sqft. @ 40 /- sqf	8000 /-
9.	Feed plants room 200 sqft. @ Rs 100/- per sqft.	20000 /-
10.	Milk recording room 150 sqft @ 75 /- sqft.	11250 /-
11.	Equipment, chaft cutter, grinder and mixer, etc	80000 /-
	Total	1454750 /-
	Margin money - 15 %	218000 /-
	Bank loand 85 %	1237000 /-

II. LACTATION CHART**Y E A R S****Particulars**

a) Lactation days

First batch 25 animals	6450	7000	7000	6750	6000
Second batch 25 animals	4500	6000	6000	6000	6000
Total	10750	13000	13000	12750	12000

B) Dry days

First batch 25 animals	2750	2000	2000	2250	3000
Second batch 25 animals	---	3000	3000	2000	3000
Total	2750	5000	5000	5250	6000

III. CASH FLOW ANALYSIS:

Recurring costs (Rupees

a) Green fodder rasing expenses	50000	50000	50000	50000	50000
b) Feeding during lactaion period Rs 23 /- days/ animal.	247250	299000	299000	293250	276000
c) Feeding during dry period Rs 9/ day / animal.	24750	45000	45000	47250	54000
d) Insurance premium @ 4 %	30000	40000	40000	40000	40000

Salaries & wages

i) Part time Veterinary Doctor @ Rs 2500 /- pm	30000	30000	30000	30000	30000
ii) Compounder cum milk recorder Rs 4000 /- pm	48000	48000	48000	48000	48000
iii) Chaff cutter cum feed plant operates @ 2000 /-	24000	24000	24000	24000	24000
iv) Labour charges 2 milkers + 2 workers for first 6 months and 4 + 4 afterwards. @ 1500/- pm for milker . @ 1200 /- pm for worker Veterinary aid etd	11250	15000	15000	15000	15000
Total A	5,72,450	6,80,600	6,80,600	6,77,100	6,66,600

IV BENEFITS :

1) Milk sales	10,64,250	12,87,000	12,87,000	12,62,250	11.88.000
2) Sale of Gunny bags	10000	12500	12500	10000	10000
3) Sale of manure	15000	20000	20000	20000	20000
4) Closing Stock value ---	---	----	----	---	3,00,000
Total B	1089250	1319500	1319500	1292000	1518000
Gross Profit(B- A)	516800	638900	638900	614900	851400

V. Repayments :

Loan principles	247400	247400	247400	247400	247400
Loan interests	167000	133600	65200	57600	30130

Margin money with int. 15% pa	---	---	---	---	381500
Total	428000	389600	351200	313600	659030

VI.

NET PROFIT (Gross profit repayment)	88,800	249300	287400	301300	192370
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D. PROJECT FOR 100 BUFFALOES

1. NON RECURRING COSTS	(RUPEES)
1. Cost of animals @ 20,000 / animals	20,00,000 /-
2. Buffalo shed @ 40 sq. ft/ animal Rs. 100 sq. ft 4000 x 100	4,00,000 /-
3. Heifer shed @ 30 sq animals 50 heifers 1500 sq. ftx 100	1,50,000 /-
4. Calf shed @ 20 sq. ft @ Rs 50 /- sq. ft	1,00,000 /-
5. Calving shed @ 50 sq.ft/ animal for animal @ 100 / sq. ft 150 x 100	15,000 /-
6. Sick animal shed @ 40 sqft / animal for 3 animals . @ 100 /- sqft 10 x 100	12,000 /-
7. Animal padlocks @ 70 sqft / animal @ Rs. 15 / sqft	105000 /-
8. Calf pad lock @ 20 sqft / animal @ Rs. 15 / sqft	30000 /-

9.	Chaft cutter shed 200 sqft open land @ 40 /- sqft	8000 /-
10.	Feet plant room and store room 600 sqft @ 100 sqft	60000 /-
11.	Milk recording room 150 sqft. @ 75 /-sqft	11250 /-
12.	Farm dispensary 200 sqft. @ Rs. 75 /sqft	15000 /-
13.	Bore well. 7" dia x 200 sqft	20000 /-
14.	Chaft cutter	25000 /-
15.	Feed grinder cum mixer 1 ton per hour capacity	40000 /-
16.	Dairy equipment Rs. 150 /-	15000 /-
	Total	2951750 /-
	Margin money	442000 /-
	Bank loan	2509000 /-

II. LACTATION CHART Y E A R S

Lactation days

First batch of 50 animals	12500	14000	14000	13500	12000
Second batch of 50 animals	9000	12000	12000	12000	12000
	21500	26000	26000	25500	24000

Dry Days

First batch 50

animals	5500	4000	4000	4500	6000
Second batch					
50 animals	---	6000	6000	6000	6000
	5500	10000	10000	10500	12000

III. CASH FLOW ANALYSIS :

1. Recurring costs (Rupees)

a) Green fodder raising expenses	100000	100000	100000	100000	100000
b) Feeding during lactation period Rs. 23 /- per animal per day.	494500	5958000	598000	586500	552000
c) Feeding during dry period Rs. 9 / animal / day.	49500	90000	90000	94500	108000
d) Insurance premium @ 4 %	60000	80000	80000	80000	80000
e) Veterinary aid	22500	30000	30000	30000	30000

2. Salaries & wages

a) Part time Veterinary doctor @ 4000 / month	48000	48000	48000	48000	48000
b) Compounder or junior veterinary officer @ 5000 / pm	60000	60000	60000	60000	60000
c) Milk recorder @ 2500 / pm	30000	30000	30000	30000	30000
d) Chaff cutter cum feed plant operator @ 25000 / pm.	30000	30000	30000	30000	30000
e) Labour charges 4 milkers + 4 worker in first six months and 8 + 8					

afterwards @ Rs. 1500 /- per milker / pm @ Rs 1200 pm for others.
 1088900 1325200 1325200 1318200 1297200

IV. BENEFITS:

a) Milk sales 2128500 257400 257400 252500 2376000
 @ 9 lit / animal / day @ Rs 11/- per lit

b) Sale of Gunny bags :
 20000 25000 25000 20000 20000

c) Sale of manure
 30000 40000 40000 40000 40000

d) Closing stock value of animal
 ----- ---- --- ---- -----

Total (B) 2178500 2619000 2619000 2565000 3036000

Gross
 Profit (B- A) 1089600 1293800 1293800 1246800 1738800

V. Repayment.

Loan principle
 501800 501800 501800 2565000 3036000

Loan Interest
 301350 301080 225810 150540 75270

Margin money with int. 15 % pa
 ---- ---- ----- --- 773500

VI

Net profit 286450 490920 598310 593460 388230

1.6 Project reports for 5000 Litres and 50,000 litres for Processing centres

A) Project report for 5,000 litres / days

Non Recurring costs

1.	Cost of 2 acres land	2,00,000 /-
2.	Milk chilling equipment	2,50,000 /-
3.	Pasteurizers 1000 lit capacity / hr	2,50,000 /-
4.	Cream separator 500 lt / hr	50,000 /-
5.	Storage tank 5000 lit. capacity 2	2,00,000 /-
6.	Refrigeration plant 5 tons / cap.	3,50,000 /-
7.	Boiler (coil fixed) 150 kg / hr	3,50,000 /-
8.	Prepak machine	2,00,000 /-
9.	Cold store	3,50,000 /-
10.	Milk weighing scale, dumping tank	1,50,000 /-
11.	Can conveyer	80,000 /-
12.	Can washing equipment	2,00,000 /-
13.	Milk pumps 2 Nos	50,000 /-
14.	Milk cans 250 @ 1000 /-	2,50,000 /-
15.	Ghee making equipment	50,000 /-
16.	Electrical supply and wiring	5,00,000 /-

17.	Building, compound wall construction.	25,00,000 /-
18.	Water tank	2,50,000 /-
a)	Margin money 15 %	9,30,000 /-
b)	Bank loan 85 %	53,00,000/-

Recurring Costs :

1.	Electricity charges	12,00,000 /-
2.	Transportation of raw milk	9,00,000 /-
3.	Transportation of market milk	9,00,000 /-
4.	Salaries & wages	
	a) Dairy incharge 9000 / pm	1,08,000 /-
	b) Supervisor 2 nos. 3500 /0 pm	84,000 /-
	c) Plant operator 2 nos. 3500/- pm	84,000 /-
	d) Quality control asst. 4000 /- pm	48,000 /-
	e) Boiler refrigeration mechanic 3500 /- pm	42,000 /-
	f) workers : Rs. 1500 / pm 6 number	1,08,000 /-
	g) Accountant & clerk 2 nos 4000 / pm	96,000 /-
	h) Office boys 2 nos @ 1500 /- pm	36,000 /-
5.	Packing material cost	4,00,000 /-
6.	Cleaning powders and detergents	50,000 /-
7.	Stationary and printing	1,00,000 /-

8.	Chemical & glass ware	1,00,000 /-
9.	Miscellaneous expenses	2,00,000 /-
10.	Cost of milk @ 11 /- per litre + 0.25 paise commission on an average 4500 lit / per day	1,85,25,000 /-
	Total (A):	2,26,81,000 /-

Cash flow :**Cash Flow**

1.	Cost of milk (toned milk) 4350 litres daily after removal of cream @ 12.00 / litre after subtracting agents commission.	1,87,92,000 /-
2.	Sale of ghee by converting ghee 145 kg daily @ 130/- per kg. After deducting agents commission.	67,86,000 /-
	Total (B)	2,55,78,000 /-
	Gross profit (B-A)	28,97,000 /-

Repayment:

a)	Principle amount of loan for 15 years	3,50,000 /-
b)	Equated interest / year @ 15% PA	5,00,000 /-
c)	Depreciation 10%	6,25,000 /-
d)	Repayment of margin money with 15% PA interest.	1,30,000 /-
	Total (c)	16,05,000 /-
	Net profit = Gross profit - Total 'c'	12,92,000 /- year

B. PROJECT REPORT FOR 50,000 LITERIDAY PROCESSING

CENTRE

1.	Cost of land 10 acres @ 100,000/	10,00,000
2.	Raw milk receiving section equipment	10,00,000
3.	Pasteurization plant with fittings	10,00,000
4.	Homogenizer with fittings	10,00,000
5.	Cream separators electrical 2 nos.	5,00,000
6.	Prepak machines 4 nos.	12,00,000
7.	Milk storage tanks / silos 2nos. 50,000 lit/ capacity	20,00,000
8.	Butter making machine	4,00,000
9.	Ghee making equipment	4,00,000
10.	Cans 2500 nos. @ 1000/- per can	25,00,000
11.	Refrigeration plant with accessories	18,00,000
12.	Boiler coil fired with accessories	12,00,000
13.	Over head tank	5,00,000
14.	Electrical lines, fittings transformer	12,00,000
15.	Laboratory equipment	2,00,000
16.	CIP cleaning unit	3,00,000
17.	Transportation vehicles 4 nos.	26,00,000
18.	Jeeps 2 nos.	10,00,000
19.	Building	60,00,000
20.	Quarters -	20,00,000
21.	Compound wall,	12,00,000
22.	Effluent treatment plant	5,00,000
23.	Office furniture	5,00,000
24.	Miscellaneous	10,00,000
	Margin money ,15% 50,00,000/ - (rounded)	
	Finance 85 % 2,60,00,000 /-	
	Total:	3,10,00,000

Recurring cost

1.	Electrical charges @ 5,00,000 pm	60,00,000 /-
2.	Diesel, petrol and fuels	18,00,000 /-
3.	Packing material cost	18,00,000 /-
4.	Cleaning agents	9,00,000 /-
5.	Stationary and printing	10,00,000 /-
6.	Chemicals and glassware	6,00,000 /-
7.	Salaries and wages	
	a) Dairy manager 20,000/- pm including	2,40,000 /-
	b) Assistant dairy manager 7,000/- pm 3 nos.	2,52,000 /-
	c) Supervisors 6 nos. @ 4500/- pm	3,24,000 /-
	d) Boiler operators 2 nos. 4000/- pm	96,000 /-
	e) Refrigeration operator 2nos 4000/ pm	96,000 /-
	f) Engineering maintenance in charge 2 nos. 6000/- p.m.	1,44,000 /-
	g) Worker 60 nos. @ 1500/- pm	10,80,000 /-
	h) Drivers 6 nos. @ 3500/- pm	2,52,000 /-
	i) Quality control incharge 3 nos. @ 6000/- pm	2,16,000 /-
	J) Office in-charge Rs. 50001pm	60,000 /-

	k) Office assistant, stores incharge 6 nos. 4000/- pm	2,88,000 /-
8.	Cost of milk @ 11.25 litres (including agents commission of Rs. 0.25 litres) 45,000 lit/day.	18,22,50,000 /-
9.	Bonus to workers	30,00,000 /-
10.	PF Contribution	5,00,000 /-
11.	Insurance premium	5,00,000 /-
12.	Repair and maintenance	15,00,000 /-
13.	Sales tax and other local taxes	1,05,00,000 /-
	Total (A)	21,33,98,000 /-

Cash flow

1.	Cost of market milk (toned milk 43,500 lit /day (after removing cream) @ 12.00 / litre (sold at 13.00 1.00/lit) commission to agent	18,79,20,000 /-
2.	Sale of ghee 1400 kg/day @ 130/ (sold at 150/- Rs. 20/kg commission)	6,55,20,000 /-
	Total (B)	25,34,40,000 /-

Repayments :

1.	Principle amount for 15 years yearly payment	17,33,000 /-
2.	Interest per year, equated installment	19,50,000 /-

3.	Depreciation 10 %	31,00,000 /-
4.	Repayment of margin money with 15% interest	7,10,000 /-
	Total :	74,93,000 /-
	Profit = Gross profit - Total C =	3,25,49,000 /
	-	
	Income tax 35% (30% + surcharge)	1,13,92,000/-
	Net profit / year	2,11,57,000 /-

SUMMARY

Importance of economics in dairying was explained with , particular reference to rural areas. The economic viability for large and small size dairying units were discussed. Various important economic principles were given with a primary moto to maximize profit. The various financial institutions are listed. Project reports with their viability are given for 2,10,50 and 100 animal dairy farms and also milk processing centres handling 5000 litres, 50000 litres per day. The importance and implications of dairy animal insurance were discussed.

SHORT QUESTIONS

1. Define Farm production economics.
2. How much percent of cost will account for feed in dairying?
3. Give important two economic principles to maximize profits in dairying.
4. What is the objective of animal insurance?
5. What is the function of NDDDB?
6. How much profit can you expect by raising two dairy animal per year?
7. How much profit can you expect by installing a dairy processing centre of 5000 lit/capacity per year?
8. What is the optimum size of dairy farm with maximum benefits?

LONG QUESTIONS

1. What are the economic principles to maximize profits in dairying?
2. Prepare project reports for establishing the dairy farms of the following strengths.
a) Two animal b) 10 animals C) 150 animal d) 100
3. Prepare project report for establishing milk processing centres of capacity a) 5000 liats/day b) 50,000 lit/day.
4. Explain about various financial institutions involved in dairy development programme.
5. Briefly explain the importance of economics in Dairying?
6. Write about economic viability of large and small size enterprizes?
7. Briefly write about cattle insurance.

2 MILK PROCUREMENT

Surveys for Milk potential area for Surplus (Milk shed area)

To assess whether any project or industry would be available in a certain area, a survey of available resources in that particular area is carried out. Milk shed area generally denotes a district (or) from which area milk is procured and processed in the common plant located in the central part of that particular area.

The villages in the milk shed area should be preliminary survey is conducted as different aspects of milk production as detailed given below

1. The existing cattle and buffalo population
2. The production and utilization / disposal pattern of milk and milk product.
3. Marketing channels for surplus milk.
4. Returns from the sale of milk realised by the farmers.
5. Agricultural facilities and production patterns.
6. Basic amenities such as communications links, educational facilities etc.
7. Other sources of income.
8. Performance of other institutions including multipurpose cooperatives etc.,
9. Different communities living in a village and their inter-relationship.
10. Other relevant information if any.

Once the milk potential areas are located detailed survey is conducted i.e. door to door survey about the milk production, surplus milk with the family, whether they are interested to sell the milk to the society or not, infrastructure needed for enhancement of milk production etc. After detailed survey possible milk routes are identified so as to cover all the milk potential areas. In selecting the routes the prime idea should be considered is that the vehicle from the starting point loading the milk from different collection centres, reaches milk chilling centers (or)

processing plants within a reasonable time without allowing the milk for spoilage.

2.2 SYSTEMS OF MILK PROCUREMENT :

The success of any dairy project depends on a well planned and organised system of milk procurement. In the case where procurement system is not well established dairy plants remain underutilized on the other hand, if the system is well planned the following advantages can be obtained.

- An assured market round the year to the milk producers.
- Full capacity utilization of the dairy plant
- Increase in the milk production through inputs at reasonable cost.
- Planning and scheduling of milk procurement

following two aspects.

- Policy decisions at top management level
- Scheduling the actions for smooth running

2.2.1 POLICY DECISIONS AT TOP MANAGEMENT LEVEL

Before starting milk procurement the following decision should be taken.

- 1) Price to be paid for raw milk in different seasons
- 2) The system and frequency of payment for milk - Daily Weekly, fortnight or Monthly.
- 3) Reserve funds required to carry milk procurement to avoid hardships
- 4) Material, equipment, chemicals and stationary required for collection centres.
- 5) Transportation of milk - hiring of transporting vehicles better rather than owning the vehicle.
- 6) Technical inputs i.e. Veterinary aids, A.I, feeds and fodder to be given in advance to the producers to get the advantage of favour.
- 7) Man power required and training engaged in milk procurement. needed

to people

2.2.2 Scheduling the actions :

Once the above policy decisions are taken, the milk procurement activities are planned. After preliminary and detailed survey of villages, village societies are started. Society staff is recruited and necessary training in the fields related to milk collection, testing, maintenance of records, bank transactions bye-laws etc is given. Transport time table for milk route is prepared and the all societies are informed about the time of loading of milk cans and (or) unloading of empty cans. All the members of the society will be informed about the time of milk collection at the collection centers. Depending upon the quantity of milk collected indent for extra cans or information about the quantity of milk to be procured in future should be reported promptly to the concerned authorities by the society organisers.

2.3 SYSTEMS OF MILK PRICING :

The pricing of any commodity is always based on its cost price and the price paid by the consumer. Working out the cost price of milk under field conditions is a complex subject any pricing system followed should be

- 1) Remunerative to the producers
- 2) Competitive to the local market prices.
- 3) Discourage adulteration and promote quality consciousness:
- 4) Based on milk constituents i.e. Fats & SNF

2.3.1 METHODS OF MILK PRICING:

The old systems followed in India are volume basis and weight basis. The volume basis will encourage the adulteration of milk with water and also quantity of milk will be affected on, with formation of foam. The weight system will not be effected by foam but it also encourages adulteration of milk. The various other pricing systems are

1. Pricing on pro-rata fat basis

In this system the price of milk is fixed proportional to the fat content of milk. This system will assign practically zero value for S.N.F content.

The advantage of this method are

easy to calculate the milk price

easy to adopt as it required only fat estimation, farmer will easily understand the system and it can be adopted to any type of milk.

The disadvantages are :

It encourages adulteration of milk with water, as there is not check on S.N.F. This system will encourage buffalo milk and donot provide remunerative price for cow milk.

PRICING ON TWO AXIS BASIS:

This method is used in pricing cow as well as buffalo milk where both fat and SNF contents are taken into accounts. As the system is based on both fat and SNF, it is called as “Two access pricing”. The prices of fat and SNF are fixed depending- upon the market price of GHEE and skim milk powder. Normally the price of fat will be declared by the union for different seasons and the price of SNF will be 2/3 price of the fat. The price is calculated using the following formulae.

Ex : Price of 100 kgs milk = Kg fat rate x Fat percentage + kg SNF rate x SNF %

Ex : If the price of kg Fat is 100 then the price of 9% SNF be $100 \times \frac{2}{3} = \text{Rs. } 66.60$

Then the cost of 100 kg of milk testing 6% fat an 9% SNF = $(100 \times 6) + (66.6 \times 9) = 600 + 599 = 1199$ i.e Rs. 11.99 per kg.

The advantages are

No discrimination against cow or buffalo milk as cow milk is reasonably priced due to consideration of SNF contents which is well comparable to that of buffalo milk.¹

PRICING ON EQUIVALENT FAT UNIT BASIS

In this method the SNF units are converted into equivalent fat units in proportion to the relative market prices of fat and SNF. The SNF is

value at $2/3$ units of fat. For example : The buffalo milk testing 6% fat and 9 % SNF

$$\text{The total number of Fat units} = 6 + 9 \times 2 / 3. = 6+6= 12$$

If the fat price is Rs. 100/- than the cost of 100 kg of milk = $100 \times 12 = 1200$

Or Rs. 12 per kg of milk.

This method will leave the same advantage of two access pricing system.

2.4 PRINCIPLES INVOLVED IN PRICING OF MILK PRODUCTS

While finalizing the price for milk products there are six steps to be followed.

1. Selecting the pricing objectives : Whether the pricing objectives should be or profit oriented service oriented.

Normally government agencies, voluntary organizations or cooperative bodies objective will be service oriented with minimum profit, where as private people will aim on maximum profit.

For any producer aiming at reasonable profit will have many advantages to have in market for longer period with maximum percentage of market share.

2. Determining the demand : By making market surveys the demand for individual product can be assessed. The heavy demand product should be prepared. The price of heavy demand product will be high.

3. Estimating the cost : The cost of the product at which it can be marketed can be calculated as follows
 - a) Cost of raw materials used for the preparation of the product i.e. milk, sugar, spices, salt etc.,
 - b) Cost of processing the product: Normally in dairy industry the
 - c) Processing costs will be around 20% of cost of raw Packing cost :
 - d) Depreciation on the cost of raw material.
 - e) Distribution cost (i.e. transportation)
 - f) Distribution margin (whole salers margin)
 - g) Retailers margin.

The total of the above gives actual price for the product. For that add profit margin which may be 10-15% depending upon the demand.

- 4.. Analysis of competitors price and offer : The price of product should be competitive and attractive compared to competitors product. Some times extra quantity of product is offered with the same prices (Add 100 gms with 500 gms of product) by competitors. That shoulJ also be taken into account.

5. Selecting a price method

i.e. Market +

Market - price methods.

Market 0

6. Selecting the final price : After deciding the above factors the final price of the products may be arrived.

For any product price fixation, other factors will also influence like.

- 1) Season : During summer, demand for flavoured milk, butter milk, Ice cream, kulfi will be enormously increased. So the price of fast moving products in summer can be increased.
- 2) Area of marketing : If the income of people is high, their purchase will be more.

2.5 PLANNING FOR MILK COLLECTION AND TRANSPORTATION ROUTES:

For efficient collection of milk, certain problems arising at the collection centre should be solved. The various problems faced at the collection centres are

1. Producers having vested interest - some persons will try to influence the staff and get undesirable things done to save their personal interest. This should not occur.
2. Some persons will supply adulterated or substandard milk. This should be discouraged.
3. Strict timings for milk procurement - Some producers will supply the milk very late, the society will not receive it resulting a direct conflict between the producers and staff. This can be sorted by explaining the farmers about the difficulties.
4. Some producers will think that sample of milk drawn is an extra quantity of milk which is not paid for. This can be explained to the farmer that all the samples are pooled and sold which is distributed to all members as bonus.
5. Some farmers due to many reasons will supply evening milk in the next morning and morning milk in the evening which causes curdling of milk and loss to the society. Such producers should be carefully checked and explain about the quality of milk causing problems in processing of milk.
6. Some staff members will not following the timings for milk collection, so

that the procedures will have to wait for hours together and lose their interest on society. Maintenance of the time by the staff is essential for improving the milk procurement.

Transportation of milk to the processing centre or chilling centre will be undertaken by the union. Some societies will not have proper roads, it's the responsibility of the society to transport the milk from the collection centre to the near by truck pick-up point. In some societies there will be transportation roads through that village, but the collection centre will be interior, in such case also it is the responsibility of the society.

At union level different roads are planned to get the milk from different places to the processing plant. Each road will be planned in such a manner that it will go through all the society villages or at least nearer to the societies. The roads are so planned that if any damage to the road or traffic an alternative road is available to the processing centre. (The road map should be supplied in advance to all the societies so that they can plan for suitable pick-up points. The length of the road should be such that from the starting point of the milk collection, it reaches the processing or chilling centre within reasonable time so that the milk may not get spoiled and fit for processing)

The transport vehicles will deliver the empty cans for next collection and lift the can with milk. In case of any break to the transporting vehicles an alternative vehicle or at least the other route vehicle may be diverted.

2.6 MEASURES TO ENHANCE MILK COLLECTION DURING LEAN SEASON.

During rainy and winter season, there will be, lot of green, roughages which will help in enormous milk production, whereas in summer the most of the fields including grazing lands become dry and green fodder will be available adversely affecting the milk production. Moreover no farmer will plan to calve the animals just before or during, summer, which will adversely affect the lactation yield. Most of the cows will be in dry or late lactation or late lactation with pregnancy. Recent studies indicate that the milk production during summer season will be decreased, 40% of the milk production during rainy and winter seasons. The summer season is

in which low production of milk is called lean season and flush season when

high milk production exists.

As the output of milk production is decreased, the demand will be as such for the milk, there will be lot of competition for the collection of milk. The competitors of milk processors will start their own strategies to get maximum share of milk collection by any dairy in lean season. The following are the some of such steps.

1. The milk production during flush season will be surplus, the collection centres are unable to collect full quantity due to varied reason. The procesers should regularly collect full quantities of milk from those producers who will be faithful and supply full. quantity of milk to him during lean season. The producers are also remember the collection centers, who has helped them during flush season. Some processors even declare milk holidays once in a week, or so during flush season, which will cause economical loss to the producers. If farmers are tackled well during flush season, they will inturn help by giving whole quantity of milk during lean season.
2. Fixing of high price or giving bonus or extra payments for the milk supplied during lean season will also improve the milk collection. As the level of production drops during summer and also most of the dairy animals in dry / pregnant conditions, the cost of the milk production will generally high during summer season. To compensate this high cost of milk production, the processors should enhance the purchase price of milk.
3. Advance payment / prompt and regular payments for the purchased milk by the collection centers will definitely improve the milk collection during summer.
4. Supply of inputs like concentrate feeds, fodder seeds, fertilizers A.I facilities to the producers in advance and adjusting the cost for the price of milk collected.
5. Satisfying the producers by explaining about the cunning nature of competitors who will give high price of milk during lean season. The collection center people should explain to the producers, that the competitors would not collect the milk during flush season.
6. Especially during festival occasion, children school reopening, marriages time farmer need of money and they may come for agreement with milk collection

center people, by supplying milk-during lean season, if they give any finance to them. Any processors should make advance payments during the above occasions to attract the producers.

7. Training programmes should be conducted on management of animals during summer season without affecting the milk production.

8. The collection centre persons should respect customs, of the local people and they should participate in a various social and cultural activities of the village so that the farmers think that these are one among them and definitely they sell milk to them only.

9. Out of their profits, the processors / milk collection centre persons should spent certain portion for social activities in the village, i.e. laying or repairing of roads, construction of school buildings. Maintenance of parks, donations to temples, or donation to any religious / other functions will have effect on milk collection.

10. Milk competitions, bull competitions, calves and other groups of animal competition regularly in the village will also increase the faith in the villagers.

In addition to the above encouragement points, the processors / collection centre people should not do the following things.

- a) cheating the producers by taking extra quantity by manipulating the weights and measures.
- b) Showing less readings of fat and SNF levels in the milk.
- c) Wrong calculation in the price fixation of milk.
- d) Utilization of money for personal use and delaying the payments to the producers.
- e) Not paying the bonus after the year.
- f) Not bothering about the collection of milk during flush season.
- g) Not attending to the problems of animals.

SUMMARY

Surveys for milk production potential areas for surplus milk in a particular milk shed area was discussed in detail to enhance milk collection. Different milk procurement systems with advantages and disadvantages were covered. Pricing policy for milk and milk products were explained so that it is useful to select effective pricing policy under different conditions. Planning for milk collection and transportation routes was covered extensively. Collection of milk during lean season is very difficult, so planning for milk collection during lean season was highly projected.

DAIRY ECONOMICS, EXTENSION AND ENTREPRENEURSHIP

SHORT QUESTIONS

1. Define Milk shed.
2. What is Surplus milk?
3. List out procurement systems for milk.
4. What is two axis system of pricing?
5. Define transport route.
6. What is lean season?
7. Name the best method for pricing of milk.
8. What is the aim of pricing milk products?
9. Why milk production is decreased during lean season.

LONG QUESTION

1. How do you survey for milk potential area for surplus milk in a milk shed area?
2. Briefly explain about milk procurement system.
3. Discuss in detail about various pricing policies of milk.
4. What are the principles involved in pricing policies for milk products.
5. How do you plan for milk collection during lean season ?
6. How do you-plan for milk collection?
7. Briefly write about milk transportation routes?

3 DAIRY DEVELOPMENT PROGRAMMES

3.1 VARIOIUS DAIRY DEVELOPMENT PROGRAMMES AVAILABLE

Milk has emerged as the second largest agricultural commodity next to rice production (1988-89). India ranks world first in milk production in 1996. India's milk production is 70 million tones.

Cross breeding of indigenous cows with exotic bulls/semen has encouraged for augmenting milk production.

Government Project/programme.

1. All India key Village Scheme - 1951
2. Intensive Cattle Development Projects (ICDPs) - 1964 - 65.
3. Operation Flood phase I - 1970.
4. IDA Assisted Dairy projects.
5. Operation Flood Phase II - 1979
6. Operation Flood Phase III - 1985.
7. Dairy Technology Mission - 1987.

1. -Key Village Scheme (KVS)

It was taken up in August, 1952. Under the scheme a "key village block" consists of one AI centre along with four key village units attached to it. Each key village unit is a compact area_ of contiguous village having a population of about 500 cows and/ or she buffaloes fit for breeding and milk supply. Selection of pedigree bulls, proper administration and technical organisation consisting of one VAS, one milk recorder and three stockmen had been provided for every centre.)

During the third five year plan the KVS was considered to be the main programme for IDCP. The main activities are :

1. To intensify the construction programme in the key village areas.

2. Extending the PTS to the Ongole breed in Andhra Pradesh and Kankrej breed in Gujarat. (PTS - Primary Testing Scheme)
3. Establishing bull-rearing farms
4. Development of grazing areas by setting up two fodder banks and also a grass land and Research Institute.

Intensive Cattle Development Projects (ICDP's)

During the third and fourth five year plan it gained its significance by its activities such as

- (i) Formation of NDDB
- (ii) Establishing progeny testing farms -IV plan
- (iii) Establishing frozen semen stations - VI plan
- (iv) Institute for Buffalo Research - VI plan
- (v) Embryo transfer technology-. VII plan.

Progress Review

By the end of 1965, there was an awareness about the success and failures of the Government's own programme. The review of above revealed the following.

Progress Made Under 5 - Year plans.

- Dairying acquired national-level recognition.
- Concept of planned approach was introduced at all the levels.
- Organized marketing was adopted by private, public and cooperative sectors.
- The multi-national introduced new milk products.
- To overcome the economic barriers, toned milk, with less fat and at comparatively cheaper price, was formulated.
- India started developing its own cadre of trained technical personnel:
- The concept of intensive cattle development was introduced.

Unfortunate Trends

Besides above contributions, some negative effects were also observed as listed below.

- modernization and planning of dairy industry was consumer oriented.
- the package of inputs required for enhancing milk production was, left in the hands of State Animal Husbandry Department without Lilly correlation with milk industry. Those inputs hardly reached the producer. This made dairy farming an unattractive proposition for rural milk ; producers as they were to bear entire burden of maintaining the milch animal.
- the private city dwellers/duhies exploited the consumer due to increased demand as a result of industrial development.
- Cattle colonies, housing large number of good cattle and buffaloes ‘ brought from the home tracts got established to meet cities demands. ‘ Maintenance of these animals in big cities was a problem, especially in dry periods. The best animals thus started finding way to slaughter ‘ houses, once these were found uneconomical. Old stocks were replaced : by the new ones from villages. This anti-dairy cycle perpetuated.

3. Operation Flood

Operation flood - the Indian white revolution was launched to over come ! the above mentioned unhealthy trends. It is designed to raise milk ~ producer’s income by organizing them into cooperatives and eliminating f middlemen; to increase milk production in rural areas creating a flood of milk to meet demand on a regular year-round basis; and to create a self-sufficient dairy industry in India.

Operation Flood I was launched in 1970, following an agreement with the United Nations World Food programme. The European Economic ~ Community was also closely associated with Operation Flood I provided much of the food aid to the World Food Programme.

To launch Operation Flood I and finance projects undertaken within its

framework, the Delhi Government set up the Indian Dairy Corporation ! (IDC) in 1970. The actual implementation of the various projects is left to . the village cooperative societies and milk unions which own dairies at , district level.

Objectives of Operation Flood I

- a. To increase the capacity of milk processing facilities.
- b. To change urban markets from traditional milk supplies to modern dairy milk supplies.
- c. To make provision for the resettlement of city based cattle in rural areas.
.
- d. To develop long distance milk transport and storage facilities.
- e. To develop Anand pattern of milk procurement system.
- f To improve dairy farming standards.

Operation Flood II

Operation flood II was started in April 1981 and ended in March 1985 with the expressed intention of creating a viable dairy industry to meet India's needs in milk and milk products.

India's White Revolution has not only received support from the European Community and the World bank, but also from a number of Western Governments, the United Nations food and Agriculture Organisation (F.A.O), the United Nations Children's Fund (UNICEF) and European NGOs such as the British Relief Agency OXFAM. It has also been regularly evaluated over the years.

4. IDA Assisted Dairy Projects

The world bank's assistance to dairy development started with the coverage of Karnataka, Madhya pradesh and Rajasthan. The project comprises of:

- i. establishment of about 7200 DCS and 12 milk producer's unions.

- ii. Important and multiplication of pure bred exotic breeding stock and an associated A.I. programme of crossbreeding native cattle with high producing exotic breeds. Provisions of extension programme to encourage production of fodder, mixed farming and improved animal husbandry practice.
- iii. Construction of 12 dairy plants and cattle feed mills.
- iv. Establishment of one regional diagnostic laboratory and a plant for production of biological veterinary vaccines.
- v. Provisions of a training centre for each union.

Objectives of Operation Flood II

- a) To cover 10 million milk producer families in rural areas.
- b) To create National Milk Herd of 14 million cross-bred graded buffaloes_
- c) To strengthen national Milk and by linking milk supply and demand centres.
cows and
- d) To construct a base structure for National Dairy Industry.
- e) To increase percapita consumption of milk products at 144 gms / day

Operation Flood III

Operation Flood III was launched in April 1985 to run until March 1990.

The results achieved in Operation Flood II justified the confidence faced by the Government in farmer's own organisations as instruments of dairy development and led to the initiation of Operation Flood III which was implemented, covering most of the Anand pattern milk sheds of the country.

Objectives of Operation Flood III

- a) To increase the coverage of milk producers.
- b) To establish an additional 15,500 village Milk co-operative societies in 173 Anand pattern milk sheds as constituents of the State Federation.

- c) To increase milch animals in co-operative ambit.
- d) To strengthen National milk Grid.
- e) To better utilization of technical inputs in co-operation with state governments.
- f) To develop dairy co-operatives own system of improving health, environmental sanitation, nutrition etc.,

National Dairy Development Board (NDDB)

To replicate the Anand pattern throughout the country National Dairy Development Board (NDDB) was established in 1965. The dairy development programmes are being implemented through a network of milk co-operatives organised on the model existing in Gujrat state namely ANAND pattern dairy cooperatives. The three tier structure of the dairy development programme are:

1. Village level primary milk co-operative producers societies.
2. District level milk producers co-operative society unions.
3. rtate level federation of district co-operative milk producers unions.'

Objectives

The main objectives are to assure remunerative price for the milk produced by the milk producers through a stable, steady and well organised market support, and distribution of milk and milk products at reasonable prices to consumers.

6. Milk and Milk Products Order (MMPO)

This programme has been issued. by the Government of India during 1992 under the liberalization polic~i6s. It empowers that those dairy plan exceeding its utilization of 10,000 liters per day must register with Government for its modernization, product manufacturing and to collect milk in specified area.

3.2. WHITE REVOLUTION - AIMS - IMPACT ON ECONOMY OF RURAL PEOPLE

Just like 'green revolution' which is intended over all increase in agricultural produce., white revolution in the increase of milk production tremendously so that sufficient quantity of milk is available for all at affordable price. To tune up the milk production the infra structure required are

1. High yielding genetic potential dairy animals in India most of the dairy cattle are native breeds, in which majority are poor yielders of milk. It is not economical to raise the animals with 1-2 litres of milk production. The milk potential of animals can be improved by
 - a) Introduction of Exotic cattle : Exotic breeds like Jersey, Holstein Friesian, Brown Swiss etc., are excellent milk producers. These breeds can be introduced to some extent through out the country to increase the milk production.
 - b) Cross breeding programme : Purchase of exotic breeds are costly and mass introduction is not possible. The semen of exotic breeds can be utilized on native breeds to produce superior breeds which can be utilized on native breeds to produce superior offsprings. With little investment the future herd will be cross breeds having good milk production capacity. Massive cross breeding programme should be undertaken.
 - c) Selective rearing of native breeds : Under native breeds there are some breeds which are yielding optimum milk production. These breeds can be maintained by maintaining pure breeding, programme.
 - d) Upgrading native buffaloes : Murrah buffalo breed is the good breed under buffalo which can be utilized for upgrading native buffaloes. Slowly the future stock will become graded murrah buffaloes.
2. Animal Husbandry activities : Veterinary doctor should be there in or around- at least within a reasonable distance who will take care of the animals in the following activities.
 - To maintain the health by doing vaccination. To treat the diseased animal

- To inseminate the animals and confirming pregnancy diagnosis Attending dystocia
- Maintaining reproductive health.
- Advising on balanced nutrition and managemental tips.
- And many other activities concerned with animal husbandry.

Now a days trained personal are involved in door step Artificial insemination. Rural unemployed people will under go short duration training on artificial insemination and they will do door step A-I on payment.

3. Improving the fodder : the fodder crops development in India is not favourable. Most of the farmers are opting for commercial crops; not leaving any land for fodder crops. Green fodder is necessary to increase the milk production economically and also maintains good health and reproductive status. Those who are maintaining dairy animals they should allot some land for fodder production. High yielding fodder crops like Napier Bajra, Para grass, leucerne, cowpea, Berseem, and other grasses can be grown whose yield is more and also give cuttings. In India the grasses grown for grazing. These grazing lands can be improved by sowing with high yielding grass varieties.

4. Establishing feed plants,⁹: The availability of good quality of concentrate feeds in India is not satisfying the needs. Modern feed plants, should be established especially under cooperative system, to produce well balanced rations for high milk production and also to keep the price of concentrate feed at minimum affordable level. As the human beings are competing for the most of the feed ingredients, much emphasis should be given for use of unconventional feed ingredients. To avoid wastage of feed in dust form, it is better to go for pelletization process. Many agricultural by products and unconventional feed ingredients can be included without affecting palatability by using palletization process. Molasses are used both as sweetening as well as energy supplements.

5. Formation of Cooperative three tier system~ The development of milk production under government has not given boost. It is proved in our country in Gujarat, that only cooperatives will perform better to boost up milk production. Cooperatives system advantage is the milk producers will manage all the activities

i.e. milk production, collection, disposal and providing basic requirements. Anand pattern of three tier system is successful system. In this in a village all the milk produces will farm village cooperative society. In a district all the village cooperative societies will form district milk producers union. All the district unions in the state will form state federation which is the apex body to take policy decision. Village societies will collect the milk and send to district union where milk is processed and milk products are prepared. Liquid milk and products are marketed by the district union. In all the villages village milk producer's cooperative societies should be formed to enhance the milk production.

6. Providing inputs to the milk producers The district union should provide the inputs like artificial insemination facilities, supply balanced concentrate feeds, fodder seeds on subsidized rates, fertilizers and arranging for loans for the purchase of dairy animals. Training programmes should be conducted periodically in the subject of dairying, so that the farmers will get sufficient knowledge in the management of dairy animals and also in producing milk production economically.

7. Improving the rural Transport The roads are in very poor conditions in the rural areas. The milk collected at rural cooperative

societies should be transported to chilling centre / processing centre with in reasonable time, to keep up the quality of milk to withstand processing. If the roads are in bad condition, the milk will spoil when it reaches the destination.

8. Processing centres / product factories': The milk processing centres / products factories should have the /sufficient capacities and sufficient number to deal with surplus milk during flush season. The surplus milk should be converted into products. If the processing centre are at long distance from collection points, chilling centres can be established in which the milk is chilled and transported to processing centres by refrigerated thermo packed road tankers.

9. Marketing facilities/ For the sale of liquid milk and milk products marketing infrastructure should be developed. I.e. C & F agents, distributors, whole saler retailers, Mobile quality checking teams should be provided to check the quality on the spot, if any complaint comes, to get consumer's satisfaction. A poor marketing structure, will easily damage the business. Now a days any body can produce any product, but viability depends on efficient marketing.

- Other basic infra structure includes
- Electricity
- Water supply In the village. Drainage

3.3 OPERATION FLOOD DIFFERENT PHASES - AIMS AND ACHIEVEMENTS

Operation flood is a project designed by the National Dairy Development board (NDDDB) in 1968 - 69. The OF is also called as White Revolution. It was implemented in three phases i.e. Operation Flood - I, Operation Flood - II and Operation Flood - III.

O.F - I	Duration	1970 to March 1981
05 - II	Duration	1981 April to March 1985
O.F. - III	Duration	1985 April to 1990

3.3.1 Operation Flood - I

The objectives :

- a) Enlargement of dairies in four major metropolitan cities namely Mumbai, Calcutta, Delhi and Chennai (Madras)
- b) Organisation of milk cooperatives in 18 milk sheds in 10 states.
- c) Skim milk powder and butter oil were received from the united Nations world food programme and FAO. The funds generated amounting to over Rs. 100 crores by selling the recombined milk were to be spent for establishing urban dairies, rural feeder balancing dairies and chilling centres and technical inputs for milk production.
- d) The target of milk production by 1984 - 85 was 38 million tonnes.
- e) The Co-operative structure under this programme would provide a fair price to the farmers for their milk produce supply good quality milk

at reasonable price to the Consumer in urban areas and stimulate enhancement in milk production.

3.3.2 OPERATION FLOOD - II

The outlay under of - II was 485.5 crores, The following are the objectives,

- a) To extend dairy co-operative structure to cover some 10 millions rural milk producers families.
- b) To develop 16 millions cross bred cows and up graded buffaloes by mid 1985 to from the national milk herd by building up the infrastructure for breeding programmes.
- c) To link all urban centres 1148 cities and towns with a populations of over 1 lakh into a national milk grid.
- d) To augment dairy processing capacities.
- e) The percapita availability of milk is expected to increase to 144 gr by end of OF-II

3.3.3 OPERATION FLOOD -III

Phase - III of being implemented during the 7th five year plan (1985 - 90) seeks primarily to consolidate the extensive milk procurement and marketing base built during the earlier two phases.

Remunerative prices and marketing opportunities created under OF have enabled small dairy farmers to look after his milk animals and use them as a major resource for increasing income.

Operation flood phase - III would endeavor to develop strong farmers organisations in 136 milk sheds built during 2nd phase. These organisations controlled by member of producers through their elected representatives at all the 3 tiers (village milk co-operative societies district milk Co-operative unions, State Dairy development co-operative federation) and manage their milk procurement, processing, marketing and inputs supply functions.

The objectives of OF - III are as follows :

- a) OF - III aims at increasing rural milk procurement to a peak of 18.3 million liters from over 8 million milk producer families by 1990.
- b) Over 12 million liters are proposed to be sold as fluid milk through urban market.
- c) It is visualised an increase in milk procurement by about 132% and milk marketing by about 148%.
- d) Farmers will be paid almost Rs. 20,000/- millions, annually for milk by the Co-operative structure by 1990.
- e) To achieve, the above targets a rational pricing policy was evolved at both farm and urban market level.
- f) Much greater emphasis was placed on the marketing of fluid milk.
- g) Expanding marketing infrastructure in all major markets linking them to milk sheds through the National milk Grid (NMG) to ensure year round stable milk supply in these markets.
- h) NMG ensures improved availability to the consumer and a remunerative price to the milk producer by balancing without regional and seasonal imbalances in supply and demand.
- i) Provision has made in OF-III to establish 10 cattle feed plants each with a capacity of 100 tonns / day. Provision are also made to extend the capacities of the selected existing cattle feed plant, Rs. 147 million would be invested on this account.

3.4 NATIONAL TECHNOLOGY MISSION FOR DAIRY DEVELOPMENT:

The government of India has formed a body “Technology mission” to coordinate the activities of various institutes concerned with dairy development such as NDDDB, IVRI, Agricultural universities, state government department working

for dairy development with the ultimate objective to promote dairying on “Operation Flood” model for the welfare of millions of milk producers in the country. Most of the above institutions are working piece meal and in isolation. This body was established in 1988 to 1994 (7 years programme) with headquarters at Anand in Gujrat State.

This body also sets targets, monitor the progress and advise government on policies and statues. This will help to promote institutional based dairying in India more rapidly during the nineties, in comparison to what we have achieved in the seventies and eighties.

The idea of mission was conceived by the then prime minister of India, Sri. Rajiv Gandhi during his visit to Anand, head quarter of National Dairy Development Board (NDDB) during 1986.

Mr. Gandhi felt that the pace of the dairy industry growth under operation flood was not fast enough and that there was a need for technological intervention. The mission would accelerate the pace of rural employment through Dairy development and bring about effective coordination among various government programmes and agencies for optimum use of resources.

The mission was launched by the Advisor to the prime minister of India on Technology mission Mr. Sam Pitroda, Dr. V.Kurean Father of India’s White revolution is the chairman of the mission.

The main objectives are

- a) Under the Technology mission the milk production in the country is expected to go up from 44 million tonnes in 1987 to 61 mmt by 1995.
- b) To increase the percapita availability of milk from 158 to 186 gr / head / day.
- c) The average lactation yield of the cow is expected to be increased from 390 to 640 lit. and in buffaloes from 900 to 1010 lit per lactation.
- d) Number of districts covered by diarying would go up from 242 to 270.
- e) Number of village milk co-operatives to increase from about 49000 to 50000. These include about 21,000 additional village cooperatives

planned under of phase III.

- f) Milk marketing facilities will go up along with processing capacity.
- g) Various government Departments associated with the mission.

Indian council of Agricultural research (ICAR) Central Scientific and industrial Research(CSIR) Agricultural universities and NDDB will be involved with the mission.

- h) The mission plans to set up large energy efficient dairies and lactoperoidase system to preserve milk quality.
- i) The mission would have a total outlay of about Rs. 1070 crores including 915 crores under OF - III.

3.5 ROLE IN VOLUNTARY ORGANIZATIONS IN DAIRY DEVELOPMENT.

Social institution may be defined as any voluntary, private, cooperative or sponsored organisation for poor people who are under below poverty. Social institutions are service oriented organisation and not aimed at profit making. Most of the social institutions are sponsored by voluntary organisations . Eg : Awane, Artic etc.

The various types of social institutions are

1. Voluntary Organisation, *.' - The persons who are interested in rural development and social activities will form a social institution and registered with central Government under ministry of human resource development. The finance sources for these organisations are
 - a Funds from human resource development ministry.
 - b Foreign bodies donations
- c) Donation from Industrial / business/ individuals

d) Income on donated properties.

The organisation is organised by a committee. They will take the help of any volunteers of different professionals, who will work voluntarily, or they will appoint persons on honorarium basis. The Govt. of India will audit the accounts and take necessary actions, if any miss happening occurs.

2. Promoted by industrialists / business people : Some of the industries / business people who are interested in rural development / social work will form a “trusty”. The funds for these “trustes” a portion of the profit from their group of companies are diverted to it, for which tax exception is provided by the government. They will also collect donations for people, for which also tax is exempted. It is also managed by a committee. They will take the help of different professions and also employees of their group of companies to do the work.

3. Promoted by Cooperatives : Milk producers cooperatives or compound live stock feed manufacturers associations or Breeding associations etc will organize social institutions.
They fertilizer

4. Promoted by banks : Nabard and other commercial / cooperative banks will sponser service centres to promote rural development. Funds are financed by respective banks.

5. Qiftas-4ndo Swiss project : Jointly organised by Switzerland and Indian governments. Some are organised by PJRI person etc.

Activities of Social _Institution _ concerned with Dairying

1. They will adopt some villages where poor, people are dominated under poverty line.
2. They will identify the beneficiaries by their own surveys and gathered information.
3. They will select the people of 25-40 members per batch as beneficiaries.
4. They will provide training to these beneficiaries on dairying by professional experts, they
5. They will help in formulating dairy project.

6. They will assist in getting loans from commercial banks and subsidies from government.
7. They will develop community facilities which are useful for most of the beneficiaries. The cost for these facilities will be borne by them. Eg : Community fodder crops, water supply, vaccination programme.
8. They will supervise the dairy farms frequently to see that it is properly running.
9. They will provide veterinary aid freely /with law fee by appointing their own doctors.
10. They will help in marketing of milk and milk products. Some times they will take the marketing work to benefit milk producers.
11. They will supply inputs like concentrate feeds, fodder, seeds, fertilizers on actual cost which can be repaid in installment.

3.6 CONCEPT OF SOCIO-ECONOMIC AND CULTURAL CHANGES FOR DAIRYING PROGRAMMES.

Society is a group of people in more or less permanent association who are organised for their collective activities and who feel that they belong together. Important aspects of society is not the structure, it is the system of relationship. Society exists only when the members know each other and possess common interest on subjects. The likeness, cooperation, inter-dependence are the important elements to constitute society.

Community is a social group that have some degrees of co-operation, likeness, inter-dependence and living in a specific area. Community is a natural group of people residing in a particular locality permanently with a feeling.

The society is heterogeneous in nature. These are rich, poor, industrialists, peasants, rulers, sweepers etc., Every where society is divided into various classes, economic, social, political and religious. The process by which individuals and groups ranked in a more or less enduring hierarchy of status is known as stratification. Every society is divided into more or less distinct groups. No

society is unstratified. Where there is a social stratification, there is social inequality since social stratification means division of society into social classes.

Social classes are defined as abstract category of persons arranged in levels according to the social status they possess. There are no firm lines

separating one category from the other. Social class is a culturally defined group that is accorded a particular position or status within the population as a whole. A social class is the aggregate of persons having essentially the same social status in a given society. Each social class has its own particular social behavior, its standards and occupations. The relative positions of the class in the society arises from the degree of prestige attached to the status. Status is the basic criterion of social class or in other words class is a status group.

In a social class there is, firstly a feeling of equality in relation to members of its own class in behavior, standard of life, occupation etc. Secondly, there is a feeling of inferiority in relation to those, who stand above in a social class. Thirdly, there is a feeling of superiority to those below in social hierarchy.

Every class has its own distinctive ways of life. A social class is distinguished from other classes by certain customary modes of behavior, which are taken to be characteristic of that class and may be concerned with such things as mode of dress, the type of conveyance, the way of recreation and expenditure. Thus the upper class members are masters rather than servants.

Economic classes are the groups engaged in different economic activities or standing in different relationships to the means of production in a society eg. Business, service, farmer and other classes

Cultural class as further social strata that have developed sub cultural patterns-of behaviors. The patterns are distinguished from each other eg. Hindu and mohammedan cultural classes.

Farmers and their families are members of the society in which they live. In any society there are strong pressures on its to behave in certain ways. In all societies there are accepted ways of doing things and these ways are directly related to the culture of the society. The culture of society is the accepted way of doing things in that particular society. Sargent etc also defined "Culture is a pattern of learned behavior shared by members of a society. It includes not only the way

of making things and doing things, but the pattern of relationships of many people, the attitude they foster, the beliefs and ideas they have and even the feelings with which they respond. Culture is not merely customs, though customs are a part of culture. For culture, is the pattern of whole of responses, the more or less consistent unity that links the many diverse elements of living into the way of life. The culture of a society is learned by individual members of that society eg : children learn by seeing how elders behave.

The basic difference between society and culture is that society is people and culture is behavior. Members of a society share to some extent at least a common culture, live with it, alter it, and transfer it to the next generation. Culture has a structure that is made of various units i.e. 'a) culture trait : which may be material or non material trait Bullock cart, Doti, Sari are examples for material culture and vanakkam and namaskaram and also pulling the harm of sari over the head to cover a women's face in the presence of outsiders are examples for nonmaterial. Certain cultural traits are essential to all are called as universal eg. Young people use to show extreme respect and obedience to the elders, dress, language etc., culture in which the individual has a choice among several forms of behavior are called alternative traits eg: When a cow comes to heat the farmer can get inseminate his animal either taking it to veterinary dispensary or subcentre or milk producers cooperative society, whichever he chooses as most convenient or beneficial to him. Some traits are practiced by some groups but not by all groups are called specialists traits. Individual peculiarities such as fears prejudices or capabilities are called individual traits b) Culture complex. It is a group of cluster of related cultural traits eg. Mattu pongal festival in livestock farmers community, thread ceremony in brahmin community, a girl coming of age function (attaining puberty).

C : cultural pattern : It is a group of cultural complexes eg : Cultural pattern of rural hindu society.

Customs : Customs are socially prescribed form of behavior, transmitted by tradition and enforced by social disapproval of its violation.

Customs are the accepted ways in which people do things together in personal contacts. Customs are interwoven with our social life, and are part and parcel of our society.

Customs can be classified as

- a) Unidentified acts : eg : a farmer prefers goat milk, using a particular brand of products.
- b) Folk ways : Are the customary way of behaving in a society in which society exerts some force for conformity.

Eg: Removal of shoes before entering in to house.

Vanakkam (greeting others with folded hands)

Folk ways are the expected forms of behavior but are not rigidly enforced.

c) Superstitions: Eg : in a farm a cow delivered a male calf on Friday and later the farmer fell ill and died. The farm women explains that the death was due to the birth of male calf on Friday.

d) Mores : Are the pattern of behavior consider essential by society. It is strickly enforced eg: Halal meth'd of slaughter in muslim soceity, standing up during the playing of the national anthem.

e) Taboo : Those things which persons ought not to do. Eg : prohibition of pork in mus(ims society and beef in hindu religion.

Acculturation : It means contact between culture when people of two different cultures come in contact, they may influence each in different ways. The impact may be one side or reciprocal.

Enthnocontrison : It is the tendency of man to consider his own culture of high value and superior to all others and judge, other cultures in terms of standards and values that exists in ones own culture eg: Arranged Marriage, American father of lady would never sell his daughter in marriage to any man.

Social and cultural change

Social structure and cultures are never completely static, they can and do change.

Cultural change in society has two major aspects.

- a) Cultural change by discovery and invention.
- b) Cultural change by diffusion and borrowing.

The first comes from within the society and culture, the second from another culture outside of the society. The extension worker will help to “seek up cultural change in farming. This may in turn contribute to wider social change.

- Eg: a) Amul pattern of milk society : Cultural change, social change
- b) Ox drawn plough to tractors.

ANIMAL HUSRANDARY COOPERATIVES AS AN INSTRUMENT OF SOCIAL AND ECONOMIC CHANGE

The advent of dairy and other animal husbandry cooperatives has been a boon for farmers especially those who are traditionally weak. It provided year round income to the farmers 60-65% of income of the group from animal husbandry.

Social Impact :

Membership is open to all regardless of caste and creed barrier. Untouchability reduced. Other impacts are

- Age old superstition of selling milk as a social evil is removed.
- Democratic election procedures of societies increased awareness of the farmers about their vote.
- Enables adoption of better managerial practices.,
- Portion of cooperative profit can be spent for improvement of road conditions, establishment of small libraries and educational units, helping establishment of hospitals, schools etc.

Interaction with educated society improves the lives of farming community.

Economic Impact : a) Direct Impact : Large number of youth especially women, widows are given employment. Farmers have become self reliant by regular in flow of money from urban to rural areas.

b) **Indirect impact :** Financial position of farmers is improved by increase milk yield, low expenses on A. 1. Veterinary aid. Middle man and exploitation of farmers are checked. Gainful employment, family labour and agricultural by products are also utilized efficiently.

SUMMARY

Various dairy development programmes started so far and its impact dairy development was discussed in detail. The infrastructure required white revolution listed step wise, which will increase milk production. three phases of operation flood programmer, their aim, objectives, achievements were discussed. Technology mission for c development which is functioning presently was highlighted. Social institution has defined and explained in detail about their role in c development. Concept of socio-economic and cultural changes N explained in detail.

SHORT QUESTIONS

1. What is key village scheme ?
2. Define Intensive cattle development project.
3. What do you mean by White revolution?
4. Mention the year of starting three phases of operation f
5. What is the main objective of Technology mission for c development?
6. What is Social institution?
7. Define society.
8. What is culture?
9. What is the direct economic effect by animal husbandry activities

LONG QUESTIONS

1. Explain about different dairy development programmes started in India?
2. Briefly write about white revolution and infrastructure required for it.
3. What are the aims and achievements of different phase of operation flood programmes?

4. Narrate the aims, functions and services of technology mission for programmes?
5. Briefly write about the role of social institution in dairy development
6. Briefly explain the concept of socio-economic and cultural change dairy development?

4- DAIRY COOPERATIVES

4.1 HISTORY OF COOPERATIVE MOVEMENT IN MIDIA :

India is a country of villages. Our farmers have small land holding. Intensive cropping therefore has been the way of farming. Use of production enhancement inputs went on increasing. Thus the input-output ratio started getting imbalanced. The need of cash was more felt to buy inputs. To meet these needs, farmers had to borrow money at a very high rate of interest. Money lenders exploited the farmers who were poor and in debt.

A large number of farmers at Pune and Ahmednagar area in Maharashtra rose in open hostility against money lenders in 1879. Subsequently Land Improvement Loan Act in 1883 and Agriculture Loans Act in 1884 were passed to advance loans at reasonable rate of interest to the farmers. At this juncture, the Government realized that the cooperative movement could possibly solve the economic problems of farmers. The Government therefore appointed a committee under the chairmanship of Edward Law to make suitable proposals for enacting a separate legislature for cooperative societies. Thus in 1904, The Co-operative Credit Societies Act was enacted.

The Act had however following shortcomings.

- only credit societies could be registered
- Classification of societies into urban & rural was unscientific
- It was silent about distribution of profit.

Thus another act, named 'The Cooperative Societies Act' of 1912 was enacted. The Act took care of following institutions like Central Banks, Supervising unions and other non-Credit societies.

In the year 1919, -Cooperation became a state subject and fell within the scope of provincial legislature. Each province then started formulating their own Co-operative societies Acts to suit these requirements. Bombay state had taken the lead by passing the Bombay Co-operative Society Act in 1925. Such as

Madras Cooperative societies Act of 1932
 Bihar and Orrisa Cooperative societies Act of 1935 Bengal Cooperative societies Act of 1940
 Coorg Cooperative societies Act of 1936.

After Independence the Co-operative movement made rapid strides. Government adopted the policy of utilizing the cooperative movement for establishing democratic economic order in the country. The government of India appointed a committee in 1956 to review cooperative Acts in different states and prepare a model bill on the basic of this model Bill these are

The Mysore Cooperative societies Act of 1959
 The Jammu & Kashmir Cooperative societies Act of 1960
 The Maharastra Cooperative societies Act of 1960
 The Punjab Cooperative societies Act of 1961
 The Gujrat Cooperative societies Act of 1961
 The UP Cooperative societies Act of 1965
 The Rajasthan Cooperative societies Act of 1965
 The A.P. Cooperative societies Act of 1964.

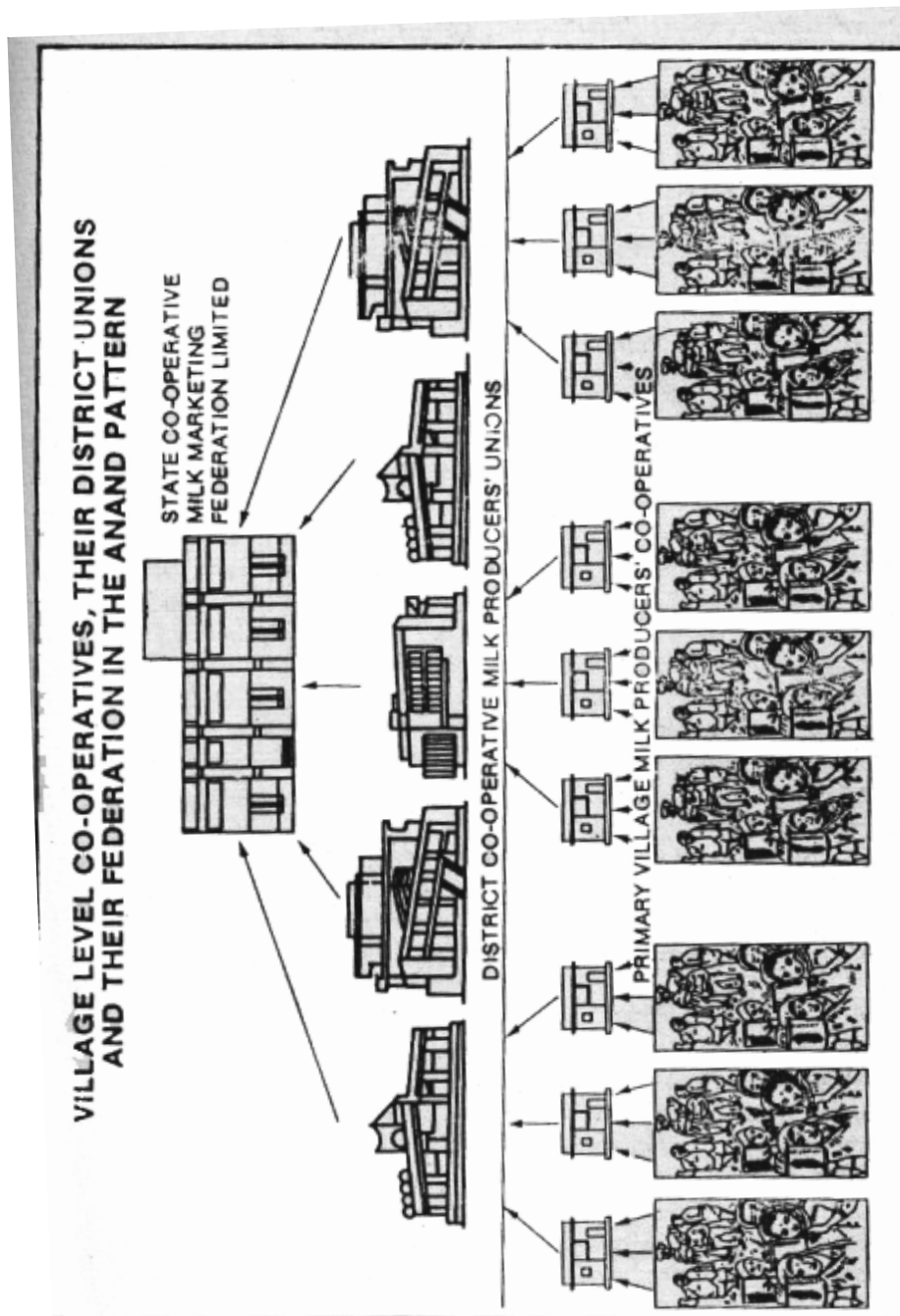
4.2 COOPERATIVE MOVEMENT IN DAIRY INDUSTRY

Before Independence there is no system of organised milk collection and distribution. Which had major effect both on the milk producers as well as milk consumers on November 15th 1945.

Aarey milk colony was established by Bombay Government under greater Bombay milk scheme. This is the first scheme in India which benefited partly milk producers and milk consumers. In 1946 the farmers of Kaira district of Gujarat state has realised that they were exploited and had no choice but to sell their product (milk) at throw away to the government approved contractors. The trade was monopolised by contractors operating in district. The farmers approached Vallabhai patel at his advice, decided to market their milk through the Co-operative Shri Morarji Desai one of the lieutenants of Sardar, moved the farmers to established village co-operatives.

Subsequently at a meeting held at Samarkha village on January 4 1946, it was

resolved that the milk cooperatives could be organised. It was also decided that the government should arrange to buy their milk which could be processed at the dairy owned by the union. And in case it was not acceptable to the government the farmers would refuse to sell milk to any agency.



The government turned down this proposals and farmers went on 'Milk Strike' which lasted 15 days. During this fortnight not a single drop of milk reached Bombay from Anand and the greater Bombay milk scheme virtually collapsed. The milk commissioner of Bombay then visited Anand and after assessing the situation accepted the farmers demand. This marked the beginning of Kaira district milk producers Ltd union on

October 26th 1946. 1st milk co-operative society formed in Hadgud village ! and on the same day 1st milk collection by Kaira district co-operative milk producers union Ltd was started on 14-12-1946. Amul union was " registered on 1-06-1948 milk processing unit was inaugurated at Anand by .

4.3 MILK COOPERATIVES - ANAND PATTERN:

The foundation of Anand pattern of milk cooperatives was laid with the ~ organisation of the Kaira dist. Co-operative Milk producer's Union limited at Anand. In this pattern all the functions of dairying - milk production, procurement, processing and marketing are controlled by the milk producers themselves. In addition to this all the facilities related to milk production and procurement are provided at farmers door steps. The ' anand pattern in three tier system i.e. village Cooperatives, District Unions and state Federation. The basic unit in the Anand pattern is the ' Village milk producers co-operative - a voluntary association of milk ; producers in a village, who wish to market their milk collectively. All the i village milk producers cooperatives in a district are members of their district Co-operative milk producer's union.

Every milk producer can become a member of society. At a general ,, meeting of members representatives are elected to form a managing committee. Which manages the day-to-day affairs of milk collection, and its testing for fat content. Sale of cattle feed etc., Each society also ;' provides Artificial Insemination Services and veterinary First-aid.

A key element in the Anand pattern of dairy co-operative is that all ; registered village milk societies are members of a district co-operative milk producer's union which enable them jointly to own a dairy processing ; factory and a cattle feed plant. In order to become members of the union, a registered society must purchase at least one share of Rs. 100/- and ! pay Rs. 5/ as entrance fee.

The District Dairy Cooperative unions became members of a cooperative milk marketing federation by subscribing to it at least Rs. 20,000 each as L share capital. The federation is responsible for evolving and implementation of policies on cooperative marketing of all member unions liquid milk and milk products, deciding the product - price mix, cooperative provision of joint services (AI, breeding) and cooperatives marketing of technical inputs to members.

4.4 AIMS, AND FUNCTIONING OF VILLAGE MILK COOPERATIVE SOCIETY:

After the complete survey of the village about milk production and related items, the supervisor / officer from the union organizes Gramsabha. If the villagers decide to form society, an organiser is selected from amongst them. The organiser is authorised to collect the share money @ Rs. 101 each for share subscription and Rs. 1/- for entrance fee from all the milk producers who are interested in society will be registered with dept of cooperation. One member will be elected as chairman and he appoints secretary who will look after day to day work.

FUNCTIONS AND ACTIVITIES OF THE SOCIETY

The basic unit of Anand Pattern structure is village milk producers cooperative society. The Functions of a society can be classified in to

- Managerial
- Operational and
- Input services.

Managerial : All the members of the society form the general body of the society which has supreme power, The society has managing committee of 9 members elected from amongst of member producers. The committee employs paid staff to run the day to day affairs of the society and this number of staff depends upon the size of the business. One third members of the committee retire every year by rotation. The rotational retirement helps bringing new faces and continuity in the management The chairman is elected every year in the management committee meeting. The committee decides policy matters and frames guide lines for efficient running of the society. The committee holds its

monthly meeting to discuss issues pertaining to society, producers, guidelines provided by the union etc.

Operational : It can be classified into two groups.

- a) Milk Trading
- b) Marketing of inputs
- a) Milk Trading: This involves the following works
 1. Reception of milk : Milk is received from the producers both morning and evening. Sample of milk is collected for testing.
 2. Testing of milk : The individual samples are tested for fat and SNF and recorded sample from pooled milk and tested.
 3. Dispatch of milk : All milk cans are covered tightly by lids. Filled milk cans are loaded on the hired l own truck and empty cans are unloaded for society use for next milk collection.
 4. Payment for the milk ; The price of milk remains uniform throughout the district irrespective of village distance from union head quarters. Both quality and quantity for the basis for the payment. Price chart will be supplied by the union. The society pay the producers morning milk price evening and evening milk price next day morning.
 5. Accounting : Separate account books are maintained for different transactions and the relevant postings are made on the same day of operation. A person from the same village is appointed as internal auditor to check the account.
 6. Distribution of profits : The society from its profits distribute bonus to the producers in proportion to the value of milk supplied by g the year.
 7. Other duties like sample milk disposal, local s a l e s of milk, standardization of testing equipment and chemicals etc., will all be undertaken.

PUT SERVICES:

1. Providing artificial insemination services
2. Providing veterinary first aid.
3. Society purchase cattle feed from the union and se-Us it to the producers in retail at cost or subsidized.
4. Provides quality fodder seeds to the producers at cost or subsidized.
5. It also distributes news letters. Educational material, meetings organisations, tours to dairy plant, cattle feed plant etc.;
6. It will also helps in cattle insurance and some strong societies will give subsidy on insurance of cattle.

4.5 STRUCTURE AND ACTIVITIES OF DISTRICT MILK UNION

Once sizeable number of societies (40 - 50) are organised and registered in a milk shed, the district level milk union can be started. The chairmans of all village milk cooperative societies forms are the members of the district milk producers unions. In order to become members of the union, a registered society must purchase at least one share of Rs. 100/- and 5 /- as an entrance fee. They hold the meeting and resolves the formation of District Cooperative milk producers union. The union registered with the cooperative department. They elect the board of directors who will inturn elect chairman. One third of elected board members retire every year by rotation. Each district union is professionally managed by a managing director who reports to the elected chairman arid board of directors. The number of board of directors will be sixteen to seventeen of which* twelve are democratically elected from amongst the representatives of the village societies. The remaining five comprise managing director as a member secretary, one or two representatives of the financing institutions, a representative of-the registrar of cooperative societies and a representatives of the Federation. These five numbers are not eligible for contesting to the post of chairman.

The general policy for the union is framed by the board. The board employees the managing Director / General manager, but his removal will be done by only general body. The board determines the number, type and scales of the posts and managing director / general manager makes appointment.

FUNCTIONS AND ACTIVITIES OF THE DISTRICT MILK PRODUCERS UNION

In general union carries five important functions.

1. PROCUREMENT OF MILK : Milk will be collected from all the member societies of union by engaging hired vehicle. Different routes are framed to cover the societies so on to enable the milk to reach the union plant within reasonable time.

2. Processing and marketing of milk and milk products : The milk is processed and liquid milk is marketed in all demand places within the union milk shed area. Different milk products are produced and kept in sale through own or distributor outlets.

3. Providing Technical inputs : The union appoints veterinarians who will provide Artificial insemination services, treatment of diseases etc.. on free cost or charging subsidized rates. Emergency services will be provided. Liquid nitrogen will be supplied regularly to field AI Centres. Supply of feeds and fodder seeds to village societies on cost or subsidized rates. Establish the dairy and fodder demonstration farms.

4. Strengthening of milk cooperative movement : The union will formulate the strategies for strengthening of cooperative, in-dairy industry.

5. Organisation of extension activities and rural development service : Under this field visits will be arranged for milk producers to dairy plant, cattle feed plant, semen production stations etc so that the producers will get some scientific and profitable methods in milk production. Milk yield competition will be organised to build competition among the producers. Screening of different educational films related to dairying will be undertaken.

6. In addition to the above: union carries research and other promotional activities for the over all benefit of farmers. The union owns and operates dairy plant, cattle feed plant, fodder and bull mother farms, semen collection station, head quarters centre for animal husbandry activities. On the net profit earned by the union, 25 % is carried 'to its reserve fund and not exceeding 12 % per annum is paid to the member societies as dividend on their paid up share capital and small contribution is made to education fund. Out of the remaining profits upto 80 % is paid as bonus to the members in proportion to milk supplied and remaining for charity, cooperative propaganda and other funds.

4.6 ROLE OF STATE MILK COOPERATIVE FEDERATIONS.

The district Dairy cooperative unions become members of a cooperative milk marketing, federation. Each union should subscribe at least Rs. 20,000/- as share capital. The federation is responsible for evolving and implementation of policies on cooperative marketing of all member unions liquid milk and milk products.

The federation board consists mainly of the elected chairman of all the all the members unions and the federations managing director. Other members are the representative of Registrar, Cooperative societies; a items are representative of financing agency, nominee of NDDDB and one nominee union of the State Government (Dairy development department). The members elect a chairman of the board. The board evolves the federation policies on all its functions. Members votes are weighted by the amount of milk procured by each union in the previous year and profit distribution is done him the on the same basis. kept in

The federation board is advised by its managing committee, which is composed of each member union chief executive, the federation chief quality control officer and one or more non voting cooped technical representatives of NDDDB. The federation managing director is the committees chairman. The committee meets once monthly and is also responsible for day to day implementation of the board policies and plans.

Out of the total profit earned by the federation 25% goes to reserve fund, not exceeding 12% as dividend, remaining as bonus to member unions and little to education fund and research and development.

4.7. RECORDS AND REGISTERS IN A MILK SOCIETY :

4.7.1 Records to be maintained

The society will be required to maintain and periodically update a number of records. The records would be in a bound form and initial supply would come from the client organisation. Their subsequent replenishment / replacement is discussed. The records can be classified in the following groups.

A. Organisational Records

- i. Membership record
- ii. Share ledger
- iii. Proceedings

(One for general body meetings and other for Managing Committee meetings).

B. Financial Records

- i. General Ledger
- ii. Cash Book

C. Procurement Records

- i. Milk Purchase register
- ii. Milk test record
- iii. Dairy register
- iv. Sample milk sales record

In the following pages, the format of each form and instructions for filling them up are given.

Column : Information.

Name of the Society	
PROCESSINGS BOOK FOR GENERAL BODY / MANAGING COMMITTEE	
Date	Proceeding

4.7.2 MEMBERSHIP RECORD :

1. Purpose

To record the membership details of each member of the primary milk producers cooperative society

2. Originating form

The secretary of the society

3. Authorized by

The Register, cooperative societies or the managing committee of the society.

4. Distribution

One copy to be retained at the society

5 Frequency of recording and updates

Initially at the start of the society, subsequently whenever a member joins the society or leaves the society.

6 Information details

- i) Date of joining as member
- ii) Date of paying in entrance fee
- iii) Name and Address and member with father's name
- iv) Age of the member
- v) Occupation of member
- vi) Heirs / Nominee's name and address
- vii) Age and relation of the heir
- viii) Member's signature or thumb impression.
- ix) Date of leaving membership.
- x) Remarks.

4.7.3. SHARE LEDGER

1 Purpose

To record the details of shares purchased by each member of the primary milk procedure's cooperative society

2. Originating from

The secretary of the society

3. Authorised by

The Registrar cooperative department / Managing committee of society.

4. Distribution

One copy to be retained at the society

5. Frequency of Recording :

Each time a share is purchased / returned / transferred by a member. It is recorded on record for each member.

6 Information Details

- i) Name of the society
- ii) Name of the share holder
- iii) Date of purchase / return / transfer of share
- iv) Cash book folio no.
- v) The no. of shares issued to member along with serial number of share certificates.
- vi) The number of shares returned or transferred by the member along with serial number of share certificates returned transferred.
- vii) Balance number of shares hold.
- viii) Balance(Rs) deposited as share money.
- ix) Amount returned / transferred to member.
- x) Remarks.

7 Processing details:

Information recorded here is used in completing individual records.

NAME OF THE SOCIETY

SHARE HOLDER : _____

Name of the shareholder _____ Address : _____

Sl No	Cash book folio No	Shares		Balance+ shares held (Nos)	Share money				Remarks
		Issued to members No. Sno.	Returned transferred by whom transferred		Deposited Rs. Ps	Returned Rs.Ps	Transferred Rs.Ps	Balance Rs. Ps	

4.7.4 Bonus and Dividend Registers

1. Purpose

Detail of business transacted by an individual producer member over period of the one year.

2 **Organisation from :**

The secretary of the society.

3. **Authorized by :**

The managing Committee of the society

4. **Distribution :**

One copy to be retained by the society Frequency of Recording :

5. **Frequency of Recording :**

At the end of every month for one year. One record of each member.

6. Information Details

- i) Name of producer member and Address
- ii) Period of accounting - from (date and month) to (date and month)
- iii) Quantity of milk supplied and its value (Ref. No. Col. 4&6 of purchase register). The total for the accounting period to recorded here.
- iv) Rate of bonus declared.
- v) Bonus payable.
- vi) No. of shares held by the producer (Ref. Co. VII of share letter) vii)
Dividend payable : Amount payable is worked out according the number of shares held by the producer.
- viii) Signature of the secretary.
- ix) Signature of receiver on receipt of amount.

7. Processing details

Bonus amount and dividend amount payable; milk supplied and number of shares held by all members may be totalled while preparing 1 financial statements and the annual report of the working of society.

BONUS AND DIVIDENT REGISTERS

Name:

Address

Acc Peri od	Milk sup plied	Rate of bonus declar ed	bonus paya ble	No. of shares held value	Rate of divid end delcar ede	Divid end paya ble	Total amt paya ble	Sign ature of secr etary	Sig. of resev ation receip t

4.7.5 Cash Book

1. Purpose

To record the daily financial business transactions of the society

2. Originating from

The Secretary of the society

3. Authorized by

The Registrar cooperative department / Managing committee of the society.

4. Distribution :

One copy to be retained at society.

5. Frequency of Recording : Daily

6. Information details

This book will have both pages of the register (left and right) for one entry The page on left will have entries for the income (credit side) where as, the right side will have the entries for the expenditure (debit side).

Every day the first entry on the left side will start with opening balance and will close on the right side with cash in hand. The cash in hand on the close of the particular day should tally with the opening balance of the next day and the total income (total of all credit enters) and total of the expenditures and cash in hand should tally.

For any withdrawal or receipt through cheque the cheque no. and the date is to be entered.

- i) Page no
- ii) Date and month of transaction.
- iii) Ledger folio no. of the head of account.
- iv) "Head of account and particulars of transaction. v) Receipt no.
- vi) Amount of money spent or received. vii) Total

Processing details: Bears a. cross reference to the general ledger

CASH BOOK

Date and Month	Ledger Folio		Receipt No.	Amount		Total Rs. Ps
	No.	Particulars		Rs.	Ps	

4.7.6 DAIRY REGISTER**Purpose:**

Dairy register helps the management of the society in finding out, on shift to shift basis the economics of the operations of the milk business. The faulty working of the society resulting in excessive profits, low and sourage or- curdling of milk can be immediately traced and remedial measures can be taken.

Since -the economics is worked out an day-today and shift to shift t loss or abnormally large profits due to excess or underpayment suppliers can be immediately checked and the operating profits kept

Originating from:

The Secretary of the society

Authorized by.

The Managing Committee, 4. Distribution One record kept by society

Frequency of recording

Twice dairy update separately for morning and evening shifts.

Information details**Column No.****Information**

1

Name of the society- month, year.

2. Date : One page is for use for 10 days. H dates are given as 1/10, 12/11 etc. During fortnight, strike out dates, 10,11 etc., and d second fort night strike out dates 1,2, etc.
3. Shift : 'M = Morning, E= Evening

Number: Number of member suppliers who poured milk.
4. Quantity: Litres of milk poured by member supplier
5. Amount : Amount in Rs. & Ps. Paid to member supplier.
6. Number: Number of non-members supplying milk
7. Quantity: Litres of milk poured by non-members
8. Amount : Amount of Rs. & Ps. Paid' to non members
9. Quantity: Litres of milk poured by member supplier
10. Amount : Amount in Rs. & Ps. Paid to member supplier.
11. Number: Number of non-members supplying milk
12. Quantity: Litres of milk poured by non-members
13. Amount : Amount of Rs. & Ps. Paid' to non members

14. Quantity: Total of columns (4) and (7)
15. Amount: Total of columns (5) and (6)
16. Fat % : General fat test of the sample drawn from total milk poured.
17. CLR : Corrected lactometer reading of the sample drawn from total milk pured.
18. Price payable per litre : Price from ready reconer based on fat and CLR recorded in columns 11 and 12.
19. Total amount payable on general test :
Price payable in column 13 x total quantity recorded in column
20. Sasti : If amount in column 14 is more than amount in column 10, record the difference in sasti column.
21. Mahngi : If amount is column 14 is less than amount in column 10, record the difference in mahngi column.
22. Quantity : Litres of milk sold locally.
23. Amount : Amount in Rs. & Ps. Realised from local sale.
24. Quantity of milk send to plant in litres:
25. Good Milk quantity : quantity of good milk received by the union.
26. Fat % : of the sample of good milk received by the union from the society.

22. CLR : Corrected lactometer reading of the good milk.
23. Kg. Fat : Amount of fat in the total quantity of good milk received by the union = $\text{Fat\%} / 100 \times \text{Litres of milk}$
24. Rates per kg. Fat or / litres : Rate payable by the union to society for one kilo of fat or one litre of milk containing fat, record in column 21 and CLR recorded in column 22.
25. Amount : Rate per Kg. In column 24 x kg.fat (column 23) or rate per litre in column 24 x qty (col.20)
26. Information recorded in column 20-25 for good milk is repeated for sour milk, if any received by the union from society.
27. Information recorded in column 20-25 for good milk is repeated for sub-standard milk, if any received by the union from society.
28. Quantity : Total quantity of the milk received by the union = total of columns 20+26+32.
29. Amount : Total amount payable by the, union to society = total of columns 25+31+37.
30. Quantity of sample milk sold

4.8 COORDINATION WITH OTHER INSTITUTIONS CONCERNED WITH DAIRY DEVELOPMENT

The dairy cooperative societies should have good cooperation with other departments which are fully or partially concerned with dairy development. Any society or organisation cannot provide all the requirements. For some requirements it will be dependant on other organisation. Unless the good coordination is maintained with other organisation it is not possible to get the help. The dairy cooperative societies should have coordination with the following organisation.

- 1. Dept. of animal husbandry :** Local veterinarian who is looking after the veterinary hospital is the key man in the maintenance, of health, reproduction and production aspects of the dairy animals. The local veterinarian will protect the health by doing vaccination, treat to the sick animals, maintains reproductive status, do artificial insemination, pregnancy diagnosis and advises on growing of fodder crops. In each mandal animal husbandry extension officer or mandal veterinarian will take animal husbandry activities in that mandal. He will assist in establishment of dairy farms. Animal husbandry department will provide subsidized fodder seeds.
- 2. Commercial, Cooperative bank and cooperative societies :** The finance required for dairying will be provided by various commercial cooperative banks, and village cooperative societies. The milk producers cooperative society should maintain good report with these bank, to get loans for all its members. If the society has any dispute with these banks, getting of loan will become difficult.
- 3. District Rural Development Agency :** The dairy societies should maintain good relation with DRDA. DRDA will operate many rural development programmes i.e. Integrated rural development programme. Draught prone area programme. Small farmers development agency, marginal farmers and agricultural labour development agency, etc., which have dairy development activities. If the society maintains good relationships with DRDA, there is every possibility in getting above schemes, which will have even subsidy of 25-50% depending upon the class of beneficiary.
- 4. Cooperative registrar office :** All the cooperative societies of any nature should be registered with cooperative registrar office present in the district head quarters. They will check the accounts and misdeeds if happens, regularly. They have to certify that the society is running as per the rules and regulations

stipulated. Any misunderstanding with them creates problems.

Dairy Cooperatives

5. Revenue Department : Most of the relief operations, matters dealing with lands, law and order will be normally dealt by revenue dept. Eg: village Asst. Mandal Revenue Officer, Revenue Divisional officer. Joint collector and collector. Most of the schemes beneficiaries will be selected by the revenue department. So coordination with revenue department is a must.

6. Panchayat Raj System : Gram panchayat is the most essential part of the panchayat raj system which is the base level of this system. Any dairy society is formed in the village. This society should fulfill and obey the rules and regulations of the Gram panchayat approach roads, drainage, water, electricity and other basic amenities will be provided by ' Gram panchayat. Sanitary milk collection can be checked by the Gram panchayat. At mandal level mandal development officer, Animal husbandry officer, Mandal cooperative officer are concerned with the dairy societies. So the dairy society should maintain coordination with panchayat raj system.

7. Voluntary organisation : In our country numerous voluntary organisations who are working for rural development. The funds for these organisation comes from abroad and partly provided by the central governments. Some of these organisations are taking up animal husbandry activities. These organisations will select the beneficiaries and provide training with experts on their cost and even bear expenses of farmers during training period. They will establish community fodder crops, for which initial expenses will be borne by them.

4.9. INSURANCE OF DAIRY ANIMAL :

Insurance is a contract by two parties, where by the insurer under takes in consideration of certain periodical fixed amount called premium to indemnify the other called insured against a certain amount of risk or loss to life or property insured. Cattle insurance has gained importance in recent years. The country is heading for white revolution with introduction of massive cross breeding programme to increase the productivity of the animals.

The financial institutions are pressing for security for loans for the purchase

of animals, the land less labourer does not possess the necessary property to offer as security. The insurance of animals which are hypothecated to the financial institution is the only security, which encourages live stock loan's.

In spite of its importance in national economy, cattle insurance has not, gained momentum in the country. The various causes for this are

Enormous Cattle, population in India

Cattle ownership is widely dispersed among millions of farmers.

Low productivity of animals

Acute shortage of feeds and fodders

Lack of effective disease control

However increase, of cross breeding, scientific farming and dairy farming," and demand created by lending policy of financial agencies, cattle insurance has popularised. The following four subsidiaries of General, insurance corporation are providing cattle insurance.

National Insurance company

New India assurance company

Oriented insurance company

United India insurance company

The premium for cattle insurance is 4 % of the cost of animal insured.

1.7:1 Types of Cattle Covered :

1. Milch Cows and Buffaloes
2. Calve/heifers
3. Stud Bulls
4. Bullocks and castrated male buffaloes.

Scope of Cover : Policy provides indemnity in the event of death of insured cattle due to :

1. Accident (Inclusive of fire, lightning, flood, cyclone, famine)
2. Surgical operations.
3. Strike, Riot, Civil commotion.

4. Diseases (inclusive of anthrax, Black quarter, Foot and Mouth disease, hemorrhage Septicemia, Rinderpest, and Thelariasli,s), contracting or occurring during the period of policy, and shall be= subject to exclusion as under:

- 1) Theft and clandestine sale
- 2) Partial disability
- 3) Wax, inclusion

N. B :- Exclusion No. 3 can be deleted on payment of 1 % extra premium.

Age -group covered:

1. Milch cows 2 yearS (or age at 1" calving)
2. Milch buffaloes 3 years to 12 years.
3. Stud bulls 2 years to 8 years.
4. Bullocks 2 years to 8 years.
5. Indegeners Cross bred / Exotic female calves heifers from 4 months upto the date of 1st calving. .

Premium Rate:

1. Cattle owned by individuals / institutions / Bank financed
2. Bullocks and male buffaloes
3. For all dairies operating under NDDB all over India

For extra covers and premium :

1. Relaxation of maximum age limit for

Milch cattle and small bulls

By one year 0.5%

Extra premium

By 2 years 1.00%

Extra premium.

2. Permanent total disability cover 1 %.

Under IRDP : Premium 2.25%

Claims : After the death of animal, the insured has to furnish duly, completed claim form and certificate of death given by qualified veterinarian for animals covered under market agreement scheme. In case of IRDP project cattle, claimant has to furnish information in the following forms.

- i) Duly completed claim form.
- ii) Certificate of death given jointly by any two of the following :
 1. Sarpanch of Village.
 2. President or any other officer of co-operative credit society.
 3. Official of .milk collection centre.
 4. Supervisor / inspector of Central co-operative, bank.
- iii) Post mortem report if conducted.

SUMMARY

The entire history of cooperative movement in India was discussed to 'know about different phases of development of cooperatives. The ,cooperative movement in dairy industry was very well illustrated. The three ties anand pattern of milk cooperative system was explained. The structure and functions of primary milk cooperative system, district milk union and state federation were detailed. The different registers and records to be maintained were listed to help the smooth running of a milk society. The coordination of milk society with other departments concerned with dairy development was explained very well.

SHORT QUESTIONS

1. In which year cooperative credit societies act was enacted?
2. In which year cooperation became state subject?

3. In which village the first milk cooperative was formed?
4. What is Amul?
5. Define Anand pattern of milk cooperatives.
6. Define village milk producers cooperative society?
7. What is district union?
8. How much percentage of state federation profit goes to reserve
9. Give three departments concerned with dairy development to which milk society to be coordinated.

LONG QUESTIONS

1. Briefly explain the cooperative movement in India?
2. Explain about cooperative movement in Dairy industry?
3. With the help of schematic diagram explain Anand pattern of m
4. Write about structure, functions and activities of primary milk cooperative society?
5. Write about structure, functions and activities of district milk union?
6. Briefly write about state cooperative milk federation?
- 7.. What are the registers and record to be maintained in a milk society?
8. Briefly write about coordination of milk society with departments concerned with dairy development?

MEMBERS DETAILS

Sr No	Date of joining as member	Paying entrance fee	Name & Address	Age	Occupation	Age	Relation	member sig. or thumb impression	Date of Leaving membership	Remarks
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5. MARKETING

5.1 PRINCIPLES OF MARKETTING:

The word 'market' comes from the latin word `Marcatus' which means merchandise or trade or a place where business is conducted. The various definitions for market are.

A market is the area within which the forces of demand and supply converge to establish a single price.

The term market means not a particular market place in which things are bought and sold, but the whole of any region in which buyers and sellers are in such a free intercourse with one another that the prices of the same goods tend to equality, easily and quickly.

Market means a social institution which performs activities and provides facilities for exchanging commodities between buyers and sellers)

Economically interpreted the term market refers, not to a place but to a commodity or commodities and buyers and sellers in free inter course with one another.

A market exists when buyers wish to exchange the money for a good or service and are in contact with the sellers, who are willing to exchange goods or services for money.

Components of a market.

For a market to exist, certain conditions must be satisfied. These conditions should be both necessary and sufficient. They may also be termed as the components of a market.

1. The existence of a good or a commodity for transactions.
2. The existence of a buyer and seller.
3. Business relationship or intercourse between buyers and sellers.
4. Demarcation of area as people, region, country or the whole of the world.

The existence of project competition or a uniform price is not necessary.

The dimensions of a market are

- 1 Location
- 2 Area of coverage
- 3 Time span
- 4 Volume of transaction
- 5 Nature of transaction
- 6 Number of commodities
- 7 Degree of competition
- 8 Nature of commodities
- 9 Stage of marketing
- 10 Extent of public intervention
- 11 Type of population served
- 12 Accrual of marketing margins.

Classification of Markets :

- 1 On the basis of Location .
 - a) Village market - Located in a small village
 - b) Primary market - located in big town
 - c) Secondary wholesale market - located in district head quarters I important trade centres / near railway stations and ‘transactions takes place between villagers and wholesalers.
 - d) Terminal markets - From where the produce is disposed to consumers.
 - e) Seaboard market - located near seashore for import / export goods.
2. **On the basis of Area / Coverage**
 - a) Local / village markets - Buying and selling activities are confined among the local villages.
 - b) Regional market - Buyers and sellers are drawn from longer area.

- c) National market - Buyers and sellers are at national level.
- d) World market *- Buyers and sellers are drawn from the whole world.

3 On the basis of volume of transactions

- a) Whole sale market - The commodities are bought and sold in large lots or bulk.
- b) Retail market - The commodities are bought and sold to the consumers as per their requirement.

4 On the basis of number of commodities in which transaction takes place.

- a) General market - All types of commodities are bought and sold
- b) Specialised market - Transaction takes place only one or two commodities.

5 On the basis of degree of competition

- a) Perfect market - All buyers and sellers are knowledge people and there will be uniform price at any one time.
- b) Imperfect market - Where conditions of perfect market are absent. Various types are there as
 - i) Monopoly market - Only one seller of a commodity monopoly on price.
 - o
 - ii) Duopoly market - Two sellers / buyers only for a commodity. they may have some understanding on firm prices.
 - iii) Oligopoly market - More than two sellers of a commodity.

6. On the basis of nature of commodities.

- a) Commodity market - Dealings -with goods and raw materials
 - b) Capital market - Dealings with bonds, shares etc.
7. On the basis of nature of transactions.
- a) Spot or cash market: Goods are exchanged for money.
 - b) Forward market - Purchase and sale of a commodity will take place at time and exchange of the commodity takes place on some specified date.

8 On the basis of Time span

- a) Short period market - Market exists for short time / season.
- b) Long-period market - held for longer period.
- c) Secular market - permanent market.

Marketing

Marketing is a science which deals with the disposal of finished product through various channels and services that are essential for the disposal, until it reaches the consumer.

Marketing also deals with the supply of raw materials used for the production of a product. It also deals with the working out the demand, fixation price and also producers to increase sales.

Difference of marketing milk compared to manufactured goods

1. Perishability of the product : Life of milk is very less and so it should be marketed quickly, while maintaining acceptability to the consumer.
2. Seasonal variation : During winter (flush) season more milk will be produced and demand will be less, Why are as in summer production will be reduced and demand will be increaser

3. Bulkiness of milk : Due to bulkiness of packing and transportation problems.
4. Variation in quality preference by the consumers : Some favour whole milk where as others favour toned, double toned or standardized milk.
5. Small size of holdings and scattered production : In India still dairy is with small farmers with less number of animals, who are scattered over the village_ and it becomes problems in collection and transportation while maintaining the quality.
6. Processing : Milk have to be processed before marketing which increases the price for transportation, plant for processing and distribution costs.

The services required for milk marketing :

- 1 Timely distribution of monthly milk cards / coupons
2. Distribution of milk at door steps
3. Collection back of bottles (If bottles are used).
4. Receiving complaints.
- 5 Establishing pick up booths.
6. Appropriate steps to prevent leakage's and pelfirages.
7. Effective availability of market people to the consumers.

5.2 MARKETING OF DAIRY ANIMALS

Marketing of dairy animals is entirely different from markefing of any other product or items. Animals will be purchased from the popuiar dairy farms, individual farmers. The price of dairy animals are depending upon the individual animal.' No common price will be there for. a11 animals. At important places animal markets are organised on specified days. The dairy animal owners will bring their animals to these markets which are popularly known as "thandas" or

“santha”. The animal purchasers will come to these markets and they will select the animals. For getting good price for the dairy animals, the records about the animals, ancestry particulars, production and other particulars. ‘

The animals displayed in the market for sale should be well prepared so that it will give good look and appearance.

- The entire body should be washed to remove dung, dust, or dirt using light detergent solution.
- Brushing may be done if the body is too dirty.
- If the hair on the body is lengthy, hair may be clipped.
- Horns are trimmed
- Blanketing : ie. Rubbing the body with blanket or cloth to bright look.
- Trimming of tail hair if too long.

Determination of the value of the animal

The value of the dairy animal will be dependent on the following factors.

- Breed
- Age
- Health
- Soundness : Sound body free from excess fat, dairy type, graceful look.
- Condition : Good flesh prior to calving in cows good growth and development in young animals.
- Present production.
- Past production

- Bred or open - pregnant will fetch more
- Calving time : Winter, rainy or summer. The time of calving which buyer needs gives more price.
- If pregnant service sire
- Ancestry
- Type and confirmation
- Typical of breed, good capacious udder, wedge shaped body, good size, chest and barrel well developed and balanced quarters.
- Disposition and others - Quite docile, good temperament, easy milker, free from vices, teats functioning, free from mastitis.
- Expected producing ability - should be high

The seller should furnish data of the animal as given below which serves while selling.

- i) Breed
- ii) Date of birth
- iii) Health condition
- iv) No. of lactation completed.
- v) Current lactation number

Lactation yield	Lactation no.	Yield
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While comparing the production of different animals with different fat percentage, the milk yield should be converted in to 4% or 3.5%. Fat corrected milk by the following formula.

4% FCM = 0.4 x milk production in the lactation + 15 x amount of butterfat in the lactation.

3.5% FCM = 0.4324 x milk production + 16.21.8 x amount of butter fat in the

lactation.

The average rate of the animal is generally calculated as follows :

Cow Value = Average Amount of milk yield per day x 2000

Buffalo value = Average Yield of milk / day x 2500

In big dairy farms / research stations, once or twice in a year open auction will be conducted in their own campus. The price of the animal will depend on the competitive bidders.

- vi) Average calving interval
- vii) Peak yield and day recorded
- viii) Total butter fat yield in a lactation
- ix) Temperament of the animal
- x) Vices in the animal
- xi) Physical defects I abnormalities.
- xii) Average service period.
- xiii) Average dry period.
- xiv) Average no. of services / conception.
- xv) Age of first calving
- xvi) Body weight at first calving
- xvii) Major diseases affected so far.

Before purchase of any dairy animal, its health, and reproductive status, pregnancy should be properly checked by a veterinarian. If the animal is suffering from any reproductive disorders, the animal may not conceive, if at all conceive it may abort.

5.3 MARKETING PLANS FOR LIQUID MILKS.

Some factors which helps in deciding the mode of distribution of milk are

- Keeping quality and kind of milk

- Perishable nature of milk and its products.
- Possible contamination
- Proper supervision and control in distribution
- Cost of distribution / delivery of milk

Distribution of Raw milk:

In planning of temperate climate and in sub-temperate conditions raw milk is distributed directly to consumers. Where carefully milk production is done and a short period lapses between production and consumption the raw milk may be distributed provided the temperature of milk does not go beyond 10°C at delivery.

Distribution of pasteurized milk :

The deterioration of quality of pasteurized milk is mainly due to post pasteurization contamination. The pattern of its distribution to public is affected by “the following factors.

1. Buildings density in particular locality
2. Topography of the area.
3. Number of customers.
4. Distance of the area from dairy plant.
5. Temperature of milk at delivery.
6. Type of delivery vehicles,
7. Shop distribution vs home delivery.

Containers for milk distributions

1. Dispensing in sealed cans.

2. Dispensing in bottles
3. Distribution by polythene bags or tetra packs

System of distribution of milk

Sound system of milk distribution is essential for

- a) Efficient well organised retail marketing of milk.'
- b) Simple, convenient for both farmer and customer,

There are three systems of distribution

- 1) Cash and carry system : The customers are required to pay the cost of milk to venders of the time of delivery of milk.

Merits :

Maintenance of account of sale proceeds of milk is easy.

- Commission of venders can be calculated easily and promptly
- Account of each calendar month can be closed in time.
- No extra cost involved in printing coupons / cards.

Demerits :

Handling of huge amount of coins and currency is a problem

- Daily counting of money is cumbersome.
- Risk of embezzlement of money by venders
- Chances of loss of money due to theft or pick-pocketing.
- Non availability of coins poses difficulty for willing customers in purchase of milk.

2. Coupon system : In this system a set of coupons is issued to the customers on advance payment. Customers receive milk in exchange of coupons and purchase new booklet of coupons when they run short of it on advance payment.

Merits :

- Chances of loss of money are eliminated
- Money on dairy farm is received much in advance which can be profitably utilised.
- Sale of milk in uniform even at the end of month.
- Counting of coupons is not cumbersome.

Demerits:

- Value of unredeemed coupons cannot be ascertained easily.
- Account of sale proceeds of milk at the close of calender month cannot be as clear.
- Chances of recirculation of redeemed coupons.
- Forged printing of similar coupons is eminent.

Sample of the Coupons

Front Cover :

Book No.	Sl. No.
..... Liter of Milk	
The Dairy farm	
Sold to shri	
..... Dairy officer	

Leaf of the coupon

<p>Book No. Sl. No.</p> <p>The</p> <p style="text-align: center;">Will exchange the coupon</p> <p>For Litres the coupon</p> <p style="text-align: right;">..... Dairy officer</p>

3. Card system : Milk cards are printed and sold to customers on advance payment. Validity of milk cards is limited to a month. Date of issue is not fixed but expiry of all sold cards is fixed. Customers who could ,not take milk for a day or days together are liable to get the cost of milk refunded. Immediately after supply of milk is made the quantity of milk is noticed at the back of card on each date. Card can be issued from the office of the dairy officer. One day time is allowed for customer to register. At the time of issue of card timings of milk delivery are notified. Usually yellow cards are issued for cow's milk and blue cards for buffalo milk.

Merits :

- Cost of milk is received in advance which can be utilised advantageously.
- Trouble of dairy counting of money / coupons eliminated
- Market of milk is assured..
- Chances of loss of money eliminated.

Demerits :

- Refund for non supply of milk causes great inconvenience to both customers and organisation.
- Monthly accounts of actual sale proceeds of milk cannot be closed on account of refund.

- Vendors and booth men may sell out milk to non-bonafide customers other than card holders.
- Printing and issue of cards and refund involves ,a good deal of labour and time.
- Customers have to pick up milk only from assigned places.

4. Push button mini dairy:

This is designed or installed on NDDB designed coin (TOKEN) operated milk vending machine, popularly known as “push mini dairy”. The milk holding capacity of these machines varies from 1000 to 3000 litres each. The consumer is expected to bring his / her own containers large enough to hold the milk required by him / her.

For marketing of liquid milk, a market survey should be conducted about the following items

1. Total liquid milk demand.
2. Complaints about the competitive product
3. Type of milk the consumer prefer, i.e. Toned milk, Double toned milk, standardized milk, whole milk, low fat milk etc.
4. Income details of the consumers.
5. Selling points which will be more convenient to maximum people and trustworthness on the seller.

After getting the survey results, the areas are divided into number of zones. In each zone milk distribution / selling points are located.

Points to be considered in marketing of liquid milk.

1. Depending upon the income of consumers, type of milk should be prepared.

2. Depending upon the need, the size of pocket i.e., 200 ml, 500 ml, 1 litre etc should be prepared.
3. The pick up / selling points should be convenient.
4. 24 hours availability of milk, will definitely increase the sales.
5. Receiving complaints about leakages, quality, availability, price, timings should be taken and necessary prompt action may be taken.

5.4 STRATEGY FOR MARKETING OF MILK PRODUCTS

For marketing of any product the following steps are followed.

.I. Market survey : Marketing of any product requires market survey to produce a product. The market survey for the marketing of milk products should be based on the following points.

- a) Economic status of the people in the area.
- b) Purchase power of the people for the milk products.
- c) Present consumption of different milk products.
- d) Packing size required:
- e) The competitors in the market.
- f) The price and offers of the competitors.
- g) No. of dealers / retailers required.
- h) Details of already established distributors / retailers.
- i) Consumer's growth.

Marketing survey people will be appointed or survey work may be given to some firm to get the information about the above information.

II. Market measurements : By analyzing the above demand and position can be analysed as followed.

- a) Present demand and supply of the product.
- b) Price existing.
- c) No. of consumers with quantity required in each area.
- d) Packing size required in area / consumer will.
- e) Effective distribution channels / sellers
- f) Weakness in competitors products
- g) Services given by competitor / service required.

III. Selection of product. : After making survey and analyzing the data of product which are in demand are selected the availability of raw materials (milk) and price of collection will be surveyed and these are favourable manufacturing of the products will be started.

IV Price of the product : Price of the product will directly influenced on the marketing of any product. The' price of the product will calculated as follows.

- a) Calculating the cost of production of the product.
- b) Distribution cost (Transportation cost) (1-2% of the product)
- c) Distribution margin (2-3% of cost of -product)
- d) Retailer margin (5-8% of the cost of product)
- e) Marketing expenses (sales personal) (1% of cost of products)
- f) Advertisement expenses (2-5% of the' cost of the products)
- g) %.of profit desired. Generally aid at 10% .

While estimating for profit it should be reasonable. The reason for aiming a reasonable profit are

1. It will prevent entry of competitors into the market.
2. It will project a favourable public image. Brand name image.
3. It will restrict the trade union demands.
4. It will maintain customer good will by getting reasonable quality at reasonable price by giving service facilities.

After calculating the production cost (including marketing, advertisement) the following price method is followed. I.e. 0 market method which is the price of the cost of production or competitors price or market + in which price is fixed above the production cost or competitors price or market - less than production cost or competitor price.

For a new firm, to compete the competition the products should be sold at market -ve price to get market share. After entering into market slowly switch over to market 0 and afterwards to market + price.

V. MARKET FORECASTING AND TARGET FIXATION

Forecast the sales volume of the product in the -market depending of the preliminary market survey and fix the target.

VI. MARKETING STRATEGIES TO ACHIEVE TARGET.

The marketing strategies are.

- a) Appointing sales officers / marketing people to promote sales.
- b) Advertisements in the form of pamphlets wall posters, holders and even in electronic media.
- c) Offering discounts / offers.
- d) Attending the complaints or any service required.

The marketing expenses will be high in the initial stage. One should not bother

about initial marketing expenses. It is very difficult to enter in competitive market. Once the product is entered into the market, growing in market share will not be a problem.

VII. REVIEW OF POLICIES

After entering into the market and gaining customers faith about the quality and services, the prices may be slowly increased and it should be

comparable with the competitors price. Within a short time the price may be fixed to market + price .

VIII. SOCIAL ACTIVITIES

To gain confidence of the customers, some programmes in the localities of the people may be sponsored like cultural programmes, games and sports, offering scholarships to meritorious students, maintaining parks, roads, school etc. For these functions company logo can be utilised for sponsoring which will help in increasing the sales.

Marketing systems .

I. Producer - Consumer

The producers directly sell the products to the consumer. No middle man in the marketing. In this any problem arises, the producers will get direct information, he will solve the problem immediately.

II Producer - Retailer - Consumer

The producer will supply the products directly to the retailers, who will in turn will sell the products to the consumers. If the .business terms between the producers and retailers, he will take lead role in marketing. If any sales promotion benefits in the form of gifts, cash etc., will give boost to the retailer to improve the marketing.

5.5 ROLE OF ADVERTISEMENT FOR MARKET PROMOTION:

In modern marketing system, there is stiff competition for any item in the market. To compete in the market with competitors advertisement is the main instrument.

It is not uncommon in market, that many of the manufacturers spending lot of money on the -advertisement. Even , the excellent quality product cannot reach the customer without much advertisement. For new producers lot of advertisement is needed to enter into the competitive market.

The various means of advertising for promotion of sales .

1. Pamphlets, bulletins etc : Pamphlets of different sizes, attractive colors are printed for distribution to the customers. The matter is so framed highlighting the worth of the product compared to other brands of competitors. A comparative statement can be prepared containing extra

quality in the product, keeping quality, effect on health, and under lining the cost comparing with other products in the market. Directly the competitors name or brand should not be mentioned, but only mentioning the other product containing 'x' composition, colour or any specific or separate qualities. The format may be like the character.

Our products : Competitors / C X C Y C Z etc.

1. Composition
2. Extra contents
3. Keeping quality
4. Taste flavour
5. Energy
6. Other nutrients
7. Price

In the pamphlet figures, cartoons etc can be printed which will give impression about the product. The running matter should be very less and only highlights should be mentioned. The matter should be in regional or popular language or one side national/international language and other side regional language.

These pamphlets can be distributed to all the houses through newspapers, or appointing boys. The pamphlets can be made available in popular shops or centres.

2. Posters : A poster is designed to make a public announcement of a special idea. It includes only a few words with an illustration. To catch the attention of the viewers and to pass a simple message at a glance. It should be attractive, brief and clear. If the poster is attractive, then only the people will look it for a longer time. It should have caption which should be as small as possible. It should be printed in bold letters. If necessary include the picture which can give eye catching to the people. Use attractive bright color. Do not use more than three colors. Normally the background colors mostly preferred as yellow, green, light blue and dark blue. Plenty of space between letters, words, lines and illustrations must be given. The layout of the poster should be well balanced so that viewers eye can smoothly travel. The style of giving message should be dependent on the type of customers, who will be customer.

3. Holders : Holders are permanent boards made of iron and placed on elevated heights with the help of strong stands or located on the top of the buildings. The advertising material is painted or poster is pasted to the board. These holders are placed in important junctions or on highways or busy centres. Lighting facility will be there to facilitate night times. The matter / figures will be almost the same guideline followed for posters. These holders are easily eye catching type and give wide publicity about the product.

4. News Papers, periodicals and Magazines : Newspapers, periodicals and magazines are good media for advertising about the product. Most of the people will read newspaper. If not all, most of the people will read magazines and periodicals. If advertisements about the products are given in news papers and periodicals, people will go through these information and definitely will increase the sales. These, advertisements should be captioned with interesting caption and the information about the product with photograph should give good opinion about the product over competitors product.

5. Cutouts and Banners : Big size cutouts with product information can be kept at important places. Banners made of cloth or plastic materials containing the information about the products may be arranged facing main roads. These cut outs and banners will improve the sales.

6. Railways and Transport Vehicles : Railway bogies, Buses, lorries and other commercial vehicles can be painted with the information about the product. When the people are waiting for buses and trains, will definitely see the matter and will have some effect on the sales.

7. Slides in Cinema halls : Slides can be prepared with the information about the products, which can be displayed in cinema halls at the beginning and interval timings.

8. Electronic Media : In modern era electronic media plays an effective role in advertising about the products. The various electronic media are

a) Radio : Advertisements can be played on radio during break time, before and after any programme. The advertisement programme prepared for radio should be preferably in songs style of popular songs or talk style of very important persons. The audio giving persons have clear and sweet voice.

b) Television : Television advertisements films can be prepared and the advertisement material can be displayed. This can be prepared using popular cine figures, famous players and athletes or any other important

People. These advertisement will have more impact on the people as it is seen in films. The famous personalities will be delivering the matter as they are using that product with good results. These Television advertisements can be displayed either in Doordarshan or any commercial channels. The rates for these advertisements depends on the time of display, the programme in which it is displayed.

c) Electronic Display boards : Electronic display boards can be displayed in the railway platforms, Bus stations, important junctions, stadiums parks and public places. The features of the product will be displayed as running matter.

In electronic media, audio - visuals are more effective than only audio or video separately.

9. Sign boards on the road -dividers or traffic islands : Sign boards can be placed in the place of road dividers. These boards will be painted with the information.

10. Appointing advertisement persons : Appointing advertisement people both men, women who will explain about good qualities of the product, at door step. They will wear dresses and caps containing information about the product, which will definitely attract the customers. Friendly walk, run on the main roads wearing logos of the company and product will definitely have the impact on sales.

5.6 ANALYSIS OF CONSUMER DEMAND AND ACCEPTANCE:

The term 'demand' refers to the quantity demand of a commodity per unit of time at a given price. It also implies a desire for whose fulfillment a person has ability and willingness to pay. Mere desire of a person to purchase or to consume a commodity is not his demand. He must possess adequate resource and willingness to pay for the commodity. The term demand for a commodity has always a reference to "a price" a period of time and 'a place.' without these no meaning for demand. The term 'market' may refer to a particular section of consumers classified under age groups, sex, social status, income groups, geographical etc.

Types of Demand

1. Individual and market demand for a commodity : The quantity of commodity which an individual is willing to buy at a particular price of commodity during a specific time period, given his money income, his

taste it is taste and prices of other commodities is known as individual demand for a commodity. Individual demand depends on price, income, taste and prices of the substitutes. The total quantity which all the consumers of any commodity are willing to buy at a given price per time unit, given their money income, taste and prices of other commodities is known as 'market demand'.

2. Demand for firms products and Industry products : The quantity of a firm products that can be disposed at a given price over a time period will be can denotes the demand for the firms product, where as the aggregate of demand for the product of all the firms of an industry is known as demand for industry product. It feels the share of a firm in the total demand for an industry's product.

3. Autonomous and derived demand : Autonomous is one that arises independent of the demand for any other commodity, where derived is one that is tied to the demand for some parent product or some other product. The demand which arises directly from the biological or physical needs of the human beings may be considered as autonomous. Eg :Milk Demand that arises out of demand for some other commodity as derived of the demand eg. Cow, feed etc..

4. Demand for durable and non durable goods :- Durable goods are those whose total utility not exhausted by single use and can be used repeated eg. Cloths, shoes; etc. non durable goods eg. All food items.

5. Short term and long term demand : The commodity is demanded AND only over a short period. Eg. Woollen clothes, long term demand which is having continuous demand eg. Cloths.

Law of Demand : Gives the relationship between the price and quantity demand. It states that the quantity demand of a product / unit time increases when the price falls and decreases when the price increases, while other factors are constant. This assumption implies that all other factors include –

- The income of the consumer
- The price of the substitute.
- Complimentary goods
- Consumers taste and preference are constant.

Eg : The demand for milk as per the milk is as follows,

2. Substitution effect : Any substituted product will decrease the demand.
3. Utility maximizing behavior : It can be studied by market surveys. Any commodity will be purchased upto maximum satisfaction.
4. Increase in the population / consumers will increase the demand.
5. Credit facility.

Analysis of consumer behavior and acceptance.: Consumer behavior in physiological and psychological phenomenon.

Physiological - needs food, clothes

Psychological - Luxury (false prestige), new modern designs of cloths, shoes etc.

The consumer acceptance depends upon psychology. It depends upon, customs, norms and values of consumers. A change in these factors like religious values, social habits, general lifestyles, age, sex, new fashions will change the behavior and effects the acceptance by the consumer. The consumer will expect maximum satisfaction with spending least possible price.

Some times the demand will be shifted due to

1. Fall in consumer's income.
2. Advertisement influence.
3. Price of complimentary goods.
4. Change in the-technology of the products.

The elasticity, of demand is the degree of responsiveness of demand to .the change in its determinants like price, income, advertisement, difference between original and inferior goods.

Market survey :

Market survey is the survey conducted among consumers about their needs, income , purchase capacity. Present using product, their satisfaction about present products and its supply, their expectation, their life styles etc. Market people will be appointed to get the above information which on analysis gives about the consumer's demand and

also his acceptance or satisfaction about the product. These surveys are helpful in

1. Knowing about the consumer demand about a particular product.
2. To know the price of product at which they can afford to purchase.
3. To know consumer expectation and requirements in the products.
4. Any improvement needed for the product.
5. To know any difficulties in distribution and selling persons.
6. To know about the quality of the products when it reaches the consumer.

5.7 ROLE OF SALESMAN AND MARKETING PERSONALITIES IN MARKETING OF DAIRY PRODUCTS:

Any person who is employed to sell the product is known as Sales man. Now a days the art and profitability of business mainly depends upon the marketing. Any body can prepare any product, but the profitability and survivability depends upon effective marketing. For effective marketing sales -people are necessary. Depending upon the organization and level of working they are named as salesman, Sales representatives, Sales officer, Marketing representative, marketing supervisor, marketing manager, sales coordinator etc. The art of selling in a person is termed as Sales manship.

Activities of Sales man

1. He will be in touch with distributors / Whole Saler / retailers regularly to know about the movement of the stock
2. Sales people will approach the important and active people, who will influence others in purchase of particular brand of the product. He will explain with them, about all the good qualities of the product comparing other similar products.
3. Sales people will approach the individual customers, and explain the advantages of their product over other products available in the market.

4. After sales service is an important item in the marketing. The sales people will highlight about the after sales services by their company, which is not attempted by other or giving inferior services.
5. He should speak good language without any breaks. His talk should be very impressive and people should be attracted to hear his speech.
6. Directly he should not introduce the product to the consumers. He should give his introduction from which company names etc.
7. He should wish the customers is local and traditional. types and he should enquire the welfare of the family members so that the ed as customers are satisfied.
8. Sales people will take samples of the product with them and they give the live demonstration before them. Which have much effect on the customers. They will carry other company's product with them and compare the qualities before customers.
9. Sales people will try to impress the customers by enquiring children education and giving best schools I colleges available in that area, best coaching centres. They will give best medical facilities available if any family members in sick. Then they will talk about their products.

Skills of a Sales Man

Any sales person should have the following skills to improve the sales of the product.

1. The sales man should wear well fitted and attractive dress and he will use tie and look trim so that he will look active and pleasing personality.
5. First he should start about the necessary of particular product and then he should introduce his company product which is superior than any other similar products available in the market.
6. He should patiently and interestingly hear, what the customers are feeling and he should not directly give controversy over their feeling. He should support their feelings and then slowly tie should tell them that the use of his company product will improve the condition or facilitates further.

7. If the customer offers any hospitality, he should agree for that and he should appreciate the hospitality repeatedly, so they show some inclination towards his product.
8. He should tell some interesting examples in the beginnings or about the famous personalities or jokes or any other interesting topics so that the customers will be attracted to the salesman's talks.
9. He should give a sample of the product to the customer and he can challenge about the good qualities of their product.
10. Sales people will attend the family functions, religious and cultural functions so that the customer's impression of sales people is enhanced.

SUMMARY

The concepts of markets and marketing were presented well. "Marketing of dairy animals, liquid milk and milk products was discussed in detail which helps the business to enter into good profit. The various ways and means of advertising for promotion of sales were listed. The various methods for finding consumer demand and acceptance of a product were fully explained. Salesman's activities and skills of a salesman were detailed to enhance the sales of the product.

SHORT QUESTIONS

1. Define market.
2. What is Marketing?
3. What is FCM?
4. Give formula for 4% FCM.
5. Give formula for 3.5% FCM.
6. What is coupon system?
7. Mention various systems of milk distribution?
8. What is demand?
9. Define Salesman?
10. What is Salesmanship?
11. Define consumer acceptance.
12. Define advertisement.

LONG ANSWERS

1. Briefly explain concepts of markets and marketing?
2. Explain about marketing of dairy animals?
3. Briefly write about marketing of liquid milk?
4. Discuss in detail about marketing of milk products.
5. What are the ways and means of advertising for promotion of sales?
6. What are the methods of finding consumer demand and acceptance?
7. Briefly explain about activities and skills of a salesman.

6. DAIRY ACCOUNTS

6.1 GENERAL PRINCIPLES OF ACCOUNT KEEPING:

Accounting is of vital importance to all business. The proper accounting helps the management to take many important decisions. Making a right : financial decision is the key to successful business operations. In order to make right decision, financial information must be readily available. If the accounts are kept properly, the manager can get immediate information as following:

- The cash position of a day
- Cost of a unit of product
- Amount owed to creditors
- Profit made
- And any other information he desires

6.1.1 Objectives :

- i) To know the number of transactions.:made during a particular period of time.
- ii) To know the total amount received or paid during a particular period. of time, an particular item or “accounthead”
- iii) To know the credit or debit balances of particular head of’ accounts.
- iv) To know the investments; cash on hand and in bank..
- v) To have an idea of overall business.
- vi) To prepare the annual statements of accounts i.e. Trial Balance, Trading account, profit and loss account and balance ‘sheet and to oresent it before the’ auditors and Annual General Meeting for approval.

6.2 SINGLE AND DOUBLE ENTRY SYSTEM

There are two systems of accounting i.e.

Single entry system

6.2.1 SINGLE ENTRY SYSTEM

Every transaction has two aspects i.e receiving aspect and giving aspect. but only one aspect is to be recorded in single entry system.

This system has not been proved to be systematic and scientific. Joint stock companies should not be followed this system aspect, Indian companies act of 1.956. This system may be followed by solotrade and partnership firms.

6.2.2 DOUBLE ENTRY SYSTEM :

The most popular and convenient system of accounting, is Double entry system which is universally adopted. Under this system each transaction is to be recorded on both sides, i.e. debit and credit sides? The fundamental principles for double entry are

- i) Debit - What comes in (goods)
Credit - What comes out (goods)
- ii) Debit - Receiver
Credit - Giver
- iii) Debit - Expenses, Loses
Credit - Income, gains

For examples are: Cash book / day book, Ledger, Trial Balance, account, Profit and loss account and Balance sheet.

Stages of Double Entry System :

The following are the three stages of complete system of double entry book keeping.

1) Recording :

Recording of transactions in the journal or subsidiary books.

2) Classification:

Classifying the transactions by posting them to the appropriate ledger accounts and preparing a trial balance.

3). Summarization:

Closing the books and preparing the final accounts.

Advantages of Double Entry System :**1) Scientific System :**

This system is only scientific systems of recording business transactions as compared to other systems of book keeping. It helps to attain the objectives of accountancy.

2) Complete record of transactions:

This system maintains a complete record of all business transactions.

3) A check on the accuracy of accounts :

By the use of this system the accuracy of the accounting work can be established, through the device of the trial balance.

4) Ascertainment of profit and loss :

The profit earned or loss suffered during a period can be ascertained together with details by preparation of profit and loss accounts.

5) Comparative study is possible :

Results- of one year may be compared with those of previous years and reasons for the change may be as certain.

6) Acknowledge of financial position of the firm :

The financial position of the firm or the institution concerned can be ascertained at the end of each period, through preparation of balance sheet.

7) No scope of Fraud :

The firm is saved from fraud misappropriations since full information about all assets and liabilities will be available.

8) Full details for purposes of control :

This system permits accounts to be kept in as much details as necessary and afford significant information for the purpose of control etc.

9) Helps management for Decision making :

The management may be able to obtain good information for its work, specially for making decisions.

6.3 VARIOUS RECORDS PERTAINING TO FINANCIAL ASPECTS**6.3.1 Financial Records**

Cash book / day book General Ledger Receipt Book Payment Register

6.3.2 Cash Book. / Day Book :

The cash book is the book in which all transactions including cash credits, counter entries etc., are made. One has to bear in mind the following principles while writing cash book of the primary Dairy Co-operative.

- 1) There are two sides of the cash book. The left side is known as receipt side or credit side and right side is known as payment side or debit side.
- 2) Both these sides together make one page of the cash book.

- 3) All the day to day transactions are entered in the cash book.
- 4) All the cash as well as credit transactions are entered in the cash book.
- 5) If there is a cash transaction, the entry will be on one side only.
- 6) If the cash is coming in “The entry will be on the receipt side / credit side of the cash book.
- 7) If the cash is paid or “going out” the entry will be on the payment side / debit side of the cash book.
- 8) Credit all the incomes and debit all the loses.
- 9) If there is a transaction which does not affect the cash, the entry will be on both sides of the cash book.
- 10) Credit the sales and debit the purchases.

In this way all the transactions of a particular day will be entered in the cash book and at the end both sides of the cash book will be totalled. The excess of the receipt side over the payment side will represent cash in hand and closing balance of the day. And the same shall be verified with the actual cash inhand - cash in box. This balance will be written on payment side to equalise the total on -both the sides. This closing balance of the day shall also be written in words and the cash book shall be signed by the writer / Secretary and the authorised person / chairman of the society

6.3.3 General Ledger

PageNo	Account of					
Date & Month	Particulars	Cash book Folio	Credit	Debit	Cr. Bal	Dr. Bal
			Rs. Ps	Rs. Ps	Rs. Ps.	Rs. Ps.

6.3.4 General / Miscellaneous Records (Other records)

- I. Indent Book
- II Stock - cum purchase register
(Consumable and dead stock)
- III Cattle stock - cum - sale register
- IV Society letter head.

Sl No	Name of Record	Originating From	Purpose	Authorized by	Distribution	Frequency of record
1	Indent book	Secretary of the society	For requesting the union to supply material, for stores, issues depending upon the business of the society	M.C.of the society	Original to every go to the union stores duplicate to be retained by the society in the book itself	every time when society require any article
2	Stock cum purchase register	Secretary of the society	To record all purchases and stock of material along with issues and balances. The ballances drawn within register are used in preparing final accounts also	M.C of the society	To be retained at soci-ety	Every time when any purch-ase is aff-ected or material is issued for use breakage etc.

3) Cattle feed stock cum sale register	Secretary of the society	To record all purchase opened and closing of stock and stocks and sales of cattle field, ghee or other such items It is used in preparing final accounts also	M.C. of the society	To be retained at	When the purchase or sale is affected, only total sale figure are to be entered here.
4) Society letter head	Secretary of the society	to communicate with union bank and other agencies. To be used for official letter from society.	M.C. of the society	2 copies original to go the party concerned to remain at society for record	when ever communicated is desired on any matter.

6.4 PREPARATION OF BALANCE SHEET :

The balance sheet is the statement which shows the complete financial position of the organisation from the beginning of the organisations upto the date of which the balance sheet is prepared. The balance sheet consists of two sides, namely "Asset and Liabilities" If total 'Asset' are more than liabilities the financial position of the organisation can be called as sound and if the total liabilities of the organisation are more than total. Asset the financial position of the organisation is called as weak or unsound

The Balance sheet is very useful statement of account in getting a clear picture of the organisation. It shows what is total capital investment how much is due to an organisation and how much the organisations owes to others. What is the total profit or loss during the year. What is the financial progress of the organisation. It also shows the total fixed and floating assets and stock and bank and cash balance of the organisation. On the top of the balance 'sheet it

should be mentioned that upto, which period the balance sheet is prepared. If all the final accounts are correct the two ' sides of the balance sheet will tally.

We will require the balance sheet of the last period for preparing the balance sheets as most of the accounts are connected with the previous period. We also requires the closing stock, closing cash balance at the end of the period over and above the trial balance for preparing the balance sheet.

The share capital all outstanding funds borrowings, loans, creditors, and net profits are inducted on the liabilities side of the balance sheet and fixed and floating assets such as Land, Building, Dead stals, Investments, debtors, Bank and Cash balance, stock in hand etc., are included on the Asset side of the balance sheet.

Benefits :

- i) The rate of profit on sale can be known.
- ii) The pricing structure can be revised if needed.
- iii) The variations and its reasons for lower profits/loss can be known.
- iv) The purchase made during the year can be maintained. Stocks in the beginning of the year and at the close of the year can be compared.
- v) The organisation can assess the efficiency of its business-whether it is progressing or there is any set back compared to the previous years.
- vi) Business turnover for the year can be known, and also helps in fixing the production cost.

Balance Sheet Proforma :

Liabilities

Sahre capital
Other Funds
 Reserve Funds
 Building fund

Assets

Share Deposits
 District cooperative union
 District cooperative bank
 Gujarat Fertilizers

Cattle Development fund	Other Fertilizers
Charity Fund	
Coop. Propagand Fund	<u>Dead Stock</u>
	Dead stock
<u>Depreciation fund</u>	Testing material
Dead Stock	A.I. Dead stock
	Library
<u>Other Debit</u>	
Special visit fee	<u>Other Deposits</u>
Staff bonus	District Cooperative union
Staff provident fund	A.I.
Share deposit	First Aid
Member's Bonus	Bank
	Interest
ARDA member fee	
Net profit	<u>Stock on hand</u>
	Milk bill due
	Dan stock
	Ghee stock
	Provident fund due
	Land purchase
	Balance in bank
	Cash on hand
Chairman	Secretary

6.5 AUDITING :

Audit means checking and the auditor is considered to be a fault finder of fraud-detector. The responsibilities of an auditor is not confined to finding of faults. (or) irregularities. He has to verify whether the books of accounts and other records maintained by the organisation are in sufficient detail and cover all types of transactions. He is responsible to see whether the final accounts show a true picture of the state of affairs of an organisation.

The general practice in co-operative is the annual audit. In case of dairy cooperatives when the transactions take place twice a day at the village level annual audit may mean a post mortem. It is therefore advisable to have a continuous and concurrent audit preferably every year.

6.5.1 Objectives and functions of Audit:**Objectives :**

- 1) Verification of accounts and statements.
- 2) Detection of errors and frauds
- 3) Prevention of inaccuracies and errors and frauds.
- 4) To ascertain the exact and current financial position of the society as on a particular date.

FUNCTIONS (General)

- 1) To examine the system of internal check
- 2) To check the arithmetical accuracy of the books of accounts & the verification of postings, castings, balancing and by tallying the receipt and payment statement of trial balance.
- 3) To verify the authenticity and validity of transactions by an examination of the entries in books with relevant support documents.
- 4) To ascertain that a proper distinction has been made between items of capital nature and those of revenue nature.
- 5) To confirm the existence and value of assets and to verify liabilities

Specific function to primary milk producers co-operative society:

1. To check that all members have been issued a pass-book and proper entry is made therein, each time when milk is brought to the society.
2. To see that registers of purchase, fat test, local sales and sales of milk to dairy are properly maintained.

3. To ensure that the members are correctly paid for the milk of the basis of its quality.
4. To see that payment for milk is made to members regularly twice every day.
5. To check whether the fat tests of the samples of milk of previous shift is correctly entered in the purchase - register and members pass book.
6. To examine the method applied for local sale of milk and see that all local sales are duly accounted for.
7. To see how the sample milk is disposed of and whether the system adopted is fair and equitable.
8. To verify that system for transportation of milk from society to dairy is satisfactory and economical.
9. To see that all statutory requirements of co-operative societies Act and rules and regulations prescribed in bye-laws of the society are duly completed with.

SUMMARY

General principles of account keeping were explained which helps in maintaining accounts in dairying business. Single and double entry systems were dealt with examples. Principles in maintenance of financial, goods and other records were discussed. Steps in preparation of balance sheet were shown which helps in development of balance sheet of the business. Auditing which helps to know the deficiency was discussed in detail.

SHORT QUESTIONS

1. What is a ledger?
2. Define trial balance.
3. What is single entry system?
4. What is double entry system?

5. Define balance sheet.
6. What is Auditing?
7. Define Accounting.
8. What is heading account?
9. What is Cash book?
10. What is the objective of auditing?

LONG QUESTIONS

1. Explain general principles of account keeping?
2. Briefly write about single and double entry system.
3. How do you maintain financial, goods and other records in d' business.
4. Explain about objectives and functions of auditing?
5. Briefly write about the balance sheet.

7- DAIRY EXTENSION

7.1 ROLE OF EXTENSION IN DAIRY DEVELOPMENT :

Dairy extension is a special branch of animal husbandry extension which deals with the people through education procedures, in improving dairying farm and /or dairy industry methods and techniques, increasing the milk production and /or processing and efficiency, increasing the income and stepping up the level of living and elevating the social and educational standards of rural life.

Importance of Dairy Extension :

The majority of the dairy industry is with illiterate people. They have dairying and subsidiary to the agriculture. The knowledge in dairying to the rural farmer is very less and the production of milk is very low quantity. To improve the milk production the dairy extension plays a vital role. The dairy extension will help the rural farmers in the field of dairying in the following areas.

1. Selection of good dairy animal
2. Construction of comfort and economical cattle housing
3. Economical feeding systems
4. Improving the milk production with better management.
5. Management techniques to combat the effects during different seasons.
6. Formulation of feed with locally availability ingredients.
7. Development of Fodder grasses
8. Good milking technicians
9. Prevention of diseases
10. Cross breeding programme.

11. Preservation of milk
12. Preparation of indigenous milk products
13. Marketing of milk and milk products
14. Financing sources for dairying
15. Insurance of animals
16. Management of different classes of animal.

7.2 DAIRY EXTENSIONS - METHODS :

The various extension methods are classified into 3 groups.

Advantages :

- 1) Individual contact methods
- 2) Group contact methods
- 3) Mass Contact methods

A. Individual contact methods : It is the direct contact by the extension worker with an individual (farm, farm women, youth etc) or the members of the family for a specific purpose. The various individual contact methods are

i) Farm and home visit : It is a face to face type of individual contact by the extension worker with the farmer and I or the members of his family on the latter's farm or home for one or more specific purposes. It is intended to give first hand information to the farmer relating to the development of farm and house. And to identify the local leaders.

Advantages.

- i) Extension worker develop good will with farmer
- ii) Ext. workers gets first hand information on rural problems
- iii) Helps in locating local leaders and cooperation
- iv) Percentage of adoption is high

- v) He develops confidence when his ideas are accepted by the farmers.

Disadvantages :

- i) It consumes much of extension worker's time and energy and costly
- ii) Limited contacts of farmers
- iii) Some times visit may not be opportunistic to the farmers
- iv) Chance for favoritism

ii) Office call :

It is a call made by a farmer or a group on the extension worker at his office for obtaining information and for inputs or other farm helps needed or making acquaintance with him. The volume of office calls is related to the degree of public interest in the program of the extension service, the relationship existing between the local extension worker and the villages and accessibility of his office to rural people.

Advantages :

- 1) Economic use of extension worker and energy.
- 2) The farmer is in receptive stage of mind and ready to follow or put the new idea in the practice.
- 3) It is the sign of confidence that the farmer has in the extension worker and respect for ability.
- 4) A careful record of office calls provides a basis for follow up activity.

Disadvantages :

- 1) It is not possible to get detailed first hand knowledge of the farmers problems and activities.
- 2) Limited contact with farmers.

- 3) Waiting for visitors who are not turning up is wasted time
- 4) Unbusiness like handling of office call with result in unconcerned person, using the office as longing place.

iii) Personal letter

It is a personal and individual letter written by extension worker to a farmer in connection with extension work. In practice personal letters are used to answer enquiry from farmers regarding specific problem.

Advantages :

- 1) Cheap and useful to educate farmer.
- 2) Best method to reach farmers who could not be reached by above two methods.
- 3) Percentage of adoption is high and ext. worker get first hand information about rural problems.
- 4) To develop good relations and confidence, this is one of the best method.

Disadvantages :

- 1) It is time consuming method
- 2) Since majority of the farmers are illiterates, this method has limited usage.
- 3) It is difficult for extension worker each and every individual problems.
- 4) Only few members can be contacted.

IV) Phone Calls:

It is a direct contact between the extension worker and farmer over the telephone for one or more specific purpose.

Advantages :

- 1) Although face to face contact is missing they have the advantage that they may be initiated by either the farmer or the extension worker.
- 2) They are useful in society and giving specific information such as first-aid-treatment of animals before arrival of veterinarian, control of lice infection, stress medication in poultry farms etc.
- 3) They provide a means of follow up and evaluation of the effectiveness of radio broadcasts or television telecasts.
- 4) It is necessary to employ special telephone number and tape recordings to answer the flood of inquiries after especially interesting programmes or announcements.

Disadvantages :

- 1) Use of telephone is very limited in our country.
- 2) The extension worker cannot see the farmers face and his farm.

V) Result Demonstration.

Result Demonstration is a demonstration conducted by farmer or others under direct supervision of an extension worker to prove the worthiness of a recommended practice or combination of practices.

Advantages :

- 1) It appears to the eye and effectively reaches the farmers is method has
- 2) Increases his confidence and also more number of people will understand.
- 3) Useful for introducing new technologies.
- 4) Contributes to discover the local leader and helps in developing local leadership.

Disadvantages :

- 1) Requires lot of time and costly method.
- 2) Difficult to find good demonstrator who will help perfect records.
- 3) Unfavorable weather and other factors may destroy the value.
- 4) Unsuccessful demonstration may create strong unfavorable conditions.

B) GROUP CONTACT METHODS

A group is a body of individuals drawn together around a common interest. The various group methods are

I) Method Demonstration : It is relatively short time demonstration given before a group to show how to carry out an entirely new practice or old practice in a better way.

Advantages :

- i) It is very effective in teaching new skill
- ii) It stimulates action and build confidence
- iii) It introduces a change of practice at low cost.
- iv) Saves publicity purposes.

Disadvantages :

- i) Suited only to the 'Skill involving technologies'
- ii) Transporting the materials and equipment's to the demonstration site is difficult.

- iii) It causes a setback of whole programme is improperly coordinated.
- IV) Field trips and tours : A group of interested farmers, accompanied and guided -by extension worker goes on tour to see and gain first hand knowledge of improved practices in their natural setting i.e. research farms, demonstration plots, farms of progressive farmer and institution.

Advantages :

1. Participants gains first hand knowledge of improved practices and are stimulated to action.
2. Best suited to the 'show me' type of people.
3. Widens the vision of farmers and adoption is
4. It has entertainment and site seeing values.

Disadvantages :

1. Most expensive method and involves time, transport and number of preparations.
2. It is difficult to fix seasons and time suitable to all
3. Recreational aspect may mask the educational aspect.
4. Frustration may result if the tour is badly conducted.

Meetings : Meetings are one of the oldest and most important group methods of extension teaching. The various types of meetings are general meeting, lecture meeting, extension talk, discussion meetings etc.

Advantages :

1. Large number of people 'can be reached.
2. Group psychology can be used in promoting the programme.

3. Reactions of the people to a programme can be assessed.
4. Adoption of practices can be accomplished at low cost.

Disadvantages :

- 1) Handling the topic becomes difficult because of mixed composition of audience.
- 2) Circumstances beyond control like factions and weather might reduce the attendance.
- 3) Difficult to avoid unconnected persons attendance.
- 4) Traditional leaders who are not functional come in the way of group activities.

C) MASS CONTACT METHOD:

Individuals, face to face methods and group methods cannot reach every one who wants and needs information. So mass methods like exhibition, Radiotalk, TV talk, motion pictures, printed methods (Eg : Leaflets, folders, pamphlets, booklets etc). This method makes large number of farmers aware of new ideas and technologies. The above mass contact methods can be used singly or in combination.

Exhibition is a systematic display of models, specimens, charts, poster etc in a sequence participant members. Radio talks are prepared subject wise and transmitted. TV talks are prepared just like radio talks, with an advantage of seeing. Motion pictures on latest technologies will be prepared. Printed media like leaflet, folder, pamphlets, bulletin, booklets, news - articles, wall news paper, circular letter, Feature stories are prepared on different topics necessary to the farmers photographs are also printed to give more impression.

Advantages :

- 1) Suitable for mass scale adoption of an improved practice in the shortest time possible.

- 2) Provide clean and clear information of the technologies.
- 3) Easy for retention and recall.
- 4) Promotes literacy and awareness. Disadvantages :

Disadvantages :

- 1) It will lose its significance if not carefully prepared and used.
- 2) Requires much preparation and investment.
- 3) Not suitable for individual problems.
- 4) Less useful in low literacy areas.

7.3 ROLE OF AUDIOVISUALS IN DAIRY DEVELOPMENT :

Audiovisual aids are the instructional devices. In which by audio aids the learners can only hear the information, by visual aids the learners can only see the information, by audiovisual aids the information can be heard and as well as seen.

Importance of A.V aids in dairy development :

Research and experience have shown that audiovisual techniques can significantly increase and reinforce learning. All dairy development activities to increase milk production can be prepared into programs and these programmes can be disseminated to the farmers using different audiovisuals at frequent intervals. The farmers will learn the new techniques through various audiovisual aids and by following the new techniques will improve the milk production in quantity as well as quality.

The various audiovisual aids are classified into three groups i.e audio aids, visual aids and audiovisual aids.

Audio aids :

The various audio aids used in extension are

a) Public address system : Used to enable the extension workers to be in more than one place at a time. It can be used for recording radio play and other group discussions and meetings. Films and still projections can be synchronized with sound. Public address system consists of mike, amplifier and speaker. Mike and speakers are connected to amplifier using wire.

b) Tape recorder : The messages can be recorded in cassettes and played before framers. Tape recorders will work on both a.c and d.c. For inserting cassettes press the eject button and insert the cassette and it is ready for recording or playing. For using side 2 track press eject, remove the cassette and turn over the cassette and insert it. Recording can also be done with microphones inserting the plug of microphone card into microphone jack. Speak before microphone after pressing the record

button and when the recording is over press stop button. Recording of cassette can be done by pressing rewind button.

Other audio aids are Telephone, Radio and Gramophone record.

VISUAL AIDS :

Visual aids are of two types i.e. projected and non projected / display aid. Under projected visual aids examples are

Overhead projector :

It is a projector which projects the image over the head of an instructor. Matter is written on transparency and place on glass stage of over head projector with the bottom of the image towards the screen. Raising or lowering the image on the screen may be accomplished either by filling the front surface mirror by means of a leaves. To get clear image focussing is done by tuning.

Slide projector

Slide is a small piece of film or other transparent material containing matter or figure. Manually operated and automatic slide projectors are available. Hand made slides can be prepared with thin semitransparent paper like Cellohane. Photographic slides can be prepared using positive film should be utilized. If not

available negative film can be utilized which can be transferred to positive film afterwards.

Opaque projector :

This is based on reflection projection rather than transmitting light through it. The matter on opaque materials like news papers, text books etc can be projected. Operation is very simple. First open the stage properly place the materials and close the stage and operate.

Film projectors :

Film projectors are classified as 70 mm, 35 mm, 16 mm and 8 mm and in class room teaching 16mm projector is commonly used.

Computers

The computer message can also be projected by using special equipment to the computer. Lessons are prepared and incorporated in the floppies.

Under non projected visuals examples are -poster, flash cards, bulletin board, photographs, models, exhibits and displays charts, flannel graphs, specimens, real objects etc.

Flannel board or felt board consists of stiff backing covered with felt material on one side. Flannel strips in a graphic or written strip which are backed with rough texture so that they adhere to the flannel board. Any message or picture in strips are used.

Bulletin boards are boards made up of soft wood, ply board covered with cloth. The materials like booklets, circular letters, bulletins, cartoons, maps, charts, news paper clippings etc can be fixed in order with the help of push pins, thorns, tape or glue.

Magnetic boards consists of steel materials and striplings will have magnets and the rest is just like flannel boards.

Charts are graphic representations. Various types of charts used as flip charts,

sliding chart, pull chart, window chart, spiral chart, slit chart, bar chart, pie chart, tree chart, flow chart etc.

Flash cards are the series of illustrated cards flashed before the learners in proper sequence.

Photographs, models (replicas of real object) specimens (real objects) and real objects will also be used as visual aids.

AUDIO VISUAL AIDS :

The various audiovisuals are motion picture projector, T.V, video, teletact and multimedia computers.

Films are projected on the screen which have background of sounds.

Television is an important audiovisual aid used for mass communication. The program is telecasted in to air by converting the audio and video waves into electromagnetic waves, which are then received in the TV set. Recorded program as well as live telecast can be done through TV.

The term video is used to denote picture which have been converted into electronic signal. The video produced can be telecasted through TV. Video cameras are utilized to record the program in video cassettes which can be played by using video player.

Computer multimedia is computer based teaching method in which the lessons are prepared with computers, stored and displayed before learners.

7.4 SELECTION OF EXTENSION METHODS FOR EFFECTIVE TRANSFER TECHNOLOGY:

While selecting the audio visual aids, three points must be kept in mind.

- a) Decide what you want to say and what it is important to say it.
- b) Out line the subject matter point by point.

- c) Visualize the key points in the outline. Make aids or select them from commencing prepared ones.

Points should be kept in mind while selection.

- a) According to the situation extension workers should choose the re the learners aid which is best for the particular situation. There is no best teaching aid suitable to all situation.
- b) The teaching objective i.e what are the changes in behavior to be brought about usually change in skill, knowledge and attitude.
- c) The subject matter to be taught.
- d) The nature of the learner. According to his age, education . interest, experience, knowledge and intelligence.
- e) Cost of the aid.
- f) Effectiveness of the aid. audio and video
- g) The teacher - his familiarity, skilfl in handling that aid, originality and skill in the selection, preparation and use of aids.
- h) Availability : An effective extension worker makes use of indigenous materials when the teaching aid he would like to use is not available.

Effective use of AN aids :

- 1) Planning ahead will help to solve anticipated problems.
- 2) Make sure the aids are suitable for the audience size. Ensure that the learner at the last row of the class must be able to see the aid.
- 3) Use of variety of well compared visual aids to hold audience interest.
- 4) Do rehearse in order to make a smooth presentation.
- 5) Make the place where the presentation is to be made convenient and

comfortable.

- 6) Arrange your visuals in sequence.
- 7) Make sure that all aids are in good working condition before the presentation is started.
- 8) Display only one side at the crucial moment.
- 9) Present aids at the crucial moment.
- 10) Keep aids out of sight until ready for it.
- 11) Stand beside the aid not in front of it.
- 12) Speak to the audience not to the aids.
- 13) Remove all unrelated material.
- 14) Avoid any misunderstanding by discussion and application.

7.4.1 Criteria for selection of extension methods.

The selection of appropriate method is not an easy one. There is no single thumb-rule for selection. In order to get more effective results the extension worker should

- i) Select the appropriate methods.
- ii) have a suitable combination of selected methods and
- iii) use them in proper sequence so as to have repetition in a variety of ways.

Factors influencing the selection :

The audience :Education to illiterate, we select personal visits and to highly educated the written materials.

Size of audience : The group methods can be used for the participant size exceeding thirty:

The teaching objective : If we want the attitudinal change we go in for the group discussion and for skill change the method demonstration.

The subject matter : If single technology which is new it will be told through the news article, where as for complex one, face-to-face contact or audio-visual aids will be used.

The state of development of extension organization : If the organisation is new and yet to gain the confidence of the people the result demonstration will be selected. The well established organisation can even use the circular letter.

Size of the extension staff: Large number of staff more of direct contacts.

Availability of media : Such as TV, Radio, News papers etc. will also have the influence in selecting method.

Relative cost: The cost involved to the method is also an important consideration in selection and use.

Extension workers familiarity : The training of the extension workers for the proper handling of the selected methods. The teacher should know his own capabilities while making selection.

Needs : Problems and technological needs of the people.

The length of time : The length of time the program has been going on in the area.

The significance of the program : Depending upon the importance of the program the methods may be selected.

m) **General local conditions :** Such as seasonal work, weather conditions, availability of meeting places, organisations and leadership.

Combination of methods :

Each extension methods has its own advantage and disadvantages. To continue it combination of two / more methods will mask the disadvantages of the individual methods. One method supplements and complements other methods. Hence more than one method is necessary to bring about adoption by majority of farmers. The rate of adoption of new methods by the farmer is very high when view information comes from more sources. The combination of modern communication technology such as video, satellite communication, micro computers multimedia etc should be used along with different methods of extension.

7.5 COMMUNICATION PROCESS-AIMS , OBJECTIVES AND PROBLEMS :

The communication process have five steps as shown below.

1. The source : The source or originator of the message occupies the first step in the communication process. The source controls the type of message sent, the construction used and frequency the channel through which the eventual message passes.

2. Encoding the message :- It involves transmission of some form or verbal or nonverbal symbol that is capable of transferring meaning such as spoken or written words, gestures or actions. From among the available symbols, the person transmitting a message selects the ones that will fulfill a specific need and arranges them in some sequence of significance. One must think not only of what is going to be said but also of how it will be presented to have the desired effect on the receiver. The symbol selected should give message to receiver so that he can easily understand. E.g. no smoking symbol, danger symbol.

3. Transmitting the message : This reflects the communicator's choice of medium or distribution channel. Oral communication may be transmitted through many channels - in person, by telephone, or videotape. Written communication may be transmitted through channel such as memos, letters, reports, notes, bulletin boards, company manuals and news feters. Oral communication gives opportunity for interaction and feed back, where as written communication provides a record for future reference.

4. Receiving the message .- Basically the people receive the message through their five senses seeing, hearing, tasting, touching and smelling.

5. Decoding the message : It involves giving meaning to the symbols the receiver receives. The receiver searches his or her memory bank for a translation of the symbols received. There is always the possibility that the source's message, when decoded by the receiver, will yield a meaning for different from the one the sender intended.

Feed back : After the message has been received and translated, the receiver may transmit a return message that stimulates the original communicator or someone else. Thus communication is a continuous and never ending process. The response is called "Feed back".

7.6 ORGANISATION OF TRAINING PROGRAMMES, CATTLE SHOWS, EXHIBITS ETC.

7.6.1 Training

Training means to educate a person so as to be fitted, qualified and (proficient in doing some job.

While the education is primarily concerned with opening out world to the students so that he can choose his interests and career. Training is primarily concerned with preparing the participant for certain lines of action which are delineated by technology and by the organisation in which he works and which also improves his performance in it. Education deals mostly with knowledge and understanding whereas training deals mostly with understanding and skill.

According to Collins, training must include the instruction, and other learning experience, which purport to fit the worker into the service so that he competently meets the demands of his job, as determined by the changing leadership needs of people.

Need for Training :

Man's knowledge, like machines, can rapidly become obsolescent. Training is a means to reduce the obsolescence among the people and organisations in the face of relentless technological innovation.

Training improves a person's skill, his power of intelligence and develops in him the desired attitudes and values required for his work.

Training helps the new entrant to acquire occupational work-skills and the latest knowledge in agriculture, Animal husbandry, home science, health and sanitation.

Types of Training:

Training of extension workers can be classified as:

1. **Pre-service Training :** Education at high school, college namely agriculture. college; Vety. College etc.
2. **In-Service training :** This is to keep an worker abreast of the latest knowledge or giving him special training in a new job.

This may be

- a. **Orientation training :** Where all a new extant is oriented to the organisational setup, the philosophy, code: of conduct etc.
- b) **Induction Training :** Where workers ~an be given the knowledge of the working and organisation of the community development - and extension service, his place of work and his place in the work team.
- c) **Short range I training :** Training of about 45 days 'in the field of Agriculture or Vet, in a concerned college i.e: agriculture college or Vety. College. ' .
- d) **Job Training :** Special job work may ~e imported by sending the person to a specially designated centres. Eg : Wool extension or wool grading of CSWRI, Avikanagar, Rajasthan.
- e) **Periodical Meetings & conferences :** Rabi & kharrtf meetings and workshops, Conferences, Refresher training and programmes, ORTS, at fixed intervals / seasons where review orientation and problem solving / technical sessions will,be conducted.

Training process

Principles of Training :

1. Motivation is ;, basic : Create a feeling of need or want in the trainee.
 - a) Desire for security
 - b) Desire for new experience
 - c) Desire for affection and response
 - d) Desire for recognition
2. Clearly defined and specific objectives.
3. Must accomplish educational changes in the subject matter learned.
Change in knowledge, skills, attitudes of understanding.
4. Effective learning situation comprising - Teacher, learner.

Subject Matter - environment class room etc.
Teaching aids and Physical facilities or
5. Should provide effective learning experience to the trainees.
6. Should provide a combination of techniques - by engaging max. no. of ranges - such as oral, visual, Audio visual and doing things.
7. Training should be challenging and satisfying.
8. Requires careful evaluation of results.

Assessment of Training needs is a pre requisite for organising a training programme.

For farmers training following points are to be kept in mind.

1. **Time of holding the training :** Lean season, free from rush of agriculture, operation.

2. **Duration of Course :** 2-3 days on a topic like plant protection poultry-chick care, Dairy calf management or upto 1 week for crop management, soil conservation, Animal feeding and management etc.
3. **Venue of Course :** Realistic venue - field or shed to provide practical exposure.
Production - cum - demonstration and discussion groups : R.D. plots in villages before each main crop season.

Continuous feed back from trainees and prompt follow-up is essential for long term success of any training programme.

7.6.2 EXHIBITS

An exhibition is a systematic display of models, specimens, charts, information, posters etc., in a sequence so as to create interest in the participant members. It covers three stages 'viz. Arousing interest, creating desire to learn and providing a chance to take a decision.

Exhibitions are generally three dimensional materials, while displays are mostly two dimensional.

Importance :

To acquire people a better standards, to adopt practices interest and to promote understanding, good will and market.

Points for arranging :

- Decide about the audience, message and suitability message to audience.
- An exhibit should be built around single idea. understandable, portable and impressive in size.
- Arrange the exhibits in a sequence and continuity.
- Use few rather than many objects.
- Make it durable, attractive and action exhibits.
- Label legibly and briefly.

- Spacing and decoration should have an appeal to the eye and to tell the story without an interpreter.
- Display for exhibit not below 2 feet and not above 7 feet from floor. I.e. near eye level, approximate five feet.
- Give adequate publicity
- Evaluate effectiveness.
- Provide relevant literature.
- Use local material.
- Take advantages of local festivals and fairs.

7.6.3 ORGANISATION OF CATTLE SHOWS

Purpose :

1. To create a spirit of healthy competitions for developing best dairy type animal.
2. To provide an opportunity to exhibit best type of animal and select best suitable type of improving the herd.
3. To popularize animal and to get best market price for good animals.
4. To increase pride of farmers.
5. To help and assess the livestock breeding programmes in operations and success achieved.
6. To encourage dairy farmer to produce best type of cattle.

7. To get opportunity of learning improved techniques of breeding and management._
8. To provide opportunity to exchange ideas, improvement.

Materials needed :

- 1.. Suitable ground
2. Funds
- 3 Organizers.
4. Decoration
5. Judges for separate rings
6. Prizes.
7. Exhibits for a) Feeds b) breeds c) Vet. Breeding methods.
8. Intimations for advertisements
Invitations to authorities far visits
9. Arrangement for film shows.

Procedure

1. Make the plan for show of animal and make different committees.
2. Allocate the funds for various expenditure.
3. Select the date and time when most farmers can participate:
4. Allot the job / terms of each committee and to persons under convenor of the committee..
5. Select the team of judges in advance.

6. Communicate in advance to all the judges and get consents of their participation
7. Give wide publicity well in advance through various media-radio, T.V. leaflets, printed letters, news paper.
8. Arrange for entry records on show day.
9. Arrange animals according to class or,age in to groups.
10. Put labels or identification strip for each animal
11. Arrange feed and water for animals.
12. Make arrangement of a veterinarian for inspection of entering the show.
13. Arrange for medicated foot bath for all animals for show.
14. Announce the timings of show for different class of animals
15. Allow animals with their owners into the respective rings.
16. Keep animals under observation of judges.
17. Sort out and record the winner of awards or prizes animals.
18. Arrange for consolation prizes to next nearest rivals of winners. animals

Notes : a) Invite the local press and Radio station authorities for wide publicity.

a) Make arrangement for film, show through all department, extension and publicity depot.

b) Animals suspected of having contagious disease should not be permitted.

Observation :

- 1 List of breeds of animals participated.
- 2 Number of farmers participated
3. Number of animals class
4. Name of winners
5. List of V.I.Ps visited
6. List of judges.

7.7 EVALUATION OF TRAINING PROGRAMMES

Evaluation or appraised of training programmes is to ascertain whether the programme has achieved its objectives and whether these objectives could have been achieved more effectively in some other way,

Objectives :

1. Assessment of progress and impact
2. Ascertain the merits and demerits
3. Measuring the success or failure in implementation.
4. Analysing the reasons for success or failure.
5. Deriving lessons for improvement in the formulation and execution of programmes.

Types of Evaluations :

The various methods of evaluation are

1. Formal and informal evaluation : It contains five point continuum of degrees of evaluation i.e casual every day evaluation, self checking evaluation, do it yourself extending evaluation, studies and scientific research.

2. Formative and summative evaluation : formative attempts to assess the demerits of the programs during implementation stage and summative evaluation assesses the worth of the final results of a program. Earlier more importance was given to summative and now to correct mistakes more emphasis was given to formative evaluation.
- 3) On going and Ex-post facto evaluation : Ongoing evaluation is an acting-oriented analysis of a project's effects and impacts compared to anticipations, to be carried out during implementations. Ex-post facto evaluation would resume the effect several years after completion of the investment, to review comprehensively the experience and impact of a project as a basis for future policy formulation and project design.

STEPS IN EVALUATION :

1. Plan for evaluation :- It indicates what should be done, why it needs to be done, how it will be done, who should be done and whom. Planning helps to acomplete the evaluation with in limitations.
2. Purpose of Evaluation : The purpose of the evaluation will determine which data have to be collected for evaluating any programme.
3. Reasons for Evaluation : The reason for evaluation, which may be, appraises progress and impact, to judge the methods and devices, to improve on going programmes and to have basis for future programme. The evaluation should fix priority for the above.
4. Respondents to Evaluation : Respondents are the audience consisting of farmers and his families, Local leaders, NGO's authorities etc. The evaluator should select the primary respondents according to the reasons for evaluation.
5. Standards for evaluation : Standards are the yard sticks or criteria applied to measure the impact of a programme.
6. Levels of evaluation : In early stage we can evaluate how the programme was planned, and after completion of programme, the impact on the farming community.

7. Evidence for evaluation : Evidence means information about a standard or criteria. To finalize which type of evidence to use, adjustments must be made between what is the best to use and what is possible to obtain.
8. Designs for evaluation : The survey is the most commonly used design for evaluation. In this sampling is done first. Questionnaire, interviews and observation techniques are applied to collect data. The other designs like case study design, experimental design etc are rarely used.
9. Conduct evaluation : It has three steps analyzing, reporting and applying. After collecting the data it is analyzed properly using device like value scales, opinion polls etc. The findings of evaluation need to be presented either by talk or written form. The implications. and recommendations drawn from evaluation needs to be presented either by talk or written form. The implications and recommendations drawn from evaluation should be used improve the ongoing or in planning future programme.

The various problems or in planning future programme

- a) Error of observation
- b) Error of measuring instrument
- c) Error of measurement
- d) Error of qualification
- e) Error due to lack of control
- f) Error of true response
- g) Error of operation difficulties.

SUMMARY

Dairy extension was well defined and the importance of dairy extension in dairy development was well covered, various types of extension methods were clearly explained. The various types of audio visuals were discussed and its importance in dairy-development was explained. The criteria for selection of audio-visual aids and extension methods for effective transfer technology was presented. The nature , importance, steps in communication process and problems in communication were presented well. The procedure for organised of training programmes, exhibits and shows was explained systematically. The objectives and various types of appraisal of training programmes were presented well.

SHORTQUESTIONS

1. Define Dairy Extension.
2. What are the groups of extension methods?
3. List various individuals contact methods of extension..
4. Define farm and home visit.
5. Mention various group contact methods.
6. Define mass contact method of extension.
7. Define audio visual aids.
8. List various audio aids.
9. Mention various visual aids.
10. List various audio visual aids.
11. Define communication:
12. Mention the steps in communication process.
13. Mention two types of barriers in communication.
14. Define appraisal of training programme.

LONG QUESTIONS

1. Define dairy extension and give the importance of dairy extension
2. Classify different extension methods and give examples.
3. Explain various individual contact methods.
4. Briefly explain about group contact methods.
5. Write about mass contact methods.
6. Define audio visual aids. Give its importance and classify and visuals with examples.
7. Write in detail different audio aids.
8. Explain about visual aids.
9. Write about the audio cum visual aids.
10. Explain the criteria for selection of A.V. Aids and extension methods for effective transfer technology.
11. Explain the nature and importance of communication.
12. Briefly write about communication process.
13. What are the problems in communication?
14. How do you organize training programme?
15. How do you organize exhibits and shows.
16. Briefly write about appraisal of training programme.

8. DAIRY ENTREPRENEURSHIP

8.1 ENTREPRENEUR - HIS BEHAVIOUR

8.1.1 Entrepreneur is the person who seeks self employment under which one perceives / innovates an idea, organizes production / services by mobilizing resources and finally market the products and services to earn profits, and opt for challenging career options that involve initial risk with promising rewards.

OR

Entrepreneur is a person or a group of persons who initiates- and manages an entrepreneurial venture and what an entrepreneur does is an entrepreneurship.

Characteristics of entrepreneur :

1. Initiative
2. Sees and acts on opportunities
3. Persistence
4. Information seeking
5. Concern for high quality innovation and efficiency
6. Commitment to work contract
7. Systematic planning
8. Problem solving
9. Self-confidence
10. Persuasion
11. Use of influencing strategies
12. Goal setting
13. Risk taking

Motivation :- A human being is governed by motives, which direct him \ her to act in a certain direction. Motivation is a process of activity. The important motives are :

- a) **Need for achievement:** It is referred to as one's desire for some standard of excellence in a performance related situation.

- b) Need for power:** It is one's desire to control or influence as on going situation. The people with a high need for power seek a position of leadership.
- c) Need for affiliation:** - It is one's concern to establish, maintain and sustain affective relationship with others. They tend to reflect concern for others love.

Achievement Motivation - Achievement motivation is the desire to do well, not so much for the sake of social recognition or prestige but to attain an inner feeling of personal accomplishment.

Characteristics of persons with high need for achievement :

1. A person with higher achievement likes to take personal responsibility.
2. He likes to take moderate risks.
3. He wants to know the results of one's efforts.
4. He tends to persists in the facts of adversity.
5. He tends to be innovative.
6. He demonstrates some interpersonal competence.
7. He is oriented towards the future.
8. He tends to be mobile.
9. He is not completely content (not satisfied with what they have achieved).

8.2 DAIRYING AS SELF EMPLOYMENT :

Now a days the Government policy is encouraging self employment rather creating salary jobs. Self employment practice for rural educated / uneducated youth creates self sustaining for rural youth, which decrease unrest among them. Self employment opportunities are there in all the fields. But for rural based people self employment in dairying is most suitable, as dairying becomes a subsidiary and additional income for

those, who have agriculture. The various opportunities in dairying for self employment are.

1. Establishment of dairy farms eg : 2,5,10,50 100 or more animals.

2. Calves rearing programmes, rearing calves and selling.
3. Heifer rearing programme : Heifer calves are maintained and pregnant heifers are soled.
4. Purchasing dry animals, making pregnant and selling milch
5. Rearing of bulls and selling.
6. Green fodder growing programme.
7. Paddy straw / any other dry roughages selling business.
8. Establishing feed plant.
9. Selling of concentrates.
10. Doing job work of grinding and mixing of feed.
11. Milk collection centre.
12. Milk chilling centre.
13. Milk processing plant.
14. Milk products factory
15. Marketing of dairy products.
16. Establishment of dairy parlours.
17. Individual dairy products preparation like softy ice cream, Khoa, Khoa based sweets, channa based sweets, kulfi, Kalakhancjgulab jamun, Rosogolla, paneer, ghee, butter milk powder etc.

For the above opportunities in dairying, the entrepreneur are selected depending upon their interest. Basic theory class will be undertaken common to all and specilized training classes will. be conducted separately for each group. All

details about the product preparation from selection of raw materials, processing, preparation packing and marketing of the particular products.

Practical classes are conducted taking the entrepreneurs to the factories and showing all the steps of operation. The process and difficulties in each steps of product preparation will be explained. Problems arising in each step of operation will be solved. Machine operations will be explained at all the sections of processing. Fault repairing in each and

every break down will be explained. The quality control of products, testing for quality and deviations in the quality are fully shown with samples. The remedies for rectifying the fault products will be explained.

Marketing principles, marketing techniques to be followed to overcome stiff competition steps to improve the quality, if any problems arises in marketing will be explained.

8.3 ENTREPRENEUR CYCLE FOR DAIRYING :

Various Entrepreneur opportunities in dairying were listed in chapter 8.2. These opportunities in dairying will be advertised in the villages. Stimulation of the rural youth to come forward to take self employment with dairying is undertaken. Separate list of entrepreneurs for each opportunity in dairy is prepared. Motivation among rural youth to take up dairying will be initiated by organizing meetings. The organizing people guide the people to select appropriate programme to suit for them, depending upon their human resource, finance, land availability, water source marketing facilities etc. The income out lays for different opportunities of dairying will be placed before the youth.

After selecting entrepreneur for dairying they will be given foundation training which will be common to all opportunities of dairying. In this training basic points like creating infra structure facilities, availability of animals at different places, fodder production, etc will be dealt.

After foundation training, special training will be conducted in groups of common opportunity selected people. Eg. Feed manufacturing unit, heifers & calves management, marketing of milk etc. In this all aspects relating to that particular field will be dealt by highly qualified practical professionals. Practical training will also be undertaken by taking the trainee to dairy farms, feed plant, dairy

plant etc. and detailed training will be given in the line of entrepreneur in interested. The pros and cons of that opportunity will be well explained. The difficulties encountered and solving tricks will be explained.

After these training the entrepreneurs are brought in to line of implementation step. As the entrepreneurs are new, support will be given in the following lines.

- Preparation of project
- Availability of,land
- Purchase of animals, machinery.
- Arrangement of finance
- Marketing avenues.
- Growing of fodder crops.
- Construction of animal sheds / feed plants etc.

A service centre will be installed to help them in the above activities. The persons will give free hand to entrepreneurs at all the stages, but they will guide them to be in proper route.

By establishing dairy farm, plant etc., will not complete the entrepreneurship programme. They should see that these people will sustain initially to grow well. Unless the entrepreneurs are established in their business, it is not fruitful. The organizers will give services for sustaining the business like.

- Expansion of business
- Diversification of business
- Arranging addition capital
- If any problems in repayment of loans, helping by different repayments.
- Quality testing
- Providing need based common facilities
- Explaining changed rules and regulations.

Once the entrepreneur is established in his line of activity the entrepreneurship programme is completed for that batch of entrepreneur.

8.4 ENTREPRENEUR DEVELOPMENT FOR RURAL YOUTH:

The permanent solution to the rural poverty has to be promotion of self employment in rural areas, which in other words would mean entrepreneurial development among the rural poor: A national scheme i.e. "Training of rural youth for self employment" (TRYSEM) was launched on 15th August 1979 as a centrally sponsored program. Under this scheme rural youth 18-35 years of age among the families living below poverty who 'having an aptitude for self employment are identified as the target group. Some of the trades identified are production of mushroom, honey processing, cultivation of medicinal herbs and plants, poultry farming, fruit plants - nursery, processing of fruits and vegetables, veterinary services, collection, storage and marketing of live stock products, sericulture, farm equipment repairing, installation and maintenance of biogas plant, water

pumps, rural transport, masonry, tailoring, small business and retail traders.

The youth are trained either by specially identified institutions or through mobile training. Much emphasis is on practical training where the youth learn by doing so that skills are developed through actual experience. These basic skills are supplemented with entrepreneurial guidance. Training is imparted in simple book keeping, procedures and rules for obtaining bank finance, management of materials etc. The selected youth are also offered, as incentives, monthly stipends during training which I ranges from 3 to 6 months.

Projects for self employment are expected to be discussed and prepared by the youth with the help of development officials. Marketability, feasibility, break-even levels, credit needs, rates of return etc are to be considered in preparing these project profiles. All TRYSEM projects are loan based ventures. The beneficiaries are given an investment subsidy by the district rural development agency (DRDA). TRYSEM Envisages that the banker is involved in the scheme right from the beginning i.e. identification of the beneficiary, the trade and the project so that it is not difficult to make a realistic assessment of the aptitude, performance and credit worthiness of the youth. Raw materials support to the youth is extended through rural marketing and service centres.

Entrepreneurship promotion under self employment (TRYSEM) is significantly different from the same under any other entrepreneurial development program. The risk bearing ability and resource mobilization capacity are poor. His family depends on his income and they are precocious about the outcome his enterprises. The rural youth prefers regular income rather self employment.

The beneficiaries are often guided by the success of local entrepreneurs in which field already saturation is reached. The functional coordination among the various agencies i.e banks, district industries center, DRDA, development officers and the trainers is rather poor. The present training systems are formal, perfunctory and not that much oriented for self employment. The trainers are not bothered about the help and guidance after training. To solve the above problems introduction of vocational training as an integral part of school curriculum and which enable the people to acquire abroad technical background so that they can branch off in to a vocation at any stage. The national development policy no longer relies on wage employment as a permanent solution to the problem of rural employment. The new thrust is or, discovering avenues of self employment.

8.5 PROGRAMMES FOR ENTREPRENEURSHIP DEVELOPMENT IN DAIRYING:

The entrepreneur cycle will have 3 phase i.e

1. Stimulatory phase
 2. Support phase
 3. Sustaining phase
1. Stimulatory phase :- The stimulatory phase consists of the following steps
 - a) Entrepreneurial education: - In rural area meeting should be conducted so as to get the information about self-employment.
 - b) Planned publicity for entrepreneurial opportunities: widely publicity should be given about dairying as an alternative opportunity for taking of self-employment.
 - c) Identification of potential entrepreneurs through scientific methods: Good entrepreneurs should be selected by interview the candidate about there interests his capabilities, resources etc...
 - d) Motivational training to new entrepreneurs: - a motivational training to new selected entrepreneurs should be given so that the entrepreneurs will take the challenge both the physically, mentally and economically.

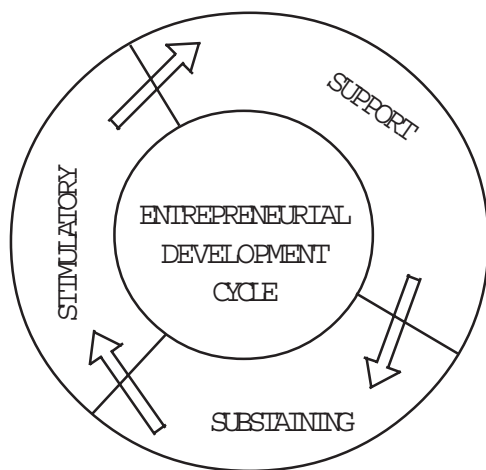
- e) Help and guidance in selected products and preparing project reports
Necessary training may be given to select the size of dairy farm or type of milk processing plants and to prepare necessary project reports.
 - f) Making available techno-economic information and project reports: Necessary technical, economical and- project reports information should be provided to the entrepreneurs.
 - g) Evolving locally suitable new products and process training should be given to evolve new technicians for better management of dairy farm.
 - h) Availability of local agencies with trained personal for entrepreneurial counseling and promotions.
 - i) Creating entrepreneurial forum.
 - j) Recognition of entrepreneurs: - After giving all the training real entrepreneurs should be identified.
- 2) Support phase : Under this the following steps will be followed
- a) Registration of units : The dairy forum or processing centre should be registered with appropriate authorities.
 - b) Arranging finance: Finance for the unit should be arranged from the local banks.
 - c) Providing land, shed , power and water etc : The necessary inputs in the form of land, sheds, power supply, water and necessary items should be providing in market or subsidized price.
 - d) Guidance for selecting and obtaining machinery : Necessary guidance should be given to select dairy animals, machinery like chaff, cutter and processing equipment.
 - e) Supply of scarce raw materials : The inputs like life saving &ugs, mineral mixtures, concentrates should be supplied which one not easily available in the rural areas.

- f) Getting licensees / import licensees : Necessary licencus may be given to start the enter”
- g) Providing common facilities : Common facilities like availability of grazing lands, fodder, vety. Hospital, milk society should be provided.
- h) Granting tax relief / subsidy : The subsidies for the enterprise may be granted from the concerned authority.
- i) Offering management consultancy : Management consultancy may be provided for better management.
- j) Help marketing products : Necessary help may be provide to help in marketing of milk and milk products.
- k) Providing information : Necessary information about prices of milk and milk products, latest managerial techniques etc should be provided.

3. Sustaining phase .

- a) Help modernization : Necessary help may be given modernize the dairy farm or plant.
- b) Help diversification / expansion I substitute production : For diversification in to other business or expansion of present business or substitute product production, necessary advice should-be given.
- c) Additional financing for full capacity utilization.
- d) Deferring repayment / interest : If the dairy farm owner is unable to pay the installments for loan, payments may deferred.
- e) Diagnostic industrial extension / consultancy source.
- f) Production units legislation / policy change.
- g) Product reservation / creating new avenues for marketing.

- h) Quality testing and improving services : Necessary facilities should be provided to test the quality of milk and milk products produced.
- f) Need bpses common facilities center should established.
- 1 Entrepreneurial education.
 - 2 Planned Publicity for Entrepreneurial Opportunities.
 - 3 Identification of potential entrepreneurs through scientific method.
 4. Motivational Training to new entrepreneurs.
 5. Help and guidance in selecting products and preparing project reports.
 6. Making available techno-economic information and project reports.
 7. Evolving locally suitable new products and processes.
 8. Availability of local agencies with trained personnel entrepreneurial counseling and promotions.
 9. Creating entrepreneurial forum.
 10. Recognition of entrepreneurs.



- 1)Registration of unit.
- 2)Arranging Finance.
- 3)Providing land, shed, power, water etc.
- 4)Guidance for selecting and obtaining machinery.
- 5)Supply Of materials.
- 6)Getting licenses / import licenses.
- 7)Providing facilities.
- 8)Granting tax other subsidy.
- 9)Offering management constancy.
- 10)Help marketing product.
- 11)Providing information.

ENTREPERENEURIAL DEVELOPMENT CYCLE

1. Help modernization.
2. Help diversification/expansion/substitute production.
3. Additional financing for full capacity utilization.
4. Deferring repayment/interest.
5. Diagnostic industrial extension/constancy source.
6. Production units legislation/policy change.
7. Product reservation/creating new avenues for marketing.
8. Quality testing and improving services.
9. Need based common facilities centre.

8.6 RISKS IN SELF EMPLOYMENT AND REMEDIES:

Risk may be defined as the stretching one's own abilities to perform. Most of the self employment seeking persons look for a security in their choice for occupation because of fear of failure. However an entrepreneur bears the risk of launching the business. Nonetheless, while opting for risk, they do not like to behave like a gambler. Although both entrepreneur and gambler expect a monetary return after investment, their approach towards risk action is totally different.

Risk taking has a very close relationship with entrepreneurial behavior. The concept of taking a challenge or stretching explains the typical entrepreneurial behavior. An entrepreneur will take risk through very decision being made as entrepreneur. Every time an entrepreneur succeeds, it gives opportunities risk taking constitutes one of the major attributes of entrepreneurship and reinforcing risk behavior is considered as one of the major inputs for motivation-development training. If you want to become an entrepreneur, you need to make decisions at every stage, what kind of business, what would be your product life, the market, the location, technology to be used, sources of finance, purchase of raw material, sales strategy, repayment of loan, personal selection, expansion, diversification and several other issues. You may not have all necessary information and also cannot wait for all complete information, but you need to take decisions and you may have to do it with different degrees of uncertainty.

The different people undertake different types of risk or have different styles. They are

- a) **High risk :** When person does not collect necessary information before making a decision, it is termed high risk. These kind of people do not see the resources or reflect on their experiences and tend to make arbitrary decision. They are increasing the risk through their choice of alternatives with high returns. They may see a low probability of success.
- b) **Low risk :** Some people undertake certain activity, where they will like to ensure hundred percent success, if not more. For them, they do not like to face where ever there is even 1 % chances of failure. But this is not good quality of entrepreneur.
- c) **Moderate risk:** Effective entrepreneurs like to take moderate risk. They under take a lot of calculation about their strengths, capacities and resources. They understand their goal clearly and define their desired outcome in definite terms. They assess various alternatives available to reach the goal () outcome. Their target at -least 40 - 60%. Probability of achieving the desired outcome.

The entrepreneur tend to achieve within their own resources and performance. They like to shoulder responsibilities for their performance. But on failure they own responsibility of being a failure and try to understand the reason of being a failure and would like to-rectify it in the next attempt.

The risk taking behavior is not in born and therefore can be developed. Different persons will have different risk taking orientation by virtue of their background, personality, early socialization and experiences. Some people may have very low risk taking orientation because of their successive failure in early life. If any body want to become an entrepreneur, he has to understand his risk taking style and implication of such a style for entrepreneurship.

SUMMARY

The definitions were explained for entrepreneur and Entrepreneur behavior. Theory and practice of self employment in dairying were very well discussed. The entrepreneur development programme for dairy development was narrated in simple manner. The entrepreneur development among rural youth was

highlighted. The entrepreneur cycle for dairying was explained with help of sketch diagram. The various risks with self employment schemes were very well highlighted.

SHORT QUESTIONS

- 1 Define Entrepreneur?
- 2 What is Entrepreneur behavior ?
- 3 Define self employment?
- 4 What is TRYSEM?f
- 5 What are the three phases of entrepreneur cycle?
- 6 What are the different types o‘ risks?

LONG QUESTIONS

- 1 Write about Entrepreneur and Entrepreneur behavior?
- 2 Briefly write about theory & practice of self employment in dairying?
- 3 Explain the entrepreneur development programme for dairy development.
- 4 Briefly write about entrepreneur development among rural youth?
- 5 Draw sketch diagram of Entrepreneur cycle for dairying?
- 6 Briefly explain about entrepreneur cycle for dairying?
- 7 Write in detail about risk bearing ability under self employment scheme.