Dairy Farming

1. Introduction

Dairying is an important source of subsidiary income to small/marginal farmers and agricultural labourers. In addition to milk, the manure from animals provides a good source of organic matter for improving soil fertility and crop yields. The gobar gas from the dung is used as fuel for domestic purposes as also for running engines for drawing water from well. The surplus fodder and agricultural by-products are gainfully utilised for feeding the animals. Almost all draught power for farm operations and transportation is supplied by bullocks. Since agriculture is mostly seasonal, there is a possibility of finding employment throughout the year for many persons through dairy farming. Thus, dairy also provides employment throughout the year. The main beneficiaries of dairy programmes are small/marginal farmers and landless labourers.

2. Scope for Dairy Farming and its National Importance

India is endowed with the largest livestock population in the world. It accounts for about 57.3 per cent of the world's buffalo population and 14.7 per cent of the cattle population. The value of output of milk is Rs. 3,05,484 crore in 2011-12. The total milk production in the country is 127.9 million tonnes per annum at the end of the Eleventh Plan (2011-12) and the demand is expected to be 180 million tonnes by 2020. To achieve this demand annual growth rate in milk production has to be increased from the present 2.5 % to 5%. The Annual growth rate for production of milk is about 5% in 2011-12. Thus, there is a tremendous scope/potential for increasing the milk production through profitable dairy farming.

3. Financial Assistance Available from Banks for Dairy Farming

For dairy schemes with large outlays, detailed project reports will have to be prepared. The items of finance would include capital asset items such as purchase of milch animals, construction of sheds, purchase of equipment etc. The feeding cost during the initial period of one/two months is capitalised and given as term loan. Cost towards land development, fencing, digging of well, commissioning of diesel engine/pump set, electricity connections, essential servants' quarters, godown, transport vehicle, milk processing facilities etc. can be considered for loan. For high value projects, the borrowers can

utilise the services of NABARD Consultancy Services (NABCONS) who are having wide experience in preparation of Detailed Project Reports.

4. Project Formulation for Bank loan

4.1 Project can be prepared by a beneficiary after consulting local technical persons of State Animal Husbandry Department, DRDA, Dairy Co-operative Society / Union / Federation / commercial dairy farmers. If possible, the beneficiaries should also visit progressive dairy farms and government / military / agricultural university dairy farms in the vicinity and discuss the profitability of dairy farming. A good practical training and experience in dairy farming will be highly desirable. The dairy co-operative societies, if existing in the villages would provide all supporting facilities particularly for marketing of fluid milk. Nearness of dairy farm to such a society, veterinary aid centre, artificial insemination centre should be ensured.

4.2 The project should include the following information on technical, financial and managerial aspects in detail based on type of unit and capacity.

Technical:

a. Land and land development (Location, area, suitability, proximity to road, site map etc.)
b. Proposed capacity / No. of milch animals
c. Civil structures (Sheds, store room, milk room, office quarters, staff room etc.)
d. Equipment and Plant and Machinery (Chaff cutter, Silo pit, Milking machine, Feed grinder and mixer, Milking pails/milk cans, Biogas plant, Bulk coolers, Equipment for manufacture of products, Truck/van)
e. Housing Type of housing (Area requirement – Adults, Heifers (1-3 years), Calves (less than 1 year)
f. Animals (Proposed species, Proposed breed, Source of purchase, Place of purchase, Distance, Cost of animal)
g. Production parameters (Order of lactation, Milk yield (ltrs. per day), Lactation days, Dry days, Conception rate, Mortality(%) – Adults, Young stock)
h. Feeding (Source of fodder and feed - Green fodder, Dry fodder, Concentrates. Fodder crop-rotations- Kharif, Rabi, Summer. Fodder cultivation expenses, Requirement and costs)
i. Breeding Facilities (Source, Location-Distance (km.), Availability of semen, Availability of staff, Expenditure per animal/year)
j. Veterinary Aid Source (Location-Distance (km.), Availability of labour and other staff, Types of facilities available, If own arrangements are made-Employed a veterinary doctor/stockman/consultant, Periodicity of visit, Amount paid/visit (Rs.), Expenditure per animal per year)

k. Electricity (Source, Approval from SEB, Connected load, Problems of power failure, Arrangements for generator)

l. Water (Source, Quality of water, Availability of sufficient quantity for drinking, cleaning and fodder production, If investment has to be made, type of structure, design and cost)

m. Marketing of milk (Source of sales, Place of disposal, Distance (km.), Price realised - (Rs. per liter of milk), Basis of payment, Periodicity of payment

n. Marketing of other products (Animal – age, place of sale, price expected, Manure Qty./animal, Price/unit (Rs.), Empty gunny bags- Number, Cost/bag (Rs.)

Financial:

a. Financial viability (Internal Rate of Return, Benefit Cost Ratio, Net Present Worth)

b. Financial position of the borrowers (Profitability Ratios, Debt Equity Ratio, Whether Income Tax & other tax obligations are paid upto date, Whether audit is up to date)

c. Lending Terms (Rate of Interest, Grace Period, Repayment Period, Nature of Security)

Managerial:

Borrower's profile

a. Individual/Partnership /Company / Corporation/ Co-operative Society /Others

b. Capability in managing the proposed business

c. Experience in proposed activity or others

d. Financial soundness

e. Technical and other special qualifications

f. Technical/ Managerial staff and adequacy there of

Others:

a. Name of the financing bank

b. Training facilities

c. Assistance available from State/ Central Government

d. Regulatory clearances, if any etc.

5. Appraisal of the Project

The scheme so formulated should be submitted to the nearest branch of the bank. The bank's officer can assist in preparation of the scheme or filling in the prescribed application form. The bank will then examine the scheme for its technical feasibility and economic viability.

6. Sanction of Bank Loan and its Disbursement

After ensuring technical feasibility and economic viability, the scheme is sanctioned by the bank. The loan is disbursed in kind in 2 to 3 stages against creation of specific assets such as construction of sheds, purchase of equipment and machinery, purchase of animals and recurring cost on purchase of feeds/fodders for the initial period of one/two months. The end use of the funds is verified and constant follow-up is done by the bank.

7. Lending terms - General

7.1 Outlay

Outlay of the project depends on the local conditions, unit size and the components included in the project. Prevailing market prices may be considered to arrive at the outlay.

7.2 Margin Money

Margin depends on the category of the borrowers and range from 10 to 25%.

7.3 Interest Rate for ultimate borrower

Banks are free to decide the rates of interest within the overall guidelines. However, for working out the financial viability and bankability of the model projects we have assumed the rate of interest as 12 % p.a.

7.4 Security

Security will be as per NABARD/RBI guidelines issued from time to time.

7.5 Repayment period of loan

Repayment period depends upon the gross surplus in the scheme. The loan will be repaid in suitable monthly/quarterly instalments usually within a period of five to seven years.

7.6 Insurance

The animals and capital assets may be insured annually or on long term master policy, where ever it is applicable.

8. Economics of Dairy Farming

A model project with 10 buffaloes is given below. This is indicative and the applicable input and output costs as also the parameters observed at the field level may be incorporated.

A. Capital Cost

Cost of animals	500000
Transportation cost	10000
Construction of animal shed	60000
Construction of calf shed	24000

Cost of Chaff cutter and equipment	60000
Total	**654000**

B. Techno economic parameters

Type of Animal	Graded Murrah Buffalo
No. of Animals	10
No. of animals/batch	5
Cost of Animal (Rs./animal)	50000
Cost of culled animal	5000
Transportation Cost/Animal	1000
Average Milk Yield (litre/day)	10
Floor space (sqft) per adult animal	50
Floor space (sqft) per calf	20
Cost of construction per sqft (Rs.)	120
Cost of chaff cutter (power operated) (Rs.)	50000
Cost of equipment per animal (Rs.)	1000
Insurance premium (% per annum)	5
Veterinary aid/animal/ year (Rs.)	1000
Quantity of Concentrate feed in one bag(kgs.)	50
Cost of concentrate feed (Rs./kg)	12
Cost of dry fodder (Rs./kg)	2
Cost of green fodder (Rs./kg)	1
No. of labourers	1
Salary of labourer per month (Rs.)	4500
Cost of electricity and water/animal/year (Rs.)	150
Margin (%)	25
Rate of interest (%)	12
Repayment period (years)	5
Selling price of milk/litre (Rs./litre)	26
Sale price of gunny bags (Rs.per bag)	10
Lactation days	270
Dry days	150

C. i) Feeding Schedule

Type of feed	**Lactation**			**Dry**	
	Price (Rs.)	**Qty. (kg)**	**Cost Per Day (Rs.)**	**Qty. (kg)**	**Cost Per Day (Rs.)**
Concentrate Feed	12	5	60	2	24
Green Fodder	1	25	25	20	20
Dry Fodder	2	4	8	5	10

Total			**93**		**54**

ii) Total Concentrate Feed Consumed (Kgs.)

Year	Lactaion	Dry	Total	No. of Gunny Bags
Year 1	8250	300	8550	171
Year 2	11250	2700	13950	279
Year 3	11250	2700	13950	279
Year 4	12000	2400	14400	288
Year 5	12000	2400	14400	288

iii) Lactation Chart Per animal

Year	I Batch		II Batch	
	Lactation days	Dry days	Lactation days	Dry days
I	240	30	90	0
II	240	120	210	150
III	210	150	240	120
IV	210	150	270	90
V	210	150	270	90

D. Economics

Particulars	Years				
	1	**2**	**3**	**4**	**5**
Sale of Milk	429000	585000	585000	585000	624000
Sale of Gunny bags	1710	2790	2790	2880	2880
Total	**430710**	**587790**	**587790**	**587880**	**626880**
Cost of feeding during lactation	153450	209250	209250	223200	223200
Cost of feeding during dry period	8100	72900	72900	64800	64800
Veterinary aid and breeding charges	10000	10000	10000	10000	10000
Labour charges	54000	54000	54000	54000	54000
Electricity and misc. charges	1500	1500	1500	1500	1500
Insurance charges	25000	25000	25000	25000	25000
Total	**252050**	**372650**	**372650**	**378500**	**378500**
Surplus	**178660**	**215140**	**215140**	**209380**	**248380**

E. BCR & IRR

	1	2	3	4	5
Capital Costs	654000				
Recurring Cost	252050	372650	372650	378500	378500
Total Costs	906050	372650	372650	378500	378500
Benefit	430710	587790	587790	587880	626880
Net Benefit	-475340	215140	215140	209380	248380

PW Costs @ 15%	1719259.92
PW Benefits @ 15%	1853258.04
NPW	133998.11
B.C. Ratio	1.08
I.R.R. (%)	30%

F. Loan Repayment Schedule

Year	Loan Outstanding	Gross Surplus	Interest	Principal	Total Repayment	Surplus
1	490500	178660	58860	98100	156960	21700
2	392400	215140	47088	98100	145188	69952
3	294300	215140	35316	98100	133416	81724
4	196200	209380	23544	98100	121644	209380
5	98100	248380	11772	98100	109872	138508