Animal Husbandry
Dairy Farming

1. Introduction

Dairying is an important source of subsidiary income to small/marginal farmers and agricultural labourers. 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.

The total milk production in the country for the year 2008-09 was estimated at 108.5 million metric tonnes 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% . Thus, there is a tremendous scope/potential for increasing the milk production through profitable dairy farming.

3.Financial Assistance Available from Banks/NABARD for Dairy Farming.

3.1. Loan from banks with refinance facility from NABARD is available for starting dairy farming.

For obtaining bank loan, the farmers should apply to the nearest branch of a commercial bank, regional rural bank or co-operative bank in their area in the prescribed application form which is available in the branches of financing banks.

3.2. For dairy schemes with very 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 equipments 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/pumpset, electricity connections, essential servants' quarters, godown, transport vehicle, milk processing facilities etc. can be considered for loan. Cost of land is not considered for loan.

4.Scheme Formulation for bank loan

4.1 A Scheme 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. There is a good demand for milk, if the dairy farm is located near urban centre.

4.2 The scheme should include information on land, livestock markets,availability of water, feeds, fodder, veterinary aid, breeding facilities, marketing aspects, training facilities, experience of the farmer and the type of assistance available from State Government, dairy society/union/federation.

4.3 The scheme should also include information on the number and types of animals to be purchased, their breed, production performance, cost and other relevant input and output costs with their description.

Based on this, the total cost of the project, margin money to be provided by the beneficiary, requirement of bank loan, estimated annual expenditure, income, profit and loss statement, repayment period, etc. can be worked out and shown in the Project report. A format developed for formulation of project report for a dairy farm is given as Annexure I.

5.Scrutiny of Schemes by banks.

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.

(A) Technical Feasibility - this would briefly include -

1. Nearness of the selected area to veterinary, breeding and milk collection centre and the financing bank's branch.

2. Availability of good quality animals in nearby livestock market

3. Availability of training facilities.

4.Availability of good grazing ground/lands.

5.Availability of Green/dry fodder, concentrate feed, medicines etc.

6.Availability of veterinary aid / breeding centres and milk marketing facilities near the scheme area.

(B) Economic Viability - this would briefly include -

1. Unit Cost

2. Input cost for feed and fodder, veterinary aid, breeding of animals, insurance, labour and other overheads.

3.Output costs i.e. sale price of milk, manure, gunny bags, male/female calves, other miscellaneous items etc

4.Income-expenditure statement and annual gross surplus.

5.Cash flow analysis.

6. Repayment schedule (i.e. repayment of principal loan amount and interest).

Other documents such as loan application form, security aspects, margin money requirements etc. are also examined. A field visit to the scheme area is undertaken for conducting a techno-economic feasibility study for appraisal of the scheme.

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 equipments 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 5 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. A model project with 10 buffaloes is given as Annexure II. This is indicative and the applicable input and output costs as also the parameters observed at the field level may be incorporated.

Annexure I

Format for Project report preparation - Dairy Farm

1. General

i) Nature and objectives of the proposed scheme

ii) Details of proposed investments

iii) Specification of the project area

iv) Name of the financing bank branch

v) Status of beneficiary:(individual/Partnership/Company/Corporation/Co-operative Society / Others)

vi) Details of borrowers profile

(a) Capability

(b) Experience (c) Financial Soundness

(d) Technical/Other special Qualifications

(e) Technical/Managerial Staff and adequacy thereof

2. Technical aspects :

a) Location, Land and Land Development :

i) Location details of the project

ii) Total Area of land and its cost

iii) Site map

iv) Particulars of land development, fencing, gates, etc.

b) Civil Structures :

Detailed cost estimates along with measurements of various civil structures

- Sheds

- Store room

- Milk room

- Quarters, etc.

i) Breeding Facilities :

i) Source :

ii) Location :

iii) Distance (km.) :

iv) Availability of semen :

v) Availability of staff :

vi) Expenditure per animal/year

j**) Veterinary Aid :**

i) Source

ii) Location

iii) Distance (km.)

iv) Availability of labour and other staff

v) Types of facilities available

vi) If own arrangements are made -

a) Employed a veterinary doctor/stockman/consultant

b) Periodicity of visit

c) Amount paid/visit (Rs.)

vii) Expenditure per animal per year (Rs.)

k) Electricity :

i) Source

ii) Approval from SEB

iii) Connected load

iv) Problems of power failure

v) Arrangements for generator

l) Water :

i) Source

ii) Quality of water

iii) Availability of sufficient quantity for drinking, cleaning and fodder production

iv) If investment has to be made, type of structure, design and cost

m) Marketing of milk :

i) Source of sales

ii) Place of disposal

iii) Distance (km.)

iv) Price realised - (Rs. per liter of milk)

v) Basis of payment

vi) Periodicity of payment

n) Marketing of other products :

i) Animal - age

- place of sale

- price expected

ii) Manure - Qty./animal

Price/unit (Rs.)

iii) Empty gunny bags

- Number

- Cost/bag (Rs.)

o) Beneficiary's experience :

p) Comments on technical feasibility :

q) Government restrictions, if any :

3. Financial Aspects :

i) Project Cost

Sr. No.	Item	Physical Unit and Specification	Cost (Rs.)
1	Capital Costs		
2	Total Capital Costs(A)		
3	Recurring Costs		
4	Total Recurring Costs (B)		
	Total Project Cost (A+B)		

ii) Down payment/margin/subsidy (Indicate source & extent of subsidy):

iii) Financial viability (comment on the cash flow projection on a farm model/unit and enclose the same.)
Particulars :

a) Internal Rate of Return (IRR) :

b) Benefit Cost Ratio (BCR) :

c) Net Present Worth (NPW) :

iv) Financial position of the borrowers (to be furnished in case of corporate bodies/partnership firms)

a) Profitability Ratio :

i) GP Ratio

ii) NP Ratio

b) Debt Equity Ratio :

c) Whether Income Tax & other tax obligations are paid upto date :

d) Whether audit is upto date (enclose copies of audited financial statements for the last three years)

v) Lending Terms :

i) Rate of Interest :

ii) Grace Period :

iii) Repayment Period :

iv) Nature of Security :

v) Availability of Government guarantee wherever necessary :

4. Infrastructural Facilities :

a) Availability of technical staff with bank/implementing authority for monitoring

b) Details of -

i) technical guidance

ii) training facilities

iii) Govt. support /extension support

c) Tie-up arrangements with marketing agencies for loan recovery

d) Insurance -

- Type of policy

- Periodicity

- Rate of premium

e) Whether any subsidy is available, if so amount per unit

f) Arrangements for supply of green fodder and cattle feed

Model Unit Cost and Economics of a 10 Buffalo Unit

A. Project Cost	**Rs.**
Cost of milch animals including transportation cost	330000
Cost of construction of shed for adult animals	60000
Cost of construction of shed for calves	20000

Cost of chaff cutter	50000
Cost of equipment	10000
Capital cost	**470000**
Cost of concentrate feed for first batch for first month	4800
Cost of fodder cultivation in 2 acres	9000
Insurance of first batch of milch animals	16000
Recurring cost	29800
Total cost	**499800**
or say	**500000**
Margin (15%)	**75000**
Bank Loan	**425000**

B. Techno economic parameters	
Type of Animal	Graded Murrah Buffalo
No. of Animals	10
Cost of Animal (Rs./animal)	32000
Transportation Cost/Animal	1000
Average Milk Yield (litre/day)	8
Floor space (sqft) per adult animal	60
Floor space (sqft) per calf	20
Cost of construction per sqft (Rs.)	100
Cost of chaff cutter (power operated) (Rs.)	50000
Cost of equipment per animal (Rs.)	1000
Cost of fodder cultivation (Rs./acre/season)	4500
Insurance premium (% per annum)	5
Veterinary aid/animal/ year (Rs.)	250
Cost of concentrate feed (Rs./kg)	8
Cost of dry fodder (Rs./kg)	1.50
No. of labourers	1
Salary of labourer per month (Rs.)	3000
Cost of electricity and water/animal/year (Rs.)	150

Margin (%)	15
Rate of interest (%)	12
Repayment period (years)	7
Selling price of milk/litre (Rs./kg)	16.50
Sale price of gunny bags (Rs.per bag**)**	10
Lactation days	270
Dry days	150

- Freshly calved animals in 1st or 2nd lactation are purchased in two batches of five animals each at an interval of 5 to 6 months.
- Cost of rearing calves not considered as it will be nullified by their sale value or retention value.
- Fodder cultivation considered in two acres and working capital for one crop / season considered. Two crops considered per year.

D. Calculation of BCR and IRR

	1	**2**	**3**	**4**	**5**	**6**	**7**
Capital Costs	470000						
Recurring Cost	162740	185140	185140	180640	180080	185140	182810
Total Costs	632740	185140	185140	180640	180080	185140	182810
Benefit	278910	322180	322180	295660	292350	322100	322050
Net Benefit	-353830	137040	137040	115020	112270	136960	139240
PW Costs @ 15%	1153513						
PW Benefits @ 15%	1272701						
NPW	119187.8						
B.C. Ratio	1.10 : 1						
I.R.R. (%)	28.66						

E. Repayment schedule

Year	Loan Outstanding	Gross Surplus	Interest	Principal	Total Repayment	Surplus
1	425000	145970	51000	51200	102200	43770
2	373800	137040	44856	51044	95900	41140
3	322756	137040	38731	57169	95900	41140
4	265587	115020	31870	48630	80500	34520
5	216957	112270	26035	52565	78600	33670
6	164392	136960	19727	76173	95900	41060
7	88219	139240	10586	88219	98805	40435