

4 Animal Dairy Farm (4 Crossbred Cow Unit)

1. Introduction

Milk production in major part of the state involves small producers with little or no land, each of them raising one or two non-descript/cross bred jersey cows or buffaloes. They largely depend on crop residues and natural herbage for feeding their animals. Dairying has emerged as a viable enterprise - a part of dynamic agribusiness that is dairying today. Dairy farming has also emerged as a vital cog in any integrated farming. The main advantage is that dairying gives a daily return which can also sustain other activities of seasonal nature. Owing to the suitable climate and availability of inputs many of the farmers are willing to go for Crossbred Cow units.

2. Scope for Dairy Farming & Borrower details.

The progressive dairy farmers who are having experience in the dairy farming and owning land can go for small dairy of about 4 animals. Rangareddy district offers excellent scope for dairy farming since the biggest market for liquid milk as well as milk products, Hyderabad is located very closely and different agencies will be procuring milk at remunerative prices. The unit is proposed by different farmers. The list of farmers who proposed similar units along with their other details like name of the farmer, village, location of the unit, land holding, experience in dairy farming, proposed milk procurement center, proposed veterinary aid center, etc are given in the annexure I. All these farmers will be located in the 16 villages of Dharur mandal in Rangareddy District. The details of these villages are given in annexure.

3. Unit Size

As the farmer has previous experience in dairy farming, and owns about 1 hectare of land and is interested in undertaking dairy farming on a small scale, can take up 4 Crossbred Cow unit, which can be expanded further. These animals may be producing on an average about 15 to 18 litres milk per day.

4. Project Cost

The Project cost of the mini dairy farm includes capital cost on sheds, animals, equipment as well as working capital for one month. Each adult buffalo requires 40 sq.ft of covered space and 14 Sq. Ft of covered area for calves. A shed with a asbestos roofing, cement flooring and manger (@ Rs. 100/sq.ft) would be ideal. Good quality Crossbred Cows with an average milk yield of 15–18 litre per day are available at Rs. 42,000 including transport cost. Equipment required for the unit include buckets & utensils for feeding / watering/milking etc., and it may cost around Rs. 250 per animal. Working capital is required for the first animal for one month which covers the cost of feeding and insurance. Based on the above norms, the project cost of the ten animal unit would be as given as follows -

Particulars	Cost (Rs.)
A. Capital Cost	
Cost of Crossbred Cows (4 animals; Rs. 42000 each)	168000
Cost of construction of shed for cows @ 40 Sq. ft per animal for 4 Cows @Rs.100 per Sq.ft	16000
Cost of construction of shed for calves @ 14 Sq. ft per animal for 2 calves @ Rs. 100 per SQ.ft	2800
Other equipment	3000
Sub Total	189800
B. Working capital	
Feed cost (considered for one month)	7943
Insurance	6720

Labour cost	4000
Medicines	1500
Veterinary aid	1500
Power supply	1000
Fodder cultivation charges	12500
Sub Total	35163
Total Outlay	224963
Promoters margin	56241
Bank Loan	168722

5. Source of Funding

Borrower will provide a margin of 25% of the project cost as their share and the rest is considered as bank loan. The nearest bank branch will be approached for the purpose.

6. Techno-Economic Assumptions

The following assumptions have been taken for working out the income and expenditure from the dairy unit -

- A Crossbred Cow producing not less than 4500 litres of milk during one lactation is considered for purchasing. In the project, good quality Crossbred Cows in second or third lactation, yielding an average daily milk yield of 16 litres will be purchased at a cost of Rs. 42000 per animal, including the transportation cost.
- Animals which are recently calved (within 30 days of calving) with a female calf on foot (preferably) would be ideal as foundation stock. These animals will be purchased in two batches of five animals each with an interval of 4 to 6 months between each batch, so as to maintain constant milk supply all through the year. (The second batch of animals may be in 5 to 6 month pregnant animals with known milk production during the previous lactation, in such a case the cost of animals will be less and remaining amount of loan will be used for maintaining the animal for 4 to 5 months.)
- For economic milk production, the dairy animals should have an inter calving period of around 390 days, of which, 285 days will be lactation days and the rest (105 days) will be dry days.
- The animal after calving will be inseminated in the second heat so that the inter calving period will not be prolonged. The services of local veterinarian or the lay inseminator available will be utilised for the purpose.
- Based on an inter calving period of 390 days, the lactation chart for the animal farm is given below.

Year	I Batch		II Batch		Total	
	Lactation days	Dry days	Lactation days	Dry days	Lactation days	Dry days
I	520	210	360	0	880	210
II	560	170	520	210	1080	380
III	570	160	520	210	1090	370
IV	570	160	520	210	1090	370
V	570	160	520	210	1090	370

- The animals can be kept economically for a minimum of 5 lactations and then they are culled and the value is considered at Rs. 3000 per animal.

- Income from sale of calves is not taken into consideration. Male calves will be sold within 1-3 months after birth and the income will be marginal. Female calves can be grown to replace the adults and the expenditure on feeding of these calves will compensate the replacement cost.
- Feeding is the single largest item of expenditure in dairying. The feeding of dairy animals comprises of fodder (Green and dry) and concentrate feed. Of the total fodder given, two thirds should be in the form of greens (Cultivated fodder and natural fodder) and one third should be dry fodder. Concentrate feed is given in proportion to their production (1 kg for every 2.5 to 3.0 litres of milk production) as well as for maintenance (1 kg per day). The appropriate feeding schedule for lactation period and dry period is given below -

	Lactation Period		Dry Period	
	Quantity(Kg)	Cost (Rs.)	Quantity(Kg)	Cost (Rs.)
i. Concentrate Feed				
For milk (1 kg/2.0 litre)	6	10	0	10
For Maintenance+preg.	1	10	1.0	10
ii. Green Fodder	20	1.00	20	1.0
iii. Dry Fodder	6	1.5	6	1.5

- A chaff cutter is also proposed in the unit to reduce the wastage of fodder. The cost of green fodder and dry fodder were considered based on the assumption that these will be purchased from the market. Since all the borrower is having his own land and cultivates the fodder the cost towards green fodder can be utilized for fodder cultivation. The fodder cultivation cost in the first year was capitalized.
- Insuring the dairy animals against epidemics, natural calamities etc., is needed to minimise the risk. The premium per animal per year is taken at 4% of the cost of the animal (Rs. 1680 approx.).
- Animals needs to be vaccinated against diseases which are endemic in the area. A schedule of vaccination will be prepared in consultation with the local veterinarian. The cost of veterinary aid per animal per year would be in the range of Rs. 1500 per year, which is inclusive of treatment cost for calf.
- Dairy farming is a labour intensive activity. Two labour will be utilized for the purpose.
- The milk produced will be supplied to the proposed Bulk Milk Chilling Unit located in the vicinity and the sale price of the milk is taken at Rs. 15 per litre of milk. Income from manure would be at Rs. 1000/animal/year.

7. Projected Profitability

The project profitability of the dairy unit based on the above assumptions is given below

Particulars	I year	II year	III year	IV year	V year
Income:					
a. By sale of Milk	211200	259200	261600	261600	261600
b. By sale of Manure	3000	4000	4000	4000	4000
Total	214200	263200	265600	265600	265600
Expenditure:					
1. CONCENTRATE FEED	63700	79400	80000	80000	80000
2. GREEN FODDER	21800	29200	29200	29200	29200
3. DRY FODDER	9810	13140	13140	13140	13140
4. VETERINARY AID	4000	4000	4000	4000	4000
5. INSURANCE	6720	6720	6720	6720	6720

6. ELECTRICITY	5000	5000	5000	5000	5000
7. LESS CAPITALISED EXPENDITURE	35163				
Total	75867	137460	138060	138060	138060
Net Income	138333	125740	127540	127540	127540

It is assumed that labour will be provided by the borrower and their family with out engaging any labour from outside. The net income from a dairy unit of 4 Crossbred Cows will be around Rs. 127540 to 138833 per year.

8. Financial Analysis

The financial analysis for the project is given below -

Particulars	I year	II year	III year	IV year	V year
Cost:					
Capital Cost	224963				
Recurring cost	75867	137460	138060	138060	138060
Total Cost	300830	137460	138060	138060	138060
Benefits	214200	263200	265600	265600	265600
Total Benefit	214200	263200	265600	265600	265600
Net Benefit	-86630	125740	127540	127540	127540
Discount Factor at 15 %	0.87	0.76	0.66	0.57	0.50
BCR	1.39: 1				
NPV	240838				
IRR	More than 100 %				

As seen above, the project is highly viable with BCR, NPV and IRR at 1.39:1; Rs. 240838 and more than 100% respectively.

9. Repayment Period

The repayment schedule proposed in monthly instalments starting from second month and the total repayment period prescribed is for 59 months. A total repayment period of five years is proposed. The monthly repayment schedule is given in the annexure. After repaying the instalments the borrower will be left with an average income of Rs. 6921/- per month with a DSCR of 2.76. Detailed monthly repayment schedule is given in Annexure 2.

If the project is covered under Pavalavaddi Scheme of GoAP, the interest burden will be further reduced. Under the scheme, the interest burden will be only 25 % of that shown above and hence the net surplus will be higher by that amount. It is eligible for Capital Subsidy under DEDS of NABARD/GOI also.

10. Conclusion

As seen above, the Dairy project is financially viable and bankable. Considering the demand for the milk and milk products as well as the assured marketing being facilitated by the milk processing unit, dairy farming appears to be the ideal subsidiary activity and the bank is requested to sanction the loan for the account.

Annexure II

REPAYMENT SCHEDULE MONTHLY IN STALLMENTS

(AMOUNT IN RUPEES)

MONTHS	LOAN OUTSTANDING AT THE BEGINNING OF THE MONTH	INTEREST	NET INCOME	PRINCIPAL PAID	TOTAL REPAYMENT	SURPLUS	DSCR
1	168722	1887	11528		1887	9641	
2	168722	1887	11528	3000	4887	6641	2.36
3	165722	1855	11528	3000	4855	6673	2.37
4	162722	1822	11528	3000	4822	6706	2.39
5	159722	1790	11528	3000	4790	6738	2.41
6	156722	1757	11528	3000	4757	6771	2.42
7	153722	1725	11528	3000	4725	6803	2.44
8	150722	1692	11528	3000	4692	6836	2.46
9	147722	1660	11528	3000	4660	6868	2.47
10	144722	1627	11528	3000	4627	6901	2.49
11	141722	1595	11528	3000	4595	6933	2.51
12	138722	1562	11528	3000	4562	6966	2.53
13	135722	1530	10478	3000	4530	5948	2.31
14	132722	1497	10478	3000	4497	5981	2.33
15	129722	1465	10478	3000	4465	6013	2.35
16	126722	1432	10478	3000	4432	6046	2.36
17	123722	1400	10478	3000	4400	6078	2.38
18	120722	1367	10478	3000	4367	6111	2.40
19	117722	1335	10478	3000	4335	6143	2.42
20	114722	1302	10478	3000	4302	6176	2.44
21	111722	1270	10478	3000	4270	6208	2.45
22	108722	1237	10478	3000	4237	6241	2.47
23	105722	1205	10478	3000	4205	6273	2.49
24	102722	1172	10478	3000	4172	6306	2.51
25	99722	1140	10628	3000	4140	6488	2.57
26	96722	1107	10628	3000	4107	6521	2.59
27	93722	1075	10628	3000	4075	6553	2.61
28	90722	1042	10628	3000	4042	6586	2.63
29	87722	1010	10628	3000	4010	6618	2.65
30	84722	977	10628	3000	3977	6651	2.67
31	81722	945	10628	3000	3945	6683	2.69
32	78722	912	10628	3000	3912	6716	2.72
33	75722	880	10628	3000	3880	6748	2.74
34	72722	847	10628	3000	3847	6781	2.76
35	69722	815	10628	3000	3815	6813	2.79
36	66722	782	10628	3000	3782	6846	2.81
37	63722	750	10628	3000	3750	6878	2.83
38	60722	717	10628	2500	3217	7411	3.30
39	58222	690	10628	2500	3190	7438	3.33
40	55722	663	10628	2500	3163	7465	3.36
41	53222	636	10628	2500	3136	7492	3.39
42	50722	609	10628	2500	3109	7519	3.42
43	48222	582	10628	2500	3082	7546	3.45
44	45722	555	10628	2500	3055	7573	3.48
45	43222	528	10628	2500	3028	7600	3.51
46	40722	501	10628	2500	3001	7627	3.54
47	38222	474	10628	2500	2974	7654	3.57
48	35722	446	10628	2500	2946	7682	3.61
49	33222	419	10628	3500	3919	6709	2.71
50	29722	381	10628	3500	3881	6747	2.74

51	26222	344	10628	3500	3844	6784	2.76
52	22722	306	10628	3500	3806	6822	2.79
53	19222	268	10628	3500	3768	6860	2.82
54	15722	230	10628	3500	3730	6898	2.85
55	12222	192	10628	3500	3692	6936	2.88
56	8722	154	10628	3500	3654	6974	2.91
57	5222	116	10628	3500	3616	7012	2.94
58	1722	78	10628	1722	3578	7050	2.97
59	0		10628			10628	
	0			168722	Average DSCR		2.76