

4 Animal Dairy Farm (4 Graded Murrah Buffalo 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. Buffalo plays a significant role in milk production of the state. It 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.

2. Scope for Dairy Farming & Borrower details.

The dairy farmers who are having experience in the dairy farming and owning land can go for a 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.

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 Graded Murrah buffalo unit, which can be expanded further. These animals may be producing on an average about 10 to 12 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 graded buffaloes with an average milk yield of 10–12 litre per day are available at Rs. 45,500 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 Graded Murrah Buffaloes (4 animals; Rs. 45500 each)	182000
Cost of construction of shed for buffaloes @ 40 Sq. ft per animal for 4 buffaloes @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
Chaff cutter	2000
Other equipment @ Rs. 250 per animal	1000
Sub Total	203800
B. Working capital	
Feed cost(considered for one month)	7126
Insurance	5460
Labour cost	0
Medicines	1200
Veterinary aid	1200

Power cost	1000
Fodder cultivation	12500
	28486
Total Outlay	232286
Promoters margin (25% of Total Outlay)	58071
Bank Loan	174214

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 Graded Murrah Buffalo producing not less than 3100 litres of milk during one lactation is considered for purchasing. In the project, good quality graded buffaloes in second or third lactation, yielding an average daily milk yield of 11 litres will be purchased at a cost of Rs. 45500 per animal.
- 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 430 days, of which, 280 days will be lactation days and the rest (150 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 intercalving period of 430 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	500	230	360		860	230
II	560	170	430	300	990	470
III	530	200	430	300	960	500
IV	430	300	430	300	860	600
V	430	300	530	200	960	500

- 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 2.0 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)	5	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.
- 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.1820 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. 1200 per year, which is inclusive of treatment cost for calf.
- Dairy farming is a labour intensive activity. Family labour of the borrower will be utilised for the purpose and in addition one labour will be engaged for looking after the unit..
- 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. 24 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	227040	261360	253440	227040	253440
b. By sale of Manure	3000	4000	4000	4000	4000
Total	230040	265360	257440	231040	257440
Expenditure:					
1. CONCENTRATE FEED	53900	64100	62600	57600	62600
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	7280	7280	7280	7280	7280
6. ELECTRICITY	3000	3000	3000	3000	3000
7. LESS CAPITALISED	28486				

EXPENDITURE					
Total	71304	120720	119220	114220	119220
Net Income	158736	144640	138220	116820	138220

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 Graded Murrah buffaloes will be around Rs.116820 to 158736 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	232286				
Recurring cost	71304	120720	119220	114220	119220
Total Cost	303590	120720	119220	114220	119220
Benefits	230040	265360	257440	231040	257440
Total Benefit	230040	265360	257440	231040	257440
Net Benefit	-73550	144640	138220	116820	138220
Discount Factor at 15 %	0.87	0.76	0.66	0.57	0.50
BCR	1.48: 1				
NPV	272860				
IRR	More than 100%				

As seen above, the project is highly viable with BCR, NPV and IRR at 1.48:1; Rs.272860 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. After repaying the instalments the borrower will be left with an average income of Rs. 7675/- per month with an average DSCR of 2.93. 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 DEEDS 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	INTERES T	NET INCOME	PRINCIP AL PAID	TOTAL REPAY MENT	SURPL US	DSCR
1	174214	1887	13228		1887	11341	
2	174214	1887	13228	3000	4887	8341	2.71
3	171214	1855	13228	3000	4855	8373	2.72
4	168214	1822	13228	3000	4822	8406	2.74
5	165214	1790	13228	3000	4790	8438	2.76
6	162214	1757	13228	3000	4757	8471	2.78
7	159214	1725	13228	3000	4725	8503	2.80
8	156214	1692	13228	3000	4692	8536	2.82
9	153214	1660	13228	3000	4660	8568	2.84
10	150214	1627	13228	3000	4627	8601	2.86
11	147214	1595	13228	3000	4595	8633	2.88
12	144214	1562	13228	3000	4562	8666	2.90
13	141214	1530	12053	3000	4530	7523	2.66
14	138214	1497	12053	3000	4497	7556	2.68
15	135214	1465	12053	3000	4465	7588	2.70
16	132214	1432	12053	3000	4432	7621	2.72
17	129214	1400	12053	3000	4400	7653	2.74
18	126214	1367	12053	3000	4367	7686	2.76
19	123214	1335	12053	3000	4335	7718	2.78
20	120214	1302	12053	3000	4302	7751	2.80
21	117214	1270	12053	3000	4270	7783	2.82
22	114214	1237	12053	3000	4237	7816	2.84
23	111214	1205	12053	3000	4205	7848	2.87
24	108214	1172	12053	3000	4172	7881	2.89
25	105214	1140	11518	3000	4140	7378	2.78
26	102214	1107	11518	3000	4107	7411	2.80
27	99214	1075	11518	3000	4075	7443	2.83
28	96214	1042	11518	3000	4042	7476	2.85
29	93214	1010	11518	3000	4010	7508	2.87
30	90214	977	11518	3000	3977	7541	2.90
31	87214	945	11518	3000	3945	7573	2.92
32	84214	912	11518	3000	3912	7606	2.94
33	81214	880	11518	3000	3880	7638	2.97
34	78214	847	11518	3000	3847	7671	2.99
35	75214	815	11518	3000	3815	7703	3.02
36	72214	782	11518	3000	3782	7736	3.05
37	69214	750	9735	3000	3750	5985	2.60
38	66214	717	9735	2500	3217	6518	3.03
39	63714	690	9735	2500	3190	6545	3.05
40	61214	663	9735	2500	3163	6572	3.08
41	58714	636	9735	2500	3136	6599	3.10
42	56214	609	9735	2500	3109	6626	3.13
43	53714	582	9735	2500	3082	6653	3.16
44	51214	555	9735	2500	3055	6680	3.19
45	48714	528	9735	2500	3028	6707	3.21
46	46214	501	9735	2500	3001	6734	3.24
47	43714	474	9735	2500	2974	6761	3.27

48	41214	446	9735	2500	2946	6789	3.30
49	38714	419	11518	3500	3919	7599	2.94
50	35214	381	11518	3500	3881	7637	2.97
51	31714	344	11518	3500	3844	7674	3.00
52	28214	306	11518	3500	3806	7712	3.03
53	24714	268	11518	3500	3768	7750	3.06
54	21214	230	11518	3500	3730	7788	3.09
55	17714	192	11518	3500	3692	7826	3.12
56	14214	154	11518	3500	3654	7864	3.15
57	10714	116	11518	3500	3616	7902	3.19
58	7214	78	11518	3500	3578	7940	3.22
59	3714	40	11518	3714	3755	7763	3.07
	0			174214	Average DSCR		2.93