

Exercise 68.1

Project for cows dairy farming

- I. Importance
- II. Objectives
- III. Location
- IV. Ownership and Financial Status
- V. Housing :
 - (a) Sheds for cows and calves
 - (b) Store and offices
 - (c) Land under fodder
- VI. Equipments
- VII. Management
- VIII. Cost and income

ASSUMPTIONS

1. **Purchase of Animals.** Animals in second lactation during first month after calving along with female calves will be purchased in two batch, sixty per cent () in first batch and forty per cent () in second batch at an interval of 6 months. Ratio of milch cows to dry cows = 3 : 1 ; with optimum productive and reproductive traits
2. **Milk production.** (a) Crossbred Cows – 10 kg per day and Murrah buffaloes as 9 kg per day on an average in lactation.
(b) Sale price of milk @ Rs. 12 per kg in cows and 14 per kg buffalo milk.
3. **Cost of Animals :**

Crossbred cows	Rs. 20,000.00
Murrah buffaloes	Rs. 25,000.00
4. **Housing.** (a) Animal shed Rs. 1,000.00 per m²
Office and store Rs. 1,200.00 per m²
(b) Floor space per adult 2 m², with loafing area of 4.5 m² and calves 1 m² per animal.
5. **Year.** Taken as 12 months or 365 days.
6. **Lactation Period.** 300 days (range 280 to 305).

22. Manure. Four tones of manure per animal per year @ Rs. 250 per tonne.
 23. Loan. 75 per cent of the capital cost.
 24. Interest. @ 14% per annum on the basis of yearly repayment of loan instalment.
 25. Prices of feed and milk. Shown as same for 5 years.
 26. Cultivable Land. Cultivable land fully irrigated and fertile of 3 acres will be sufficient 10 animals to supply green fodder round the year. or, 1.5 hectare for 8 to 10 dairy cows.
 27. Replacement of milch animals. After 7 lactations, difficult to breed and culled ones @ 10 per cent ; sale price of culled @ 40 per cent of their purchase cost.
 28. Ratio of milch animals to dry cows. 3 : 1 keeping in view their optimum values of reproductive and productive traits.

28. Capital Expenses of Fixed cost or Non Recurring Expenses for A Unit of 30 Milch Cows.

Items	Cost Rs.
1. Cost of milch animals @ Rs. 20,000 per crossbred cow	
2. Cost of shed construction @ 3 sq m/adult × Rs. 1,000 per sq.m. (3 × 30 × 1,000)	6,00,000
3. Cost of calf shed @ 1.5 sq m. / calf 1.5 × 20 calves × Rs. 1,000 per sq m.	90,000
4. Office store, dispensary, A. I. etc. @ Rs. 1,500 per m ² × 2 × 15 m ²	30,000
5. Equipments—milk pails, buckets, tie chains, cans, carts, chaff cutter	45,000
6. Cost of Borewell, pumpset etc.	1,50,000
7. Cost of silo pit	1,65,000
8. Miscellaneous	50,000
	70,000
Total	12,00,000
Loans 75% of the capital cost Rs. 9,00,000	

LACTATION PERIOD IN DAYS

Particulars	First Year	2nd Year	3rd Year	4th Year	5th Year	Total days
First batch of 18 cows (60%) 300 days × cows 18	4860 @270d/ per cow	5400 @300d/ per cow	5400	5400	4860 @ 270d/ per cow	25920
Second batch of 12 cows (40%) 300 days × cows 12	3240	3600	3600	3600	3240	17,280
Born in herd	-----	-----	1500 6 @ 250 days	2430 9 @ 270 days	4500 15 @300 days	8430
Total	8100	9000	10500	11430	12600	51630

DRY PERIOD IN DAYS

	1st Year	2nd Year	3rd Year	4th Year	5th Year	Total
1st Batch 18 cows 60 days × cows				1,170	1,710	6,930
2nd batch 12 cows @ 60 days × cows	1,710	1,170	1,170	780	1,140	4,620
Born in herd			690	855	975	2,520
Total	2,850	1,950	2,640	2,805	3,825	14,070

7. **Dry Period.** 80 days in cows and 120 days in buffaloes.
8. **Female Calves.** Female calves born in herd calve at $2\frac{1}{2}$ years in cows and at $3\frac{1}{2}$ years in buffaloes.
9. **Depreciation.** (a) The depreciation on shed will be 5 per cent per year. However, this will not be taken into consideration during loan repayment period.
(b) On equipment 10 per cent of the cost.
10. **Maintenance Ration.** The body weight of cows is taken as 400 kg and buffaloes 500 kg. Maintenance ration is provided by 3 per cent dry matter per 100 kg weight of buffaloes and 2 per cent per 100 kg body weight of cows. Green fodder has 25% dry matter and dry roughages and concentrates have 90% dry matter.
11. **Production Ration.** This will be provided by feeding one kg for buffaloes concentrates for every $2\frac{1}{2}$ kg for buffaloes and 1 kg for every 3 kg milk in cows.
12. **Dairy Feed cost.** (a) Green fodder @ Rs. 40 per qt.
(b) Dry fodder (Bhusa) @ Rs. 130 per qt.
(c) Concentrates @ Rs. 700 per qt.

Feed	Cows in				Buffaloes in			
	Lactation		Dry Period		Lactation		Dry Period	
	Amt. kg.	Cost Rs.	Amt. kg.	Cost Rs.	Amt. kg.	Cost Rs.	Amt. kg.	Cost Rs.
I. Green Fodder @ 40 paisa per kg	20	8.00	10	4.00	25	6.00	10	4.00
II. Dry Fodder @ Rs. 1.30 kg.	4	5.20	5	6.50	7	9.10	8	10.40
III. Concentrates @ 7 per kg	4	28.00	2	14.00	4	28.00	2	14.00
Total		41.20		24.50		43.10		28.40

13. **Feeding During Dry Period.** Concentrates @ 2 kg per adult per day.
14. **Calves Sex Ratio.** 50% Male and 50% Females.
15. **Female Calf Feeding Expenditure.** Rs. 1,500 during first year and Rs. 2,000 during subsequent years until calving.
16. **Male Calf Feeding Expenses.** Equal to the income received by their sale.
17. **Mortality in Calves.** In adult 3 per cent and 15 to 20 per cent in calves.
18. **Cattle Insurance.** Annual premium of 4 per cent of the cost of animal.
19. **Veterinary Vaccination and Artificial Insemination Charges.** Rs. 200 per animal in a year.
20. **Labour.** One labourer for 10 animals @ Rs. 1,200 P.M.
21. **Calved Animals and Income :**
 - (a) If the milk production is less or if the animals are reproductively inefficient, they have to be removed and replaced by newly purchased/raised (on the farm) animals, during first three years at the rate of one per year.
 - (b) Income from calved animal approximately @ $\frac{1}{3}$ of the purchase cost.

ANNUAL RECURRING EXPENDITURE (Rs.)

	1st Year	2nd Year	3rd Year	4th Year	5th Year	Total
1. Feeding during lactation (days × cost/day)	3,33,720	3,70,800	4,32,600	4,70,916	5,19,120	21,27,156
2. Feed during dry period (days × cost/day)	69,825	47,775	64,860	68,722	93,713	3,44,795
3. Calf feeding @ 1500/- calf × calves (10 calves)	15,000	22,000 (10 + 8) Calves	31,000	44,500	67,000	1,79,500
4. Cattle insurance @ 4% of animal cost	24,000	24,000	28,800	31,200	36,000	1,44,000
5. Veterinary aid @ 200/- per animal	6,000	6,000	7,200	7,800	9,000	36,000
6. Labour @ one for 10 animals @ Rs. 1200/- p.m.	43,200	43,200	43,200	57,600	57,600	2,44,800
Total	Rs. 4,91,745	5,13,775	6,07,660	6,80,738	7,82,433	30,76,371

INCOME (Rs.)

Item	1st Year	2nd Year	3rd Year	4th Year	5th Year	Total
(a) Milk (days × yield × rate)	1166400	1296000	1512000	1645920	1814400	7434720
(b) Manure (yield × rate) 4 × 30 × 250	30000	30000	36000	39000	45000	180000
(c) Sale of culled animals (1/3 of the cost purchased)	—	—	—	—	—	—
Total	1196400	1326000	1548000	1684920	1859400	7614720
I. Total Income (Rs.)	1196400	1326000	1548000	1684920	1859400	7614720
II. Total Expenditure (Rs.)	491745	513775	607480	680738	782433	3076171
III. Total Profit (I – II)	704655	812225	940520	1004182	1076967	4538549
IV. Average number of dairy animals/year	30	30	36	39	45	30
V. Profit per dairy animal	23488	27074	26125	25748	23932	126070.8

PROFIT AFTER DEDUCTION OF LOAN AND INTEREST PAYMENTS (Rs.)

Item	1st Year	2nd Year	3rd Year	4th Year	5th Year	Total
1. Total Profit	704655	812225	940520	1004182	1076967	4538549
2. Loan instalments	180000	180000	180000	180000	180000	900000
3. Interest (14%)	126000	100800	75600	50400	25200	378000
4. Loan instalment + interest	306000	280800	255600	230400	205200	1278000
5. Profit after deducting loan + interest	398655	531425	684920	773782	871767	3260549
6. Monthly net Profit	33221	44285	57076	64481	72647	54342