

**Model 'Detailed Project Report' (DPR) for setting up small-scale, medium-scale and large-scale silage manufacturing units.**

**1.0: Overview of the operational context:**

Describe the details of the proposed operational area in terms of:

- dairy animal population
- estimated demand for green fodder
- availability/ deficit of fodder etc.

**2.0: Rationale for the proposed project:**

As per your assessment what is the need for putting up the silage manufacturing plant of the desired capacity.

Indicative manufacturing capacities for small-scale silage manufacturing unit is 1 Metric Ton (MT) per Hour or 8 MT in a single shift. For medium-scale silage manufacturing unit the indicative capacity is 2 MT per hour or 16 MT in a single shift of eight working hours. For a large-scale manufacturing unit the indicative capacity is 10 MT per hour or 80-100 MT per shift.

**3.0: Project objectives:**

Indicative project objectives are specified below. The entrepreneur may wish to expand on the same and add new ones.

- Preparation and supply of quantity of silage to dairy farmers/ other buyers.
- Creation of a demand-base for good quality silage among dairy farmers.

**4.0: SWOT (Strengths, Weaknesses, Opportunities, Threats) analysis of the proposer with justification of the plans to capitalize on the strengths and opportunities while mitigating risks and weaknesses.**

This may broadly cover the following aspects:

- 4.1: Product related.
- 4.2: Price related.
- 4.3: Extension/marketing related.

**5.0: Necessary pre-requisites** (check-list) for success in this activity are given below.

You may indicate in the project report, the status of the below mentioned features and plans for the same.

- Suitability of land/soils for cultivation of fodder crops.

- Status of rainfall/ availability of irrigation facility throughout the year.
- Access to land for fodder crop cultivation/ arrangement for the same.
- Access to expert guidance / training with regard to crop selection, recommended agronomic practices for crop production as well as 'Silage making' dos and don'ts that are indispensable for quality silage production.
- Access to the right machinery for crop harvesting, chaffing, baling/compression.
- Robust demand generation activity to ensure easy off-take of the enriched silage.

## **6.0: Project details:**

*6.1 Proposed location:*

*6.2 Proposed capacity of the silage manufacturing unit:*

*6.3 Land availability:*

Indicative land requirement is 1000 sqm, 2000 sqm and 5000 sqm land would be required for setting up of silage making unit of 8 MTPD, 16 MTPD and 100 MTPD capacity, respectively, which includes area for silage storage space.

*6.4: Details of machinery:*

- Horsepower of the Tractor
- Capacity of Forage harvester (acres per hour)
- Capacity of Chopper-loader (Metric Tons per hour)
- Capacity of Baling Unit (Bales per hour)

*6.5 Manpower recruitment/hiring plans:* Manpower would be required for essential areas such as harvesting, production, sale, stores etc.

The arrangement for recruitment/hiring of manpower may be mentioned.

## **7.0: Project viability:**

Estimates of capital expenditure, revenue expenditure, operational costs, gross margin, net margin etc. may be mentioned. Also other financial parameters such as Break-even period etc. may be mentioned.

An indicative format for the same is provided in Annexure I.

Annexure II provides indicative estimates of the capital expenditure, revenue expenditure and income for small-scale, medium scale and large-scale silage manufacturing units.

## Annexure I

| Particulars  | Unit  | Figure | Yr 1 | Yr 2 | Yr 3 | Yr 4 | Yr 5 |
|--|-------|--------|------|------|------|------|------|
| Capacity of silage making unit in Metric Tons Per Day (MTPD) |       |        |      |      |      |      |      |
| Annual Silage Production (MT)                                |       |        |      |      |      |      |      |
| <b>Total Production</b>                                      |       |        |      |      |      |      |      |
| <b>Sales</b>   |       |        |      |      |      |      |      |
| Average Silage Sales (MT)                                    |       |        |      |      |      |      |      |
| <b>Total</b>   |       |        |      |      |      |      |      |
| <b>Operating Revenue (Rs Lakh):</b>                          |       |        |      |      |      |      |      |
| Silage   | Rs/MT |        |      |      |      |      |      |
| <b>Total Operating Income</b>                                |       |        |      |      |      |      |      |
| Raw Material (Green fodder)                                  | Rs/MT |        |      |      |      |      |      |
| <b>Total Raw Material Cost</b>                               |       |        |      |      |      |      |      |
| <b>Gross Margin</b>  |       |        |      |      |      |      |      |
| <b>Variable Costs :</b>                                      |       |        |      |      |      |      |      |
| <b>Processing Cost -</b>                                     |       |        |      |      |      |      |      |
| Cost of Power (electricity)                                  | Rs/MT |        |      |      |      |      |      |
| Cost of Fuel   | Rs/MT |        |      |      |      |      |      |
| Packing Cost   | Rs/MT |        |      |      |      |      |      |
| Repairs & Maintenance  | Rs/MT |        |      |      |      |      |      |
| Freight  | Rs/MT |        |      |      |      |      |      |
| Material Handling  | Rs/MT |        |      |      |      |      |      |
| Labour & Overheads - Variable                                | Rs/MT |        |      |      |      |      |      |
| Distribution Channel Commission - Silage                     | Rs/MT |        |      |      |      |      |      |
| Other Variable Cost  | Rs/MT |        |      |      |      |      |      |
| <b>Total Variable Costs</b>                                  |       |        |      |      |      |      |      |
| <b>Contribution</b>  |       |        |      |      |      |      |      |
| <b>Per KG contribution</b>                                   |       |        |      |      |      |      |      |

| Particulars                     | Unit       | Figure | Yr 1 | Yr 2 | Yr 3 | Yr 4 | Yr 5 |
|---------------------------------|------------|--------|------|------|------|------|------|
| <b>Fixed Costs -</b>            |            |        |      |      |      |      |      |
| Salaries                        |            |        |      |      |      |      |      |
| Salaries of outsourced manpower |            |        |      |      |      |      |      |
| General & Admin exp             |            |        |      |      |      |      |      |
| <b>Total Fixed Cost</b>         |            |        |      |      |      |      |      |
| <b>EBITDA</b>                   |            |        |      |      |      |      |      |
| <b>Financing Cost</b>           |            |        |      |      |      |      |      |
| Interest on New Investments     |            |        |      |      |      |      |      |
| Interest on working capital     |            |        |      |      |      |      |      |
| <b>Depreciation</b>             |            |        |      |      |      |      |      |
| Depreciation                    |            |        |      |      |      |      |      |
| <b>Profit Before Tax</b>        |            |        |      |      |      |      |      |
| <b>Tax</b>                      |            |        |      |      |      |      |      |
| <b>Profit After Tax (PAT)</b>   |            |        |      |      |      |      |      |
| <b>VIABILITY Analysis:</b>      |            |        |      |      |      |      |      |
| PAT + INT on term loan          |            |        |      |      |      |      |      |
| Cash Profit (PAT + Dep)         |            |        |      |      |      |      |      |
| PAT + Dep + INT on term loan    |            |        |      |      |      |      |      |
| Total Investment                |            |        |      |      |      |      |      |
| <b>Return on Investment</b>     | <b>ROI</b> |        |      |      |      |      |      |
| <b>IRR</b>                      |            |        |      |      |      |      |      |

## Annexure II

| <b>Small-scale Silage making unit (1 MT/hr &amp; 8 MT per shift)</b> |   |      |           |                    |
|--|---|------|-----------|--------------------|
| Sl. No.  | Particulars   | Unit | Unit rate | Amount (Rs. Lakhs) |
| <b>A</b>   | <b>Capital Expenditure</b>  |      |           |                    |
| 1  | Tractor (45-50 HP)  | 1    | 9.00      | 9.00               |
| 2  | Tipping trailer (5 MT)  | 1    | 2.50      | 2.50               |
| 3  | Chopper loader (3-4 MT)   | 1    | 2.50      | 2.50               |
| 4  | Silage packing machine/Surface silo pit capacity- 50 MT                 | 1    | 6.00      | 6.00               |
|  | <b>Total</b>  |      |           | <b>20.00</b>       |
| <b>B</b>   | <b>Revenue Expenditure</b>  |      |           |                    |
| 1  | Cost of silage Production @ Rs 4500 per MT including 10% process losses | 50   | 4500      | 2.25               |
|  | Total income from sale @ Rs 5500 per MT                                 | 50   | 5500      | 2.75               |
|  | Net income on 50 MT silage production                                   |      |           | <b>0.50</b>        |

| <b>Medium scale Silage making Unit (2 MT/hr &amp; 16 MT per shift)</b> |  |      |           |                    |
|--|--|------|-----------|--------------------|
| Sl. No.  | Particulars  | Unit | Unit rate | Amount (Rs. Lakhs) |
| <b>A</b>   | <b>Capital Expenditure</b>   |      |           |                    |
| 1  | Tractor (90 HP)  | 2    | 20.00     | 40.00              |
| 2  | Tipping trailer (5 MT)   | 2    | 2.50      | 5.00               |
| 3  | Mower chopper loader   | 1    | 15.00     | 15.00              |
| 4  | Silage packing machine (40-50 bales/hour) / Surface Silo Pit capacity-150 MT | 1    | 20.00     | 20.00              |
|  | <b>Total</b>   |      |           | <b>80.00</b>       |
| <b>B</b>   | <b>Revenue Expenditure</b>   |      |           |                    |
| 1  | Cost of silage Production @ Rs 4500 per MT including 10% process losses      | 100  | 4500      | 4.50               |
|  | Total income from sale @ Rs 5500 per MT                                      | 100  | 5500      | 5.50               |
|  | Net income on 100 MT silage production                                       |      |           | <b>1.00</b>        |

| <b>Large- scale Silage making Unit (10 MT/hr &amp; 80-100 MT per day)</b> |   |             |                  |                          |
|---|---|-------------|------------------|--------------------------|
| <b>Sl. No.</b>  | <b>Particulars</b>  | <b>Unit</b> | <b>Unit rate</b> | <b>Amount (Rs Lakhs)</b> |
| <b>A Capital Expenditure</b>  |   |             |                  |                          |
| 1   | Tractor (80-90 HP)  | 1           | 15.00            | 15.00                    |
| 2   | Dumper (10 MT)  | 4           | 20.00            | 80.00                    |
| 3   | Forage Harvester (2 acres per hour)                                     | 1           | 250.00           | 250.00                   |
| 4   | Silage packing machine (40-50 bales per hour)                           | 1           | 175.00           | 175.00                   |
| <b>Total</b>  |   |             |                  | <b>520.00</b>            |
| <b>B Revenue Expenditure</b>  |   |             |                  |                          |
| 1   | Cost of silage Production @ Rs 4500 per MT including 10% process losses | 2500        | 4500             | 112.50                   |
| Total income from sale @ Rs 5500 per MT                                   |   | 2500        | 5500             | 137.50                   |
| Net income on 2500 MT silage production                                   |   |             |                  | 25.00                    |