

# Model Project on Meat Processing (Canning Unit)

Govt. of West Bengal

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## PROJECT PROFILE ON MEAT PROCESSING (Canning Unit)

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### I. INTRODUCTION

The meat production in India is 2.3 million tonnes per year (2010-2011). India exports more than 500,000 tons of meat of which majority is buffalo meat. Indian buffalo meat is witnessing strong demand in international markets due to its lean character and near organic nature. West Bengal is the highest producer of meat in India followed by Andhra Pradesh, Maharashtra, Uttar Pradesh and Bihar. It is also the largest consumer of meat products including “fresh” meat.

### II. OBJECTIVES

The commercial meat canning unit will have following objectives

- Production of ready to serve canned meat product.
- Preservation of meat and also production of hygienic meat product.
- Export of the canned meat product.

### III. RAW MATERIAL AVAILABILITY

Around 20.5 million goats are slaughtered in Bengal every year. Bengal produces over 31 percent of the total goat meat production in India annually. Bengal black goat has high demand in the export market due to its low fat and low cholesterol character.

### IV. MARKET OPPORTUNITIES

People are becoming conscious about the health. Because of existing poor slaughter house conditions quality of meat is affected. Hence there is huge market potential for the processed canned meat products in India. Canned meat has great demand in domestic as well as international market. It is used in hotels, canteens, railways, airlines and for export.

### V. PROJECT DESCRIPTION

#### • Product and Its Uses

Meat is highly perishable product. Canned meat can be preserved for a long duration without any loss in the quality. Canned meat would be ready to serve

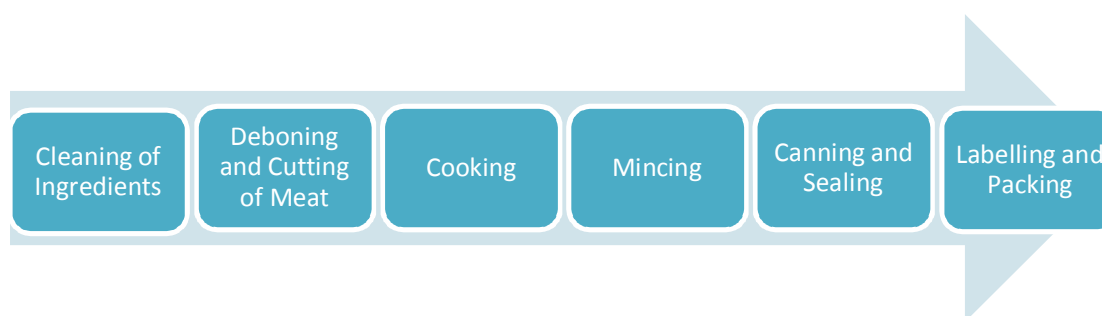
product and could be used instantly. Meat processing waste can be utilized for preparation of fish feed, animal feed and as a manure.

- **Capacity**

Capacity of meat processing plant is considered as 160MT per year.

- **Manufacturing Process with Flow Chart**

The process starts with slaughter of sheep/goat, dressing, cleaning, deboning of meat and cutting it into pieces of 6-7 cms and preparation of various ingredients. Then these ingredients are cooked. After mincing, all the ingredients are properly mixed and pre-heated at around 80-85°C. Finally, they are filled into lacquered cans; cans are sealed and processed/sterilised at a pressure of about 15 lbs PSI for about 40-45 minutes. Cans are immediately cooled, labelled and packed. The product should have a thick free-flowing consistency with a total soluble solid content of not less than 13%



## VI. PROJECT COMPONENTS

- **Land and Building**

A plot of land of around 0.5 acre shall be required which would cost around Rs. 2.5 Lakh. The cost of land development will be Rs. 5 Lakhs.

- **Civil Works**

Main building and storage Area	1000 sq. m
Other Civil Structures	500 sq. m

The construction cost is considered as Rs. 6000 per sq. meter. Hence the total construction cost for built up area is Rs. 60.00 Lakhs. Another 500 sq. meter area is required for slaughtering & dressing, boundary wall, parking area etc. An amount of Rs. 5 Lakhs is necessary to take care of miscellaneous civil work.

- **Plant and Machinery**

S.N.	Name of Machinery	Qty. in Nos	Price in Rs.
1	Slaughter House Equipments	1	300000
2	Ps-Steam Boiler: Ps-500 Kgs./Hr. Capacity	1	450000
3	PS-WORKING TABLE: Top stainless steel 304.	1	225000
4	Ps-Steam Jacketed Kettle (Model No.Psk110): 50 Gallons (225 Ltrs.)	1	51300
5	PS-STRAIGHT LINE EXHAUSTS BOX: Capable of passing 2 A2! /2 cans at a time.	1	86200
6	PS-CANNING RETORT: With Thermometer and Pressure gauge Capacity 280/300 A21/2 cans.	1	51500
7	<b>Electric Hoist:</b> 1Ton Capacity.	1	36000
8	Complete Reforming and seaming unit	1	237830
9	Aluminium and SS vesals of various size.	5	25000
10	Meat Mincer	1	100000
11	Refrigerator -complete unit of freezer	1	350000
12	Weigh scale -large	1	18000
13	Masonry tanks for cooling /Pickling	1	150000
14	Laboratory equipment	1	110000
Total Machinery (Rs. In Lakhs)			21.91
Transportation, Erection, VAT, etc.			4.44
<b>Total Cost of Plant and Machinerics (Rs. In Lakhs)</b>			<b>26.35</b>

- **Miscellaneous Fixed Assets**

The cost of miscellaneous fixed assets is considered as Rs. 3.78 Lakhs. Cost of miscellaneous fixed assets includes cost of office furniture and other infrastructure, telephone installation, electrical infrastructure etc.

- **Preliminary & Preoperative Expenses**

Provision of Rs. 5.00 Lakhs will be necessary to take care of the expenses like registration, travelling etc.

- **Contingency**

Contingency charges are considered as a 2 % of the cost of project excluding the pre-operative expenses and the land cost.

- **Margin money for working capital**

Margin money for working capital is considered for one cycle in the project cost while calculating project components.

## VII. PROJECT COST

S. No.	Particulars	Amount (Rs. In Lakhs)
1	Land & Land Development	7.5
2	Civil Works	65.00
3	Plant & Machineries	26.35
4	Miscellaneous Fixed Assets	3.78
5	Preliminary & Preoperative Expenses	5.00
6	Contingency	2.00
7	Margin money for working capital	21.14
<b>Total Project Cost in Lakhs</b>		<b>130.77</b>

## VIII. MEAN OF FINANCE

S. No.	Source of Finance	Amount (Rs. In Lakhs)
1	Equity (25%)	32.69
2	Term Loan from Bank (75%)	98.08
<b>Total Project cost</b>		<b>130.77</b>

## IX. WORKING CAPITAL ASSESMENT

Working capital required to run the plant is worked as under:

Rupees in Lakh

Working Capital Assessment				
Particulars				
Raw material	10	10.51	14.71	18.91
WIP	5	5.58	7.82	10.05
Finished Goods	30	33.51	46.91	60.32
Debtors	30	34.94	48.96	62.36
Total		84.54	118.40	151.64
Creditors		0	0	0
Total		0	0	0
WCG		84.54	118.40	151.64
Margin	25%	21.14	29.60	37.91
MPBF		63.41	88.80	113.73
Interest	14%	8.88	12.43	15.92

## X. MANPOWER REQUIREMENT

### a. Administrative and Supervisory

Particulars	No's	Salary Per Month in Rupees
Factory Manager	1	20,000
Purchase & Sales Manager	1	15,000
Accountant -cum -Cashier	1	10,000
Clerk	3	7,500
Store In charge	1	10,000
Guard	2	5,000
Food Technologist	1	12,000
Veterinary Doctor	1	18,000
Supervisor	2	8,000
Mechanic-cum Boiler Operator	1	7,000
Skilled Workers	5	6,000
Unskilled workers	10	5,000
<b>Total Salary in INR Lakh</b>		<b>1.73</b>

### b. Unskilled Labour

Ten labours are required for slaughtering, handling, packing etc. Wages per person per day is Rs. 220/-. This would be cost for Rs. 6.60 Lakhs per annum.

## XI. PROJECT PROFITABILITY

- **Installed Capacity and Capacity Utilization**

The capacity of meat processing plant is to produce 160 MT of processed canned meat per year. During first year only 50% capacity will be utilized, in second year 70% and from third year onwards 90% of total capacity will be utilized.

- **Yield and Production**

At 100 % capacity utilization around 160000 containers of 1 kg of canned meat per year will be produced.

- **Sales Revenue**

The sale revenue at 100% capacity utilization will be,

Products	Price/unit (Rs)	Income (Rs in Lakhs)
Canned Meat	450.00	720.00
By product (Skin & other edible offal 13480 animals)	250	33.68

- **Profit Calculations**

Particulars	Amount (Rs. In lakhs)				
Installed Capacity (MT / Year)	160				
Years	1	2	3	4	5
Capacity utilization (%)	50	70	90	90	90
<b>Income</b>					
Canned Meat	360.00	504.00	648.00	648.00	648.00
By product	17	24	30	30	30
Total income	<b>376.84</b>	<b>527.58</b>	<b>678.32</b>	<b>678.32</b>	<b>678.32</b>
Total expenditure	<b>352.20</b>	<b>493.19</b>	<b>628.09</b>	<b>628.31</b>	<b>628.53</b>
PBDIT	24.64	34.39	50.22	50.01	49.79
Depreciation	10.23	9.04	7.99	7.06	6.25
Interest on term loan	11.77	11.77	10.33	8.89	6.93
Interest on working capital	8.88	12.43	15.92	15.92	15.92
Intangible assets written off	0.00	2.30	2.30	2.30	2.30
Profit after depreciation and interest	2.63	11.28	29.60	31.76	34.31
Tax @ 36%	0.95	4.06	10.66	11.43	12.35
PADIT	1.69	7.22	18.95	20.32	21.96
Surplus available for repayment	23.69	28.03	37.26	36.27	35.13
Cash Accruals	11.92	16.26	26.93	27.38	28.21

## XII. FINANCIAL PARAMETERS

- **Cash Flow Statement**

The statement of cash flow is concerned with the flow of cash in and out of the business. Cash inflow means the source of cash which includes equity, Loan from bank and the cash accruals from the business. Cash outflow is a sum of cash required for the applications like increase in fixed assets, for repayment of term loan, preoperative expenses and cash required for the payment of dividend.

Particulars	1 <sup>st</sup> Year	2 <sup>nd</sup> Year	3 <sup>rd</sup> Year	4 <sup>th</sup> Year	5 <sup>th</sup> Year
Cash Inflow	142.69	16.26	26.93	27.38	28.21
Cash outflow	130.77	12.00	12.00	17.00	17.00
Opening Balance	0.00	11.92	16.18	31.11	41.49
Surplus	11.92	4.26	14.93	10.38	11.21
Closing Balance	11.92	16.18	31.11	41.49	52.70



- **Break Even Analysis**

Particulars (Rs. In Lakhs)	Year 1	Year 2	Year 3	Year 4	Year 5
Sales Revenue	376.84	527.58	678.32	678.32	678.32
Total Variable Cost	335.10	469.14	603.18	603.18	603.18
Contribution	41.74	58.44	75.14	75.14	75.14
Total Fixed Cost	28.88	35.72	35.00	33.52	31.53
<b>Break Even Point (%)</b>	69.17	61.13	46.58	44.61	41.96

The unit is expected to break even at approximately 69 % capacity utilization during first year and during third year onwards the breakeven is at 47%.

- **Debt Service Coverage Ratio (DSCR)**

• DSCR	Year 1	Year 2	Year 3	Year 4	Year 5
Coverage Available	23.69	28.03	37.26	36.27	35.13
Debt	11.77	23.77	22.33	25.24	23.27
DSCR Ratio	2.01	1.18	1.67	1.44	1.51
<b>Average DSCR Ratio</b>	<b>1.53</b>				

The debt service coverage ratio based on the assumed techno economic parameters is found satisfactory. The average DSCR is 1.53.

- **Internal Rate of Return (IRR)**

The financial indicators like Net Present Worth (NPW), Benefit Cost Ratio (BCR), Internal Rate of Return (IRR) etc were analysed by discounting cash flow @15% discounting rate. The internal rate of return is found to be 36.03% and BCR is about 1.03.

- **Projected Balance Sheet**

Liabilities	Yr 1	Yr 2	Yr 3	Yr 4	Yr 5	Yr 6	Yr 7
Equity	20.06	20.06	20.06	20.06	20.06	20.06	20.06
Term Loan	60.19	50.12	41.77	33.41	25.06	16.71	8.35
Reserve & Surpluses	2.23	10.63	19.36	28.75	39.13	50.27	61.77
<b>Total</b>	<b>82.48</b>	<b>80.81</b>	<b>81.18</b>	<b>82.22</b>	<b>84.25</b>	<b>87.04</b>	<b>90.18</b>
<b>Assets</b>							
Gross Fixed Assets	73.25	73.25	73.25	73.25	73.25	73.25	73.25
Less Depreciation	3.25	10.70	17.23	22.94	27.95	32.34	36.19
Net Fixed Assets	70.00	62.55	56.02	50.31	45.30	40.91	37.06
Intangible Assets	7.00	7.00	6.00	5.00	4.00	3.00	2.00
Cash & Bank Balance	5.48	11.26	19.16	26.91	34.95	43.13	51.12
<b>Total</b>	<b>82.48</b>	<b>80.81</b>	<b>81.18</b>	<b>82.22</b>	<b>84.25</b>	<b>87.04</b>	<b>90.18</b>
TNW	102.55	100.87	101.25	102.28	104.31	107.10	110.25
TOL	60.19	50.12	41.77	33.41	25.06	16.71	8.35
TOL/TNW	0.59	0.50	0.41	0.33	0.24	0.16	0.08

### XIII. ASSUMPTIONS

- a. The unit will work for 8 hours a day for 300 days per annum.
- b. Capacity utilization: First year -50%, Second year - 70%, Third year onwards - 90%.
- c. The wages for skilled and unskilled workers are taken as per prevailing rates in this type of industry.
- d. Interest rate for term loan is 12% per annum and that for working capital is 14% per annum.
- e. Margin money is considered at 25% of the financial outlay.
- f. Insurance charges for the fixed assets considered as 0.5% of the depreciated cost of the assets.
- g. Repayment period of seven years with one year grace period for repayment of principal.
- h. Costs of machinery and equipment are based on average prices quoted by machinery manufacturers.
- i. Power cost is considered as Rs. 6.00 per unit and that for the fuel is Rs. 55 per litre.
- j. The cost of water is considered as 30 paisa per litre.
- k. Depreciation rate of 10%, 13.91% and 15% has been considered for civil structures, plant & machineries and miscellaneous fixed assets respectively.
- l. Repair and maintenance is considered as a percentage of total project cost excluding preliminary preoperative expenses, land and land development cost. The percentages are 0.10, 0.25 and 0.5 for first three years respectively and 0.75 for fourth year onwards.
- m. The administrative expenses will be considered as Lump sum Rs. 50 thousand per annum.
- n. The 0.5% of total income would be considered to take care of promotion and marketing expenses.
- o. Land cost is considered as Rs.5 Lakh per acre.

### XIV. ADDRESS OF SUPPLIER OF PLANT AND MACHINERY

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