

# Model Project on Poultry Processing (Canning) Unit

Government of West Bengal

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## PROJECT PROFILE OF POULTRY PROCESSING UNIT

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### I. INTRODUCTION

Poultry is one of the fastest growing segments of the agriculture sector in India. Poultry meat is important source of high quality proteins, minerals and vitamins to balance the human diet. The poultry population in country is around 650 million and poultry meat production in year 2010-11 is 2.19 million metric tonnes. In a poultry processing and canning unit, birds are slaughtered, cooked and preserved in cans so that it can be kept for longer time hygienically and in good condition.

### II. OBJECTIVES

1. To establish infrastructure for supply of canned poultry meat to the consumers.
2. To create awareness about the hygienic conditions and quality products among the consumers.

### III. RAW MATERIAL AVAILABILITY

The principal raw material required is birds (chicken of about 1.5 kg each). The average production of poultry in West Bengal is around 3 Lakh MT during a year 2011-12.

### IV. MARKET OPPORTUNITIES

Processed chicken has huge demand in local as well as international market. The demand for processed poultry meat is predictably estimated at 20% of the total demand for poultry meat. The demand is expected to reach at 2,465 tons by the year 2020.

## V. PROJECT DESCRIPTION

- **Product and its Uses**

In the poultry processing and canning unit, product obtained are canned poultry meat in brine, fried chicken which has huge consumption in metros, super markets and for export also. Left overs obtained during processing become very good source of additional income.

- **Capacity**

This profile envisages the establishment of a plant for the production of 451200 cans per year each of 300 gms capacity.

- **Manufacturing Process with Flow Chart**

- **Slaughtering and cleaning of Birds:** The process starts with slaughtering of birds and subsequently their feathers, lungs, kidneys, head and other unwanted parts are removed.
- **Washing:** The carcass is thoroughly washed in water.
- **Cutting and Processing:** The carcasses are deboned. Cleaned portion is cut into required sizes and 3-5% brine solution is added. For chicken in curry vegetables will be added.
- **Steaming of Cans:** Tins are subjected to live steam in an exhaust box for around 15 minutes at a temperature of about 60-65° C
- **Canning:** Sealed air tight cans are further processed in retort at a pressure of 10 to 15 lbs. for about 40-45 minutes.
- **Cooling and Labeling:** Cans are immediately cooled to room temperature and labeled

## 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 lakhs. The cost of land development will be assuming Rs. 5.0 Lakhs.

- **Civil Work**

Area of 1000 sq. meters will be essential for plant building and 500 sq. meters for other structure the construction cost is considered as Rs. 6000 per sq. meter. Therefore the total construction cost for built up area is around Rs. 65.00 Lakhs.

• **Plant and Machinery**

S. N.	NAME OF MACHINERY	QTY IN NOS	PRICE IN RS
1	CRATE LOADING TABLE	1	6,841
2	S.S. CABINET: 6 X 2 X 3 HT SS frame work & 304 tops.	1	38,106
3	KILLING CONES: 3 NOS With Splash guard & Hopper and Plastic Drum SCALDING TANK: 18" DIA.	1	19,814
4	Without door, gear box model 0.5 hp, 1 Phase Approx. Load Capacity -7.5 kg	1	47,114
5	EVISCERATION TABLE 4' X 2' X 3' with Plastic Crates(2 Nos) + Drums (1 Nos)	1	20,241
6	KLEEN KUT K1 0.5 ½ HP, Single Phase motor with 8" dia SS hardened cutting blade		45,230
8	SPARES: TOOL KIT.15 Rubber fingers 10/11 & 12/13 & 17/19 Spanner set Allan Key		5,145
9	Boiler, with pressure of 7 kg per square cm, approx. evaporation 182 kg/hr, oil fired.	1	4,58,000
10	Autoclave 30" X 36" size, with crate capacity of about 360 can., with dial thermometer, safety valve and pressure gauge.	2	2,30,000
11	Double seamer – motor driven, complete with stand, motor, starter, switch gear, and change parts, chuck	2	1,85,000
12	Balancing tank SS made, with steam piping arrangement.(90 cm X 45 cm X 45 cm)	1	1,10,000
13	Brine heating tank SS with steam heating type, of 100 kg capacity	1	1,30,000
14	Exhaust box, straight line type, 275 cm X 60Cm X 450 cm	1	2,70,000
15	Treadle embossing system with one set of double row die, or 5 letter figures range	1	65,000
16	Platform balance	2	16,000
17	Pan balance	3	9,000
18	Rack for cooling meat under fan 180cm X 120 Cm X 45 Cm	2	90,000
19	Rack for arranging cans, 180 cm X 150 Cm x 45 cm	6	3,00,000
20	Process table with AL top	6	1,92,000
21	Washing tanks 120cm X 90 cm x 45 cm	2	1,70,000
22	Bottle washer	1	65,000
23	PP capping machine	1	85,000
24	Pulverizer	1	2,15,000
25	Pickling vat	1	35,000
Plant and Machineries (Rs. In Lakhs)			28.07
Transportation, Erection, VAT etc. (Rs. In Lakhs)			4.42
<b>Total Cost of Plant and Machineries (Rs. In Lakhs)</b>			<b>32.49</b>

- **Miscellaneous Fixed Assets**

A provision of Rs. 3.78 Lakhs is needed to take care of expenditure like office furniture and other infrastructure, telephone installation, electrical infrastructure is considered under miscellaneous fixed assets. .

- **Preliminary & Preoperative Expenses**

Rs. 2.00 Lakhs will be required to pay the preliminary and preoperative expenses like interest during construction period, registration, travelling expenses etc.

- **Contingency**

Contingency charges are considered as a 2 % of the cost of project excluding the pre-operative expenses and 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	32.49
4	Miscellaneous Fixed Assets	3.78
5	Preliminary & Preoperative Expenses	2.00
6	Contingency	2.03
7	Margin money for Working Capital	8.11
<b>Total Project Cost In Lakhs</b>		<b>120.90</b>

## VIII. MEAN OF FINANCE

S. No.	Source of Finance	Amount (Rs. In Lakhs)
1	Equity (25%)	30.23
2	Term Loan from Bank (75%)	91.68
<b>Total Project Cost in Lakhs</b>		<b>120.90</b>

## IX. WORKING CAPITAL ASSESMENT

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

Rupees in Lakh

Working Capital Assessment				
Particulars	Day	Year1	Year 2	Year 3
Raw material	10	3.31	4.63	5.95
WIP	5	2.21	3.10	3.98
Finished Goods	30	13.28	18.59	23.90
Debtors	30	13.62	19.39	24.94
Total		32.42	45.71	58.77
Creditors		0	0	0
Total		0	0	0
WCG		32.42	45.71	58.77
Margin	25%	8.11	11.43	14.69
MPBF		24.32	34.28	44.08
Interest	14%	3.40	4.80	6.17

## X. MANPOWER REQUIREMENT

### a. Administrative and Supervisory

Designation	Quantity in Nos	Salary Per Month in Rupees
Watchman cum peon	1	5,000
Production-cum-quality control manager	1	20,000
Food Technologist	1	15,000
Supervisor (Production)	1	10,000
Supervisor (Sales & Purchase)	1	10,000
Accountant cum clerk cum cashier	1	10,000
Mechanic	1	8,000
Boiler attendant	1	8,000
Store in charge	1	10,000
<b>Total Salary in Lakh</b>		<b>0.96</b>

### b. Unskilled Labour

Ten labours are required for unskilled work like handling, packing etc. Wages per person per month is Rs. 5000/-. This would be a cost of Rs. 6.00 Lakhs per

annum. The provision for 5 skilled workers also has been proposed. Wages per person per month is Rs.6000/-. This would cost 3.6 Lakh.

## XI. PROJECT PROFITABILITY

- **Installed Capacity and Capacity Utilization**

The installed capacity of the plant is production of 225000 cans per year of each fried chicken curry and chicken in brine solution. During first year only 50% capacity will be utilized. In second year the capacity utilization is 70% and from third year onwards 90% of total capacity will be utilized.

- **Yield and Production**

The final products in the unit are fried chicken curry and chicken in brine solution. Hence at 90% capacity utilization production target will be;

Products	No of Cans/year
Fried Chicken in Curry Veg	202500
Chicken in Brine Solution	202500

- **Sales Revenue**

S. No.	Products	Price (Rs per unit)
1	Fried Chicken in Curry Veg(Rs/Can)	80
2	Chicken in Brine Solution(Rs/Bottle)	61
3	Bi products /Kg	30

- **Profit Calculations**

Particulars		Amount (Rs. In lakhs)				
Installed Capacity(Cans per year)		450000				
Years		1	2	3	4	5
Capacity utilization (%)		50	70	90	90	90
Capacity utilization(Cans per year)		225000	315000	405000	405000	405000
Income						
1	Fried Chicken in Curry Veg	90.00	126.00	162.00	162.00	162.00
2	Chicken in Brine Solution	68.63	96.08	123.53	123.53	123.53
3	Income from bi-products.	6.90	9.66	12.43	12.43	12.43
Total income		<b>165.53</b>	<b>231.74</b>	<b>297.95</b>	<b>297.95</b>	<b>297.95</b>
Total expenditure		<b>137.98</b>	<b>196.09</b>	<b>251.95</b>	<b>252.18</b>	<b>252.41</b>
PBDIT		27.54	35.65	46.00	45.77	45.54
Depreciation		11.09	9.77	8.62	7.61	6.72
Interest On term loan		10.88	10.88	9.44	7.76	5.96
Interest on working Capital		3.40	4.80	6.17	6.17	6.17
Intangible assets written off		0.00	0.40	0.40	0.40	0.40
Profit after depreciation and interest		5.58	14.60	27.54	30.01	32.46



Tax @ 36%	2.01	5.25	9.91	10.80	11.69
PADIT	3.57	9.34	17.63	19.20	20.78
Surplus available for repayment	25.54	30.00	35.69	34.57	33.45
Cash Accruals	14.66	19.11	26.24	26.81	27.49

## 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= Equity + Loan from bank + cash accruals from the business

Cash Out flow= Increase in fixed assets + Repayment of term loan + Preoperative expenses + 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	135.56	19.11	26.24	26.81	27.49
Cash outflow	120.90	12.00	14.00	15.60	15.60
Opening Balance	0.00	14.66	21.77	34.01	45.22
Surplus	14.66	7.11	12.24	11.20	11.89
Closing Balance	14.66	21.77	34.01	45.22	57.11

- Break Even Analysis**

Particulars (Rs. In Lakhs)	Year 1	Year 2	Year 3	Year 4	Year 5
Sales Revenue	165.53	231.74	297.95	297.95	297.95
Total Variable Cost	131.77	184.48	237.19	237.19	237.19
Contribution	33.75	47.26	60.76	60.76	60.76
Total Fixed Cost	16.09	20.98	22.13	20.41	18.58
<b>Break Even Point (%)</b>	47.67	44.40	36.43	33.60	30.58

The unit is expected to break even at approximately 47% capacity utilization during first year and during the third year the breakeven point will be 26%

- Debt Service Coverage Ratio (DSCR)**

DSCR	Year 1	Year 2	Year 3	Year 4	Year 5
Coverage Available	25.54	30.00	35.69	34.57	33.45
Debt	10.88	22.88	23.44	22.76	20.96
DSCR Ratio	2.35	1.31	1.52	1.52	1.60

<b>Average DSCR Ratio</b>	<b>1.54</b>
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The debt service coverage ratio based on the assumed techno economic parameters is found satisfactory. The average DSCR is 1.54.

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

The internal rate of return is found to be 36.93% and BCR is about 1.06.

- **Projected Balance Sheet**

Liabilities	Yr 1	Yr 2	Yr 3	Yr 4	Yr 5	Yr 6	Yr 7
Equity	30.23	30.23	30.23	30.23	30.23	30.23	30.23
Term Loan	90.68	78.68	64.68	49.68	34.68	16.68	0.00
Reserve & Surpluses	3.57	12.91	30.14	48.33	68.11	89.55	113.49
<b>Total</b>	<b>124.47</b>	<b>121.81</b>	<b>125.04</b>	<b>128.24</b>	<b>133.01</b>	<b>136.45</b>	<b>143.72</b>
<b>Assets</b>							
Gross Fixed Assets	110.80	110.80	110.80	110.80	110.80	110.80	110.80
Less Depreciation	11.09	20.86	29.48	37.08	43.80	49.73	54.97
Net Fixed Assets	99.71	89.94	81.32	73.71	67.00	61.07	55.82
Intangible Assets	2.00	2.00	1.60	1.20	0.80	0.40	0.40
Cash & Bank Balance	14.66	21.77	34.01	45.22	57.11	66.88	79.39
<b>Total</b>	<b>116.37</b>	<b>113.71</b>	<b>116.93</b>	<b>120.13</b>	<b>124.90</b>	<b>128.35</b>	<b>135.61</b>
TNW	154.70	152.04	155.26	158.46	163.23	166.68	173.94
TOL	90.68	78.68	64.68	49.68	34.68	16.68	0.00
TOL/TNW	0.59	0.52	0.42	0.31	0.21	0.10	0.00

### XIII. ASSUMPTIONS

- The unit will work for 300 days per annum on single shift basis.
- In first year 50% of installed capacity would be utilized in second year 70% Capacity will be utilized and third year onwards the capacity utilization will be 90% of installed capacity.
- The wages for skilled and unskilled workers are taken as per prevailing rates in this type of industry.
- Interest rate for term loan is 12% per annum and that for working capital is 14% per annum.
- Depreciation rate of 10%, 13.91% and 15% has been considered for civil structures, plant & machineries and miscellaneous fixed assets respectively.
- Margin money considered at 25% of the financial outlay.
- Insurance charges for the fixed assets considered as 0.5% of the depreciated cost of the assets.

- h. Repayment period of seven years with one year grace period for repayment of principal is considered.
- i. Costs of machinery and equipment are based on the average prices provided by machinery manufacturers.
- j. Power cost is considered as Rs. 6.0 per unit and that for the fuel is Rs. 55 per Litre.
- k. 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.
- l. The administrative expenses will be considered as Lump sum Rs. 50 thousand per annum.
- m. The 0.5% of total income would be considered to take care of promotion and marketing expenses.
- n. Land cost is considered as Rs.5 Lakh per acre.
- o. The cost of water is considered as 30 paisa per L.

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

##### **RND Practical Engineering**

No. 1/4, Shiv Complex, Wadgaon, Buduruk,  
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##### **Dhopeswar Engineering Private Limited**

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