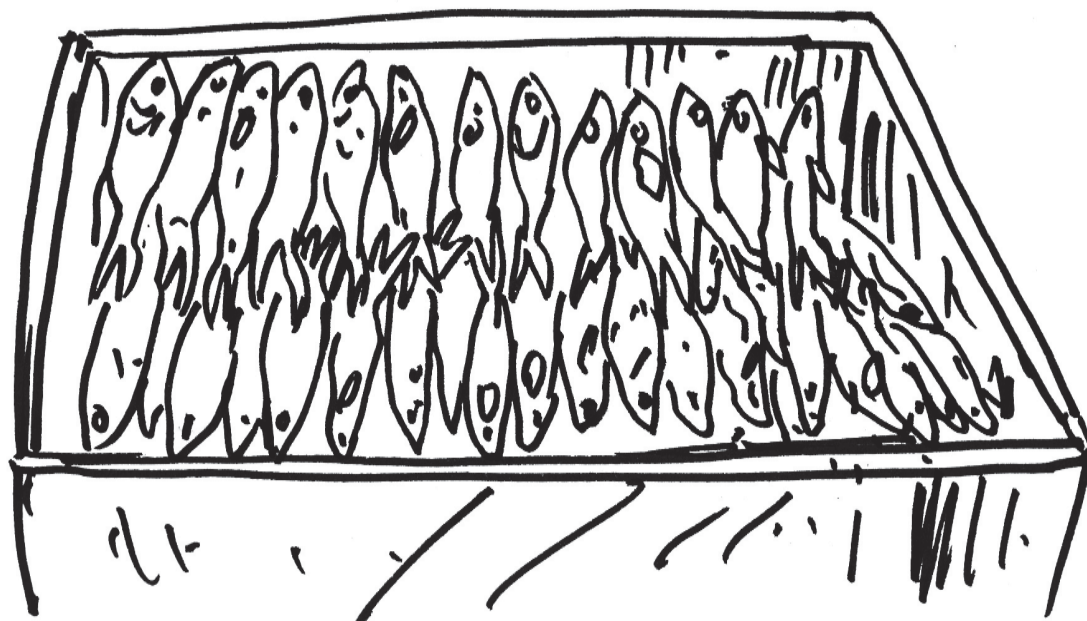


FISH PROCESSING



1.0 INTRODUCTION

Fish is a highly perishable item and reportedly, bulk of the catch is sun-dried after salt curing which is an unhygienic process. Fish, when carefully processed under most hygienic conditions with addition of required quantity of salt, preservatives and spices will have generally an average shelf life of one year. Most of the sea fish like Prawn, Tuna, Pomfret, Mackerel, etc. are ideally suitable for canning.

This project profile is for setting up of Fish Processing unit for production of processed and canned fish with installed processing capacity of 100 tonnes per annum of fresh fish.

2.0 MARKET POTENTIAL

Fish is a popular non-vegetarian variety and many delicious food and snack items are prepared from fish and prawns. Number of non-vegetarians are growing steadily. Fish is a highly perishable item and salt curing and sun-drying method of processing is not only unhygienic but also imparts limited shelf life. Fresh fish is available only near the coastal areas and consumers at other locations

get processed varieties. Apart from individual households, fish is regularly consumed in restaurants, canteens, clubs etc. Flight kitchens and caterers are another important segment. The Defence Purchase Department of the Govt. of India is a major bulk consumer. There are many varieties, which can be processed like tuna, prawn, pomfret, mackerel and so on. Apart from institutional supplies, retailing can be undertaken with proper placement in the departmental stores, super bazars, shopping malls etc.

3.0 PROCESS DETAILS

After cleaning fish in water, certain items like head, fins, tail etc. are removed and remaining parts are washed in water again to remove blood, dirt etc. Then they are cut and packed in sterilised tins. They are canned with tomato sauce, brine or oil. Then these cans are subjected to live steam in the exhaust box at a temperature of around 80-90° C for 15-20 minutes. Exhausted cans are immediately sealed air tight and treated in retort at a pressure of 10 to 15 lbs for 30 to 90 minutes. Pressure and processing time depends upon size of cans and products. Cans taken out from retort need to be cooled as early as possible. The net yield of finished product is around 65%.

4.0 COST OF THE PROJECT

The estimated project cost is given below:

Particulars	Amount (Rs lacs)
Land & Site Development	-
Building & Civil Works	7.51
Machinery & Equipment	7.13
Misc. Fixed Assets	2.50
Preliminary & Pre-operative Expenses	0.81
Contingencies & Escalation @ 3%	0.51
Working Capital	4.93
TOTAL	23.40

4.1 Land & Site Development: No cost has been considered for land & site development. It is assumed that the project will be set up in own land.

4.2 Building & Civil Works: Details of building & civil works are given below.

Particulars	Area (Sqm)	Rate (Rs)	Amount (Rs)
Machine Room (Half brick wall, CGI roof, Concrete floor)	120	4500	540000
Dressing Room (Open shed, CGI roof, Concrete floor)	50	3500	175000
Sub-total			715000
Add: Electrification, water supply, etc @ 5%			35750
TOTAL			750750
Say (Rs. in lacs)			7.51

4.3 Machinery & Equipment: Details of machinery & equipment are given below.

Particulars	Qty	Rate (Rs)	Amount (Rs)
Oil-fired Boiler	1	125000	125000
Autoclave complete with all accessories	1	60000	60000
Double-seamer complete with all accessories	1	70000	70000
SS blanching tank with steam heating pipe etc.	1	25000	25000
Straight line type exhaust box complete with heating pipe, reduction gear, electrical etc	1	90000	90000
Canning Retort	1	70000	70000
Can reformer with flanger	1	80000	80000
Weighing scales, sealing machine, etc	LS	LS	100000
Sub-total			620000
Add: Transportation, taxes, etc @ 15%			93000
TOTAL			713000
Say (Rs. in lacs)			7.13

4.4 Misc. Fixed Assets: Details of miscellaneous fixed assets are given below.

Particulars	Qty	Rate (Rs)	Amount (Rs)
Power connection (60 HP)	1	150000	150000
Water supply system (STW boring, 3 HP pump set, storage, pipes & fittings)	1	80000	80000
Furniture & fixtures	LS	LS	10000
Miscellaneous items	LS	LS	10000
TOTAL			250000
Say (Rs. in lacs)			2.50

4.5 Preliminary & Pre-operative Expenses: Details of preliminary & pre-operative expenses are given below.

Particulars	Amount (Rs lacs)
Travelling expenses	0.30
Professional & other fees	0.20
Interest during implementation	0.21
Miscellaneous expenses	0.10
TOTAL	0.81

4.6 Contingencies & Escalation: Contingencies & escalation has been assumed at 3% of the cost of building & civil works, machinery & equipments and miscellaneous fixed assets.

4.7 Working Capital: Details of working capital are given below.

	Period (Days)	Amount (Rs lacs)		
		Year 1	Year 2	Year 3
Packing cans	30	0.13	0.16	0.19
Power	30	0.12	0.15	0.19
Salary	30	0.49	0.50	0.50
Finished Goods	15	2.05	2.50	2.95
Receivables	15	2.14	2.67	3.21
total		4.93	5.98	7.03
Working Capital Margin in Year 1 (100%)	4.93			

5.0 MEANS OF FINANCE

The means of finance for the project is estimated as below.

Particulars	Percent	Amount (Rs lacs)
EQUITY		
A. Equity from Promoters	40%	9.36
B. Subsidy from Central/State Govt.	-	
DEBT		
Term Loan from Banks/FIs	60%	14.04
TOTAL	100%	23.40

6.0 PROFITABILITY STATEMENT

(Rs. in lacs)

Particulars	Yr 1	Yr 2	Yr 3	Yr 4	Yr 5	Yr 6	Yr 7
A. INCOME							
Installed capacity (Nos)	130000	130000	130000	130000	130000	130000	130000
Capacity utilisation	40%	50%	60%	60%	60%	60%	60%
Production at CU	52000	65000	78000	78000	78000	78000	78000
Price (Rs/can)	100	100	100	100	100	100	100
Income from sales	52.00	65.00	78.00	78.00	78.00	78.00	78.00
B. OPERATING EXPENSES							
Raw Materials & Consumables	41.32	51.65	61.97	61.97	61.97	61.97	61.97
Power	1.50	1.88	2.26	2.26	2.26	2.26	2.26
Salary	6.00	6.03	6.06	6.09	6.12	6.15	6.18
Repair & Maintenance	0.26	0.28	0.31	0.34	0.37	0.41	0.45
Selling Expenses	0.52	0.65	0.78	0.78	0.78	0.78	0.78

Miscellaneous Expenses	0.26	0.33	0.39	0.39	0.39	0.39	0.39
Total Operating Expenses	49.86	60.81	71.77	71.83	71.89	71.96	72.03
Less: Working expenses capitalised	4.93	0.00	0.00	0.00	0.00	0.00	0.00
Operating profit	7.08	4.19	6.23	6.17	6.11	6.04	5.97
C. FINANCIAL EXPENSES							
Depreciation	0.79	0.79	0.79	0.79	0.79	0.79	0.79
Interest on Term Loan	1.12	1.00	0.82	0.64	0.46	0.28	0.10
Net Profit	5.17	2.41	4.63	4.75	4.86	4.98	5.08
Net cash accruals	5.96	3.19	5.42	5.53	5.65	5.76	5.87
Principal Repayment	0.56	2.25	2.25	2.25	2.25	2.25	2.25

6.1 Production Capacity: Total production of canned fish at installed capacity is estimated as below.

Rated processing capacity/annum (tonnes)	100
Yield of finished good	65%
Total production of processed fish (tonnes)	65
Capacity of packing cans (kg)	0.50
Total Nos. canned fish per annum at installed capacity (Nos)	130000

6.2 Raw Materials & Consumables: Expenses on raw materials & consumables at installed capacity is estimated as below.

Particulars	Unit	Quantity	Rate (Rs)	Amount (Rs)
Fresh fish	Tonnes	100	90000	9000000
Cans	Nos	130000	3	390000
Total				9390000
Add: Additives, etc @ 10%				939000
Expenses on raw materials & consumables at installed capacity (Rs)				10329000

6.3 Power: Expenses on power at installed capacity is estimated as below.

Connected load (kw)	44.76
Avg. load factor	70%
Hrs/day	8
Days/annum	300
Annual power consumption (kwh)	75197
Rate per unit (Rs)	5.00
Expenses on power at installed capacity (Rs)	375984

6.4 Salary: Expenses on salary in the 1st year is estimated as given below. It is assumed that salary expenses will increase @ 0.5% every subsequent year.

Particulars of Employees	Numbers	Salary/Month (Rs)	Cost/annum (Rs)
Manager (Self)	-	-	-
Machine operators/skilled workers	3	6000	216000
Sales Staff	2	4000	96000
Helpers	8	3000	288000
Expenses on salary in the 1st year (Rs)			600000

6.5 Repair & Maintenance: Expenses on repair & maintenance in the 1st year is estimated as given below. It is assumed that expenses on repair & maintenance will increase @ 10% every subsequent year.

Particulars	Cost (Rs)	Rate	Amount (Rs lacs)
Building & Civil Works	7.51	1%	0.08
Machinery & Equipment	7.13	2%	0.14
Misc. Fixed assets	2.50	2%	0.04
Expenses on repair & maintenance in year 1			0.26

6.6 Selling Expenses: Selling expenses has been assumed at 1% of sales.

6.7 Miscellaneous Expenses: Miscellaneous expenses have been assumed at 0.5% of sales.

6.8 Depreciation: Depreciation has been calculated by straight line method. The details of calculation are given below.

Description	Cost (Rs)	Rate	Amount/annum (Rs lacs)
Building & Civil Works	7.51	3.34%	0.25
Machinery & Equipment	7.13	5.28%	0.38
Misc. Fixed assets	2.50	6.33%	0.16
TOTAL			0.79

6.9 Interest on Term Loan & Principal Repayment: Interest rate has been assumed at 8%. Duration of Loan repayment has been considered for a period of 7 years including moratorium period of 9 months with equal monthly instalments. The details of calculation are given below.

(Rs in lacs)

Month	Year	1	2	3	4	5	6	7
Month 1	Opening balance	14.04	13.48	11.23	8.98	6.74	4.49	2.25
	Repayment	0.00	0.19	0.19	0.19	0.19	0.19	0.19
	Interest (8%)	0.09	0.09	0.07	0.06	0.04	0.03	0.01
	Closing balance	14.04	13.29	11.04	8.80	6.55	4.31	2.06
Month 2	Opening balance	14.04	13.29	11.04	8.80	6.55	4.31	2.06
	Repayment	0.00	0.19	0.19	0.19	0.19	0.19	0.19
	Interest	0.09	0.09	0.07	0.06	0.04	0.03	0.01
	Closing balance	14.04	13.10	10.86	8.61	6.36	4.12	1.87
Month 3	Opening balance	14.04	13.10	10.86	8.61	6.36	4.12	1.87
	Repayment	0.00	0.19	0.19	0.19	0.19	0.19	0.19
	Interest	0.09	0.09	0.07	0.06	0.04	0.03	0.01
	Closing balance	14.04	12.92	10.67	8.42	6.18	3.93	1.68
Month 4	Opening balance	14.04	12.92	10.67	8.42	6.18	3.93	1.68
	Repayment	0.00	0.19	0.19	0.19	0.19	0.19	0.19
	Interest	0.09	0.09	0.07	0.06	0.04	0.03	0.01
	Closing balance	14.04	12.73	10.48	8.24	5.99	3.74	1.50
Month 5	Opening balance	14.04	12.73	10.48	8.24	5.99	3.74	1.50
	Repayment	0.00	0.19	0.19	0.19	0.19	0.19	0.19
	Interest	0.09	0.08	0.07	0.05	0.04	0.02	0.01
	Closing balance	14.04	12.54	10.29	8.05	5.80	3.56	1.31
Month 6	Opening balance	14.04	12.54	10.29	8.05	5.80	3.56	1.31
	Repayment	0.00	0.19	0.19	0.19	0.19	0.19	0.19
	Interest	0.09	0.08	0.07	0.05	0.04	0.02	0.01
	Closing balance	14.04	12.35	10.11	7.86	5.62	3.37	1.12
Month 7	Opening balance	14.04	12.35	10.11	7.86	5.62	3.37	1.12
	Repayment	0.00	0.19	0.19	0.19	0.19	0.19	0.19
	Interest	0.09	0.08	0.07	0.05	0.04	0.02	0.01
	Closing balance	14.04	12.17	9.92	7.67	5.43	3.18	0.94

Month 8	Opening balance	14.04	12.17	9.92	7.67	5.43	3.18	0.94
	Repayment	0.00	0.19	0.19	0.19	0.19	0.19	0.19
	Interest	0.09	0.08	0.07	0.05	0.04	0.02	0.01
	Closing balance	14.04	11.98	9.73	7.49	5.24	2.99	0.75
Month 9	Opening balance	14.04	11.98	9.73	7.49	5.24	2.99	0.75
	Repayment	0.00	0.19	0.19	0.19	0.19	0.19	0.19
	Interest	0.09	0.08	0.06	0.05	0.03	0.02	0.00
	Closing balance	14.04	11.79	9.55	7.30	5.05	2.81	0.56
Month 10	Opening balance	14.04	11.79	9.55	7.30	5.05	2.81	0.56
	Repayment	0.19	0.19	0.19	0.19	0.19	0.19	0.19
	Interest	0.09	0.08	0.06	0.05	0.03	0.02	0.00
	Closing balance	13.85	11.60	9.36	7.11	4.87	2.62	0.37
Month 11	Opening balance	13.85	11.60	9.36	7.11	4.87	2.62	0.37
	Repayment	0.19	0.19	0.19	0.19	0.19	0.19	0.19
	Interest	0.09	0.08	0.06	0.05	0.03	0.02	0.00
	Closing balance	13.66	11.42	9.17	6.93	4.68	2.43	0.19
Month 12	Opening balance	13.66	11.42	9.17	6.93	4.68	2.43	0.19
	Repayment	0.19	0.19	0.19	0.19	0.19	0.19	0.19
	Interest	0.09	0.08	0.06	0.05	0.03	0.02	0.00
	Closing balance	13.48	11.23	8.98	6.74	4.49	2.25	0.00
Principal Repayment		0.56	2.25	2.25	2.25	2.25	2.25	2.25
Interest		1.12	1.00	0.82	0.64	0.46	0.28	0.10

7.0 DEBT SERVICE COVERAGE RATIO (DSCR)

(Rs. in lacs)

Year	1	2	3	4	5	6	7	Total
Profit After Tax (Net Profit)	5.17	2.41	4.63	4.75	4.86	4.98	5.08	
Depreciation	0.79	0.79	0.79	0.79	0.79	0.79	0.79	
Interest	1.12	1.00	0.82	0.64	0.46	0.28	0.10	
Total	7.08	4.19	6.23	6.17	6.11	6.04	5.97	41.78
Interest	1.12	1.00	0.82	0.64	0.46	0.28	0.10	
Loan repayment	0.56	2.25	2.25	2.25	2.25	2.25	2.25	
Total	1.68	3.24	3.06	2.88	2.70	2.52	2.34	18.44
DSCR	4.21	1.29	2.03	2.14	2.26	2.39	2.55	

Average DSCR = 2.27

BREAK EVEN POINT (BEP)

(Rs. in lacs)

Year	1	2	3
A. Net sales (Rs. lakh)	52.00	65.00	78.00
B. Variable cost			
Raw Materials & Consumables	41.32	51.65	61.97
Power	1.50	1.88	2.26
Selling Expenses	0.52	0.65	0.78
Miscellaneous Expenses	0.26	0.33	0.39
Total variable cost	43.60	54.50	65.40

C. Contribution (A-B)	8.40	10.50	12.60
D. Fixed & Semi-fixed Costs			
Salary	6.00	6.03	6.06
Repair & maintenance	0.26	0.28	0.31
Interest on Term Loan	1.12	1.00	0.82
Depreciation	0.79	0.79	0.79
Total fixed cost	8.16	8.09	7.97
E. BREAK EVEN POINT	97.14%	77.07%	63.26%
F. BEP at operating capacity	38.86%	38.53%	37.95%
G. Cash BEP	35.12%	34.79%	34.21%

8.0 INTERNAL RATE OF RETURN (IRR)

(Rs. in lacs)

Year	0	1	2	3	4	5	6	7
CASH OUTFLOW								
Capital Expenditure	17.65	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Working Capital	0.00	4.93	1.05	1.05	0.00	0.00	0.00	0.00
Total (A)	17.65	4.93	1.05	1.05	0.00	0.00	0.00	0.00
CASH INFLOW								
Profit After Tax		5.17	2.41	4.63	4.75	4.86	4.98	5.08
Add: Depreciation		0.79	0.79	0.79	0.79	0.79	0.79	0.79
Add: Interest		1.12	1.00	0.82	0.64	0.46	0.28	0.10
Add: Salvage Value								
Total (B)	0.00	7.08	4.19	6.23	6.17	6.11	6.04	5.97
NET FLOW (B-A)	-17.65	2.14	3.14	5.18	6.17	6.11	6.04	5.97

IRR = 17%

MACHINERY SUPPLIERS

- (a) Blue Point
No. 14, Sudder Street, Kolkata - 700 016, West Bengal, India
- (b) Globe Marine Products
Al- Rahaba Plaza, Nellikai Road, Mangalore - 575 001, Karnataka, India
- (c) Dr. Froeb (India) Private Limited
C - 22, 2nd Floor, Sector - 2, Noida - 201 301, Uttar Pradesh, India