Project profile of other food products

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PROJECT PROFILE OF
AERATED WATER / PACKAGED DRINKING WATER

1. INTRODUCTION

Beverages are consumed by man from childhood to old age to quench the thirst as a pleasure and for specific nutritional and medicinal value. Beverage include carbonated beverages, fruit based drink, milk, any preparation from milk and stimulating beverages like coffee, tea, cocoa etc. The soft drink such as cola-type, orange, lime-lemon , ginger etc. have become very popular in recent years. Carbonated beverages are refreshing thirst quenching drink, mainly consisting of water impregnated with carbon dioxide , added sweeteners, flavour, acid, colour, preservatives and additives.

2. OBJECTIVES

The objective of the profiles is to encourage and assist prospective entrepreneurs in MSME sector in and guiding, making them aware of the opportunities of this sector. It is also being developed by the Directorate of the Food Processing Industries, Government of West Bengal to help entrepreneurs with knowledge about raw materials availability, knowledge of market, source of technology and plant and machinery suppliers. M/s ITV Agro & Food Technologies Pvt. Ltd., New Delhi has helped in developing the project profile.

3. RAW MATERIAL AVAILABILITY

The company require various raw material such as sugar, liquid glucose, citric acid, essences, colour, flavour & preservatives, carbon dioxide and activated carbon.

4. MARKET OPPORTUNITIES

The customers range from ordinary man to a five star hotel to a cinema hall to small eating place and a pan shop. The recent modernization of the soft drink industry has resulted in a healthy competition in the trade expansion, in the production and sales of the beverages, providing opportunities for new entrepreneurs to enter this trade.

With the increasing transport cost, it will be uneconomical to transport the soft drinks to long distances. This necessitates the setting up of more and more small & medium size bottling plants to cater to the nearby areas, but it should not be at the cost of the products quality.

5. PROJECT DESCRIPTION

a) Product & Its uses

The carbonated beverage industry has grown from a simple dispenser of flavoured, sweetened carbonated water at the local soda soap to a multimillion industry in the country. Several new entrepreneurs have entered into beverages market with quality products, based on indigenous expertise and using the locally available raw materials. There is still a good scope for the development of this industry on a decentralized basis to meet the increasing demand of the product in the different parts of the country.

b) Capacity

The proposed capacity of the plant is to process 3.80 lacs crates / annum of different beverages such as cola, lime, orange etc.

c) Manufacturing process

The ingredients which go into carbonated beverages are mainly water, sweeteners, acidulants, flavouring, foaming agents and preservatives .

Water constitutes the major (85-90) percent of any carbonated beverages. Water used for beverages must be clear, colourless, sterile, free from any odour or taste, free from heavy metal, organic matters and must have a low alkalinity. The method of water treatment comprises passing it through chemicals, sand and carbon filtration followed by resin treatment to eliminate undesirable mineral salts and suspendable particles.

The second most important feature is the making of sugar syrup through a process of sterilization treated with activated carbon to make into a colourless, odourless and crystal clear liquid glucose is also used depending upon the type of carbonated beverage is to be prepared. The syrup thus obtained blended with essences, preservatives, acid, colour, foaming agent, clouding agent, emulsifiers etc. as per the pre-standardized recipe. The concentrate thus prepared is chilled and is fed into the dozing machine. The treated chiller water if fed into the carbonator to mix thoroughly with the purified co. before it is fed to the main filling machine. The washed and checked bottle are fed to the syrup filling machine. The requisite quantity of the concentrate is released in each of the bottles against the counter pressure applied by the machine. Finally it is crown-corked and passed through a shaker to mix the ingredients thoroughly. Before the filled bottles are put into the crates, these are inspected to keep of dust, specks etc. The bottles containing uneven level of the contents are rejected at this stage.

6. PROJECT COMPONENTS & COST

a) Land & Building

Land 1000 sq. meter @ Rs. 500 sq. m	-	Rs. 5.0 lacs
Covered area 500 sq. meter @ Rs. 6000 sq. m.	-	Rs. 30.00 lacs

b) Plant & Machinery

		(Rs. in lacs)
1. Automatic bottle filling machine	-	Rs. 10.20
2. Bottle washing machine	-	Rs. 11.70

3.	Carbonation unit	-	Rs. 2.20
4.	Bottle collecting & revolving table	-	Rs. 3.60
5.	Steam jacket tank	-	Rs. 3.10
6.	Water treatment plant	-	Rs. 2.10
7.	Steam boiler	-	Rs. 8.40
8.	Refrigeration unit	-	Rs. 5.50
9.	Chain & chain conveyor	-	Rs. 3.70
10.	Hand operated bottle filling machine	-	Rs. 1.70
11.	Leg operated crown corking machine	-	Rs. 0.80
12.	Light screener & other accessories	-	Rs. 0.70
13.	Volume tester-cum – purifier & other	-	Rs. 0,65
	Total	**-**	**Rs. 54.40**

c) Miscellaneous Assets

Some other assets like furniture and fixtures, working tables, storage racks and bins, D. G. set, electrical etc. would cost about Rs. 29.00 lacs.

d) Utilities

Power requirement shall be 30 HP whereas per day water requirement for processing and potable and sanitation purpose will be 50,000 litres. Annual cost of utilities at 100% utilization will be Rs. 8.40 lacs**.**

e) Prel. & Pre Operative Expenses

There will be many pre-production expenses like registration, establishment & administrative & travelling expenses, interest during implementation, trial run expenses, etc for which a provision of Rs. 2.75 lacs is made.

f) Working Capital Assessment

(Rs. in lacs)

Particulars	**Period**	**Margin**	**Total**	**Bank**	**Promoters**
Stock of raw material & packing material	1 month	30%	1.23	0.86	0.37
Stock of Finished Goods	½ month	30%	3.72	2.61	1.11
Receivable	½ month	30%	5.47	3.83	1.64
Total			**10.42**	**7.30**	**3.12**

g) Project cost & Means of finance

Item	**Amount (Rs. in lacs)**
Land and Building	35.00
Plant and Machinery	54.40
Miscellaneous Assets	29.00
P & P Expenses	2.75
Contingencies @ 10% on building and plant & machinery	8.40
Working capital margin	3.12
Total	**132.67**
Means of Finance	
Promoters' contribution	53.67
Term loan from Bank FI	79.00
Total	132.67
Debt Equity Ratio	1.5:1
Promoters contribution	40%

Financial assistance in the form of grant is available from the Ministry of Food Processing Industries, Govt. of India, towards expenditure on technical civil works and plant and machinery for eligible projects subject to certain terms and conditions.

7) PROJECTED PROFITABILITY

a) Production Capacity

The rated production capacity of the plant is to manufacture 3.80 lacs crates / year of various carbonated beverages.

b) Sales Revenue at 100%

Product	**Qty (crates)**	**Selling Price (Rs. / crate)**	**Sales (Rs. in lacs)**
Cola	1,50, 000	60/-	90.00
Orange	1,00,000	60/-	60.00
Lime & Lemon	1,00,000	60/-	60.00
Soda water	30,000	30/-	9.00
		Total	**219**

c) Raw Material Required at 100%

Product	**Value (Rs. in lacs)**
Drink concentrate & sugar	12.00
Liquid glucose	5.00
Citric Acid	4.20
Essence	2.00
Co2	1.20
Active carbon	0.30
Total	24.70

d) Projected Profitability **(Rs. in lacs)**

S. No.	Particulars	1st year	2nd year
A.	**Installed capacity**	**3.80 lacs crates**	
	Capacity Utilisation	60%	75%
	Sales Realisation	131.40	164.25
B.	**Cost of Production**		
	Raw Materials	14.82	18.52
	Packing Materials	1.74	2.17
	Utilities	5.04	6.30
	Salaries	34.68	38.14
	Stores and Spares	1.80	2.25
	Repairs and Maintenance	3.00	3.75
	Selling Expenses @ 20%	26.00	32.85
	Administrative Expenses	2.40	3.00
	Total	89.48	106.98
C.	**Profit before Interest & Depreciation**	**41.92**	**57.27**
	Interest on Term Loan	7.90	6.90
	Interest on Working Capital	0.87	1.09
	Depreciation.	8.40	7.56
	Net Profit	24.75	41.72
	Income-tax @ 20%	4.95	8.34
	Profit after tax	19.80	32.88
	Cash Accruals	28.20	40.44
	Repayment of Term Loan	Nil	10.00

e) Break Even Point Analysis ***(Rs. in lacs)***

S. No.	Particulars	Amount	
(A)	**Sales**		**131.40**
(B)	**Variable Costs**		
	Raw Material	14.82	
	Packing Material	1.74	
	Utilities(70%)	3.52	
	Salaries (60%)	20.80	
	Stores and Spares	1.80	
	Selling Expen. (70%)	18.20	
	Admn Expenses (50%)	1.20	
	Repair & maintenance	3.00	
	Interest on WC	0.87	**62.90**
(C)	**Contribution (A) – (B)**		**68.50**
(D)	**Fixed Costs**		**27.48**
(E)	**Break Even Point**		**41%**

f) Debt Service Coverage Ratio (DSCR) ***(Rs. in lacs)***

Particulars	1st year	2nd year	3rd year
Cash Accruals	28.20	40.44	48.52
Interest on TL	7.90	6.90	5.90
Total (A)	36.10	47.34	54.42
Interest on TL	7.90	6.90	5.90
Repayment of TL	Nil	10.0	10.0
Total (B)	7.90	16.90	15.90
DSCR (A) / (B)	4.46	2.80	3.42
Average DSCR	3.59		

g) Internal Rate of Return (IRR)

Cost of the project is Rs. 132.67 lacs

(Rs. in lacs)

Year	**Cash Accruals**	**20%**	**12%**	**16%**
1	28.20	23.49	25.18	24.30
2	40.44	28.06	32.23	30.04
3	48.52	28.09	34.54	31.10
4	48.52	23.38	30. 85	26.78
5	48.52	19.40	27.51	23.09
Total	48.52	122.20	150.31	135.53

Internal Rate of Return IRR is 17%

h) Manpower requirement

Particulars	**Nos.**	**Monthly**	**Total Monthly Salary (Rs.)**
Manger	1	10,000	10,000
Sales Manager	1	8,000	8,000
Purchase Officer	1	8,000	8,000
Accountant cum cashier	1	8,000	8,000
Clerk	2	5,000	10,000
Steno-cum- Typist	2	5,000	10,000
Salesman-cum- Driver	1	5,000	5,000
Chief Chemist	1	10,000	10,000
Production Chemist	2	5,000	10,000
Maintenance Engineer	1	8,000	8,000
Laboratory Chemist	1	8,000	8,000
Mechanic	2	8,000	16,000

Skilled workers	5	7,000	35,000
Unskilled workers	10	6,000	60,000
Contact Labourers	15	5,000	75,000
Total			**2.89 lacs**

8. ASSUMPTIONS

- The plant will work for 300 days in a year.
- The operating capacity is 60% , 75%, 90 % during 1st year , 2nd year and 3rd year respectively.
- The interest on term loan is taken at 10% per annum and on working capital it is 12% per annum.
- Selling price of finished products is taken at Rs. 60.00 /crates

9. SOURCES OF TECHNOLOGY

CFTRI, Mysore, has successfully developed the technical know-how for the product. BIS has laid down quality standard. The compliance under FSSAI act is a must.

10. PLANT & MACHINERY SUPPLIERS

1. Mukund Industries
   8, Mavdi Plot, Nr. Suraj Besan Mill, Rajkot - 360004
   Ph. (0281) 2388075

2. Silvan Bolting Co.
   131/1 Shed No. A Nr. Global Health Care Dapada Vill,
   Silvassa-396230
   Ph.: (0260) 2699369/6539444

PROJECT PROFILE
HONEY PROCESSING & BEE KEEPING

1. INTRODUCTION

Honey is a consumable product and it is also used extensively in making Ayurvedic medicines. Natural honey is always in demand round the year. Natural honey is obtained from honey bees and hence bee-keeping is a profitable activity. But it has to be undertaken at a place where there is a very limited movement of people or vehicles. This activity has potential to provide regular income especially in rural areas. Therefore, the government is also encouraging this activity and Khadi and Village Industries Board extends many incentives as well as marketing support.

2. OBJECTIVES

The objective of the profiles is to encourage and assist prospective entrepreneurs in MSME sector in and guiding, making them aware of the opportunities of this sector. It is also being developed by the Directorate of the Food Processing Industries, Government of West Bengal to help entrepreneurs with knowledge about raw materials availability, knowledge of market, source of technology and plant and machinery suppliers. M/s ITV Agro & Food Technologies Pvt. Ltd., New Delhi has helped in developing the project profile.

3. RAW MATERIAL AVAILABILITY

There are no raw materials as such. Honey feed of about Rs. 1,50,000/- will be required every year for 30 boxes. Quantum of bottles would depend upon the type of packing. In case of bulk packing, bottles could be bigger sizes. However, cost per kg. is taken at Rs. 6/-. The total cost of raw material & packing is estimated to be Rs. 1,93,200/-

4. MARKET OPPORTUNITIES

Honey has substantial medicinal properties and is used in India since long. Procurement of natural or pure honey is becoming difficult due to urbanization and de-forestation. Simultaneously, its demand is steadily increasing as Ayurvedic medicines are becoming more and more popular. To facilitate rearing of honey bees to obtain natural honey, many government agencies are providing assistance/incentives. Realizing the potential of the area, Bee-keeping Directorate provides training as well as buy-back facilities at this centre. Thus, this activity has very good potential in and around the forest area. There are many location in West Bengal where this activity can be taken up.

5. PROJECT DESCRIPTION

a) Product & Its uses

Three species of honey bees exist in India viz. Apis Dorsta, Apis Flora and and Apis Indica. These species are reared for honey-combs. Pure or natural honey is extracted from bees. This honey is in great demand round the year especially for Ayurvedic medicinal purposes. Many health conscious people consume it regularly. It is also used in making certain health food reparations.

b) Capacity

The proposed capacity of the project is to produce 7.20 MT / annum of honey.

c) Manufacturing process

As explained earlier, Bee-keeping activity should ideally be located where there are minimum movement of human beings with very little noise. Forest area is, therefore, suited with many flowering plants naturally grown there. Movable wooden frames with boxes are placed at such locations and these boxes are spread with honey spice to attract more and more honey-bees. These bees leave fresh honey sucked from flowers in the cells of honey –comb provided in the boxes to eat bee feed. When these cells are

full of honey, they are hermetically sealed by capping with wax and then honey is extracted from these cells. Freshly extracted honey is warm and easy to bottle. It is essential to undertake proper training of extraction and bottling.

6. PROJECT COMPONENTS & COST

a) Land & Building

Land has to be in secluded and forest or hilly area. A plot of around 150-200 sq. mtrs. is sufficient. To limit the capital cost, the promoter can start this activity on own land or it can be obtained on long term lease. There is no need to have a RCC building but a shed of around 20-25 sq. mtrs. Asbestos sheet roofing is sufficient. It may cost Rs. 1.00 lac.

b) Plant & Machinery

This is not a manufacturing activity as such and no machines are required. There is nothing like production capacity as well. Small wooden frames with boxes are needed. Their sizes are also standardized. Around 30 such sets would cost Rs. 90,,000/- Honey extractors would cost Rs. 10,000/- each with filtration facilities. Two such extractors would mean investment of Rs. 20,000/-. Manually operated bottle capping machine would be available at about Rs. 6,000/-. Thus, total investment for support facilities would be Rs. 1,16,000/-.

c) Utilities

The is no need to have industrial connection for power and even domestic supply is sufficient. In case of non availability of power connection (due to peculiar location), the operations can be carried out during day-time. The cost of utilities is estimated to be Rs. 30,000/-

d) Project cost & Means of Finance

(Rs. in lacs)

Item	**Amount**
Land	Own
Building	1.00
Equipment	1.16
Total	2.16
Means of Finance	
Promoters' contribution	0.86
Term loan from Bank /FI	1.30
Total	**2.16**
Debt Equity Ratio	1.5:1
Promoters contribution	40%

Financial assistance in the form of grant is available from the Ministry of Food Processing Industries, Govt. of India, towards expenditure on technical civil works and plant and machinery for eligible projects, subject to certain terms and conditions.

7) PROJECTED PROFITABILITY

a) Production Capacity

The rated production capacity of the plant is 300 tons per year whereas actual capacity utilization is expected to be 60% and 75%.

b) Sales Revenue at 100% ***(Rs. in lacs)***

Product	**Qty (Tons)**	**Selling Price**	**Sales**
Honey	7.2	1.40	10.08

c) Projected Profitability

(Rs. in lacs)

S. No.	Particulars	1st year	2nd year
A.	**Installed capacity**	**7.20 Tonnes**	
	Capacity Utilisation	-	-
	Sales Realisation	6.04	7.54
B.	**Cost of Production**		
	Raw material & packing materials	1.15	1.43
	Utilities	0.18	0.22
	Salaries	3.00	3.30
	Repairs and Maintenance	0.18	0.22
	Selling admn. Expenses @ 10%	0.60	0.75
	Total	5.11	5.92
C.	**Profit before Interest & Depreciation**	**0.93**	**1.62**
	Interest on Term Loan	0.13	0.11
	Depreciation.	0.20	0.19
	Net Profit	0.60	1.32
	Profit after tax	0.60	1.32
	Cash Accruals	0.80	1.51
	Repayment of Term Loan	Nil	0.50

k) Manpower requirement

Particulars	**Nos.**	**Monthly**	**Total Monthly Salary (Rs.)**
Semi Skilled Workers	2	7500	15,000
Helpers	2	5000	10,000
		Total	**25,000**

8. ASSUMPTION

- The plant will work for 300 days in a year. :
- The operating capacity is 60% , 75%, 90 % during 1st year , 2nd year and 3rd year respectively.
- The interest on term loan is taken at 10% per annum and on working capital it is 12% per annum.
- Selling price of finished products is taken at Rs. 1.40 lacs / ton

9. SOURCES OF TECHNOLOGY

CFTRI, Mysore, has successfully developed the technical know-how for the product. BIS has laid down the quality standard. The compliance under FSSAI act is a must.

10. PLANT & MACHINERY SUPPLIERS

1. Suan Scientific Instruments & Equipments
   P-814, (GF) Blok – A, Laketown,
   Kolkata – 700089 (WB)
   Ph. 08373903363
   www.suamequipments.com

PROJECT PROFILE
EGG POWDER

1. INTRODUCTION

The egg is the most nutritious natural product. Eggs are rich in protein, vitamins and minerals. During last three decades, the poultry industry in the country has made remarkable progress and grown into an organized and highly productive industry. Dried egg powder can be stored and transported at room temperatures. It is quite stable and has long shelf life . The manufacture of egg powder is an important segment of egg consumption. There is enough scope of an egg powder manufacturing plant, with a suitable capacity.

2. OBJECTIVES

The objective of the profiles is to encourage and assist prospective entrepreneurs in MSME sector in and guiding making them aware of the opportunities of this sector. It is also being developed by the Directorate of the Food Processing Industries, Government of West Bengal to help entrepreneurs with knowledge about raw materials availability, knowledge of market, source of technology and plant and machinery suppliers. M/s ITV Agro & Food Technologies Pvt. Ltd., New Delhi has helped in developing the project profile.

3. RAW MATERIAL AVAILABILITY

The major raw material required is fresh eggs and the daily requirement is 20,000. Prior confirmed arrangements for this quantity are necessary. Packing material like poly-lined paper bags, corrugated boxes, labels etc. shall be needed. Total production of egg in West Bengal is estimated to be 15.00 million / year.

4. MARKET OPPORTUNITIES

Egg is full of nutrients and minerals and is consumed in different forms since centuries. There was misconception that they are from non-vegetarian food category but now people at large have accepted them as a vegetarian item and their consumption is increasing year after year. Transportation of eggs is difficult as chances of breakage during transportation is higher and it is costly also. Egg powder is comparatively easier to transport and there is no question of any breakage during the transit.

a) Marketing Strategy

The major market is defense establishments, various government and non-government nutritional programmes, bakeries and all such areas like hills or forests where transportation is difficult. Before venturing into this project, a proper market assessment and some firm tie- up is advisable.

5. PROJECT DESCRIPTION

a) Product & Its uses

Egg powder is one of the most common products in poultry industry in the country. Attempts have been made to prepare egg pudding also, but this product has not yet been accepted by the consumers, whereas demand for egg powder is increasing year after year. This project can be set up in West Bengal.

b) Capacity

The proposed capacity of the plant is to process 60 lacs eggs / year.

c) Manufacturing process

Manufacture of dried egg powder starts with breaking of eggs and removing egg-shells. After removal of shells, the mixture is filtered and stored in storage tanks at about 4 ° C and then it is taken to tubular heater wherein it is dried at about 65° C for 8 to 10 minutes and it is filtered and passed to high pressure spray drier with the

help of high pressure pump. The material which comes out of high pressure spray drier is not only in dried form but also in powder form which is then packed in poly-lined boxes. The average yield is around 80%.

6. PROJECT COMPONENTS & COST

a) Land & Building

A plot of around 800 sq. mtrs. will be sufficient as the built –up area requirement is not more than 500 sq. mtrs. The built –up area would have main production unit in around 300 sq. mtrs. and balance area will be utilized for storage and packing. Cost of land is expected to be Rs. 4.0 lacs whereas that of civil work would be Rs. 40.00 lacs.

b) Plant & Machinery

It is proposed to install dry egg powder making unit with capacity of 240 tons per annum with 16 hours of working per day for 300 working days.

The plant and machinery required for the above production capacity may cost about Rs. 162.50 lacs. The details are as under:

(Rs. in lacs)

Particulars	**Qty.**	**Price**
Egg breaker	4	5.00
Centrifuge	2	15.00
Filter	2	5.00
Storage tank	4	7.50
Feed pump	2	15.00
Tubular heater	1	20.00
Balance tank	4	7.50
Feed pump	2	17.50
High pressure pump	1	20.00

High Pressure spray dryer	1	18.75
Cyclone with exhaust and fan	1	8.75
Packing unit	1	12.50
Electrification and installation	-	10.00
Total		**162.50**

c) Miscellaneous Assets

Other miscellaneous assets required are fans, weighing balance, tables, chairs, furniture, D. G. set etc. which would cost Rs. 15.00 lacs.

d) Utilities

The total power required shall be 75 HP whereas per day water requirement would be 50,000 litre. The cost of utilities is estimated at Rs. 8.40 lacs.

e) Prel. & Pre Operative Expenses

The registration charges, establishment expenses, trial run expenses, interest during implementation etc. would be around Rs. 20.00 lacs.

f) Working Capital Assessment

At 65% utilization in the first year, the total working capital needs shall be as under:

(Rs. in lacs)

Particulars	**Period**	**Margin**	**Total**	**Bank**	**Promoters**
Stock of Raw & packing Material	½ month	30%	4.16	2.98	1.38
Stock of Finished Goods	½ month	25%	6.28	4.71	1.57
Receivable	½ month	25%	8.40	6.30	2.10
		Total	**18.84**	**13.79**	**5.05**

g) Project cost & Means of finance

Item	**Amount (Rs. in lacs)**
Land and Building	44.00
Plant and Machinery	162.50
Miscellaneous Assets	15.00
P & P Expenses	24.00
Contingencies @ 10% on Building and plant and machinery	20.00
Working capital margin	5.05
Total	**270.55**
Means of Finance	
Promoters' contribution	108.22
Term loan from Bank/ FI	162.33
Total	270.55
Debt Equity Ratio	1.5:1
Promoters contribution	40%

Financial assistance in the form of grant is available from the Ministry of Food Processing Industries, Govt. of India, towards expenditure on technical civil works and plant and machinery for eligible projects, subject to certain terms and conditions.

7) PROJECTED PROFITABILITY

a) Production Capacity

The installed production capacity of the proposed unit would be to process 60 lacs eggs / year in 300 working days. The capacity utilization of 65% and 80 % is envisaged during the first two years.

b) Sales Revenue at 100%

Product	**Qty (Tons)**	**Selling Price (Rs./kg)**	**Sales (Rs. in lacs)**
Egg Powder	240	150.00	360.00

c) Raw Material Required at 100.

(Rs. in lacs)

Product	**Qty (Tons)**	**Rate (Rs./ egg)**	**Value**
Fresh Eggs	60 lacs	2.50	150.00
Cost of packing material @ 7000 / T	-	-	16.80
		Total	**166.80**

d) Projected Profitability **(Rs. in lacs)**

S. No.	**Particulars**	**1st year**	**2nd year**
A.	**Installed capacity**	**240 Tonnes**	
	Capacity Utilisation	65%	80%
	Sales Realisation	234.00	288.00
B.	**Cost of Production**		
	Raw & packing materials	100.00	125.00
	Utilities	5.04	6.30
	Salaries	18.00	19.80
	Stores and Spares	2.40	3.00
	Repairs and Maintenance	3.00	3.75
	Selling Expenses @ 10%	20.00	25.20
	Administrative Expenses	2.40	3.00
	Total	**150.80**	**186.00**
C.	**Profit before Interest & Depreciation**	**83.20**	**102.00**
	Interest on Term Loan	16.23	13.20
	Interest on Working Capital	1.70	2.12
	Depreciation.	20.00	18.00
	Net Profit	45.00	68.68
	Income-tax @ 20%	9.00	13.73
	Profit after tax	36.00	54.95

	Cash Accruals	56.00	72.95
	Repayment of Term Loan	Nil	30.00

e) Break Even Point Analysis (Rs. in lacs)

S. No.	Particulars	Amount	
(A)	**Sales**		**234.00**
(B)	**Variable Costs**		
	Raw & packing material	100	
	Utilities(70%)	3.50	
	Salaries (60%)	12.60	
	Stores and Spares	2.40	
	Selling and Distribution Exps (70%)	14.00	
	Admn Expenses (50%)	1.20	
	Interest on WC	1.70	**135.40**
(C)	**Contribution (A) - (B)**		**99.00**
(D)	**Fixed Costs**		**33.33**
(E)	**Break Even Point**		**34%**

f) Debt Service Coverage Ratio (DSCR) ***(Rs. in lacs)***

Particulars	1st year	2nd year	3rd year
Cash Accruals	56.00	72.95	83.71
Interest on TL	16.23	13.20	10.20
Total (A)	79.23	26.15	93.91
Interest on TL	16.23	13.20	10.20
Repayment of TL	Nil	30.00	30.00
Total (B)	16.23	43.20	40.20
DSCR (A) /(B)	4.88	1.86	2.33
Average DSCR	3.02		

g) Internal Rate of Return (IRR)

Cost of the project is Rs. 270.55 lacs

(Rs. in lacs)

Year	Cash Accruals	15%	24%
1	56.00	48.72	44.80
2	72.95	55.15	47.09
3	83.71	55.08	43.86
4	83.71	47.88	35.40
5	83.71	41.01	28.54
6	83.71	34.48	23.02
7	83.71	31.47	18.58
8	83.71	27.37	14.98
Total		336.16	255.00

The IRR is around 22%

h) Manpower requirement

Particulars	**Nos.**	**Monthly**	**Total Monthly Salary (Rs.)**
Machine operators	2	8,000	16,000
Skilled workers	6	7,500	45,000
Semi skilled workers	4	6,000	24,000
Un Skilled Workers	10	5,000	50,000
Salesman	1	8,000	08,800
Clerk	1	7,000	07,000
		Total	**1,50,000/-**

8. ASSUMPTIONS

- The plant will work for 300 days in a year. :
- The operating capacity is 65% , 80% & 90 % during 1st year , 2nd year and 3rd year respectively.
- The interest on term loan is taken at 10% per annum and on working capital it is 12% per annum.
- Price of raw material and selling price of finished products is taken at Rs. 2.50 / egg and Rs. 150/kg respectively.

9. SOURCES OF TECHNOLOGY

CFTRI, Mysore, has successfully developed the technical know-how for the product. BIS has laid down the quality standard. The compliance under FSSAI act is a must.

10. PLANT & MACHINERY SUPPLIERS

1. Sanova Technology Group
   Thulevej 25-27
   5210, odense NV. Denmark
   email.info@sanova group.com

2. SSP Limited
   19, DLF Industrial Area – II,
   13/4, Mathura Road, Faridabad – 121003 (Haryana)
   Tel. 2275441
   www. sspindia.com

PROJECT PROFILE
CATTLE FEED

1. INTRODUCTION

With the development of dairy in India, there is a very good demand for cattle feed which is mainly used for cows, buffaloes, bullocks etc. Health of cattle depends on its feed. Generally cattle / poultry feed must contain good amount of food nutrients such as protein , carbohydrates, fat, vitamins, minerals, etc. Therefore, cattle feed should have right proportion of these ingredients. Cattle feed is available either in powder form or pellet form whereas poultry feed is available only in coarse form. But there are different types of poultry feed like layer mash, grower mash, chick mash, broiler starter mash, broiler finisher mash etc.

2. OBJECTIVES

The objective of the profiles is to encourage and assist prospective entrepreneurs in MSME sector in and guiding making them aware of the opportunities of this sector. It is also being developed by the Directorate of the Food Processing Industries, Government of West Bengal to help entrepreneurs with knowledge about raw materials availability, knowledge of market, source of technology and plant and machinery suppliers. M/s ITV Agro & Food Technologies Pvt. Ltd., New Delhi has helped in developing the project profile.

3. RAW MATERIAL AVAILABILITY

The main ingredients of cattle feed are oil cake, wheat or rice bran , maize , cotton seed, molasses, mineral mix , vitamin mix etc, while those of poultry feed are maize rice polish, wheat oil cake , fish meal etc. The required quantity is given below:

	Qty in MT	Rate per MT	Rs. in lacs
• Groundnut oil cake	18.750	24,000	54.00
• Wheat bran	37.500	6,000	27.00
• Rice bran	25.000	8, 000	24.00
• Maize	12.500	15,000	15.00
• Molasses	6.250	10,000	6.25
• Mineral mix & vitamin	(LS)	20,000	0.20
• Fish meal	12.500	15,000	30.00
• Bone meal	12.500	15,000	2.25
• Gunny bags for packing	2500	10,000	3.00
	Total		**161.70**

4. MARKET OPPORTUNITIES

The per capita consumption of milk and eggs in India is only about 50% of what we need . Cattle farming and poultry faming are nowadays considered as active & growing activity in agriculture or in animal husbandry. There are very few large manufacturers in this line . With the increase in no. of cattle and birds, the demand of cattle feed and poultry feed goes on increasing.

5. PROJECT DESCRIPTION

a) Product & Its uses

With the development of dairy in India, there is a very good demand for cattle feed which is mainly used for feeding the cows, buffaloes, bullocks etc. Health of cattle depends on it s feed. Generally cattle / poultry feed must contain good amount of food nutrients such as protein , carbohydrates, fats, vitamins, minerals, etc. Therefore, cattle feed should have right proportion of these ingredients.

Cattle feed is available either in powder form or pellet form whereas poultry feed only in coarse form.

b) Capacity

The proposed capacity of the plant is to manufacture 1500 MT / annum of cattle & poultry feed.

c) Manufacturing process

Depending on the product mix various raw material are disintegrated and made in to powder form. Ingredients are taken in required quantity in disintegrator and mix with the prescribed raw material such as oil cake, bran etc. Subsequently, vitamins and minerals are also added. After thorough mixing the cattle feed/ poultry feed is packed.

6. PROJECT COMPONENTS & COST

a) Land & Building

Land – 1000 sq. m @ Rs. 500 per sq. m Rs. 5,00,000

Building -	**Size in ft.**		**Area**
Process Hall	40x30	=	1200 Sq. ft.
Store (2)	40x20	=	1600
Laboratory	20x10	=	200
Office	20 x10	=	200
Total 3200 sq. ft.@ Rs. 600 per sq. ft. i.e		=	Rs. 19.20

b) Plant & Machinery

		Qty	**(Rs. in lacs)**
1.	Disintegrator	1	5.00
2.	Mixer	1	3.75
3.	Weighing scale	1	1.50
4.	Misc. Equipment	(L.S)	0.75
5.	laboratory equipment	(L.S.)	1.80

	Electrification & erection	**1**.65
	Total	**14.45**

c) Miscellaneous Assets

Some other assets like furniture and fixtures, storage facilities, plastic tubs etc. shall be required for which a provision of Rs. 3.80 lacs is made.

d) Utilities

			Rs. in lacs
1.	Electricity	3000 units	
		@ Rs. 5 per unit	1.80
2.	Water		0.25
3.	Grease, Machine oil etc.		0.35
		Total	**2.40**

e) Prel. & Pre Operative Expenses

A provision of Rs. 2.60 lacs is made towards certain pre-production expenses like establishment, registration, administrative and travelling charges, interest during implementation, trial run expenses etc.

f) Working Capital Assessment (Rs. in lacs)

Particulars	**Period**	**Margin**	**Total**	**Bank**	**Promoters**
Stock of Raw material & packing material	½ month	30%	4.04	2.83	1.21
Stock of Finished Goods	½ month	30%	5.33	3.73	1.60
Receivable	½ month	30%	6.37	4.46	1.91
Total			**15.74**	**11.02**	**4.72**

g) Project cost & Means of Finance

Item	**Amount (Rs. in lacs)**
Land and Building	24.20
Plant and Machinery	14.45
Miscellaneous Assets	3.80
P & P Expenses	2.60
Contingencies @ 10% on building and plant & machinery	3.36
Working capital margin	4.72
Total	53.13
Means of Finance	
Promoters' contribution	21.25
Term loan from Bank/ FI	31.88
Total	53.13
Debt Equity Ratio	1.5:1
Promoters contribution	40%

Financial assistance in the form of grant is available from the Ministry of Food Processing Industries, Govt. of India, towards expenditure on technical civil works and plant and machinery for eligible projects subject to certain terms and conditions.

7) PROJECTED PROFITABILITY

a) Production Capacity

The rated production capacity of the plant is 1500 tonnes per year whereas actual capacity utilization is expected to be 60% and 75% during 1st year & 2nd year respectively.

b) Sales Revenue at 100%

Product	**Qty (Tonnes)**	**Selling Price (Rs./Ton)**	**Sales (Rs. in lacs)**
Cattle feed	750	17,000	127.50
Poultry feed	750	17,000	127.50
		Total	**255.00**

c) Projected Profitability **(Rs. in lacs)**

S. No.	Particulars	1st year	2nd year
A.	**Installed capacity**	**1500 Tons**	
	Capacity Utilisation	60%	75%
	Sales Realisation	153.00	191.25
B.	**Cost of Production**		
	Raw material & packing material	97.02	121.27
	Utilities	1.44	1.60
	Salaries	6.66	7.32
	Stores and Spares	3.35	4.18
	Repairs and Maintenance	1.80	2.25
	Selling Expenses @ 25%	15.30	19.12
	Administrative Expenses	2.50	3.12
	Total	128.07	158.86
C.	**Profit before Interest & Depreciation**	**24.93**	**32.39**
	Interest on Term Loan	3.18	2.58
	Interest on Working Capital	1.32	1.65
	Depreciation.	3.36	3.02
	Net Profit	17.07	25.14

	Income-tax @ 20%	3.41	5.02
	Profit after tax	13.66	20.12
	Cash Accruals	17.02	23.14
	Repayment of Term Loan	Nil	6.00

d) Break Even Point Analysis

S. No.	**Particulars**	**Amount (Rs. in lacs)**	
(A)	**Sales**		**153.00**
(B)	**Variable Costs**		
	Raw material & packing material	97.02	
	Utilities(70%)	1.08	
	Salaries (60%)	3.99	
	Stores and spares	3.35	
	Selling Exps (70%)	10.71	
	Admn Expenses (50%)	1.25	
	Interest on WC	1.32	**118.72**
(C)	**Contribution (A) – (B)**		**34.28**
(D)	**Fixed Costs**		**13.91**
(E)	**Break Even Point**		**41%**

e) Debt Service Coverage Ratio (DSCR) *(Rs. in lacs)*

Particulars	**1st year**	**2nd year**	**3rd year**
Cash Accruals	17.02	23.14	27.76
Interest on TL	3.18	2.58	1.98
Total (A)	20.20	25.72	29.74
Interest on TL	3.18	2.58	1.98
Repayment of TL	Nil	6.00	6.00
Total (B)	3.18	8.58	7.98

DSCR (A) / (B)	6.35	2.99	3.72
Average DSCR	4.35		

f) Internal Rate of Return (IRR)

Cost of the project is Rs. 53.13 lacs

(Rs. in lacs)

Year	**Cash Accruals**	**20%**	**28%**	**24%**
1	17.02	14.17	13.27	13.71
2	23.14	16.05	14.11	15.04
3	27.76	16.07	13.24	14.54
4	27.76	13.38	10.35	11.82
Total		59.67	50.97	55.11

The IRR is 24 %

g) Manpower requirement

Particulars	**Nos.**	**Monthly**	**Total yearly Salary (Rs.)**
Skilled workers	2	7500	1.80
Helpers	3	5,000	1.80
Production Manager	1	10,000	1.20
Salesman	1	8,000	0.96
Others	1	7,500	0.90
		Total	**6.66**

8. ASSUMPTIONS

- The plant will work for 300 days in a year. :
- The operating capacity is 60% , 75%, 90 % during 1st year , 2nd year and 3rd year respectively.

- The interest on term loan is taken at 10% per annum and on working capital it is 12% per annum.
- Selling price of finished products is taken at Rs. 17000 / ton .

9. SOURCES OF TECHNOLOGY

CFTRI, Mysore, has successfully developed the technical know-how for the product. BIS has laid down the quality standard. The compliance under FSSAI act is a must.

10. PLANT & MACHINERY SUPPLIERS

1. Namdhari Agro Industries
   D-26, Focal Point,
   Khanna – 141001 (Punjab)
   Ph. 9888531657
   email.nandhariagroind@yahoo.in

2 Best Engineering Technologies,
Plot No. 69-A, No. 5-9-285/13,
Rajiv Gandhi Nagar, Industrial Estate,
Kukatpally, Hyderabad – 500037 (AP)
Ph. 08447523620
www.bestengineeringtechnologies.com

PROJECT PROFILE
CHEWING GUM

1. INTRODUCTION

Chewing gum is a kind of sweet, made up of a combination of rubber latex, ester gum and sweetening agents. It has no nutrient value except it contains glucose which has some stamina properties. It is a consumable item. It is very popular among children as well as among adults.

2. OBJECTIVES

The objective of the profiles is to encourage and assist prospective entrepreneurs in MSME sector in and guiding making them aware of the opportunities of this sector. It is also being developed by the Directorate of the Food Processing Industries, Government of West Bengal to help entrepreneurs with knowledge about raw materials availability, knowledge of market, source of technology and plant and machinery suppliers. M/s ITV Agro & Food Technologies Pvt. Ltd., New Delhi has helped in developing the project profile.

3. RAW MATERIAL AVAILABILITY

The following raw material will be required.

			Value (Rs.)
1.	Edible Ester gum 450 kgs @ Rs. 70 kg	-	31,500
2.	Synthetic latex / natural latex 412.5 kgs @ Rs. 50 per kg.	-	20,600
3.	Glycerol mono stearate (GMS) 106.26 kgs @ Rs. 80 per kg.	-	8,480
4.	Calcium carbonate 362. 5 kgs @ Rs. 32 per kg	-	11,584

5.	Sugar -3437.5 kgs.	-	1,10,016
6.	Glucose	-	1,06,250
7.	Citric acid	-	1,875
8.	Essence	-	22,050
9.	Color	-	600
10.	wax coated wrappers	-	1,11,720
11	Polythene Bags – 12500 pcs	-	12,500
12	wooden crates 250 pcs		7,500
13	Ropes & nail	-	900
14	Other miscellaneous item	-	900
Total		**-**	**Rs. 4,46,475**

4. MARKET OPPORTUNITIES

India is a thickly populated country. It is known that due to rapid industrialization in the country the purchasing power is also increasing and the living standards of people are going up. Chewing gum is very popular among children and there is a great demand in the urban areas. The demand for this product is also increasing in the rural area. As such there is scope for the product in the coming years.

5. PROJECT DESCRIPTION

a) Product & Its uses

Chewing gum is a kind of sweet made of a combination of rubber latex, ester gum and sweetening agents. It has no nutrient value except it contains glucose which has some stamina properties. It is a consumable item. It is very popular among children as well as among adults.

b) Capacity

The proposed capacity of the plant is to produce 68 MT / annum of chewing gum.

c) Manufacturing process

In the manufacturing process of bubble gum, first the ingredients are pulverized into fine powder form. Then the gum base is made by mixing and heating ester gum, natural latex/synthetic latex (all of edible grade) G.M.S. and calcium carbonate in a mixing bottle, for about two hours. When the ingredients have mixed homogenously, then the resultant mass is further mixed with sugar, glucose, citric acid, essence and food colour for two more hours. The mixed mass is then passed through bubble gum cutting machine to cut small pieces of required size and shape, which are then kept in an air conditioned room for 24 hours for complete drying. Once dried, these pieces are wrapped in printed packs and sealed.

6. PROJECT COMPONENTS & COST

a) Land & Building	*(Rs. in lacs)*
Building with 1450 sq. ft. covered area .	8.40

b) Plant & Machinery		*(Rs. in lacs)*
1.	Bubble gum mixing machine	Rs. 3.00
2.	Bubble gum cutting machine	Rs. 0.42
3.	Bubble gum cutting machine	Rs. 2.30
4.	Pulveriser	Rs. 0.45
5.	Air conditioner (1.5 ton)	Rs. 1.20
6.	Erection and installation	Rs. 0.75
7.	Office furniture	Rs. 0.65
	Total	**Rs. 8.77**

c) Misc fixed assets

Other miscellaneous assets required are fans, weighing balance, tables, chairs, furniture, etc. which would cost Rs. 2.25 lacs.

d) Utilities

Power requirement shall be 20 HP whereas daily water requirement would be 3000 ltrs Roaster will need oil as fuel. The cost of utilities is estimated to be Rs. 2.80 lacs.

e) Prel. & Pre Operative Expenses

A provision of Rs. 3.15 lacs is made towards certain pre-production expenses like establishment, registration, administrative and travelling charges, interest during implementation, trial run expenses etc.

f) Working Capital Assessment

(Rs. in lacs)

Particulars	**Period**	**Margin**	**Total**	**Bank**	**Promoter's**
Stock of raw & packing material	1 month	30%	0.23	0.16	0.07
Stock of Finished Goods	½ month	30%	0.93	0.65	0.28
Receivable	½ month	30%	1.70	1.19	0.51
Total			**2.86**	**2.0**	**0.86**

g) Project cost & Means of finance

Item	**Amount (Rs. in lacs)**
Land and Building	8.40
Plant and Machinery	8.77
Miscellaneous Assets	2.25
P & P Expenses	3.15
Contingencies @ 10% on building and plant & machinery	1.71
Working capital margin	0.86
Total	**25.14**
Means of Finance	
Promoters' contribution	10.00
Term loan from Bank/ FI	15.14
Total	25.14
Debt Equity Ratio	1.5:1
Promoters contribution	40%

Financial assistance in the form of grant is available from the Ministry of Food Processing Industries, Govt. of India, towards expenditure on technical civil works and plant and machinery for eligible projects subject to certain terms and conditions.

7) PROJECTED PROFITABILITY

a) Production Capacity

The rated production capacity of the plant is 68 tonnes per year whereas actual capacity utilization is expected to be 60% and 75% during 1st year and 2nd year respectively.

b) Sales Revenue at 100%

Product	**Qty (Tons)**	**Selling Price (Rs. / kg)**	**Sales (Rs. in lacs)**
Chewing gum	68.00	100	68.00

c) Projected Profitability

(Rs. in lacs)

S. No.	**Particulars**	**1st year**	**2nd year**
A.	**Installed capacity**	**68 Tons**	
	Capacity Utilisation	60%	75%
	Sales Realisation	40.80	51.00
B.	**Cost of Production**		
	Raw material & packing material	2.68	3.35
	Utilities	1.68	2.10
	Salaries	6.78	7.45
	Stores and Spares	2.10	2.62
	Repairs and Maintenance	1.80	2.25
	Selling Expenses @15%	6.12	7.65
	Administrative Expenses	1.20	1.50
	Total	22.36	26.92
C.	**Profit before Interest & Depreciation**	**18.44**	**24.08**
	Interest on Term Loan	1.51	1.21
	Interest on Working Capital	0.24	0.30
	Depreciation.	1.71	1.54
	Net Profit	14.98	21.03
	Income-tax @ 20%	2.98	4.20
	Profit after tax	12.00	16.83

	Cash Accruals	13.71	18.37
	Repayment of Term Loan	Nil	3.00

d) Break Even Point Analysis

S. No.	Particulars	Amount (Rs. in lacs)	
(A)	**Sales**		**40.80**
(B)	**Variable Costs**		
	Raw material & packing material	2.68	
	Utilities(70%)	1.17	
	Salaries (60%)	4.06	
	Stores and Spares	2.10	
	Selling Exps (70%)	4.28	
	Admn Expenses (50%)	0.60	
	Interest on WC	0.24	**15.13**
(C)	**Contribution (A) – (B)**		**25.67**
(D)	**Fixed Costs**		**8.96**
(E)	**Break Even Point**		**35%**

e) Debt Service Coverage Ratio (DSCR) **(Rs. in lacs)**

Particulars	1st year	2nd year	3rd year
Cash Accruals	13.71	18.37	22.04
Interest on TL	1.51	1.21	0.95
Total (A)	15.22	19.58	22.99
Interest on TL	1.51	1.21	0.95
Repayment of TL	Nil	3.00	3.00
Total (B)	1.51	4.21	3.95
DSCR (A) / (B)	10.07	4.65	5.82
Average DSCR	6.84		

f) Internal Rate of Return (IRR)

Cost of the project is Rs. 25.14 lacs

(Rs. in lacs)

Year	**Cash Accruals**	**28%**	**32%**
1	13.71	10.70	10.07
2	18.37	11.20	10.47
3	22.04	10.51	9.47
Total		**32.41**	**31.01**

The IRR is 32 %

g) Manpower requirement

Particulars	**Nos.**	**Monthly**	**Total yearly Salary (Rs. in lacs)**
Skilled workers /operator	2	7,500	1.80
Semi Skilled Workers	3	6,000	2.16
Manager	1	8,000	0.96
Salesman	1	8,000	0.96
Office staff	1	7,500	0.90
Total			**6.78**

8. ASSUMPTIONS

- The plant will work for 300 days in a year. :
- The operating capacity is 60% , 75%, 90 % during 1st year , 2nd year and 3rd year respectively.
- The interest on term loan is taken at 10% per annum and on working capital it is 12% per annum.
- Selling price of finished products is taken at Rs. 100 / kg.

9. SOURCES OF TECHNOLOGY

CFTRI, Mysore, has successfully developed the technical know-how for the product. BIS has laid down the quality standard. The compliance under FSSAI act is a must.

10. PLANT & MACHINERY SUPPLIERS

1. Dhiman Group
   Dakhni gate, Nakodar (Punjab) – 144040
   Ph.220010 /220018
   Email. info@dhimangroup.com

2. Linhandle
   No. 33 Lane 201, Chung Hsiao Road,
   Panchiao city , Taipei hsien, Taiwan
   0888-2-29536225

PROJECT PROFILE
COCONUT SHELL POWDER

1. INTRODUCTION

Coconut shell powder is made from coconut shells and is used as a filler in the manufacture of thermo set moulding powders like bakelite synthetic resin glues or phenol formaldehyde. Availability of adequate quantity of coconut shells is the most critical aspect. It is imperative to locate reliable sources for regular supplies and the location of the factory has to be finalized accordingly. Mesh size of 80-100 is suitable for thermoset moulding power whereas for synthetic resin glues the size has to be around 230-240 mesh. Product provides substantial value addition as normally shells are either thrown away or used as a fuel.

2. OBJECTIVES

The objective of the profiles is to encourage and assist prospective entrepreneurs in MSME sector in and guiding making them aware of the opportunities of this sector. It is also being developed by the Directorate of the Food Processing Industries, Government of West Bengal to help entrepreneurs with knowledge about raw materials availability, knowledge of market, source of technology and plant and machinery suppliers. M/s ITV Agro & Food Technologies Pvt. Ltd., New Delhi has helped in developing the project profile.

3. RAW MATERIAL AVAILABILITY

The only raw material required will be coconut shells. Monthly requirement at 100% activity level shall be 50 tons which is not a small quantity. Proper assessment and arrangements must be made to ensure adequate regular supply. Powder can be packed

in gunny bags with liner inside. Production of coconut in the state is estimated 326.30 million nuts / year.

4. MARKET OPPORTUNITIES

Coconut shell powder is mainly used as filler and thus it is an industrial product. It is used in the manufacture of thermoset moulding powder such as phenol formaldehyde moulding powder or bakelite and synthetic resin glues. Powder of different particle size is required for different end-uses. It would be better if the promoters have relevant marketing background. India has maintained fairly steady industrial growth during last 8-10 years. Indian economy is gradually coming out of the grip of demand recession and industrial production is once again picking up. Yet, another favourable aspect of coconut shell powder is that it is a comparatively cheaper filler and hence preferred by many end users.

5. PROJECT DESCRIPTION

a) Product & Its uses

Coconut shell powder is an industrial product and is considered to be a suitable and cheap filler compared to others. It is easy to manufacture and results in considerable value addition.

b) Capacity

The proposed capacity of the plant is to process 600 MT / annum of coconut shell.

c) Manufacturing process

It is not very complicated. Coconut shells are cleaned and broken manually into small pieces and then fed into pulveriser. Powder obtained from pulveriser is fed into rotor lift, coiled and passed through dresser to have required mesh size. Rejects from the dresser are recycled. Efficient pulverizing and screening are critical aspects. Recovery is around 90%.

6. PROJECT COMPONENTS & COST

a) Land & Building

Land of 200 sq. mtrs. with built up area of 100 sq. mtrs. shall be adequate. Spare land can be utilized for storage of coconut shells. Land may cost Rs. 1.00 lacs whereas cost of construction could be Rs. 6.00 lacs.

b) Plant & Machinery

Production capacity has to be determined after assessing the availability of coconut shells but the minimum viable size has to be to process 600 tons every year and 300 working days. This would call for installation of the following machinery.

Item	**Qty**	**Price (Rs in lacs.)**
Pulveriser with electric motor and accessories	1	4.20
Centrifugal screen with electric motor and accessories	1	1.50
Rotor lift with Electric motor	1	0.60
Laboratory equipment	-	0.40
Weighing scales etc.	-	0.30
	Total	**7.00`**

c) Miscellaneous Assets

Some other assets like furniture & fixtures, tools, material handling equipment etc. shall be required for which a provision of Rs. 1.30 lacs is made.

d) Utilities

Power requirement shall be 50 HP whereas water required every day shall be around 5000 ltrs. The cost of utilities is estimated at Rs. 2.60 lacs.

e) Prel. & Pre Operative Expenses

There will be many pre-production expenses like registration, establishment and administrative charges, travelling expenses, interest during implementation, trial run expenses and so on for which a provision of 1.60 lac is made.

f) Working Capital Assessment

(Rs. in lacs)

Particulars	**Period**	**Margin**	**Total**	**Bank**	**Promoters**
Stock of Raw material & packing material	1 month	30%	1.15	0.80	0.35
Stock of finished goods	½ month	25%	1.71	1.28	0.43
Receivable	1 month	25%	2.02	1.52	0.50
Total			**4.88**	**3.60**	**1.28**

g) Project cost & Means of finance

Item	**Amount (Rs. in lacs)**
Land and Building	7.00
Plant and Machinery	7.00
Miscellaneous Assets	1.30
P & P Expenses	1.60
Contingencies @ 10% on Building and plant & machinery	1.30
Working capital margin	1.28
Total	19.48
Means of Finance	
Promoters' contribution	7.80
Term loan from Bank /FI	11.68

Total	**19.48**
Debt Equity Ratio	1.5:1
Promoters contribution	40%

Financial assistance in the form of grant is available from the Ministry of Food Processing Industries, Govt. of India, towards expenditure on technical civil works and plant and machinery for eligible projects subject to certain terms and conditions.

7) PROJECTED PROFITABILITY

a) Production Capacity

The rated production capacity of the plant is 600 tonnes per year whereas actual capacity utilization is expected to be 60% and 75%, during 1st year and 2nd year respectively.

b) Sales Revenue at 100%

Assuming selling price of Rs. 15,000 per ton and recovery of 90%, the annual turnover at 100% would be Rs. 81.00. lacs.

c) Raw Material Required at 100%

Price of coconut shells is assumed to be Rs. 7000/- per ton and thus cost of 600 tonnes would be 42.00 lacs. Per ton packing material cost would be Rs. 700/- and hence cost of packing material for 600 tons would be Rs. 4.20 lacs.

d) Projected Profitability **(Rs. in lacs)**

S. No.	Particulars	1st year	2nd year
A.	**Installed capacity**	**600 Tons**	
	Capacity Utilisation	60%	75%
	Sales Realisation	48.60	60.75
B.	**Cost of Production**		
	Raw material & Packing materials	27.72	34.65
	Utilities	1.56	1.95
	Salaries	7.32	8.05
	Stores and Spares	1.20	1.50
	Repairs and Maintenance	0.90	1.12
	Selling & Admn. Expenses @ 5%	2.41	3.03
	Total	41.11	50.30
C.	**Profit before Interest & Depreciation**	**7.49**	**10.45**
	Interest on Term Loan	1.16	0.91
	Interest on Working Capital	0.43	0.54
	Depreciation.	1.30	1.17
	Net Profit	4.60	7.83
	Profit after tax	4.60	7.83
	Cash Accruals	5.90	9.00
	Repayment of Term Loan	Nil	2.50

e) Break Even Point Analysis ***(Rs. in lacs)***

S. No.	**Particulars**	**Amount**	
(A)	**Sales**		**60.75**
(B)	**Variable Costs**		
	Raw materal & packing material	34.65	
	Utilities(70%)	1.36	

	Salaries (60%)	5.63	
	Stores and Spares	1.50	
	Selling and admn. Exps (50%)	1.51	
	Interest on WC	0.54	**45.15**
(C)	**Contribution (A) – (B)**		**15.60**
(D)	**Fixed Costs**		**6.54**
(E)	**Break Even Point**		**42%**

f) Debt Service Coverage Ratio (DSCR) *(Rs. in Lacs)*

Particulars	**1st year**	**2nd year**	**3rd year**
Cash Accruals	5.90	9.00	10.80
Interest on TL	1.16	0.91	0.66
Total (A)	7.06	9.91	11.46
Interest on TL	1.16	0.91	0.66
Repayment of TL	Nil	2.50	2.50
Total (B)	1.16	3.41	3.16
DSCR (A) + (B)	6.08	2.90	3.62
Average DSCR	4.20		

g) Internal Rate of Return (IRR)

Cost of the project is Rs. 19.48lacs **(Rs. in lacs)**

Year	**Cash Accruals**	**20%**	**24%**
1	5.90	4.91	4.72
2	9.00	6.20	5.85
3	10.80	6.10	5.61
4	10.80	5.18	4.53
Total		22.31	20.71

The IRR is around 24%.

h) Manpower requirement

Particulars	Nos.	Monthly	Total Monthly Salary (Rs.)
Machine Operator	1	8,000	8,000
Skilled Workers	2	7,500	15,000
Un skilled workers	5	6,000	30,000
Salesman	1	8,000	8,000
		Total	**61,000**

8. ASSUMPTIONS

- The plant will work for 300 days in a year. :
- The operating capacity is 60% , 75%, 90 % during 1st year , 2nd year and 3rd year respectively.
- The interest on term loan is taken at 10% per annum and on working capital it is 12% per annum.
- Price of raw material and selling price of finished products is taken at Rs. 7,000 / ton and Rs. 15,000/ ton respectively.

9. SOURCES OF TECHNOLOGY

CFTRI, Mysore, has successfully developed the technical know-how for the product. BIS has laid down the quality standard. The compliance under FSSAI act is a must.

10. PLANT & MACHINERY SUPPLIERS

1. Sri Ballaji Industries
   No. 622-1 Elgi Industrial Area,
   Trichy Road, Singan cellur, Coimbator (T.N)
   Ph. 9943023249
   email.sbicbes@gmail.com
2. Essar Engineers
   519/1-A, Attipalayam Road,
   Chinnavedampatti, Coimbatore – 641006 (TN)
   Ph. 08447578059

PROJECT PROFILE

CORN FLAKES

1. INTRODUCTION

Health awareness is increasing day-by-day and people are more watchful about their health. Health clubs are becoming popular along with health food. Corn has got many nutritional values. Corn flakes are a product which is being accepted by many as health food. Flakes can be deep fried and are used extensively while making chevada – a popular snack item in Western India. Dry roasted maize flakes along with a small quantity of sugar are mixed in milk and it becomes a health food especially for growing children. The preferred location is West Bengal.

2. OBJECTIVES

The objective of the profiles is to encourage and assist prospective entrepreneurs in MSME sector in and guiding making them aware of the opportunities of this sector. It is also being developed by the Directorate of the Food Processing Industries, Government of West Bengal to help entrepreneurs with knowledge about raw materials availability, knowledge of market, source of technology and plant and machinery suppliers. M/s ITV Agro & Food Technologies Pvt. Ltd., New Delhi has helped in developing the project profile.

3. RAW MATERIAL AVAILABILITY

The only raw material will be good quality maize nuts. Maize is grown in many parts of West Bengal. A proper assessment of total crop and quality has to be made while finalizing the location of the factory. Annual requirement of maize nuts even at 100% utilization will be 450 tons. Production of maize in West Bengal is estimated to be 30.00 lacs ton /year.

4. MARKET OPPORTUNITIES

With increasing health awareness, people are becoming health conscious and are choosy about their eating habits. Many health foods are becoming popular. Maize is considered to be good for health. Maize flour is very popular in many region and maize flakes are being accepted as health food. But people at large are still not familiar with this product and therefore, proper publicity will be crucial. The product shall have to be pushed with the help of retailers. Chevda is also a popular snack throughout West Bengal and it is prepared from rice flakes or maize flakes . Hence, there has to be bulk as well as consumer packing as restaurants, hotels, canteens.

5. PROJECT DESCRIPTION

a) Product & Its uses

Maize is an agricultural produce and traditionally used, especially in rural areas, for preparation of roti. This product is good for health . On proper roasting and flaking, maize flakes are obtained. These flakes can be consumed along with sugar and milk or deep fried to make chevda. The project is meant to self roasted maize flakes.

b) Capacity

The proposed capacity of the plant is to process 360 MT / annum of corn flakes.

c) Manufacturing process

The process is very simple. Maize nut are cleaned and graded to remove mud, stones etc. and then soaked in hot water. After drying, they are roasted and then taken to flakes polisher wherein flakes are formed. Flakes are then passed through sieves to remove bran and broken maize and are then suitably packed in polythene bags. During this process of manufacture, the net recovery of flakes is 80%. Of the balance 20%, process loss is 5% and remaining 15% is bran and broken flakes or maize which is sold to cattle-feed manufacturers.

6. PROJECT COMPONENTS & COST

a) Land & Building

About 250 sq. mtrs. of land is sufficient as built –up area requirement is 75 sq. mtrs consisting of production hall of 45 mtrs and two rooms for packing and storage. Cost of land is taken at Rs 1.25 lacs whereas civil work may cost Rs. 4.50 lacs including soaking tanks.

b) Plant & Machinery

In this case, the major factor deciding the proposed production capacity is market. Hence before taking a final decision, a market survey of nearby major towns / cities must be undertaken. But keeping in mind the financial viability, annual rated capacity of 360 tons and 300 working days is suggested for which, the following machines shall be required :

(Rs. in lacs)

Item	**Qty**	**Amount**
Electrically-operated Roaster	1	2.60
Flaker Polisher	1	2.00
Coal-fired furnace	1	0.60
Sieves	2	0.30
Sealing Machine, weighing scales etc.	-	0.50
Electricals etc		1.50
Total		**7.50**

c) Miscellaneous Assets

A provision of Rs. 1.30 lacs has been made towards furniture and fixtures, storage facilities, working tables, exhaust fans, etc.

d) Utilities

Power requirement shall be 25 HP and hard coke of 18 tons will be required during the year. Water requirement per day will be 5000 ltrs. Expected annual expenditure at 100% will be Rs. 2.30 lacs.

e) Prel. & Pre Operative Expenses

Expenses incurred prior to the commencement of commercial production are covered under this head. A provision of Rs. 1.40 lacs would take care of registration, establishment and other administrative charges, market survey expenses, interest during implementation and trial run expenses.

f) Working Capital Assessment

Capacity utilization in the first year is considered to be 60%. At this level of activity, the requirement of working capital will be as under :

(Rs. in lacs)

Particulars	**Period**	**Margin**	**Total**	**Bank**	**Promoters**
Stock of raw material & packing material	½ month	30%	1.82	1.27	0.55
Stock of Finished Goods	¼ month	30%	2.56	1.92	0.64
Receivable	½ month	25%	3.19	2.39	0.80
Total			7.57	5.58	1.99

g) Project cost & Means of finance

Item	**Amount (Rs. in lacs)**
Land and Building	5.75
Plant and Machinery	7.50

Miscellaneous Assets	1.30
P & P Expenses	1.40
Contingencies @ 10% on building and plant & machinery	1.20
Working capital margin	1.99
Total	19.14
Means of Finance	
Promoters' contribution	7.65
Term loan from Bank / FI	11.49
Total	19.14
Debt Equity Ratio	1.5:1
Promoters contribution	40%

Financial assistance in the form of grant is available from the Ministry of Food Processing Industries, Govt. of India, towards expenditure on technical civil works and plant and machinery for eligible projects subject to certain terms and conditions.

7) PROJECTED PROFITABILITY

a) Production Capacity

The rated production capacity of the plant is to process 450 tons per year of maize whereas actual capacity utilization is expected to be 60% and 75% during 1st year and 2nd year of operation respectively.

b) Sales Revenue at 100%

Product	**Qty (Tons)**	**Selling Price (Rs. / Ton)**	**Sales (Rs. in lacs)**
Maize Flakes	360	35000	126.00
Bran & Broken flakes	45	4000	1.80
Total			**127.80**

c) Raw Material Required at 100%

Details of raw material required are as under :

(Rs. in lacs)

Product	**Qty (Tons)**	**Rate (Rs./ Ton)**	**Value**
Maize Nuts	450	15,000	67.50
Packing Material	-	-	5.40
	Total		**72.90**

d) Projected Profitability

(Rs. in lacs)

S. No.	Particulars	1st year	2nd year
A.	**Installed capacity**	**450 Tons**	
	Capacity Utilisation	60%	75%
	Sales Realisation	76.68	95.85
B.	**Cost of Production**		
	Raw Materials Packing Material	43.74	54.67
	Utilities	1.38	1.72
	Salaries	5.46	6.00
	Stores and Spares	1.20	1.50
	Repairs and Maintenance	0.90	1.12
	Selling Expenses @ 25%	7.68	9.58
	Administrative Expenses	1.20	1.50
	Total	61.56	76.09
C.	**Profit before Interest & Depreciation**	**15.12**	**19.76**
	Interest on Term Loan	1.14	0.90
	Interest on Working Capital	0.67	0.84

	Depreciation.	1.20	1.00
	Net Profit	12.11	17.02
	Income-tax @ 20%	2.42	3.40
	Profit after tax	9.69	13.62
	Cash Accruals	10.89	14.62
	Repayment of Term Loan	Nil	2.50

e) Break Even Point Analysis

S. No.	**Particulars**	**Amount (Rs. In lacs)**	
(A)	**Sales**		**95.85**
(B)	**Variable Costs**		
	Raw Material & Packing Material	54.67	
	Utilities(70%)	1.03	
	Salaries (60%)	3.90	
	Stores and Spares	1.50	
	Selling Exps (70%)	6.27	
	Admn Expenses (50%)	0.75	
	Interest on WC	0.84	**68.96**
(C)	**Contribution (A) – (B)**		**26.89**
(D)	**Fixed Costs**		**8.87**
(E)	**Break Even Point**		**33%**

f) Debt Service Coverage Ratio (DSCR) *(Rs. in lacs)*

Particulars	**1st year**	**2nd year**	**3rd year**
Cash Accruals	10.89	14.62	17.54
Interest on TL	1.14	0.90	0.65
Total (A)	12.03	15.52	18.19
Interest on TL	1.14	0.90	0.65

Repayment of TL	Nil	2.50	2.50
Total (B)	**1.14**	**3.40**	**3.15**
DSCR (A) / (B)	10.55	4.56	5.77
Average DSCR	6.96		

g) Internal Rate of Return (IRR)

Cost of the project is Rs. 19.14 lacs

(Rs. in lacs)

Year	**Cash Accruals**	**32%**	**50%**
1	10.89	8.25	7.18
2	14.62	8.39	6.43
3	17.54	7.62	5.08
4	17.54	5.77	3.33
Total		**30.03**	**21.04**

The IRR is 50%

h) Manpower requirement

Particulars	**Nos.**	**Monthly**	**Total Monthly Salary (Rs.)**
Skilled workers	3	7,500	22,500
Semi Skilled Workers	3	5,000	15,000
Sales man	1	8,000	8,000
		Total	**45,500/-**

8. ASSUMPTIONS

- The plant will work for 300 days in a year. :
- The operating capacity is 60% , 75%, 90 % during 1st year , 2nd year and 3rd year respectively.

- The interest on term loan is taken at 10% per annum and on working capital it is 12% per annum.
- Price of raw material and selling price of finished products is taken at Rs. 15,000 / ton and Rs. 35,000 / ton respectively.

9. SOURCES OF TECHNOLOGY

CFTRI, Mysore, has successfully developed the technical know-how for the product. BIS has laid down the quality standard. The compliance under FSSAI act is a must.

10. PLANT & MACHINERY SUPPLIERS

1. Gurunanak Engg. Works (P) Ltd.
   C-33, Sector – 88, Phase – II, Gautam Budh Nagar (UP)
   Ph. : 9810378448 / 120-243674

2. Kailash Engg. Works
   H1-81, Napasar RIICO Industrial Area,
   Bikaner (Rajasthan)
   Ph. 151-2762534

3. Pagariya Food Products P. Ltd.
   15/1, 3rd cross, Kasturbanagar,
   Mysore Road, Bengalore – 560026
   Ph. 09953361350
   www. indiamart.com

PROJECT PROFILE
ENERGY FOOD

1. INTRODUCTION

With growing health awareness many people have become very selective about their diet and there is a marked preference for low calorie high protein food supplements. At the same time poor people cannot afford costly energy food available in the market. Thus, there is a growing market for good quality health food if the prices are reasonable. Growing children are yet another target group.

2. OBJECTIVES

The objective of the profiles is to encourage and assist prospective entrepreneurs in MSME sector in and guiding making them aware of the opportunities of this sector. It is also being developed by the Directorate of the Food Processing Industries, Government of West Bengal to help entrepreneurs with knowledge about raw materials availability, knowledge of market, source of technology and plant and machinery suppliers. M/s ITV Agro & Food Technologies Pvt. Ltd., New Delhi has helped in developing the project profile.

3. RAW MATERIAL AVAILABILITY

Materials like wheat, gram dal, edible groundnut cake, jiggery shall be available locally. Major requirement will be wheat for which arrangement for bulk supply must be made. Printed polythene bags with cartons and BOPP tape shall be the packing material.

4. MARKET OPPORTUNITIES

There are many health foods especially targeted at urban markets as they are high priced. But bulk of them are for children. But there is a large semi urban and rural market wherein these products are considered to be very costly. With greater health awareness, people are preferring diet food but presently such products are not easily available in the low price range. If such product is made available then many people who cannot afford the high priced diet food would go for it. Hence, affordable pricing would play a major role.

5. PROJECT DESCRIPTION

a) Product & Its uses

Energy food is prepared from easily available ingredients like wheat, gram dal, Jaggery, edible groundnut cake and minerals and vitamins. It is ready to eat food item and does not require extensive cooking. Some water or milk can be added depending upon individual choice. It can also be used along with other materials while making halwa, chapatti etc. This product is a common product and can be produced across the nation. However, this profile considers West Bengal as a potential location.

b) Capacity

The proposed capacity of the plant is to produce 200 MT / annum of finished product.

c) Manufacturing process

It is not very complicated. Cleaned wheat is roasted in the roaster into golden brown colour and then ground in a hammer mill. Similarly, gram dal and edible groundnut cake are also roasted and ground. Jaggery is mixed with calcium carbonate and wheat flour and processed in multi-mill to obtain coarse flour. Finally, all the ingredients alongwith pre-mixed minerals and vitamins are thoroughly mixed and packed. The typical mix could be 60% wheat flour, 10% gram dal,10% edible groundnut

cake, 15-16% jiggery and balance would be calcium carbonate and vitamins. It is imperative to maintain strict quality control.

6. PROJECT COMPONENTS & COST

a) Land & Building

Land of around 200 sq. mtrs. with built up area of 125 sq.mtrs. would be adequate. Main production area would not require more than 60 sq. mtrs. but storage and packing would occupy considerable space . Cost of land is assumed to be 1.00 lac whereas construction cost is taken at Rs. 7.50 lacs.

b) Plant & Machinery

Rated annual capacity of 200 tonnes would need the following equipments.

Item	**Qty**	**Price (Rs. in lacs)**
Electrically-operated Roaster	1	3.75
Hammer Mill	1	1.60
Multi-mill	1	1.90
Homogeniser	1	2.10
Sieves, SS Utensils, Weighing scales etc.	-	1.60
	Total	10.95

c) Miscellaneous Assets

Other assets like furniture & fixtures, packing tables, plastic tubs, storage racks etc. would cost Rs. 1.80 lacs.

d) Utilities

Total power requirement shall be 30 HP whereas per day water requirement shall be around 5000 ltrs. The annual cost of utilities is estimated at Rs. 1.50 lacs.

e) Prel. & Pre Operative Expenses

Pre-production expenses like registration, establishment, administrative and travelling charges, interest during implementation, trial runs etc. are likely to be Rs. 1.50 lacs.

f) Working Capital Assessment

At 60% capacity utilization in the first year, the working capital needs would be as under : (Rs. in lacs)

Particulars	**Period**	**Margin**	**Total**	**Bank**	**Promoters**
Stock of packing Material	½ month	30%	1.31	0.92	0.39
Stock of Finished Goods	½ month	25%	1.90	1.42	0.48
Receivable	½ month	25%	2.25	1.69	0.56
			5.46	4.31	1.15

g) Project cost & Means of finance

Item	**Amount (Rs. in lacs)**
Land and Building	7.50
Plant and Machinery	10.95
Miscellaneous Assets	1.80
P & P Expenses	1.50
Contingencies @ 10% on building and plant & machinery	1.74
Working capital margin	1.15
Total	24.64
Means of Finance	
Promoters' contribution	9.85
Term loan from Bank /FI	14.79
Total	24.64

Debt Equity Ratio	1.5:1
Promoters contribution	40%

Financial assistance in the form of grant is available from the Ministry of Food Processing Industries, Govt. of India, towards expenditure on technical civil works and plant and machinery for eligible projects subject to certain terms and conditions.

7) PROJECTED PROFITABILITY

a) Production Capacity

The rated production capacity of the plant is 200 ton / year of finished products whereas actual capacity utilization is expected to be 60% and 75%. during 1st year 2nd year respectively.

b) Sales Revenue at 100%

Assuming selling price of Rs. 45,000 / ton, the annual sales at 100% activity level would be Rs. 90.00 lacs.

c) Raw Material Required at 100%

Requirement of various raw material is as under :

(Rs. in lacs)

Product	**Qty (Tons)**	**Rate (Rs. / Ton)**	**Value**
Wheat	120	20,000	24.00
Gram dal	20	45,000	9.00
Edible groundnut cake	20	30,000	6.00
Jaggery	30	25,000	7.50
Vitamins, minerals, Calcium Carbonate etc.	-	-	1.50
Packing materials	-	-	4.50
	Total		**52.50**

d) Projected Profitability

(Rs. in lacs)

S. No.	Particulars	1st year	2nd year
A.	**Installed capacity**	**200 Tonnes**	
	Capacity Utilisation	60%	75%
	Sales Realisation	54.0	67.50
B.	**Cost of Production**		
	Raw & packing Materials	31.50	39.37
	Utilities	0.90	1.12
	Salaries	5.16	5.67
	Stores and Spares	0.90	1.12
	Repairs and Maintenance	0.60	0.75
	Selling Expenses @ 10%	5.40	6.75
	Administrative Expenses	1.20	1.50
	Total	45.66	56.28
C.	**Profit before Interest & Depreciation**	**8.34**	**11.22**
	Interest on Term Loan	1.47	1.17
	Interest on Working Capital	0.52	0.65
	Depreciation.	1.74	1.57
	Profit before tax	4.61	7.83
	Profit after tax	4.61	7.83
	Cash Accruals	6.35	9.40
	Repayment of Term Loan	Nil	3.00

e) Break Even Point Analysis

(Rs. in lacs)

S. No.	Particulars	Amount	
(A)	**Sales**		**67.50**
(B)	**Variable Costs**		
	Raw material & Packing material	39.37	
	Utilities(70%)	0.78	
	Salaries (70%)	3.97	
	Stores and Spares	1.12	
	Selling Exps (70%)	4.72	
	Admn Expenses (50%)	0.75	
	Interest on WC	0.65	**51.36**
(C)	**Contribution (A) – (B)**		**16.14**
(D)	**Fixed Costs**		**6.74**
(E)	**Break Even Point**		**42%**

f) Debt Service Coverage Ratio (DSCR)

(Rs. in lacs)

Particulars	1st year	2nd year	3rd year
Cash Accruals	6.35	9.40	11.28
Interest on TL	1.47	1.17	0.87
Total (A)	7.82	10.57	12.15
Interest on TL	1.42	1.17	0.87
Repayment of TL	Nil	3.00	3.00
Total (B)	1.42	4.17	3.87
DSCR (A) / (B)	5.50	2.53	3.13
Average DSCR	3.72		

g) Internal Rate of Return (IRR)

Cost of the project is Rs. 24.64 lacs **(Rs. in lacs)**

Year	**Cash Accruals**	**20%**	**24%**
1	6.35	5.52	4.95
2	9.40	7.10	4.62
3	11.28	7.40	5.91
4	11.28	6.67	4.77
5	11.28	5.60	3.84
Total		**32.29**	**24.09**

The IRR is around 24%

h) Manpower requirement

Particulars	**Nos.**	**Monthly**	**Total Monthly Salary (Rs.)**
Skilled workers	2	7,500	15,000
Helpers	4	5,000	20,000
Salesman	1	8,000	8000
		Total	**43,000**

8. ASSUMPTIONS

- The plant will work for 300 days in a year. :
- The operating capacity is 60% , 75%, 90 % during 1st year , 2nd year and 3rd year respectively.
- The interest on term loan is taken at 10% per annum and on working capital it is 12% per annum.
- Price of raw material and selling price of finished products is taken at Rs. 20,000 / ton and Rs. 45,000/ ton respectively.

9. SOURCES OF TECHNOLOGY

CFTRI, Mysore, has successfully developed the technical know-how for the product. BIS has laid down the quality standard. The compliance under FSSAI act is a must.

10. PLANT & MACHINERY SUPPLIERS

1. Gurunanak Engg. Works (P) Ltd.
   C-33, Sector – 88, Phase – II, Gautam Budh Nagar (UP)
   Ph. : 9810378448 / 120-243674

2. Kailash Engg. Works
   H1-81, Napasar RIICO Industrial Area,
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   Ph. 151-2762534

3. Pagariya Food Products P. Ltd.
   15/1, 3rd cross, Kasturbanagar,
   Mysore Road, Bengalore – 560026
   Ph. 09953361350
   www. indiamart.com

PROJECT PROFILE
SOYABEAN NUGGET

1. INTRODUCTION

Soyabeans are rich in proteins and are becoming popular day-by-day. States like MP, UP, Maharashtra, Gujarat etc. are producing substantial quantities with MP being the largest producer. Bulk of the soyabeans are processed by solvent extraction plants for oil, leaving large quantities of defatted soya flakes. These flakes or de-oiled soya cake can be converted into nuggets or chunks by extrusion.

2. OBJECTIVES

The objective of the profiles is to encourage and assist prospective entrepreneurs in MSME sector in and guiding making them aware of the opportunities of this sector. It is also being developed by the Directorate of the Food Processing Industries, Government of West Bengal to help entrepreneurs with knowledge about raw materials availability, knowledge of market, source of technology and plant and machinery suppliers. M/s ITV Agro & Food Technologies Pvt. Ltd., New Delhi has helped in developing the project profile.

3. RAW MATERIAL AVAILABILITY

The most critical material will be good quality de-oiled soya flour and the annual requirement shall be 600 tonnes for which adequate prior arrangements are advisable. Rice and baking powder shall be required in small quantity. HDPE bags and barrels shall be the packing materials.

4. MARKET OPPORTUNITIES

Soya products have become very popular not only amongst the health conscious people but also with others as they are easy to digest and rich in proteins. Products like edible oil, paneer, flour, milk nuggets or chunks etc made from soybean are gaining popularity. Texturised soya products like nuggets or chunks are used in large quantities along with other vegetables while making curries. Thus restaurants, caterers, clubs and canteens and ready to eat vegetable manufacturers are the bulk consumers. There are good export possibilities as well but that market can be explored once the quality of the product is well-established.

5. PROJECT DESCRIPTION

a) Product & Its uses

Texturised soya products have become popular. They are used along with other vegetables for making curries etc. They are low cost but protein rich substitutes of cheese, paneer, meat and fish.

b) Capacity

The proposed capacity of the plant is to process 600 MT / annum of soya flour.

c) Manufacturing process

It is imperative to have good quality solvent extracted flour for processing with the Nitrogen solubility index in the range of 45% to 50%. Other parameters are 7.5 % to 8.5% moisture, 53 to 54% proteins, less than 10 % fat, 2 to 3% fiber and yellow to light brown colour . Extracted flour with these characteristics is suitable for extrusion. Extrusion technology is based on high temperature, short time processing. Rice and baking powder in a small quantity are mixed with the de -oiled soya flour or cake. The chunks are dried after extrusion. The chunks can also be converted into flakes or granules.

6. PROJECT COMPONENTS & COST

a) Land & Building

A plot of around 300 sq. mtrs. with constructed area of 150 sq.mtrs. can accommodate production area, godown and a small factory office. Land may cost Rs. 1.50 lacs whereas cost of construction is estimated to be Rs. 9.00 lacs.

b) Plant & Machinery

Rated annual production capacity of 600 tons and 300 working days would need the following equipments:

Item	**Qty**	**Price (Rs. in lacs)**
Mixing –cum grinding machine with 5 HP motor and other accessories	1	3.20
Soya Nugget Extrusion Plant with 30 HP motor and complete set of screws, barrel and suitable dies	1	30.50
Vibrating sieve with 3 HP motor	1	1.30
200 kg. capacity platform type weighing scale	1	0.60
Bag sewing machine	1	0.30
	Total	**35.90**

c) Miscellaneous Assets

Other assets like furniture & fixtures, storage facilities, plastic tubs, office equipments etc. would cost Rs. 2.70 lacs.

d) Utilities

Total power requirement shall be 60 HP whereas daily water requirement shall be 20,000 ltrs. The cost of utilities will be Rs. 4.60 lacs.

e) Prel. & Pre Operative Expenses

Expenses like registration and establishment charges, travelling, interest during implementation, trial runs etc. sre estimated to be Rs. 3.20 lacs

f) Working Capital Assessment

(Rs. in lacs)

Particulars	**Period**	**Margin**	**Total**	**Bank**	**Promoters**
Stock of Raw and packing Material	½ month	30%	2.76	1.93	0.83
Stock of Finished Goods	½ month	25%	3.92	2.94	0.98
Receivable	½ month	25%	4.50	3.38	1.12
Total			**11.18**	**8.25**	**2.93**

g) Project cost & Means of finance

Item	**Amount (Rs. in lacs)**
Land and Buildings	10.50
Plant and Machinery	35.90
Miscellaneous Assets	2.70
P & P Expenses	3.20
Contingencies @ 10% on building and plant & machinery	4.50
Working capital margin	2.93
Total	**59.73**
Means of Finance	
Promoters' contribution	23.89
Term loan from Bank/ FI	35.84
Total	**59.73**
Debt Equity Ratio	1.5:1
Promoters contribution	40%

Financial assistance in the form of grant is available from the Ministry of Food Processing Industries, Govt. of India, towards expenditure on technical civil works and plant and machinery for eligible projects ,subject to certain terms and conditions.

7) PROJECTED PROFITABILITY

a) Production Capacity

The plant will produce 600 MT/ annum of soyabean nugget

b) Sales Revenue at 100%

Assuming selling price of Rs. 35,000/- per ton, the annual sales at 100% shall be Rs. 210.00 lacs for 600 ton of finished products.

c) Raw Material Required at 100%

Product	**Qty (Tons)**	**Rate (Rs. / Ton)**	**Value(Rs. in lacs)**
De-oiled Soya Flour	600	15,000	90.00
Rice	5	15,000	7.50
Baking Powder	1	2,00,000	2.00
Packing Material	600	3,000	18.00
Total			**110.75**

d) Projected Profitability

(Rs. in lacs)

S. No.	Particulars	1st year	2nd year
A.	**Installed capacity**	**600 Tonnes**	
	Capacity Utilisation	60%	75%
	Sales Income	126.00	157.50
B.	**Cost of Production**		

	Raw & Packing Materials	66.45	83.00
	Utilities	2.76	3.45
	Salaries	8.52	9.37
	Stores and Spares	1.80	2.25
	Repairs and Maintenance	2.10	2.62
	Selling Expenses @ 15%	10.80	13.50
	Administrative Expenses	1.80	2.25
	Total	**94.23**	**116.44**
C.	**Profit before Interest & Depreciation**	**31.77**	**41.06**
	Interest on Term Loan	3.58	2.88
	Interest on Working Capital	0.99	1.23
	Depreciation.	4.50	4.05
	Profit before Tax	22.70	32.90
	Income-tax @ 20%	4.54	6.58
	Profit after tax	18.16	26.32
	Cash Accruals	22.60	30.37
	Repayment of Term Loan	Nil	7.00

e) Break Even Point Analysis

S. No.	**Particulars**	**Amount (Rs. in lacs)**	
(A)	**Sales**		**157.50**
(B)	**Variable Costs**		
	Raw & Packing Material	83.00	
	Utilities(70%)	2.41	
	Salaries (60%)	6.56	
	Stores and Spares	2.62	
	Selling Exps (70%)	9.45	
	Admn Expenses (50%)	1.12	

	Interest on WC	1.23	106.35
(C)	**Contribution (A) – (B)**		**51.15**
(D)	**Fixed Costs**		**14.15**
(E)	**Break Even Point**		**28%**

f) Debt Service Coverage Ratio (DSCR) ***(Rs. in lacs)***

Particulars	**1st year**	**2nd year**	**3rd year**
Cash Accruals	22.60	30.37	32.40
Interest on TL	3.58	2.88	2.20
Total (A)	26.18	33.25	34.60
Interest on TL	3.58	2.88	2.20
Repayment of TL	Nil	7.00	7.00
Total (B)	3.58	9.88	9.20
DSCR (A) / (B)	7.31	3.36	3.76
Average DSCR	4.81		

g) Internal Rate of Return (IRR)

Cost of the project is Rs. 59.73 lacs

(Rs. in lacs)

Year	Cash Accruals	24%	32%
1	22.60	18.08	17.13
2	30.37	19.74	17.43
3	32.40	16.84	14.09
4	32.40	13.60	10.65
Total		**68.31**	**59.30**

The IRR is around 32%

h) Manpower requirement

Particulars	Nos.	Monthly	Total Monthly Salary (Rs.)
Skilled workers	1	8,000	8,000
Semi Skilled Workers	2	7,500	15,000
Helpers	8	5,000	40,000
Salesman	1	8,000	8,000
		Total	**71,000/-**

8. ASSUMPTIONS

- The plant will work for 300 days in a year. :
- The operating capacity is 60% , 75%, 90 % during 1st year , 2nd year and 3rd year.
- The interest on term loan is taken at 10% per annum and on working capital it is 12% per annum.
- Price of raw material and selling price of finished products is taken at Rs. 15,000 / ton and Rs. 35,000 respectively.

9. SOURCES OF TECHNOLOGY

CFTRI, Mysore, has successfully developed the technical know-how for the product. BIS has laid down the quality standard. The compliance under FSSAI act is a must.

10. PLANT & MACHINERY SUPPLIERS

1. Gurunanak Engg. Works (P) Ltd.
   C-33, Sector – 88, Phase – II, Gautam Budh Nagar (UP)
   Ph. : 9810378448 / 120-243674
2. Kailash Engg. Works
   H1-81, Napasar RIICO Industrial Area,
   Bikaner (Rajasthan) Ph. 151-2762534
3. Pagariya Food Products P. Ltd.
   15/1, 3rd cross, Kasturbanagar,
   Mysore Road, Bengalore – 560026 Ph. 09953361350
   www. indiamart.com

PROJECT PROFILE
CASHEWNUT PROCESSING

1. INTRODUCTION

Cashew are cultivated mainly in Kerala, Maharashtra and Goa. Cashew processing is a well established activity in Kerala and Goa but it is yet to pick up in West Bengal. Konkan region of Maharashtra is famous for cashew.. It is also attracting number of tourists due to its vast coast line and scenic beauty. Most of the cashew processing is undertaken manually and reportedly there are only few mechanized factories. There are some colleges imparting vocational training in cashew processing. Cashew processing has good potential in the state.

2. OBJECTIVES

The objective of the profiles is to encourage and assist prospective entrepreneurs in MSME sector in and guiding making them aware of the opportunities of this sector. It is also being developed by the Directorate of the Food Processing Industries, Government of West Bengal to help entrepreneurs with knowledge about raw materials availability, knowledge of market, source of technology and plant and machinery suppliers. M/s ITV Agro & Food Technologies Pvt. Ltd., New Delhi has helped in developing the project profile.

3. RAW MATERIAL AVAILABILITY

The only raw material required will be cashew fruits. They are grown in large quantities in Konkan area of Maharashtra and adjacent states of Goa, Kerala Andhra Pradesh, Karnataka & Tripura. Reportedly, around 20,000 acres of land is under cashew cultivation and the state government, as well as NABARD are encouraging cashew plantation. Hence, obtaining around 50 tons of cashew fruits per season even at 100% capacity utilization will not pose any problem. Packing material like

polythene bags and second hand corrugated boxes shall be available locally. Production of cashew nut in the state is estimated to 10,000 MT/ year.

4. MARKET OPPORTUNITIES

a) Demand and supply

Cashew nuts are high value dry fruits with retail price ranging from Rs. 400 to 600/- per kg. Their shelf –life is 4 to 6 months if processed properly or else they develop fungus or taste bitter. They are used in many sweet preparation, certain farsan items, dessert preparations and ice creams. They are also used as table enrichers in some exclusive restaurants and star hotels. Due to their high price, their regular domestic use is limited to elite families. Total export of dehydrated cashewnut from India during the year 2010-11, 2011-12 and 2012-13 is estimated at Rs. 1399.86 lacs, Rs. 4493.83 lacs and Rs. 6077.55 lacs respectively.

b) Marketing Strategy

Market for cashew is gradually increasing whereas its supply is limited . Cashew plants require a very special climate and hence they are grown in Konkan region of Maharashtra, nearby states of Goa and Kerala. Thus, demand for cashews is increasing and there are fluctuation in prices according to the supplies.

5) PROJECT DESCRIPTION

a) Product & Its uses

Cashew form an integral part of dry fruits and are used in many preparations since long. Raw cashews are plucked from plants and then they are processed and kernels are removed so that table variety can be obtained.

b) Capacity

The proposed capacity of the plant is to process 50 MT / annum of cashewnut .

c) Manufacturing process

The process of manufacture is well established. Cashew fruits are dried under sun and then they are boiled to remove all impurities and to facilitate removal of shell. Subsequently, they are dried in a dryer and then cracked to remove shell and take out cashews. They are once again dried and outer reddish skin is removed to obtain the table variety. Actual recovery of table variety is around 30% whereas 50% account for shell and remaining 20% is process loss. Cashew shells have market as they are used in cattle feed.

6. PROJECT COMPONENTS & COST

a) Land & Building

A plot of land of around 250 sq. mtrs. with built-up area of 100 sq.mtrs will be sufficient. Main processing area would require around 55-60 sq. mtrs. whereas storage and packing rooms would occupy the balance area. The total cost of building is estimated to be Rs. 6.00 lacs whereas that of land is around Rs. 1.25 lacs.

b) Plant & Machinery

This is a seasonal business and the factory would work for about 200 days every year. Keeping in mind the availability of raw materials and market prospects, processing capacity of 50 tons per season is suggested. This would require the following equipments:

Item	**Qty**	**Price (Rs. in lacs)**
Electrically operated Boiler	1	3.50
Tray-drier (24 trays)	1	5.00
Cutters	10	2.00
Weighing Scales	2	0.80
Automatic sealing machine	2	0.60
	Total	**11.90**

c) Miscellaneous Assets

Some other assets like furniture , fruit crates, SS utensils, storage racks, working tables etc. shall be required for which a provision of Rs. 1.60 lacs is made.

d) Utilities

Total power requirement will be 10 HP whereas water required for washing the cashew fruits and for sanitation and potable purpose will be 10,000 ltrs. per day. Per season cost at 100% utilization is likely to be Rs. 1.70 lacs.

e) Prel. & Pre Operative Expenses

There will be many pre-production expenses like establishment & administrative charges, travelling, interest during implementation, trial run expenses and so on. A provision of Rs. 1.40 lacs is made towards them.

f) Working Capital Assessment

(Rs. in lacs)

Particulars	**Period**	**Margin**	**Total**	**Bank**	**Promoters**
Stock of raw material & packing material	½ month	30%	0.66	0.46	0.20
Stock of Finished goods	½ month	30%	1.10	0.83	0.27
Receivable	½ month	30%	1.36	1.02	0.34
Total	1 month		3.12	2.31	0.81

g) Project cost & Means of finance *(Rs. in lacs)*

Item	**Amount**
Land & Building	7.25
Plant & Machinery	11.90
Miscellaneous Assets	1.60
P & P Expenses	1.40
Contingencies @ 10% on building and plant & machinery	1.79
Working capital margin	0.81
Total	24.75
Means of Finance	
Promoters' contribution	9.90
Term loan from Bank / FI	14.85
Total	24.75
Debt Equity Ratio	1.5:1
Promoters contribution	40%

Financial assistance in the form of grant is available from the Ministry of Food Processing Industries, Govt. of India, towards expenditure on technical civil works and plant and machinery for eligible projects subject to certain terms and conditions.

7) PROJECTED PROFITABILITY

a) Production Capacity

As against the processing capacity of 50 tonnes, the actual utilization in the first will be 60%and second year onwards it will be 75%.

b) Sales Revenue at 100% ***(Rs. in lacs)***

Product	**Qty (Tons)**	**Selling Price (Rs. / Ton)**	**Sales**
Processed Cashew	15	4,00,000	60.00
Cashew shells	25	8,000	2.00
		Total	**62.00**

c) Raw Material Required at 100% *(Rs. in lacs)*

Product	**Qty (Tons)**	**Rate (Rs. / Ton)**	**Value**
Raw Cashew nut	50	50,000	25.00
Packing Material	-	-	1.50
	Total		**26.50**

d) Projected Profitability **(Rs. in lacs)**

S. No.	Particulars	1st year	2nd year
A.	**Installed capacity**	**50 Tons**	
	Capacity Utilisation	60%	70%
	Sales Realisation	37.20	43.40
B.	**Cost of Production**		
	Raw material & packing material	15.90	19.87
	Utilities	1.02	1.27
	Salaries	3.44	3.78
	Stores and Spares	0.72	0.90
	Repairs and Maintenance	0.90	1.12
	Selling Expenses @ 10%	3.27	4.08

	Administrative Expenses	1.20	1.50
	Total	**26.45**	**32.52**
C.	**Profit before Interest & Depreciation**	**10.75**	**10.88**
	Interest on Term Loan	1.48	1.18
	Interest on Working Capital	0.28	0.35
	Depreciation.	1.79	1.61
	Net Profit	7.20	7.74
	Profit after tax	2.70	5.21
	Cash Accruals	9.00	9.35
	Repayment of Term Loan	Nil	3.00

e) Break Even Point Analysis ***(Rs. in lacs)***

S. No.	**Particulars**	**Amount**	
(A)	**Sales**		**37.20**
(B)	**Variable Costs**		
	Raw material & Packing Material	15.90	
	Utilities(70%)	0.61	
	Salaries (60%)	2.24	
	Stores and Spares	0.72	
	Selling Exps (70%)	2.29	
	Admn Expenses (50%)	0.60	
	Interest on WC	0.28	**22.64**
(C)	**Contribution (A) – (B)**		**14.56**
(D)	**Fixed Costs**		**5.56**
(E)	**Break Even Point**		**38%**

f) Debt Service Coverage Ratio (DSCR)

(Rs. in lacs)

Particulars	**1st year**	**2nd year**	**3rd year**
Cash Accruals	9.00	9.35	11.21
Interest on TL	1.48	1.18	0.88
Total (A)	10.48	10.53	12.09
Interest on TL	1.48	1.18	0.88
Repayment of TL	Nil	3.00	3.00
Total (B)	1.48	4.18	3.88
DSCR (A) /(B)	6.87	2.51	3.16
Average DSCR	4.18		

g) Internal Rate of Return (IRR)

Cost of the project is Rs. 24.75 lacs

(Rs. in lacs)

Year	**Cash Accruals**	**20%**
1	9.00	7.49
2	9.35	6.48
3	11.21	6.49
4	11.21	5.40
5	**Total**	**25.86**

The IRR is around 20%

h) Manpower requirement

Particulars	Nos.	Monthly	Total Monthly Salary (Rs.)
Skilled workers	2	7500	15,000
Helpers	4	5000	20,000
Salesman	1	8000	8,000
		Total	**43,000**

8. ASSUMPTIONS

- The plant will work for 200 days in a year. :
- The operating capacity is 60% , 75%, 90 % during 1st year , 2nd year and 3rd year respectively.
- The interest on term loan is taken at 10% per annum and on working capital it is 12% per annum.
- Price of raw material and selling price of the finished products is taken at Rs. 50,000 / ton and Rs. 4,00,000 / ton respectively.

9. SOURCES OF TECHNOLOGY

CFTRI, Mysore, has successfully developed the technical know-how for the product. BIS has laid down the quality standard. The compliance under FSSAI act is a must.

10. PLANT & MACHINERY SUPPLIERS

1. Sun Industries
   296,Vikas Nagar Industrial Area,
   Meerut Road - Ghaziabad – 201003
   Ph. : 0120-6667845
   www.sunindustries1973@gmail.com
2. Best Engineering Technologies,
   Plot No. 69-A, No. 5-9-285/13,
   Rajiv Gandhi Nagar, Industrial Estate,
   Kukatpally, Hyderabad – 500037 (AP)
   Ph. 08447523620
   www.bestengineeringtechnologies.com

PROJECT PROFILE
INSTANT FOOD MIXES

1. INTRODUCTION

Indians love to eat spicy food. Their meals contain many spicy items of different varieties and many snacks are also prepared with spices and chilly. This note basically discusses instant food mixes targeted at rural areas. Many national brands like Pepsi and Haldiram have entered this market with huge investments and attractive packaging. These products are obviously very costly. There are many regional brands as well. But a large part of rural India just cannot afford these products as they are priced very high. Rural market is aimed at under the proposed project.

There are many wholesale manufacturers who supply to retailers and they in turn repack these products in small packs and sell. These items fall under the category of "Farsan" and include many products like masala puffed rice , chevda, fried peas, fried dal mix, roasted masla peanuts, idli, upma and dosa mix etc. At times nomenclature may vary but items more or less remain the same. More and move variants or new products can be added depending upon the local taste. These products can be made and sold anywhere in the country but the location considered here is West Bengal.

2. OBJECTIVES

The objective of the profiles is to encourage and assist prospective entrepreneurs in MSME sector in and guiding making them aware of the opportunities of this sector. It is also being developed by the Directorate of the Food Processing Industries, Government of West Bengal to help entrepreneurs with knowledge about raw materials availability, knowledge of market, source of technology and plant and

machinery suppliers. M/s ITV Agro & Food Technologies Pvt. Ltd., New Delhi has helped in developing the project profile.

3. RAW MATERIAL AVAILABILITY

The basic raw material required is rice, gram, wheat, corn & various pulses in powder form. In addition to this various spices such as chillies, gram masala, ginger powder etc. are also required. No problem is anticipated in getting the required quantity of raw material.

4. MARKET OPPORTUNITIES

a) Demand and supply

The manufacturing unit has to be located at a taluk or district place where traders from nearby towns and villages come regularly for wholesale purchase. They in turn, repack the products in smaller quantities and sell them. This is a very well established practice for many low value consumer goods. The items contemplated under this project will also be packed in 1,2 or 5 kgs. plastic bags and sold at wholesale rates. Shelf-life of these items is generally not more than 15 days and hence quick turnover is the key element. This is typically a "High Volume Low Margin" activity.

b) Marketing Strategy

Marketing is restricted to dealers and deciding factors are reasonably good and consistent quality and competitive pricing. A three wheeler delivery vehicle is advisable as it can move around in a radius of 40 -50 kms., covering all major rural centres at a pre-determined day of every week. With proper canvassing and contacts, marketing network can be established. There could be minor changes in the product-mix based on consumer feedback and seasonal availability of certain raw material but many items would have demand round the year.

5. PROJECT DESCRIPTION

Capital investment has to be planned very judiciously to remain competitive. Certain operations can be undertaken outside the main building or on the terrace under asbestos roofing.

a) Economic Viability

Production capacity can be easily altered in this activity . Addition of one bhatti or closure of the existing once , increasing or decreasing the working hours can easily change it. However, for the purpose of calculation s it is taken at 500 kgs . per day. In this industry, there are very few holidays and annual working is for almost 350 days. There is no fixed product- mix and demand is the only the guiding factor. On an average, the selling price is around Rs. 50/- per kg in bulk packing with raw materials constituting around 90% selling prices are adjusted if the prices of inputs witness major changes.. The objective it to work on very low margins to capture larger and larger share of market and to minimize overheads.

b) Capacity

Installed capacity of the plant is to manufacture 500 kgs. per day of instant food mixes.,

c) Manufacturing process

The manufacturing process is very well established and does not involve technicalities. Un-ground grain and spices are cleaned manually to remove impurities like mud stones and are then washed in water. After drying them in sunlight, they are graded and grounded with the help of grinding machine to convert them in powder form. Disintegrator is used in case of solid material like turmeric to obtain uniform mesh size. Grains and Spices in powder form are then weighed as per the contemplated packing quantities and packed in printed polythene bags and then these bags are sealed on automatic sealing machine. The powder in mixed and ready to eat items are made as per the demand.

6. PROJECT COMPONENTS & COST

a) Land & Building

The cost of the land along with building is estimated at Rs. 3.00 lacs

b) Plant & Machinery

(Rs. in lacs)

Particulars	**Qty.**	**Price**
Cabinet drier	-	3.50
Ribbon blender.	-	1.30
Disintegrator	-	0.80
De-stoner		0.50
Slicer		0.60
Fumigation chamber		0.90
Steaming chamber		0.90
Powder filling machine		0.75
Sealing machine		0.75
Total		10.00

c) Miscellaneous Assets

Other miscellaneous assets required are fans, weighing balance, tables, chairs, furniture, etc. which would cost Rs. 1.50 lacs.

d) Utilities

Power requirement will be around 10 HP. The unit also requires LPG cylinder. The cost of utilities is estimated at Rs. 2.60 lacs.

e) Prel. & Pre Operative Expenses

The registration charges, establishment expenses, trial run expenses, interest during implementation etc. would be around Rs. 1.20 lacs.

f) Working Capital Assessment

At 60% capacity utilization in the first year, the total working capital needs shall be as under:

(Rs. in lacs)

Particulars	**Period**	**Margin**	**Total**	**Bank**	**Promoters**
Stock of raw material & packing material	½ month	30%	1.02	0.72	0.30
Stock of Finished Goods	½ month	30%	1.68	1.18	0.50
Receivable	½ month	30%	2.25	1.58	0.67
Total			**4.95**	**3.48**	**1.47**

g) Project cost & Means of finance

Item	**Amount (Rs. in lscs)**
Land and Building	3.00
Plant and Machinery	10.00
Miscellaneous Assets	1.50
P & P Expenses	1.20
Contingencies @ 10% on Building and plant & machinery	1.30
Working capital margin	1.47
Total	**18.47**
Means of Finance	
Promoters' contribution	7.39
Term loan from Bank/ FI	11.08

Total	18.47
Debt Equity Ratio	1.5:1
Promoter's contribution	40 %

Financial assistance in the form of grant is available from the Ministry of Food Processing Industries, Govt. of India, towards expenditure on technical civil works and plant and machinery for eligible projects subject to certain terms and conditions.

7) PROJECTED PROFITABILITY

a) Production Capacity

The rated production capacity of the plant is 150 tonnes per year whereas actual capacity utilization is expected to be 60% and 75% during 1st year and 2nd year respectively.

b) Sales Revenue at 100%

Product	**Qty (Tons)**	**Selling Price (Rs. / Ton)**	**Sales (Rs. in lacs)**
Instant food mixes	150	60,000	90.00

c) Raw Material Required at 100%

Product	**Qty (Tons)**	**Rate (Rs. / Ton)**	**Value (Rs. in lacs)**
Wheat	50	15,000	7.50
Dhal	50	35,000	17.50
Rice	50	20,000	10.00
Vanaspati	-		1.50
Packing material			4.50
Total			**41.00**

d) Projected Profitability

(Rs. in lacs)

S. No.	Particulars	1st year	2nd year
A.	**Installed capacity**	**150 Tonnes**	
	Capacity Utilisation	60%	75%
	Sales Realisation	54.00	67.50
B.	**Cost of Production**		
	Raw Materials & Packing Materials	24.60	30.75
	Utilities	1.56	1.95
	Salaries	5.16	5.67
	Stores and Spares	0.90	1.12
	Repairs and Maintenance	1.20	1.50
	Selling Expenses @ 10%	5.40	6.75
	Administrative Expenses	1.50	1.87
	Total	40.32	49.61
C.	**Profit before Interest & Depreciation**	**13.68**	**17.89**
	Interest on Term Loan	1.10	0.85
	Interest on Working Capital	0.41	0.52
	Depreciation.	1.30	1.17
	Net Profit	10.87	15.35
	Income-tax @ 20%	2.17	3.07
	Profit after tax	8.70	12.30
	Cash Accruals	10.00	13.47
	Repayment of Term Loan	Nil	2.50

e) Break Even Point Analysis

S. No.	Particulars	Amount. (Rs. in lacs)	
(A)	**Sales**		**54.00**
(B)	**Variable Costs**		
	Raw Material &Packing Material	24.60	
	Utilities(70%)	1.09	
	Salaries (60%)	3.09	
	Stores and Spares	0.90	
	Selling Exps (70%)	3.78	
	Admn Expenses (50%)	0.75	
	Interest on WC	0.41	**34.62**
(C)	**Contribution (A) – (B)**		**19.38**
(D)	**Fixed Costs**		**7.19**
(E)	**Break Even Point**		**37 %**

f) Debt Service Coverage Ratio (DSCR) *(Rs . in lacs)*

Particulars	1st year	2nd year	3rd year
Cash Accruals	10.00	13.47	16.16
Interest on TL	1.10	0.85	0.60
Total (A)	11.10	14.32	16.76
Interest on TL	1.10	0.85	0.60
Repayment of TL	Nil	2.50	2.50
Total (B)	1.10	3.35	3.10
DSCR (A) / (B)	10.09	4.27	5.40
Average DSCR	6.50		

g) Internal Rate of Return (IRR)

Cost of the project is Rs. 8.47 lacs (Rs. in lacs)

Year	Cash Accruals	24%	32%
1	10.00	8.00	7.50
2	13.47	8.75	7.67
3	16.16	8.62	7.02
Total		**25.37**	**22.19**

The IRR is 32%

h) Manpower requirement

Particulars	**Nos.**	**Monthly**	**Total Monthly Salary (Rs.)**
Skilled workers	2	7,500	15,000
Helpers / semi skilled workers	4	5,000	20,000
Salesman (on counter)	1	8,000	8,000
		Total	**43,000**

8. ASSUMPTIONS

- The plant will work for 300 days in a year. :
- The operating capacity is 60% , 75%, 90 % during 1st year , 2nd year and 3rd year respectively.
- The interest on term loan is taken at 10% per annum and on working capital it is 12% per annum.
- Price of raw material and selling price of finished products is taken at Rs. 15,000 / ton and Rs. 60,000 / ton respectively.

9. SOURCES OF TECHNOLOGY

CFTRI, Mysore, has successfully developed the technical know-how for the product. BIS has laid down the quality standard. The compliance under FSSAI act is a must.

10. PLANT & MACHINERY SUPPLIERS

1. Gurunanak Engg. Works (P) Ltd.
   C-33, Sector – 88, Phase – II, Gautam Budh Nagar (UP)
   Ph. : 9810378448 / 120-243674

2. Kailash Engg. Works
   H1-81, Napasar RIICO Industrial Area,
   Bikaner (Rajasthan)
   Ph. 151-2762534

3. Pagariya Food Products P. Ltd.
   15/1, 3rd cross, Kasturbanagar,
   Mysore Road, Bengalore – 560026
   Ph. 09953361350
   www. indiamart.com

PROJECT PROFILE
MUSHROOM PROCESSING

1. INTRODUCTION

Mushrooms are gradually becoming popular as they are rich in minerals and vitamins and very low on fat and sugar. Fresh mushrooms have very limited life and hence they need to be consumed within a few hours . But processing and canning increase their shelf life to a few months. Mushrooms are used to make soups, pickles, and used as vegetables also. It is considered as a vegetarian delicacy all over the world and their consumption is increasing in India as well. Their household use is picking up but they are consumed in large quantities in star hotels and restaurants. Hence, firm tie-up with some of them is advisable.

2. OBJECTIVES

The objective of the profiles is to encourage and assist prospective entrepreneurs in MSME sector in and guiding making them aware of the opportunities of this sector. It is also being developed by the Directorate of the Food Processing Industries, Government of West Bengal to help entrepreneurs with knowledge about raw materials availability, knowledge of market, source of technology and plant and machinery suppliers. M/s ITV Agro & Food Technologies Pvt. Ltd., New Delhi has helped in developing the project profile.

3. RAW MATERIAL AVAILABILITY

The most crucial raw material will be good quality fresh mushrooms. Shelf life of fresh mushrooms is few hours and hence the location has to be very close to the cultivation areas. Prior arrangements with some cultivators for regular supply must be made. Future planning may include mushroom cultivation for captive consumption .

Salt and citric acid will be required in small quantities . Cans of appropriate size, lables and corrugated boxes would form packing material.

4. MARKET OPPORTUNITIES

Mushrooms are very popular in most of the developed countries and they are becoming popular in many developing countries like India. Applications and market for mushrooms is growing rapidly in India because of their nice aroma, nutrition value, subtle flavour and special taste. Many exotic food preparations like soup, vegetables, pickles etc. are made from them. They are also used for garnishing, to prepare many varieties of gravy and for stuffing several food preparations. But they are still considered as up market products and their consumption is limited to urban and semi urban areas. Fresh mushrooms have very limited shelf life but processed and canned mushrooms have a fairly long shelf life and can be sold even at far off places. Star hotels, exclusive restaurants, certain caterers are the bulk consumers and a firm tie-up for regular supply with some of them is advisable. The product can be sold even through department stores, super markets etc.

5. PROJECT DESCRIPTION

a) Product & Its uses

Mushroom is an exotic and nutritious source of vegetarian food and is also easy to digest. It is considered as a suitable substitute for meat and eggs. There are many varieties of mushrooms and most of them are edible. It is a universal product and WB has been considered as a likely location.

b) Capacity

The proposed capacity of the plant is to process 300 MT / annum of fresh mushrooms.

c) Manufacturing process

Fresh mushrooms are washed in cold water and then blanched in boiling water for around 3 -4 minutes. Then they are dehydrated in drier and packed. It is advisable to pre-treat fresh mushrooms in a solution containing brine to prevent discolouration. Packing is very critical as formation of moisture contaminates mushrooms very quickly. Hence plain cans and brine of 2% salt and 0.2% citric acid are used for packing. The cans are exhausted at 19°C for 7-8 minutes, sealed and processed under pressure for around half an hour. Yield of final product depends up on the quality of dryer, manufacturing process employed, moisture content in fresh mushrooms and moisture required in the final product.

6. PROJECT COMPONENTS & COST

a) Land & Building

Land measuring around 200 sq. mtrs. built up area of about 100 sq. mtrs. is adequate. Land may cost Rs. 1,00,000/- whereas cost of construction could be Rs. 6.00 lacs.

b) Plant & Machinery

A market survey would help to arrive at the proposed processing capacity. Assuming daily capacity of 0.5 ton or annual capacity of 150 tons considering 300 working days would require the following machines.

(Rs. in lacs)

Item	**Qty**	**Amount**
Baby boiler	1	3.50
Tray-type dehydrator	1	5.00
Can seamer	1	0.60
Can reforming with rubber rollers, hand flanger etc.	1	0.75
Exhaust box with electric motor	1	0.80
Steam jacketed kettle	1	0.75

Weighing scales	2	0.40
Laboratory equipments	-	0.50
Total		**12.30**

c) Miscellaneous Assets

Some other support assets like furniture and fixture, storage rack, packing tables, SS utensils etc. shall be required for which a provision of Rs. 2.00 lacs is made.

d) Utilities

The power requirement will be 20 HP and everyday water requirement shall be 5000 ltres / day . The cost of utilities is estimated to be at Rs. 1.60 lacs/ year.

e) Prel. & Pre Operative Expenses

A provision of Rs. 1.50 lacs is made towards pre-production expenses like market assessment, registration , establishment and administrative charges, interest during implementation, trial runs etc.

f) Working Capital Assessment

As against the processing capacity of 150 tons, the plant is expected to run at 60% in the first year which would call for the following working funds :

(Rs. in lacs)

Particulars	**Period**	**Margin**	**Total**	**Bank**	**Promoters**
Stock of raw material & packing material	½ month	30%	1.92	1.34	0.58
Stock of finished goods	½ month	25%	2.55	1.92	0.63
Receivable	½ month	25%	3.18	2.38	0.80
Total			**7.65**	**5.64**	**2.01**

g) Project cost & Means of finance

Item	**Amount (Rs. in lacs)**
Land and Building	7.00
Plant and Machinery	12.30
Miscellaneous Assets	2.00
P & P Expenses	1.50
Contingencies @ 10% on building and plant & machinery	1.83
Working capital margin	2.01
Total	26.64
Means of Finance	
Promoters' contribution	10.64
Term loan from Bank/ FI	16.00
Total	26.64
Debt Equity Ratio	1.5:1
Promoters contribution	40%

Financial assistance in the form of grant is available from the Ministry of Food Processing Industries, Govt. of India, towards expenditure on technical civil works and plant and machinery for eligible projects subject to certain terms and conditions.

7) PROJECTED PROFITABILITY

a) Production Capacity

As against the rated processing capacity of 300 tons/ year the, capacity utilization in the first year is assumed to be 60% and thereafter 75%.

b) Sales Revenue at 100%

Product	**Qty (Tons)**	**Price / Ton (Rs. in lacs)**	**Sales value (Rs. in lacs)**
Tinned mushrooms	75	1.70	127.50

c) Raw Material Required at 100%

(Rs. in lacs)

Product	**Qty (Tonnes)**	**Rate (Rs./ Ton)**	**Value**
Fresh Mushrooms	300	20,000	60.00
Salt, Citric Acid etc	-		1.20
Cans	1,76,500	Rs. 7/tin	12.35
Cartons, labels etc	-	-	3.50
	Total		**77.05**

d) Projected Profitability **(Rs. in lacs)**

S. No.	**Particulars**	**1st year**	**2nd year**
A.	**Installed capacity**	**150 Tons**	
	Capacity Utilisation	60%	70%
	Sales Realisation	76.50	95.62
B.	**Cost of Production**		
	Raw Materials & Packing material	46.23	57.78
	Utilities	0.96	1.20
	Salaries	5.16	5.67
	Stores and Spares	1.20	1.50
	Repairs and Maintenance	0.90	1.12
	Selling Expenses @ 25%	5.73	7.17
	Administrative Expenses	1.20	1.50
	Total	**61.38**	**75.74**
C.	**Profit before Interest & Depreciation**	15.12	19.88
	Interest on Term Loan	1.60	1.30
	Interest on Working Capital	0.68	0.85
	Depreciation.	1.83	1.64
	Net Profit	11.01	16.13

	Income-tax @ 20%	2.20	3.22
	Profit after tax	8.81	12.91
	Cash Accruals	10.64	14.55
	Repayment of Term Loan	Nil	3.00

e) Break Even Point Analysis

S. No.	Particulars	Amount (Rs. in lacs)	
(A)	**Sales**		**95.62**
(B)	**Variable Costs**		
	Raw Material & Packing Material	**57.78**	
	Utilities(70%)	0.84	
	Salaries (60%)	3.96	
	Stores and Spares	1.50	
	Selling Exps (70%)	5.01	
	Admn. Expenses (50%)	0.75	
	Interest on WC	0.85	**70.69**
(C)	**Contribution (A) – (B)**		**24.93**
(D)	**Fixed Costs**		**7.36**
(E)	**Break Even Point**		**30%**

f) Debt Service Coverage Ratio (DSCR)

(Rs. in lacs)

Particulars	1st year	2nd year	3rd year
Cash Accruals	10.64	14.55	17.64
Interest on TL	1.60	1.30	1.00
Total (A)	12.24	15.85	18.46
Interest on TL	1.60	1.30	1.00
Repayment of TL	Nil	3.00	3.00

Total (B)	1.60	4.30	4.00
DSCR (A) /(B)	7.65	3.68	4.62
Average DSCR	5.31		

g) Internal Rate of Return (IRR)

Cost of the project is Rs. 26.64 lacs

(Rs. in lacs)

Year	**Cash Accruals**	**24%**	**40%**
1	10.64	8.57	7.60
2	14.55	9.45	7.42
3	17.46	9.14	6.35
4	17.46	7.38	4.53
Total		**34.54**	**25.90**

The IRR is around 40%

h) Manpower requirement

Particulars	**Nos.**	**Monthly**	**Total Monthly Salary (Rs.)**
Skilled workers	2	7,500	15,000
Helpers	4	5,000	20,000
Salesman	1	8,000	8,000
		Total	**43,000/-**

8. ASSUMPTIONS

- The plant will work for 300 days in a year. :
- The operating capacity is 60% , 75%, 90 % during 1st year , 2nd year and 3rd year respectively.
- The interest on term loan is taken at 10% per annum and on working capital it is 12% per annum.

- Price of raw material and selling price of finished products is taken at Rs. 20,000/ ton and Rs. 1.70 lacs / ton respectively.

9. SOURCES OF TECHNOLOGY

CFTRI, Mysore, has successfully developed the technical know-how for the product. BIS has laid down the quality standard. The compliance under FSSAI act is a must.

10. PLANT & MACHINERY SUPPLIERS

1. Henan name brand machinery co. Ltd.
   I Xishizhao, 1st District, North West of Xinji Road,
   Dist. Zhenghou, Henan, (China)
   Ph. 0086 – 371 65950319
   www.brandmachinery.com , e-mail.info@foodmachinesale.com

2. Central Food Technological Research Institute
   Mysore -570020 (Karnataka)
   Ph. 0821-2514760
   www. cftri.com

PROJECT PROFILE
PAPAD MAKING

1. INTRODUCTION

Papad is a popular and tasty food item in the Indian diet since many centuries. It is essentially a wafer like product, round in shape and made from dough of powdered pulses, spice, powdered chilly and salt. Variety of pulses and proportion of pulses and spices varies from region to region depending upon preferences of local people whereas certain varieties are popular on a larger scale. Traditionally, this activity was confined to household papad making but in view of increasing demand and availability of machinery is has now been developed in cottage and small scale sector.

2. OBJECTIVES

The objective of the profiles is to encourage and assist prospective entrepreneurs in MSME sector in and guiding making them aware of the opportunities of this sector. It is also being developed by the Directorate of the Food Processing Industries, Government of West Bengal to help entrepreneurs with knowledge about raw materials availability, knowledge of market, source of technology and plant and machinery suppliers. M/s ITV Agro & Food Technologies Pvt. Ltd., New Delhi has helped in developing the project profile.

3. RAW MATERIAL AVAILABILITY

The all important raw material would be flour of pulses depending upon the product mix. Since annual requirement even at 100% will not be more than 60 tonnes, availability would not be a bottleneck. Other materials like salt, spices, edible oil, preservatives etc. shall be required in small quantity and they will be available locally. Packing material like different sizes of polythene bags and corrugated boxes shall also be available locally.

4. MARKET OPPORTUNITIES

Market for papad is steadily growing across the country. There are not much seasonal fluctuations but demand generally goes up by 10% to 15 % during winter season. There are a couple of national brands but the market is predominantly controlled by the local brands. This activity is yet to pick up in West Bengal and thus, prospects for a new entrant are bright, provided quality is good and prices are competitive. It can be sold through many outlets of provision and departmental stores. Before launching the product, a quick assessment of consumer preference is advisable.

5. PROJECT DESCRIPTION

a) Product & Its uses

Papad is a favourite item with Indians and is used as taste enricher with the main course and as a snack item. Since it is made from pulses, it is easy to digest and nutritious as well. It is a very easy to make instant food item and is either fried in edible oil or simply roasted before serving . Its shelf life is 2.5 to 3 months. This product can be made anywhere in the country. The note envisages location at an appropriate place in West Bengal.

b) Capacity

The proposed capacity of the plant is to manufactures 60 MT / annum of papad.

c) Manufacturing process

Papad can be manufactured from different varieties of pulses or there could be a combination of pulses as well . Adequate quantity of water is added in flour of pulses, common salt, spices and sodium bicarbonate and homogenous mixing is done to obtain dough. After about 30 minutes, small balls weighing around 7-8 grams of dough are made. These balls are then placed in papad making machine or papad press wherein

these balls are pressed and circular papads are made as per the size of mould. These papads are then sun dried but in this note driver with trolley is recommended as sun drying may not be always feasible in West Bengal. Lot of 25 or 50 papads is then packed in polythene bags .

6. PROJECT COMPONENTS & COST

a) Land & Building

A plot of land of about 150 sq.mtrs with built –up area of approximately 80 sq. mtrs. shall be adequate to house all the equipments leaving sufficient space for storage and packing. The location need not be at a prominent place as counter sales is not envisaged. The total cost of land is taken at Rs. 75,000 whereas the construction cost is assumed to be Rs. 4.80 lacs.

b) Plant & Machinery

It is suggested to have annual rated production capacity of 60 ton / year 300 working days.. To install this capacity, following machinery shall be needed:

Item	**Qty**	**Price (Rs.)**
Grinder with electric motor having 30-35 kgs/hr. capacity	1	70,000
Mixer of 20 kgs. per charge capacity with electric motor	1	65,000
Pedal –operated papad press	2	35,000
Drier with trolley and 48 trays with heating element of 9 KW	1	5,00,000
Extra aluminium trays	2	50,000
Sealing Machine	1	20,000
Water storage tank	-	10,000
Laboratory equipment	1	15,000
Weighing		15,000
Total		**7,81,000/-**

c) Miscellaneous Assets

Some other assets like aluminium top tables, furniture & fixtures, baskets drums, storage racks, aluminium stainless steel utensils etc shall also be required for which a provision of Rs. 1.40 lacs is made.

d) Utilities

The total power requirement shall be 25 HP whereas water required for process and sanitation and other purposes shall be about 2,000 ltrs per day. The annual cost under this head at 100% capacity utilization shall be around Rs. 1.80 lacs.

e) Prel. & Pre Operative Expenses

Expenses like registration & establishment charges, trial run, interest during project implementation etc. will be around Rs. 1.20 lacs

f) Working Capital Assessment

The rated production capacity of the project shall be 60 tons per year but it is assumed that it would operate at 60% in the first year. The working capital needs at this level shall be as under :

(Rs. in lacs)

Particulars	**Period**	**Margin**	**Total**	**Bank**	**Promoters**
Stock of Raw Material	½ month	30%	0.63	0.44	0.19
Stock of Finished Goods	½ month	25%	1.17	0.88	0.29
Receivable	1 month	25%	1.50	1.13	0.37
Other expenses			3.30	2.45	0.85

g) Project cost & Means of Finance

Item	**Amount (Rs. in lacs)**
Land and Building	5.50
Plant and Machinery	7.81
Miscellaneous Assets	1.40
P & P Expenses	1.20
Contingencies @ 10% on Building and plant and machinery	1.26
Working capital margin	0.85
Total	18.02
Means of Finance	
Promoters' contribution	7.20
Term loan from Bank FI	10.82
Total	18.02
Debt Equity Ratio	1.5:1
Promoters contribution	40%

Financial assistance in the form of grant is available from the Ministry of Food Processing Industries, Govt. of India, towards expenditure on technical civil works and plant and machinery for eligible projects subject to certain terms and conditions.

7) PROJECTED PROFITABILITY

a) Production Capacity

The rated production capacity of the plant is 60 tonnes per year whereas actual capacity utilization is expected to be 60% and 75% during 1st year and 2nd year respectively.

b) Sales Revenue at 100%

Product	**Qty (Tonnes)**	**Selling Price (Rs. / Ton)**	**Sales (Rs. in lacs)**
Papad	60	1,00,000	60.00

c) Raw Material Required at 100%

Product	**Qty (Tonnes)**	**Rate (Rs./ Ton)**	**Value (Rs. in lacs)**
Flour of pulses	58	35,000	20.30
Edible oil, salt, spices	-	-	1.00
Preservatives, etc.	-	-	1.50
Packing Material	-	-	2.40
		Total	**25.20**

d) Projected Profitability

(Rs. in lacs)

S. No.	Particulars	1st year	2nd year
A.	**Installed capacity**	**60 Tonnes**	
	Capacity Utilisation	60%	75%
	Sales Realisation	36.00	45.00
B.	**Cost of Production**		
	Raw & packing materials	15.12	18.90
	Utilities	1.08	1.35
	Salaries	5.16	5.67
	Stores and Spares	0.90	1.12
	Repairs and Maintenance	1.20	1.50
	Selling Expenses @ 10%	3.60	4.50

	Administrative Expenses	1.20	1.50
	Total	28.26	34.54
C.	**Profit before Interest & Depreciation**	**7.74**	**10.46**
	Interest on Term Loan	1.08	0.88
	Interest on Working Capital	0.29	0.36
	Depreciation.	1.26	1.14
	Net Profit	5.11	8.08
	Profit after tax	5.11	8.08
	Cash Accruals	6.37	9.22
	Repayment of Term Loan	Nil	2.00

e) Break Even Point Analysis

(Rs. in lacs)

S. No.	**Particulars**	**Amount**	
(A)	**Sales**		**45.00**
(B)	**Variable Costs**		
	Raw Material	18.90	
	Utilities(70%)	0.95	
	Salaries (60%)	3.96	
	Stores and Spares	1.12	
	Selling and Distribution Exps (70%)	3.60	
	Admn Expenses (50%)	0.75	
	Interest on WC	0.36	**29.64**
(C)	**Contribution (A) – (B)**		**15.36**
(D)	**Fixed Costs**		**6.13**
(E)	**Break Even Point**		**40%**

f) Debt Service Coverage Ratio (DSCR) *(Rs. in lacs)*

Particulars	**1st year**	**2nd year**	**3rd year**
Cash Accruals	6.37	9.22	11.06
Interest on TL	1.08	0.88	0.68
Total (A)	7.45	10.10	11.74
Interest on TL	1.08	0.88	0.68
Repayment of TL	Nil	2.00	2.00
Total (B)	1.08	2.88	2.68
DSCR (A) /(B)	6.89	3.50	4.38
Average DSCR	4.92		

g) Internal Rate of Return (IRR)

Cost of the project is Rs. 18.02 lacs

(Rs. in lacs)

Year	Cash Accruals	24%	32%
1	6.37	5.13	4.82
2	9.22	5.99	5.29
3	11.06	5.79	4.81
4	11.06	4.67	3.62
Total		**21.58**	**18.50**

The IRR is around 32%

h) Manpower requirement

Particulars	**Nos.**	**Monthly**	**Total Monthly Salary (Rs.)**
Skilled workers	2	7,500	15,000
Helpers	4	5,000	20,000
Salesman	1	8,000	8,000
		Total	**43,000/-**

8. ASSUMPTIONS

- The plant will work for 300 days in a year. :
- The operating capacity is 60% , 75%, 90 % during 1st year , 2nd year and 3rd year respectively.
- The interest on term loan is taken at 10% per annum and on working capital, it is 12% per annum.
- Price of raw material and selling price of finished products is taken at Rs. 35,000 / ton and Rs.1,00,000 / ton respectively.

9. SOURCES OF TECHNOLOGY

CFTRI, Mysore, has successfully developed the technical know-how for the product. BIS has laid down the quality standard. The compliance under FSSAI act is a must.

10. PLANT & MACHINERY SUPPLIERS

1. Gurunanak Engg. Works (P) Ltd.
   C-33, Sector – 88, Phase – II, Gautam Budh Nagar (UP)
   Ph. : 9810378448 / 120-243674

2. Kailash Engg. Works
   H1-81, Napasar RIICO Industrial Area,
   Bikaner (Rajasthan)
   Ph. 151-2762534

3. Pagariya Food Products P. Ltd.
   15/1, 3rd cross, Kasturbanagar,
   Mysore Road, Bengalore – 560026
   Ph. 09953361350
   www. indiamart.com

PROJECT PROFILE
PAPAIN ENZYME

1. INTRODUCTION

Papain is a proteolytic enzyme from the cysteine protein family. It is manufactured from the latex of raw papaya fruits as papaya is very rich in papain. A milky fluid known as latex containing papain oozes out of the green papaya. The greener the fruit, more active is the papain. Papaya is grown in large quantities in the Eastern region including West Bengal. Papain enzyme results in high value- addition . Hence this product can be manufactured in West Bengal. It is also possible to produce papain enzyme in many other states like Gujarat, Maharastra , U.P. AP etc. . Ideally, some progressive papaya grower should undertake this venture as a measure of forward integration.

2. OBJECTIVES

The objective of the profiles is to encourage and assist prospective entrepreneurs in MSME sector in and guiding making them aware of the opportunities of this sector. It is also being developed by the Directorate of the Food Processing Industries, Government of West Bengal to help entrepreneurs with knowledge about raw materials availability, knowledge of market, source of technology and plant and machinery suppliers. M/s ITV Agro & Food Technologies Pvt. Ltd., New Delhi has helped in developing the project profile.

3. RAW MATERIAL AVAILABILITY

The most important raw material will be raw or unripe and fully grown papaya which will be cultivated by the promoters . Papaya, after extraction of latex, is sold in the market. Price of papaya as input material will decide the viability of the project. Other material like potassium metabisulphate, lactose powder etc. shall be required in

small quantity. Plastic containers and corrugated boxes shall be required for packing of finished product. Production of papaya in West Bengal is estimated at 3.31 lacs MT / year.

4. MARKET OPPORTUNITIES

Papain is used in many industries for variety of reasons. Some of the end-users are breweries, pharmaceuticals, food, leather, detergents, meat and fish processing etc. Thus, the end use segments are many. Most of these industries are growing . Good quality papain has export demand as well. In spite of very good domestic as well as export demand, papain manufacturing has not picked up in West Bengal and hence there are good prospects for new entrants.

5. PROJECT DESCRIPTION

a) Product & Its uses

Dry powder made from the latex of raw papaya is commonly known as crude papain. Dried papain is stored in powder or flakes form. They are diluted with lactose powder to get BPC grade papain. There is a market for raw as well as BPC grade papain. This note considers production of BPC grade papain.

b) Capacity

The proposed capacity of the plant is to process 20MT / annum of papaya.

c) Manufacturing process

White milky latex of green and fully grown papaya fruits is collected in the early morning by making deep longitudinal cuts by stainless steel or wooden sharp knives. Latex is collected in stainless steel trays while latex coagulated in the surface of the fruits is scrapped and collected in the trays. A fruit is tapped about 6 times in the course of 16 days. This latex is passed through 50 mesh sieves to remove dirt and then it is mixed with potassium metabisulphate and spread on trays and dried in a vacuum shield drier at a temperature of about 55° C for 4-5 hours. The dried product is packed

in air-tight containers and stored in a cool, dry place. It should be kept in flake form as powdering decreases the stability of the product during storage. Dried flakes are powdered and diluted with lactose powder to get BPC grade papain. Plastic containers should be used to pack crude papain flakes or powder as metal containers would result in loss of enzyme activity. Transportation is also very critical as papain has to be kept below 20° C temperature or else its shelf life is reduced. With proper storage and handling, its shelf life is 5-6 months. Recovery of BPC grade papain is in the range of 25% to 30 %. In other words, 100 kgs. of good quality latex is required to produce 25-30 kgs. of BPC grade papain.

6. PROJECT COMPONENTS & COST

a) Land & Building

As indicated earlier, this project should preferably be started by or with the help of existing papaya grower. For production capacity of 6 tonnes of BPC grade papain every year, about 66 kgs. of latex would be required every day considering 30 % recovery and 300 working days every year. For 66 kgs.. of latex every day, there is a need for cultivation on 30 -32 acres of land. This land has to be divided into 3 sections and plantation is done in one section at a time in a cycle of 3-4 months to ensure availability of papaya round the year. If the promoters are not papaya growers then they should have adequate agricultural land on which papaya cultivation could be started instead of some other item. Or else land can be taken on long term lease. But buying of 30-32 acres of land for this project would be an economically unviable proposition.

Total constructed area would be around 150 sq. mtrs. which has to be in the same farm. Main processing area would be around 50 sq. mtrs. Laboratory, office and packing area can be accommodated in the balance 40 sq. mtrs.

It is envisaged that the processing will be done in the farm itself . Even then for a piece of land of about 250 sq. mtrs. on which factory building shall be constructed, price is

taken @ Rs. 500/ sq. mtr. to arrive at a realistic picture. Thus cost of land is taken at Rs. 1.25 lacs whereas construction cost is assumed to be Rs. 9.00 lacs.

b) Plant & Machinery

For processing around 20 tons of papaya per year (300 working days) the following machines will be required.

Item	**Qty**	**Price (Rs. in lacs)**
Aluminium and SS trays, Weighing Scales & Measuring cans, knives, sieves etc.	-	1.80
5 HP Pumps-set with hose pipe	2	5.00
Vacuum Shield Drier	1	6.50
De-humidifier	1	1.60
Hammer Mill	1	2.10
Blender	1	1.60
Laboratory Equipments	-	1.00
Packing machine	1	0.70
	Total	**15.80**

c) Miscellaneous Assets

Some other assets like furniture and fixtures, working tables, storage racks and bins etc. would cost about Rs. 2.00 lacs.

d) Utilities

Power requirement shall be 30 HP whereas per day water requirement for processing and potable and sanitation purpose will be 5000 litres. Annual cost of utilities at 100% utilization will be Rs. 2.80 lacs**.**

e) Prel. & Pre Operative Expenses

There will be many pre-production expenses like registration, establishment & administrative & travelling expenses, interest during implementation, trial run expenses, etc for which a provision of Rs. 2.20 lacs is made.

f) Working Capital Assessment

Capacity utilization in the first year is expected to be 60% for which working capital needs would be as under **:**

(Rs. in lacs)

Particulars	**Period**	**Margin**	**Total**	**Bank**	**Promoters**
Stock of Finished Goods	½ month	25%	0.95	0.71	0.24
Receivable	½ month	25%	1.20	0.90	0.30
Raw material	½ month	25%	0.28	0.21	0.07
Total			2.43	1.82	0.61

f) Project cost & Means of finance

Item	**Amount (Rs. in lacs)**
Land and Building	10.25
Plant and Machinery	15.80
Miscellaneous Assets	2.00
P & P Expenses	2.20
Contingencies @ 10% on Building and plant and machinery	2.48
Working capital margin	0.61
Total	**33.34**

Means of Finance	
Promoters' contribution	13.34
Term loan from Bank FI	20.00
Total	**33.34**
Debt Equity Ratio	1.5:1
Promoters contribution	40%

Financial assistance in the form of grant is available from the Ministry of Food Processing Industries, Govt. of India, towards expenditure on technical civil works and plant and machinery for eligible projects subject to certain terms and conditions.

7) PROJECTED PROFITABILITY

a) Production Capacity

As against the rated production capacity of 20 tons per year, actual utilization is expected to be 60 % in the first year and 75% thereafter.

b) Sales Revenue at 100%

Assuming selling price of Rs.10.00 lacs per ton, total sales income of 6 tonnes would be Rs. 60.00 lacs.

c) Raw and packing Material Required at 100%

Requirement of various raw material is as under :

(Rs. in lacs)

Product	**Qty (Tonnes)**	**Rate (Rs./ Ton)**	**Value**
Raw / Unripe papaya	20	30,000	6.00
Chemicals	-		3.20
Packing /materials	-		1.80
Total			**11.00**

d) Profitability statements

(Rs. in lacs)

S. No.	Particulars	1st year	2nd year
A.	**Installed capacity**	**20 Tonnes**	
	Capacity Utilisation	60%	75%
	Sales Realisation	36.80	45.0
B.	**Cost of Production**		
	Raw & Packing Materials	6.60	8.25
	Utilities	1.68	2.10
	Salaries	7.32	8.05
	Stores and Spares	1.20	1.50
	Repairs and Maintenance	1.50	1.87
	Selling Expenses @ 25%	2.88	3.60
	Administrative Expenses	1.50	1.87
	Total	**22.68**	**27.24**
C.	**Profit before Interest & Depreciation**	**13.32**	**17.76**
	Interest on Term Loan	2.00	1.60
	Interest on Working Capital	0.22	0.28
	Depreciation.	2.48	2.23
	Profit before Tax	8.62	13.65
	Cash Accruals	11.10	15.88
	Repayment of Term Loan	Nil	4.0

e) Break Even Point Analysis

(Rs. in lacs)

S. No.	Particulars	Amount	
(A)	**Sales**		**45**
(B)	**Variable Costs**		
	Raw & packing material	8.25	
	Utilities(70%)	1.36	
	Salaries (60%)	6.03	
	Stores and Spares	1.50	
	Selling and Distribution Exps (70%)	2.52	
	Admn Expenses (50%)	0.93	
	Interest on WC	0.28	20.87
(C)	**Contribution (A) – (B)**		**24.13**
(D)	**Fixed Costs**		**8.44**
(E)	**Break Even Point**		**35%**

f) Debt Service Coverage Ratio (DSCR) ***(Rs. in lacs)***

Particulars	1st year	2nd year	3rd year
Cash Accruals	11.10	15.88	19.00
Interest on TL	2.0	1.68	1.20
Total (A)	13.10	17.58	20.20
Interest on TL	2.0	1.68	1.20
Repayment of TL	-	4.00	4.00
Total (B)	2.0	5.68	5.20
DSCR (A) / (B)	6.55	3.09	3.88
Average DSCR	4.50		

g) Internal Rate of Return (IRR)

Cost of the project is Rs. 33.34 lacs

Year	Cash Accruals	8%
1	11.10	8.65
2	15.88	9.68
3	19.00	8.93
4	19.00	7.08
5	19.00	5.50
5		**39.84**

The IRR is around 29%

h) Manpower requirement

Particulars	Nos.	Monthly	Total Monthly Salary (Rs.)
Skilled workers	2	7500	15,000
Helper	2	5000	30,000
Laboratory chemist	1	8000	8,000
Salesman	1	8,000	8,000
		Total	**61,000**

8. ASSUMPTIONS

- The plant will work for 300 days in a year. :
- The operating capacity is 60% , 75%, 90 % during 1st year , 2nd year and 3rd year respectively.
- The interest on term loan is taken at 10% per annum and on working capital it is 12% per annum.
- Price of raw material and selling price of finished products is taken at Rs. 30,000 / ton and Rs. 10,00,000 lacs / ton respectively.

9. SOURCES OF TECHNOLOGY

CFTRI, Mysore, has successfully developed the technical know-how for the product. BIS has laid down the quality standards. The compliance under FSSAI act is a must.

10. PLANT & MACHINERY SUPPLIERS

1. Nova Chernauxi (India) Ltd.
   RZ -390-9/21, Tugalakabad Extn.
   New Delhi – 110019
   Ph. 011 -29992944

2. Central Food Technological Research Institute
   Mysore -570020 (Karnataka)
   Ph. 0821-2514760
   www. cftri.com

PROJECT PROFILE

RICE FLAKES

1. INTRODUCTION

Rice flakes are prepared from paddy. It is also popularly known as Poha. It is a fast moving consumer item and generally eaten as breakfast item. It can be fried with spices and chilly to make a hot and tasty food item. Milk or curd is mixed with it and then eaten. It is also used in large quantities for making Chevda (farsan item) and many caterers use it for thickness of gravy. Since it is made from paddy, it is easily digestible. Most of its preparations can be made at a short notice and hence bulk of the households store it on regular basis. With proper storage its shelf life is 2-3 months. This is a common product and can be produced anywhere in the country. This note envisages West Bengal as the proposed location.

2. OBJECTIVES

The objective of the profiles is to encourage and assist prospective entrepreneurs in MSME sector in and guiding making them aware of the opportunities of this sector. It is also being developed by the Directorate of the Food Processing Industries, Government of West Bengal to help entrepreneurs with knowledge about raw materials availability, knowledge of market, source of technology and plant and machinery suppliers. M/s ITV Agro & Food Technologies Pvt. Ltd., New Delhi has helped in developing the project profile.

3. RAW MATERIAL AVAILABILITY

The most critical material will be good quality paddy. It is grown in many parts of West Bengal but the location should be chosen carefully to ensure adequate supply round the year. Hence areas where 2 crops are taken in West Bengal are ideal. 1 Kg, 2 kg and 5 kgs capacity polythene bags and 25 kgs. capacity gunny bags (for bulk supply) shall be required for packing.

4. MARKET OPPORTUNITIES

a) Demand and supply

Rice flakes or poha is an important breakfast in semi-urban and rural areas and middle class families of urban India. Spicy or sweet preparation made from it are not only easy to make but they can be made at a short notice as well. Therefore it is extensively used all over the country round the year.

b) Marketing Strategy

Apart from households, its spicy preparations are sold in restaurants, roadside dhabas or eateries, canteens etc. There is also a fairly large bulk market. Farsan makers use it to make Chevda and it is also used to increase thickness of gravies. Thus, the manufacturer has to cater to both these segments.

5. PROJECT DESCRIPTION

a) Product & Its uses

Rice flakes are made from paddy and hence they are easy to digest. Spicy as well as sweet preparations are made from them in the category of fast food items. Since the manufacturing process involves roasting of rice, the shelf life of flakes is longer.

b) Capacity

The proposed capacity of the plant is to process 450 MT / annum of rice.

c) Manufacturing process

It is very well established and simple. Paddy is cleaned and graded to remove impurities and then it is soaked in hot water for about 45 minutes. Then it is dried and roasted. Subsequently, it is taken to mill for processing and flakes are passed through sieves to separate bran and broken flakes and to obtain flakes of fairly even size. During this process, yield of good quality flakes is around 80%, process loss and wastage are about 10% and balance 10% is bran which is used by cattle feed producers.

6. PROJECT COMPONENTS & COST

a) Land & Building

A plot of land of about 250 sq.mtrs with built-up area of 75 sq. mtrs. is adequate. Land may cost Rs. 1.25 lacs, whereas building will cost around Rs. 4.50 lacs . The main production area would require about 40 sq. mtrs. and godown, packing and other facilities can be accommodated in the remaining 35 sq.mtrs.

b) Plant & Machinery

It is suggested to install machinery to process around 450 tonnes of paddy every year with 300 working days.

Item	**Qty**	**Price (Rs. in lacs)**
Poha mill with accessories and electric motors	2	3.50
Electrically operated roaster	1	2.10
Coal-fired furnace	1	0.60
Paddy soaking tanks of 200 kg. cap	4	0.50
Sieves	4	0.30
Sealing machine, weighing scales etc.	-	0.50
	Total	**7.50**

c) Miscellaneous Assets

A provision of Rs. 1.30 lacs would take care of other items like furniture and fixtures, storage facilities, packing table etc.

d) Utilities

25 HP power connection shall be required whereas per day water requirement for processing and other purposes will be 10,000 litres. Hard coke of around 14-15 tons will be required per year for furnace . The cost of utilities is estimated at Rs. 2.30 lacs.

e) Prel. & Pre Operative Expenses

There will be many pre-production expenses like registration, administrative and travelling charges, interest during implementation, trial run expenses etc. for which a provision of Rs. 1.40 lacs is made.

f) Working Capital Assessment

(Rs. in lacs)

Particulars	**Period**	**Margin**	**Total**	**Bank**	**Promoters**
Stock of Raw Material & packing material	½ month	30%	1.82	1.27	0.55
Stock of Finished Goods	¼ month	25%	2.56	1.92	0.64
Receivable	½ month	25%	3.19	2.39	0.80
	Total		**7.57**	**5.58**	**1.99**

g) Project cost & Means of finance

(Rs. in lacs)

Item	**Amount**
Land and Building	5.75
Plant and Machinery	7.50
Miscellaneous Assets	1.30
P & P Expenses	1.40
Contingencies @ 10% on building and plant & machinery	1.20
Working capital margin	1.99

Total	19.14
Means of Finance	
Promoters' contribution	7.65
Term loan from Bank /FI	11.49
Total	19.14
Debt Equity Ratio	1.5:1
Promoters contribution	40%

Financial assistance in the form of grant is available from the Ministry of Food Processing Industries, Govt. of India, towards expenditure on technical civil works and plant and machinery for eligible projects subject to certain terms and conditions.

7) PROJECTED PROFITABILITY

a) Production Capacity

As against the rated production capacity of 450 tons per year , actual utilization is envisaged to be 60% in the first year and 75% from second year onwards.

b) Sales Revenue at 100%

Product	**Qty (Tons)**	**Selling Price (Rs. / Ton)**	**Sales (Rs. in lacs)**
Rice flakes	360	35000	126.00
Rice Bran	45	4000	1.80
		Total	**127.80**

c) Raw Material Required at 100%

Details of raw material required are as under :

(Rs. in lacs)

Product	**Qty (Tonnes)**	**Rate (Rs./ Ton)**	**Value**
Paddy	450	15,000	67.50
Packing material	-	-	5.40
	Total		**72.90**

d) Projected Profitability

(Rs. in lacs)

S. No.	Particulars	1st year	2nd year
A.	**Installed capacity**	**450 Tonnes**	
	Capacity Utilisation	60%	75%
	Sales Realisation	76.68	95.85
B.	**Cost of Production**		
	Raw material & packing material	43.74	54.67
	Utilities	1.38	1.72
	Salaries	5.46	6.00
	Stores and Spares	1.20	1.50
	Repairs and Maintenance	0.90	1.12
	Selling Expenses @ 10%	7.68	9.58
	Administrative Expenses	1.20	1.50
	Total	61.56	76.09
C.	**Profit before Interest & Depreciation**	**15.12**	**19.76**
	Interest on Term Loan	1.14	0.90
	Interest on Working Capital	0.67	0.84
	Depreciation.	1.20	1.00

	Profit before tax	12.11	17.02
	Income-tax @ 20%	2.42	3.40
	Profit after tax	9.69	13.62
	Cash Accruals	10.89	14.62
	Repayment of Term Loan	Nil	2.50

e) Break Even Point Analysis *(Rs. in Lacs)*

S. No.	**Particulars**	**Amount**	
(A)	**Sales**		**95.85**
(B)	**Variable Costs**		
	Raw material & packing material	54.67	
	Utilities(70%)	1.03	
	Salaries (60%)	3.90	
	Stores and Spares	1.50	
	Selling Exps (70%)	6.27	
	Admn Expenses (50%)	0.75	
	Interest on WC	0.84	68.96
(C)	**Contribution (A) – (B)**		**26.89**
(D)	**Fixed Costs**		**8.87**
(E)	**Break Even Point**		**33%**

f) Debt Service Coverage Ratio (DSCR) *(Rs.. in lacs)*

Particulars	1st year	2nd year	3rd year
Cash Accruals	10.89	14.62	17.54
Interest on TL	1.14	0.90	0.65
Total (A)	12.03	15.52	18.19
Interest on TL	1.14	0.90	0.65
Repayment of TL	Nil	2.50	2.50

Total	**1.14**	**3.40**	**3.15**
DSCR (A) / (B)	10.55	4.56	5.77
Average DSCR	6.96		

g) Internal Rate of Return (IRR)

Cost of the project is Rs. 19.14 lacs

(Rs. in lacs)

Year	**Cash Accruals**	**32%**	**50%**
1	10.89	8.25	7.18
2	14.62	8.39	6.43
3	17.54	7.62	5.08
4	17.54	5.77	3.33
Total		**30.03**	**21.04**

The IRR is around 50%

h) Manpower requirement

Particulars	**Nos.**	**Monthly**	**Total Monthly Salary (Rs.)**
Skilled workers	3	7,500	22,500
Semi Skilled Workers	3	5,000	15,000
Salesman	1	8,000	8,000
		Total	**45,500/-**

8. ASSUMPTIONS

- The plant will work for 300 days in a year. :
- The operating capacity is 60% , 75%, 90 % during 1st year , 2nd year and 3rd year respectively.
- The interest on term loan is taken at 10% per annum and on working capital it is 12% per annum.

- Price of raw material and selling price of finished products is taken at Rs. 15,000/- ton and Rs. 35,000 respectively.

9. SOURCES OF TECHNOLOGY

CFTRI, Mysore, has successfully developed the technical know-how for the product. BIS has laid down the quality standard. The compliance under FSSAI act is a must.

10. PLANT & MACHINERY SUPPLIERS

1. Gurunanak Engg. Works (P) Ltd.
   C-33, Sector – 88, Phase – II, Gautam Budh Nagar (UP)
   Ph. : 9810378448 / 120-243674

2. Kailash Engg. Works
   H1-81, Napasar RIICO Industrial Area,
   Bikaner (Rajasthan)
   Ph. 151-2762534

3. Pagariya Food Products P. Ltd.
   15/1, 3rd cross, Kasturbanagar,
   Mysore Road, Bengalore – 560026
   Ph. 09953361350
   www. indiamart.com

PROJECT PROFILE
STARCH FROM TAMARIND SEED

1. INTRODUCTION

Tamarind trees are grown almost in all parts of the country with states like Karnataka, Orissa, Uttar Pradesh, Madhya Pradesh, West Bengal and Tamil Nadu being the major cultivation centres. Tamarind fruits are used for edible purposes and seeds are generally thrown away. These seeds could be used for producing starch which is used for sizing in textile industry and as a general adhesive material. This is one of the cheapest available non-edible starch. Production process is simple and easy and no special skill is required. It is necessary that adequate arrangement for procurement of tamarind seeds are made.

2. OBJECTIVES

The objective of the profiles is to encourage and assist prospective entrepreneurs in MSME sector in and guiding making them aware of the opportunities of this sector. It is also being developed by the Directorate of the Food Processing Industries, Government of West Bengal to help entrepreneurs with knowledge about raw materials availability, knowledge of market, source of technology and plant and machinery suppliers. M/s ITV Agro & Food Technologies Pvt. Ltd., New Delhi has helped in developing the project profile.

3. RAW MATERIAL AVAILABILITY

The most critical material would be tamarind seeds. Monthly requirement at 100% utilization would be 75 tonnes which is not a small quantity. Hence, it is necessary that a proper survey is undertaken and proper arrangements are made before finalizing the location of the factory. Starch is packed in polythene-lined new gunny bags.

4. MARKET OPPORTUNITIES

Starch made from tamarind seeds is considered to be the cheapest non edible starch with many industrial applications. Tamarind fruits are used for edible purposes and seeds are wasted. Processing of these seeds results in substantial value addition. This starch is used by textile units and industries manufacturing starch based adhesives. Plywood industry is yet another bulk consumer. Thus, this product has growing market and with the anticipated growth in textile and plywood industry in coming years, demand is bound to go up.

5. PROJECT DESCRIPTION

a) Product & Its uses

Starch made from tamarind seeds is non-edible . These seeds are generally thrown away and hence their use results in substantial value addition.

b) Capacity

The proposed capacity of the plant is to process 900 MT / annum of tamarind seed.

c) Manufacturing process

Tamarind seeds are roasted in oil-fired roaster and then they are decorticated to remove skin. Seeds are then broken into small pieces in a grinder. These broken pieces are finally pulverized to make starch. Starch is packed in polythene lined gunny bags. The yield is around 60%.

6. PROJECT COMPONENTS & COST

a) Land & Building

A building of around 125 sq. mtrs. can accommodate production area as well as storage and packing departments. Cost of such a building is assumed to be Rs. 7.50 lacs.

b) Plant & Machinery

Production capacity of processing 75 tonnes seeds every month or 900 tonnes per year and 300 working days would require the following machines.

Item	**Qty**	**Price (Rs. in lacs)**
Oil-fired Roaster complete with accessories and electricals	1	5.00
Decorticator	1	1.40
Elevator with conveyor	1	2.30
Beater type pulveriser with cyclone separator dust collector and electric motor	1	4.60
Weighing –scales , miscellaneous tools, storage drums etc.	-	1.00
Total		**14.30**

c) Miscellaneous Assets

Some other assets like furniture and fixtures, storage facilities, electrical. shall be required for which a provision of Rs. 1.80 lacs is made.

d) Utilities

Power requirement shall be 20 HP whereas daily water requirement would be 5000 ltrs Roaster will need oil as fuel. The cost of utilities is estimated to be Rs. 2.30 lacs.

e) Prel. & Pre Operative Expenses

A provision of Rs. 1.60 lacs is made towards certain pre-production expenses like establishment registration, administrative and travelling charges, interest during implementation, trial run expenses etc.

f) Working Capital Assessment

(Rs. in lacs)

Particulars	**Period**	**Margin**	**Total**	**Bank**	**Promoters**
Stock of raw material & packing material	½ month	30%	1.92	1.32	0.58
Stock of finished goods	½ month	25%	2.65	1.99	0.66
Receivable	½ month	25%	3.15	2.36	0.79
Total			7.72	5.69	2.03

g) Project cost & Means of finance

Item	**Amount (Rs. in lacs)**
Land and Building	7.50
Plant and Machinery	14.30
Miscellaneous Assets	1.80
P & P Expenses	1.60
Contingencies @ 10% on building and plant & machinery	2.18
Working capital margin	2.03
Total	**29.41**
Means of Finance	
Promoters' contribution	11.76
Term loan from Bank/ FI	17.65
Total	**29.41**
Debt Equity Ratio	1.5:1
Promoters contribution	40%

7) PROJECTED PROFITABILITY

a) Production Capacity

The rated production capacity of the plant is 900 tonnes per year whereas actual capacity utilization is expected to be 60% and 75% during 1st year and 2nd year respectively.

b) Sales Revenue at 100%

Assuming selling price of Rs. 14000/ ton and yield of 60%, total sales revenue at 100% utilization would be Rs. 126.00 lacs

c) Raw Material Required at 100%

(Rs. in lacs)

Product	**Qty (Tons)**	**Selling Price (Rs. / Ton)**	**Sales**
Tamarind seeds	900	8000	72.00
Chemicals	-	-	2.30
Polythene-lined Jute Bags	11000 nos	Rs. 34 per piece	3.75
Total			**77.05**

d) Projected Profitability

(Rs. in lacs)

S. No.	Particulars	1st year	2nd year
A.	**Installed capacity**	**900 Tons**	
	Capacity Utilisation	60%	75%
	Sales Realisation	75.60	94.50
B.	**Cost of Production**		
	Raw & packing Materials	46.20	57.75
	Utilities	1.38	1.72
	Salaries	6.60	7.26

	Stores and Spares	0.90	1.12
	Repairs and Maintenance	1.20	1.50
	Selling admn. expenses @ 10%	7.50	9.45
	Total	63.78	78.80
C.	**Profit before Interest & Depreciation**	**11.82**	**15.70**
	Interest on Term Loan	1.76	1.36
	Interest on Working Capital	0.68	0.85
	Depreciation.	2.18	1.96
	Net Profit	7.88	11.53
	Profit after tax	7.88	11.53
	Cash Accruals	10.06	13.49
	Repayment of Term Loan	Nil	4.00

e) Break Even Point Analysis

S. No.	**Particulars**	**Amount (Rs. in lacs)**	
(A)	**Sales**		**75.60**
(B)	**Variable Costs**		
	Raw Material	46.20	
	Utilities(70%)	0.96	
	Salaries (60%)	4.62	
	Stores and Spares	0.90	
	Selling and admn. exps. (70%)	3.75	
	Interest on WC	0.68	**57.11**
(C)	**Contribution (A) – (B)**		**18.49**
(D)	**Fixed Costs**		**9.11**
(E)	**Break Even Point**		**49%**

f) Debt Service Coverage Ratio (DSCR) *(Rs. in lacs)*

Particulars	1st year	2nd year	3rd year
Cash Accruals	10.06	13.49	16.18
Interest on TL	1.76	1.36	0.97
Total (A)	11.82	14.85	17.15
Interest on TL	1.76	1.36	0.97
Repayment of TL	Nil	4.00	4.00
Total (B)	1.76	5.36	4.97
DSCR (A) / (B)	6.71	2.77	3.45
Average DSCR	3.87		

g) Internal Rate of Return (IRR)

Cost of the project is Rs. 29.41 lacs

(Rs. in lacs)

Year	**Cash Accruals**	**24%**	**28%**
1	10.06	8.04	7.84
2	13.49	8.76	8.22
3	16.18	8.41	7.60
4	16.18	6.79	5.98
Total		32.00	29.64

The IRR is 28%

h) Manpower requirement

Particulars	**Nos.**	**Monthly**	**Total Monthly Salary (Rs.)**
Skilled workers	2	7500	15,000
Semi Skilled Workers	2	6000	12,000
Helpers	4	5000	20,000
Salesman	1	8000	8,000
		Total	**55,000**

8. ASSUMPTIONS

- The plant will work for 300 days in a year. :
- The operating capacity is 60% , 75%, 90 % during 1st year , 2nd year and 3rd year respectively.
- The interest on term loan is taken at 10% per annum and on working capital it is 12% per annum.
- Price of raw material and selling price of finished products is taken at Rs. 8,000 / ton and Rs. 14,000 / ton respectively.

9. SOURCES OF TECHNOLOGY

CFTRI, Mysore, has successfully developed the technical know-how for the product. BIS has laid down the quality standard.

10. PLANT & MACHINERY SUPPLIERS

1. D. P. Pulveriser Works,
   12, Nagindas Master Road,
   Fort Mumbai – 400 023

2. B. Sen Barry & Co.
   65/11, Rohtak Road,
   Karol Bagh, New Delhi

PROJECT PROFILE
NOODLES/ CHOW/ VERMICELLI

1. INTRODUCTION

Many fast food items have flooded the markets but noodles have emerged as the most popular item as it is cheaper, very easy to make and nutritious. Urban and semi –urban markets are controlled by Maggi and other players are Top Raman and other brands. Maggi has revolutionized the concept and this product has gone to the majority of the urban households. As an off shoot of this development, noodle have become very popular in India. Good quality and cheaper product can be pushed in the market with systematic strategy and network.

2. OBJECTIVES

The objective of the profiles is to encourage and assist prospective entrepreneurs in MSME sector in and guiding making them aware of the opportunities of this sector. It is also being developed by the Directorate of the Food Processing Industries, Government of West Bengal to help entrepreneurs with knowledge about raw materials availability, knowledge of market, source of technology and plant and machinery suppliers. M/s ITV Agro & Food Technologies Pvt. Ltd., New Delhi has helped in developing the project profile.

3. RAW MATERIAL AVAILABILITY

Noodles are made with the help of many ingredients with the major input being wheat flour. Other materials required are corn and rice flour, protein isolates, salt, spices, edible oil preservatives etc. All of them are easily available. Packing materials are equally important. Colourful and attractive pouches shall have to be printed and outer packing will be corrugated boxes.

4. MARKET OPPORTUNITIES

a) Demand and supply

There is a very large and growing market. Urban market is captured by some national brands as mentioned earlier. But there is a good scope in semi-urban and certain rural markets as the branded products which are sold at about Rs. 100/- per kg are considered to be costly. At the same time, these markets are familiar with noodles due to constant hammering by the established brands by way of advertisements. Thus, it will not amount to concept selling.

b) Marketing Strategy

A good product with attractive packaging and affordable price of around Rs. 80-85 per kg. has good potential. Creation of proper distribution network and product advertisement through vernacular media is also necessary. In other words, good quality, affordable pricing and concentration on semi –urban and upcoming rural markets are the key factors.

5. PROJECT DESCRIPTION

a) Product & Its uses

There are many pasta products like vermicelli, macaroni, instant noodle etc. They are wheat-based snack food items. They are extruded products and are meant for direct consumption. Preparation time is hardly few minutes and even children can make it. The product has good market in most of the metros and accordingly the location has to be selected.

b) Capacity

The proposed capacity of the plant is to process 100 MT / annum of noodles .

c) Manufacturing process

Pre weighed raw materials are mixed thoroughly followed by steam pre-conditioning in pre-conditioner. Passing of steam increases the temperature as well as moisture contents of the materials which help in thorough mixing of all the ingredients before extrusion. The pre-conditioned feed is again mixed with water in a mixer and edible oil is added. Feed is finally fed to the extruder and after processing in the machine, extruded product (noodles) comes out which is cut with the help of a rotating knife in the required size. The process is same for chow and vermicelli .

6. PROJECT COMPONENTS & COST

a) Land & Building

A plot of land of about 200 sq. mtrs with built-up area of 100 sq. mtrs is sufficient. Land would cost around Rs. 1.00 lac whereas cost of construction could be Rs. 6.00 lacs. Main production area would occupy around 50 sq. mtrs. whereas packing room and storage area would occupy the balance area.

b) Plant & Machinery

Marketing is the key success determinant and the production capacity has to be finalized accordingly. Keeping in mind the financial viability, the rated production capacity has to be 100 tonnes per year with 300 working days.

Item	**Qty**	**Price (Rs. in lacs)**
Extrusion Machine	1	5.00
Pre-conditioner	1	2.40
Mixer (50 kgs capacity)	1	0.70
Pouch Packing and sealing Machine	1	2.80
Weighing Scale	1	0.30
	Total	**11.20**

c) Miscellaneous Assets

Other assets like furniture and fixtures, storage facilities, working table, SS utensils, etc. would call for expenditure of Rs. 1.80 lacs.

d) Utilities

Power requirement shall be 20 HP whereas per day water requirement would be 5000 ltrs. Annual expenditure at full capacity utilization will be Rs. 2.60 lacs.

e) Prel. & Pre Operative Expenses

There will be certain pre-production expenses like registration, establishment & administrative, market survey expenditure , interest during implementation period, trial run expenses and so on . Estimated expenditure is Rs. 2.20 lacs.

f) Working Capital Assessment

The plant is likely to operate at 60% of its rated capacity for which the following working capital will be required :

(Rs. in lacs)

Particulars	**Period**	**Margin**	**Total**	**Bank**	**Promoters**
Stock of Raw Materials & packing Material	½ month	30%	0.95	0.66	0.29
Stock of Finished Goods	½ month	25%	1.62	1.21	0.41
Receivable	½ month	25%	2.00	1.50	0.50
Total			**4.57**	**3.37**	**1.20**

g) Project cost & Means of finance

(Rs. in lacs)

Item	**Amount**
Land and Building	7.0
Plant and Machinery	11.20
Miscellaneous Assets	1.80
P & P Expenses	2.20
Contingencies @ 10% on Building and plant and machinery	1.72
Working capital margin	1.20
Total	25.12
Means of Finance	
Promoters' contribution	10.0
Term loan from Bank FI	15.12
Total	25.12
Debt Equity Ratio	1.5:1
Promoters contribution	40%

Financial assistance in the form of grant is available from the Ministry of Food Processing Industries, Govt. of India, towards expenditure on technical civil works and plant and machinery for eligible projects subject to certain terms and conditions.

7) PROJECTED PROFITABILITY

a) Production Capacity

As against the rated capacity of the plant of 100 tonnes per year, it is expected to run at 60% in the first year and thereafter at 75%.

b) Sales Revenue at 100%

Considering competitive selling price of Rs. 80/- per kg , the annual income at 100% utilization works out to Rs. 80.00 lacs.

c) Raw and Packing Material Required at 100%

The requirement of raw material is as under :

Product	**Qty (Tons)**	**Rate (Rs./ Ton)**	**Value (Rs. in lacs)**
Raw Material	100	30,000	30.00
Packing Material	@ Rs. 8,000/Ton		8.00
Total			**38.00**

d) Projected Profitability

(Rs. in lacs)

S. No.	Particulars	1st year	2nd year
A.	**Installed capacity**	**100 Tons**	
	Capacity Utilisation	60%	75%
	Sales Realisation	48.00	60.00
B.	**Cost of Production**		
	Raw & Packing Materials	22.80	28.50
	Utilities	1.56	1.95
	Salaries	5.52	6.07
	Stores and Spares	1.20	1.50
	Repairs and Maintenance	1.50	2.25
	Selling Expenses @ 10%	4.80	6.00
	Administrative Expenses	1.50	2.25
	Total	38.88	48.52
C.	**Profit before Interest & Depreciation**	**9.12**	**11.48**

	Interest on Term Loan	1.50	1.20
	Interest on Working Capital	0.41	0.50
	Depreciation.	1.72	1.54
	Profit before tax	5.49	8.24
	Profit after tax	5.49	8.24
	Cash Accruals	7.21	9.78
	Repayment of Term Loan	Nil	3.00

e) Break Even Point Analysis

S. No.	**Particulars**	**Amount (Rs. in lacs)**	
(A)	**Sales**		**60.00**
(B)	**Variable Costs**		
	Raw & Packing Material	28.50	
	Utilities(70%)	1.17	
	Salaries (60%)	3.95	
	Stores and Spares	1.50	
	Selling and Distribution Exps (70%)	4.20	
	Admn Expenses (50%)	1.12	
	Interest on WC	0.50	**40.94**
(C)	**Contribution (A) – (B)**		**19.06**
(D)	**Fixed Costs**		**9.27**
(E)	**Break Even Point**		**49%**

f) Debt Service Coverage Ratio (DSCR)

(Rs. in lacs)

Particulars	**1st year**	**2nd year**	**3rd year**
Cash Accruals	7.21	9.78	11.73
Interest on TL	1.50	1.20	0.90

Total (A)	8.71	10.98	12.63
Interest on TL	1.50	1.20	0.90
Repayment of TL	Nil	3.00	3.00
Total (B)	1.50	4.20	3.90
DSCR (A) / (B)	5.80	2.61	3.23
Average DSCR	3.88		

g) Internal Rate of Return (IRR)

Cost of the project is Rs. 25.12 lacs

(Rs. in lacs)

Year	**Cash Accruals**	**24%**	**28%**
1	7.21	5.76	5.62
2	9.28	6.35	5.96
3	11.73	6.09	5.59
4	11.73	4.92	4.34
5.	11.72	3.98	3.39
Total		**27.10**	**24.90**

The IRR is around 28%

h) Manpower requirement

Particulars	**Nos.**	**Monthly**	**Total Monthly Salary (Rs.)**
Skilled workers	2	8,000	16,000
Semi Skilled Workers	2	6,000	12,000
Helpers	2	5,000	10,000
Salesman	1	8,000	8,000
		Total	**46000/-**

8. ASSUMPTIONS

- The plant will work for 300 days in a year. :
- The operating capacity is 60% , 75%, 90 % during 1st year , 2nd year and 3rd year respectively.
- The interest on term loan is taken at 10% per annum and on working capital it is 12% per annum.
- Price of raw material and selling price of finished products is taken at Rs. 30,000 / ton and Rs. 80,000 / ton respectively.

9. SOURCES OF TECHNOLOGY

CFTRI, Mysore, has successfully developed the technical know-how for the product. BIS has laid down the quality standard. The compliance under FSSAI act is a must.

10. PLANT & MACHINERY SUPPLIERS

1. Gurunanak Engg. Works (P) Ltd.
   C-33, Sector – 88, Phase – II, Gautam Budh Nagar (UP)
   Ph. : 9810378448 / 120-243674

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   15/1, 3rd cross, Kasturbanagar,
   Mysore Road, Bengalore – 560026
   Ph. 09953361350
   www. indiamart.com

PROJECT PROFILE
SATOO / BESAN

1. INTRODUCTION

Satoo is made by processing gram. Gram is a commonly used pulse and dal or curry is made out of it which is a very popular item in majority of the Indian households. De husked grams are cleaned, roasted and pulverized to convert them in powder or flour form and this is known as Satoo. It is used in many vegetarian food and snack preparations. West Bengal is an ideal location as there are many dal mills in the region. Hence, selection of appropriate location has to be made after considering raw material sources as well as market potential. This is a very popular item of Bihar and Jharkhand.

2. OBJECTIVES

The objective of the profiles is to encourage and assist prospective entrepreneurs in MSME sector in and guiding making them aware of the opportunities of this sector. It is also being developed by the Directorate of the Food Processing Industries, Government of West Bengal to help entrepreneurs with knowledge about raw materials availability, knowledge of market, source of technology and plant and machinery suppliers. M/s ITV Agro & Food Technologies Pvt. Ltd., New Delhi has helped in developing the project profile.

3. RAW MATERIAL AVAILABILITY

The only raw material required will be gram. The annual requirement even at 100% will not be more than 95 tons. Price of gram would go up during off-season and therefore availability during this season has to be ensured. Different packing will require different size of plastic bags and for bulk packing of 10 kgs. and above gunny bags with liners shall be needed.

4. MARKET OPPORTUNITIES

a) Demand and supply

Gram is an integral part of the diet of Indians and apart from use in making curry or dal, its powder is used in preparing many vegetarian preparations. It is mixed in wheat flour in making rotis and a popular snacks item known as " Litti". The market for this product is scattered covering urban, semi urban and rural areas.

b) Marketing Strategy

Ideally, a small manufacturer should concentrate on such bulk consumers by undertaking direct supplies as the selling expenses are minimal and this benefit can be passed on to the buyer by way of discount .Bulk packing also results in saving of packing costs and assured orders bring down the per unit fixed costs over a period of time. Urban markets are saturated by some established manufacturers and thus for retailing, the concentration has to be on rural and semi-urban areas. Sattu is considered as staple diet in the region and hence there is a considerable demand.

5. PROJECT DESCRIPTION

a) Product & Its uses

Sattu is regularly used in many households and restaurants & eateries. It is used in many food and snack preparations especially during summer and is an item of mass consumption. Since it is made from gram, it has certain nutritional values as well.

b) Capacity

The proposed capacity of the plant is to manufacture 90 MT / annum of sattu/ besan.

c) Manufacturing process

Gram dal is cleaned with the help of pulse-cleaning machine and then roasted in an electrically operated roaster. It is then ground to obtain finer mesh size. Finally, it is

passed through sieves to remove any foreign material or coarse powder and then packed. The process loss is 4-5%.

6. PROJECT COMPONENTS & COST

a) Land & Building

A building of around 80 sq. mtrs. is adequate and hence instead of buying land and undertaking construction, a readymade premise is considered to save time as well as cost. The main processing area would require around 40 sq. mtrs, whereas balance space can be utilized for storage and packing. Cost of building is taken at Rs. 4.80 lacs.

b) Plant & Machinery

Rated production capacity to manufacture 90 tons / annum of sattu with 300 working days would require the following machine :

Item	**Qty**	**Price (Rs. in lacs)**
Dal Cleaning Machine	1	1.20
Grinder of 25 Kgs/Hr Capacity	1	3.10
Electrically –operated Roaster (20 kgs/hour roasting capacity)	1	4.50
Screen type Sieves	3	0.75
Bag Sealing Machine, weighing scales etc.	-	1.30
	Total	**10.85**

c) Miscellaneous Assets.

Some other assets like furniture and fixtures, appropriate storage facilities, working tables etc. shall be required for which a provision of Rs. 1.80 lacs is made.

d) Utilities

Power requirement shall be 20 HP whereas water will be required for potable and sanitation purposes and the requirement will be about 5000 ltrs. every day. The cost of utilities is estimated to be 2.30 lacs.

e) Prel. & Pre Operative Expenses

Expenses like registration, establishment & administrative, market survey expenditure, travelling, interest during implementation, trial run expenses etc. will be incurred prior to the commencement of commercial production for which a sum of Rs. 1.70 lacs is provided.

f) Working Capital Assessment

Capacity utilization in the first year is assumed to be 60%. To achieve this level, the working capital needs shall be as under :

(Rs. in lacs)

Particulars	**Period**	**Margin**	**Total**	**Bank**	**Promoters**
Stock of Raw material & packing material	½ month	30%	0.79	0.55	0.24
Stock of Finished Goods	½ month	25%	1.38	1.03	0.35
Receivable	½ month	25%	1.91	1.43	0.48
Total			4.08	3.01	1.07

g) Project cost & Means of finance

Item	**Amount (Rs. in lacs)**
Land and Building	4.80
Plant and Machinery	10.85
Miscellaneous Assets	1.80

P & P Expenses	1.70
Contingencies @ 10% on building and plant & machinery	1.56
Working capital margin	1.07
Total	21.78
Means of Finance	
Promoters' contribution	8.71
Term loan from Bank /FI	13.07
Total	21.78
Debt Equity Ratio	1.5:1
Promoters contribution	40%

Financial assistance in the form of grant is available from the Ministry of Food Processing Industries, Govt. of India, towards expenditure on technical civil works and plant and machinery for eligible projects subject to certain terms and conditions.

7) PROJECTED PROFITABILITY

a) Production Capacity

The rated production capacity of the plant is 90 tonnes per year whereas actual capacity utilization is expected to be 60% and 75% during 1st year and 2nd year respectively

b) Sales Revenue at 100%

It is assumed that the promoters would concentrate on bulk buyers at least during the first couple of years and then gradually increase retailing. Hence average sales realization is taken at Rs. 85,000 per ton. In other words sales value of 90 tonnes will be Rs. 76.50 lacs.

c) Raw Material Required at 100%

Assuming 5% process loss, the annual requirement of gram at 100% would be 95 tonnes. Considering the average purchase price of Rs. 33,000/- per ton , the total value will be Rs. 31.30 lacs whereas packing material cost will be Rs. 20,000/-

d) Projected Profitability **(Rs. in lacs)**

S. No.	Particulars	1st year	2nd year
A.	**Installed capacity**	**90 Tonnes**	
	Capacity Utilisation	60%	75%
	Sales Realisation	45.90	57.37
B.	**Cost of Production**		
	Raw material & packing materials	18.90	23.62
	Utilities	1.36	1.72
	Salaries	4.20	4.62
	Stores and Spares	1.40	1.74
	Repairs and Maintenance	1.60	2.00
	Selling Expenses @ 10%	4.59	5.73
	Administrative Expenses	1.20	1.50
	Total	**33.25**	**40.93**
C.	**Profit before Interest & Depreciation**	**12.65**	**16.44**
	Interest on Term Loan	1.30	1.05
	Interest on Working Capital	0.36	0.45
	Depreciation.	1.56	1.40
	Profit before tax	9.43	13.54
	Income-tax @ 20%	1.88	2.70
	Profit after tax	7.55	11.00
	Cash Accruals	9.11	12.40
	Repayment of Term Loan	Nil	2.50

e) Break Even Point Analysis *(Rs. in lacs)*

S. No.	Particulars	Amount	
(A)	**Sales**		**57.37**
(B)	**Variable Costs**		
	Raw material & Packing material	23.62	
	Utilities(70%)	1.20	
	Salaries (75%)	3.45	
	Stores and Spares	1.74	
	Selling Exps (70%)	3.43	
	Admn. Expenses (50%)	0.75	
	Interest on WC	0.45	**34.66**
(C)	**Contribution (A) – (B)**		**22.71**
(D)	**Fixed Costs**		**7.77**
(E)	**Break Even Point**		**35%**

f) Debt Service Coverage Ratio (DSCR) *(Rs. in lacs)*

Particulars	1st year	2nd year	3rd year
Cash Accruals	9.11	12.40	14.87
Interest on TL	1.30	1.05	0.80
Total (A)	10.41	13.45	15.67
Interest on TL	1.30	1.05	0.80
Repayment of TL	1.30	2.50	2.50
Total (B)	Nil	3.55	3.30
DSCR (A) / (B)	8.00	3.78	4.74
Average DSCR	5.50		

g) Internal Rate of Return (IRR)

Cost of the project is Rs. 21.78lacs

(Rs. in lacs)

Year	**Cash Accruals**	**36%**
1	9.11	6.65
2	12.40	6.60
3	14.87	5.70
4	14.82	4.20
Total		**22.16**

The IRR is around 36%

h) Manpower requirement

Particulars	**Nos.**	**Monthly**	**Total Monthly Salary (Rs.)**
Skilled workers	2	7500	15,000
Helpers	4	5000	20,000
		Total	**35,000**

8. ASSUMPTIONS

- The plant will work for 300 days in a year. :
- The operating capacity is 60% , 75%, 90 % during 1st year , 2nd year and 3rd year respectively.
- The interest on term loan is taken at 10% per annum and on working capital it is 12% per annum.
- Price of raw material and selling price of finished products is taken at Rs. 33,000 / ton and Rs. 85,000 respectively.

9. SOURCES OF TECHNOLOGY

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