

POTATO & BANANA CHIPS



1.0 INTRODUCTION

Chips are the most popular variety of snacks on various occasions. Besides being salty, spicy or flavoured, consumer preference is always for fresh quality. Potato and banana chips are popular processed food items resulting in substantial value-addition.

2.0 PRODUCTS

2.1 Application

Chips are very popular amongst all age groups and they are made from various materials. This industry is very large and is dominated mainly by local manufacturers. Easy availability, freshness and competitive price are the main features. These products can be manufactured in any part of the country but this note envisages Meghalaya as the location.

2.2 Quality standards, Compliances and availability of technology

Compliances under the FPO and PFA Act are mandatory. Quality standards as specified by BIS are IS 2397:1988. CFTRI, Mysore, has developed the technical know-how.

3.0 MARKET POTENTIAL

3.1 Demand and Supply

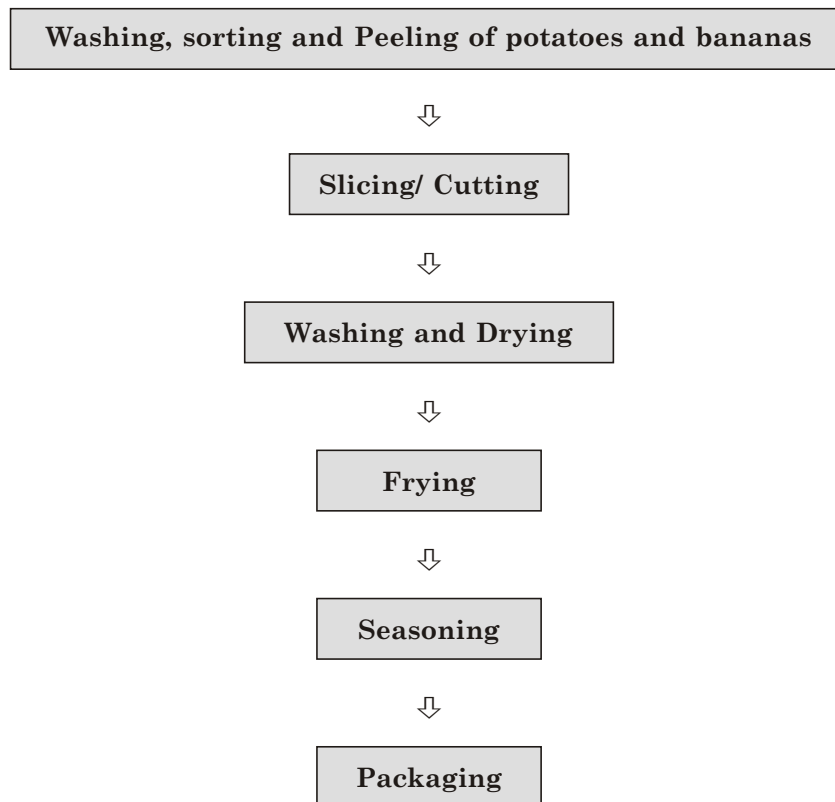
There exists a very large market for chips and they can be sold at various retail outlets, paan shops, bus-stands, railway stations, roadside eateries, etc. There also exists institutional market consisting of clubs and other institutions, school & college canteens, army establishments, bars & pubs, railway and airlines caterers, etc.

3.2 Marketing Strategy

Competition from organised sector is increasing but local and small units have distinct advantages in terms of less overheads and transportation costs, longer shelf life, quick access to market and cost.

4.0 MANUFACTURING PROCESS

It is very well established and simple. It involves visual inspection and sorting of damaged potatoes and bananas and washing them in water. Then they are peeled and trimmed before slicing or cutting them to the required size. Then they are once again washed and dried. They are then fried and either salt or other spices/flavours are mixed homogenously. After cooling them, they are packed in pouches or plastic bags. A typical process flow chart is as under:



5.0 CAPITAL INPUTS

5.1 Land and Building

Land measuring to around 250 sq.mtrs. with built-up area of 125 sq.mtrs. would be adequate. Apart from main factory area of 75-80 sq.mtrs; there will be godown and packing room. Cost of land is estimated to be Rs.0.75 lac whereas that of building Rs.3.15 lacs.

5.2 Plant and Machinery

Following machinery shall be required to produce about 50 tonnes of chips every year with working of two shifts and 300 working days.

Item	Qty.	Price (Rs.)
Slicer made of SS with attachments and electric motor	1	30,000
Electrically-operated dryer with trolleys and 96 trays	1	80,000
Automatic Potato Peeling Machine	2	30,000
Automatic Sealing Machine	2	20,000
Coal-fired Furnace	1	15,000
Electrical Installations	--	10,000
Cutting and peeling knives, aluminium utensils, weighing scale, etc.	--	20,000
	Total	2,05,000

5.3 Miscellaneous Assets

It is expected that storage racks, working tables etc. would cost Rs. 45,000/-.

5.4 Utilities

Power requirement shall be 10 HP and about 1500 ltrs. of water shall be required in production process.

5.5 Raw Material

Potatoes and bananas are grown abundantly in the entire North-East region. It is estimated that Meghalaya grows around 65,000 to 70,000 tonnes of bananas and 1,70,000 tonnes of potatoes every year. Other materials required are salt, edible oil, spices and flavours. But their quantities shall be very small. Printed polythene bags and corrugated or cardboard boxes would form the packing materials.

6.0 MANPOWER REQUIREMENTS

Particulars	Nos.	Monthly Salary (Rs.)	Total Monthly Salary (Rs.)
Skilled Workers	2	1,800	3,600
Semi-skilled Workers	2	1,500	3,000
Unskilled Workers	2	1,200	2,400
Salesman	1	2,500	2,500
		Total	11,500

7.0 TENTATIVE IMPLEMENTATION SCHEDULE

Activity	Period (in months)
Application and sanction of loan	2
Site selection and commencement of civil work	1
Completion of civil work and placement of orders for machinery	4
Erection, installation and trial runs	1

8.0 DETAILS OF THE PROPOSED PROJECT

8.1 Land and Building

Particulars	Area (Sq.Mtrs)	Cost (Rs.)
Land	250	75,000
Building	125	3,15,000

8.2 Plant and Machinery

The total cost under this head is likely to be Rs.2.05 lacs as explained earlier.

8.3 Miscellaneous Assets

A provision of Rs.45, 000/- is made under this head as explained earlier.

8.4 Preliminary & Pre-operative Expenses

A lump sum provision of Rs.40, 000/- is made under this head towards registration charges, establishment expenses and pre-production expenses.

8.5 Working Capital Requirement

The total requirement of working capital in the first year at 60% capacity utilisation is estimated at Rs. 1.40 lacs consisting of bank finance of Rs. 0.89 lac and margin money of Rs. 0.51 lac. The detailed calculations are as under:

(Rs. in lacs)

Particulars	Period	Margin	Total	Bank	Promoters
Stock of Raw & Packing Materials	1 Month	30%	0.22	0.15	0.07
Stock of Finished Goods	½ Month	25%	0.32	0.24	0.08
Receivables	1 Month	30%	0.66	0.50	0.16
Working Expenses	1 Month	100%	0.20	--	0.20
		Total	1.40	0.89	0.51

8.6 Cost of the Project and Means of Financing (Rs. in lacs)

Item	Amount
Land and Building	3.90
Plant and Machinery	2.05
Miscellaneous Assets	0.45
P&P Expenses	0.40
Contingencies @ 10% on Building and P&M	0.60
Working Capital Margin	0.51
Total	7.91
Means of Finance	
Promoters' Contribution	2.31
Loan from Bank/FI	5.60
Total	7.91
Debt Equity Ratio	2.42 : 1
Promoters' Contribution	30%

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.

9.0 PROFITABILITY CALCULATIONS

9.1 Production Capacity and Build-up

The installed production capacity shall be 50 tonnes of chips every year considering 300 working days and working of 2 shifts per day. It is expected that the factory would operate at 60% and 75% respectively during first two years.

9.2 Sales Revenue at 100% (Rs. in lacs)

Product	Qty. (Tonnes)	Selling Price (Rs.)	Sales
Potato Chips	30	55,000	16.50
Banana Chips	20	50,000	10.00
		Total	26.50

9.3 Raw and Packing Materials Required at 100%

In case of potato chips, process loss is 30% whereas in case of banana chips, it is 20%. Accordingly the input costs have been worked out.

(Rs. in lacs)

Product	Qty. (Tons)	Rate/Tone (Rs.)	Total
Potatoes	44	8,000	3.52
Bananas	25	7,000	1.75
Hard Coke	15	1,000	0.15
Spices/Flavours, Salt, edible oil, etc.	--	--	1.40
Packing Materials	--	--	2.00
		Total	8.82

9.4 Utilities

Annual power and water charges at 100% capacity level are assumed to be Rs. 60,000/-.

9.5 Selling and Distribution Overheads

In view of competition in the market, there will be need to undertake advertisements in local TV channel, printing of pamphlets, small hoardings etc. Retailers shall have to be given commission of 8%to 10%. Hence, a provision of 12.5% of sales value has been made.

9.6 Interest

Interest on term loan finance of Rs.5.60 lacs has been calculated @ 12% per annum assuming that the loan shall be repaid in 3 years including a moratorium period of 6 months. Interest on bank finance for working capital is taken at 14% per annum.

9.7 Depreciation

It is calculated on WDV basis and rates assumed are 10% on building and 20% on plant and machinery

10.0 PROJECTED PROFITABILITY

(Rs. in lacs)

No.	Particulars	1st Year	2nd Year
A	Installed Capacity	--- 50 Tonnes ---	
	Capacity Utilisation	60%	75%
	Sales Realisation	15.90	19.90
B	Cost of Production		
	Raw and Packing Materials	5.30	6.60
	Utilities	0.36	0.45
	Salaries	1.38	1.55
	Stores & Spares	0.18	0.24
	Repairs & Maintenance	0.24	0.36
	Selling and Distribution Expenses @ 25% of Sales	4.00	5.00
	Administrative Expenses	0.36	0.48
	Total	11.82	14.68
C	Profit before Interest & Depreciation	4.08	5.22
	Interest on Term Loan	0.54	0.30
	Interest on Working Capital	0.13	0.17
	Depreciation	0.82	0.68
	Net Profit	2.59	4.07
	Income-tax @ 20%	0.52	0.82
	Profit after Tax	2.07	3.25
	Cash Accruals	2.89	3.98
	Repayment of Term Loan	1.00	2.00

11.0 BREAK-EVEN ANALYSIS

(Rs. in lacs)

No	Particulars	Amount	
[A]	Sales		15.90
[B]	Variable Costs		
	Raw and Packing Materials	5.30	
	Utilities (70%)	0.25	
	Salaries (70%)	0.97	
	Stores & Spares	0.18	
	Selling Expenses (70%)	2.80	
	Admn. Expenses (50%)	0.18	
	Interest on Working Capital	0.13	9.81
[C]	Contribution [A] - [B]		6.09
[D]	Fixed Cost		3.50
[E]	Break-Even Point (D ÷ C)		58%

12.0 [A] LEVERAGES

Financial Leverage

$$= \text{EBIT/EBT}$$

$$= 3.26 \div 2.59$$

$$= 1.26$$

Operating Leverage

$$= \text{Contribution/EBT}$$

$$= 6.09 \div 2.59$$

$$= 2.35$$

Degree of Total Leverage

$$= \text{FL/OL}$$

$$= 1.26 \div 2.35$$

$$= 0.54$$

[B] Debt Service Coverage Ratio (DSCR)

(Rs. in lacs)

Particulars	1st Yr	2nd Yr	3rd Yr
Cash Accruals	2.89	3.93	4.27
Interest on TL	0.54	0.30	0.14
Total [A]	3.43	4.23	4.41
Interest on TL	0.54	0.30	0.14
Repayment of TL	1.15	2.30	2.15
Total [B]	1.69	2.60	2.29
DSCR [A] ÷ [B]	2.03	1.63	1.93
Average DSCR	----- 1.86 -----		

[C] Internal Rate of Return (IRR)

Cost of the project is Rs. 7.91 lacs.

(Rs. in lacs)

Year	Cash Accruals	24%	28%	32%
1	2.89	2.33	2.26	2.19
2	3.93	2.55	2.40	2.26
3	4.27	2.24	2.04	1.86
4	4.53	1.92	1.69	1.49
	15.62	9.04	8.39	7.80

The IRR is around 31%.

Some machinery suppliers are

1. Industrial Equipments, Guwahati
2. Archana Machinery Stores, Guwahati
3. East End Engineering Company, 173/1, Gopalrai Thakur Road, Kolkata 700035.
Tel. No. 25773416/6324