

# CASHEW PROCESSING



## 1.0 INTRODUCTION

Cashews 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 Maharashtra. Konkan region of Maharashtra is famous for cashews and alphonso mangoes. It is also attracting number of tourists due to its vast coast line and scenic beauty. Konkan railway has made this region easily accessible. Most of the cashew processing is undertaken manually and reportedly there are only two mechanised factories. There are some colleges in Ratnagiri imparting vocational training in cashew processing. Thus, cashew processing has good potential in the region.

## 2.0 PRODUCTS

### 2.1 Applications

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

### 2.2 Compliance with the provisions of the PFA Act is required.

## 3.0 MARKET POTENTIAL

### 3.1 Demand and Supply

Cashews are high value dry fruits with retail price ranging from Rs. 200/- to Rs. 325/- 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 preparations, 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 few elite families.

### 3.2 Marketing Strategy

Market for cashews 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 state of Goa and Kerala. Thus, demand for cashews is increasing and there are fluctuations in prices according to the supplies.

## 4.0 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.

## 5.0 CAPITAL INPUTS

### 5.1 Land and 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 balance area. The total cost of building is estimated to be Rs. 2.25 lacs whereas that of land around Rs.75, 000/-.

### 5.2 Plant and 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 tonnes per season is suggested. This would require following equipments:

Item	Qty.	Price (Rs.)
Electrically-operated Boiler	1	90,000
Tray-drier- 24 Trays	1	60,000
Cutters	10	10,000
Weighing Scales	2	15,000
Automatic Sealing Machines	2	10,000
	<b>Total</b>	<b>1,85,000</b>

### 5.3 Miscellaneous Assets

Some other assets like furniture & fixtures, fruit crates, SS utensils, storage racks, working tables etc. shall be required for which a provision of Rs. 60,000/- is made.

### 5.4 Utilities

Total power requirement will be 20 HP whereas water required for washing of cashew fruits and sanitation and potable purposes will be 700-800 ltrs. per day. Per season cost at 100% utilisation is likely to be Rs. 60,000/-.

### 5.5 Raw and Packing Materials

The only raw material required will be cashew fruits. They are grown in large quantities in Konkan area of Maharashtra and adjacent state of Goa. Reportedly, around 20,000 acres of land is under cashew cultivation in Ratnagiri district and the state government as well as NABARD are encouraging cashew plantation. Hence, obtaining around 50 tonnes of cashew fruits per season even at 100% capacity utilisation will not pose any problem. Packing materials like polythene bags and second-hand corrugated boxes shall be available locally.

### 6.0 MANPOWER REQUIREMENTS

Particulars	Nos.	Monthly Salary (Rs.)	Total Monthly Salary (Rs.)
Skilled Worker	2	2,250	4,500
Helpers	4	1,250	5,000
Salesman	1	2,500	2,500
		<b>Total</b>	<b>12,000</b>

### 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	100	2,25,000
	<b>Total</b>	<b>3,00,000</b>

#### 8.2 Plant and Machinery

As explained earlier, the total expenditure under this head is expected to be Rs. 1.85 lacs.

#### 8.3 Miscellaneous Assets

A provision of Rs. 0.60 lac is enough as explained earlier.

#### 8.4 Preliminary & Pre-operative Expenses

There will be many pre-production expenses like establishment, legal & administrative charges, travelling, interest during implementation, trial run expenses and so on. A provision of Rs. 50,000/- is made towards them.

### 8.5 Working Capital Requirement

The plant is expected to operate at 60% in the first year for which following working funds will be needed:

(Rs. in lacs)

Particulars	Period	Margin	Total	Bank	Promoters
Stock of Raw Materials	½ Month	30%	0.45	0.32	0.13
Stock of Finished Goods	½ Month	25%	0.55	0.42	0.13
Receivables	½ Month	25%	0.75	0.56	0.19
Working Expenses	1 Month	100%	0.20	--	0.20
		<b>Total</b>	<b>1.95</b>	<b>1.30</b>	<b>0.65</b>

### 8.6 Cost of the Project and Means of Financing

(Rs. in lacs)

Item	Amount
Building	3.00
Machinery	1.85
Miscellaneous Assets	0.60
P&P Expenses	0.50
Contingencies @ 10% on Building and Machinery	0.50
Working Capital Margin	0.65
<b>Total</b>	<b>7.10</b>
<b>Means of Finance</b>	
Promoters' Contribution	2.00
Term Loan from Bank/FI	5.10
<b>Total</b>	<b>7.10</b>
Debt Equity Ratio	2.55 : 1
Promoters' Contribution	28%

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

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

## 9.2 Sales Revenue at 100%

(Rs. in lacs)

Product	Qty. (Tonnes)	Selling Price (Rs.)	Sales
Processed Cashew	15	1,85,000/-	27.75
Cashew Shells	25	5,000/-	1.25
		<b>Total</b>	<b>29.00</b>

## 9.3 Raw and Packing Materials Required at 100%

(Rs. in lacs)

Product	Qty. (Tonnes)	Rate per Ton Rs.	Value
Raw Cashew	50	35,000	17.50
Packing Materials	--	--	0.50
		<b>Total</b>	<b>18.00</b>

## 9.4 Utilities

As spelt out earlier, per season expenses at 100% will be Rs.60, 000/-.

## 9.5 Interest

Interest on term loan of Rs. 5.10 lacs is computed @ 12% per annum assuming repayment in 4 years including a moratorium period of 1 year. Interest on working capital funds from bank is calculated @ 14%. per annum.

## 9.6 Depreciation

It is calculated on WDV basis @ 10% on building and 20% on machinery and other assets.

## 10.0 PROJECTED PROFITABILITY

(Rs. in lacs)

No.	Particulars	1st Year	2nd Year
<b>A</b>	<b>Installed Capacity</b>	---- 50 Tonnes ----	
	Capacity Utilisation	60%	75%
	Sales Realisation	17.40	21.75
<b>B</b>	<b>Cost of Production</b>		
	Raw Materials	10.80	13.50
	Utilities	0.36	0.45
	Salaries	0.96	1.10
	Stores & Spares	0.24	0.36
	Repairs & Maintenance	0.42	0.54
	Selling Expenses	0.72	0.96
	Administrative Expenses	0.36	0.48
	<b>Total</b>	<b>13.86</b>	<b>17.39</b>
<b>C</b>	<b>Profit before Interest &amp; Depreciation</b>	<b>3.54</b>	<b>4.36</b>
	Interest on Term Loan	0.55	0.37
	Interest on Working Capital	0.18	0.23
	Depreciation	0.73	0.60
	Net Profit	2.08	3.16
	Income-tax @ 20%	0.41	0.62
	Profit after Tax	1.67	2.54
	Cash Accruals	2.40	3.14
	Term Loan Repayment	--	1.55

## 11.0 BREAK-EVEN ANALYSIS

(Rs. in lacs)

No	Particulars	Amount	
[A]	Sales		17.40
[B]	Variable Costs		
	Raw and Packing Materials	10.80	
	Utilities (60%)	0.22	
	Salaries (65%)	0.64	
	Stores & Spares	0.24	
	Selling Expenses (70%)	0.50	
	Admen Expenses (50%)	0.18	
	Interest on WC	0.18	12.76
[C]	Contribution [A] - [B]		4.64
[D]	Fixed Cost		2.56
[E]	Break-Even Point [D]÷ [C]		55%

**12.0 (A) LEVERAGES**

**Financial Leverage**

= EBIT/EBT

= 2.81 ÷ 2.08

= 1.35

**Operating Leverage**

= Contribution/EBT

= 4.64 ÷ 2.08

= 2.23

**Degree of Total Leverage**

= FL/OL

= 1.35 ÷ 2.23

= 0.61

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

(Rs. in lacs)

Particulars	1st Yr	2nd Yr	3rd Yr	4th Yr
Cash Accruals	2.40	3.14	2.82	2.48
Interest on TL	0.55	0.37	0.18	0.07
<b>Total [A]</b>	<b>2.95</b>	<b>3.51</b>	<b>3.00</b>	<b>2.55</b>
Interest on TL	0.55	0.37	0.18	0.07
Repayment of TL	--	1.55	1.55	1.50
<b>Total [B]</b>	<b>0.55</b>	<b>1.92</b>	<b>1.73</b>	<b>1.57</b>
<b>DSCR [A] ÷ [B]</b>	<b>5.36</b>	<b>1.83</b>	<b>1.73</b>	<b>1.62</b>
<b>Average DSCR</b>	----- 2.64 -----			

**[C] Internal Rate of Return (IRR)**

Cost of the project is Rs. 7.10 lacs.

(Rs. in lacs)

Year	Cash Accruals	16%	18%	20%	24%	28%	32%
1	2.40	2.07	2.03	2.00	1.93	1.87	1.82
2	3.14	2.33	2.25	2.18	2.04	1.92	1.80
3	2.82	1.81	1.72	1.63	1.48	1.35	1.23
4	2.48	1.37	1.28	1.20	1.05	0.93	0.82
5	2.05	0.98	0.90	0.82	0.70	0.60	0.51
	<b>12.89</b>	<b>8.56</b>	<b>8.18</b>	<b>7.83</b>	<b>7.20</b>	<b>6.67</b>	<b>6.18</b>

The IRR is around 24%.

**Some of the equipment and packing machinery suppliers are**

1. Sujata Enterprises, Laxmi Road Pune
2. G.R. Engg. Works Pvt Ltd, Worli, Mumbai 400 018
3. Harvest Sortmac Shosha Pvt. Ltd. Nutech Vikas, No. 6, 1st Avenue, Ashok Nagar Chennai-600083. Tel No. 24717588
4. Vashisht Food Pvt. Ltd. 315, Ambic Vihar, Paschim Vihar, New Delhi-110087. Tel No. 25271619/25271636
5. Universal Polypack II, Old ESI Road, Ramapuram, Ambattura, Chennai-600053. Tel No. 26358050/26359707