



Detailed Project Report COCONUT MILK PROCESSING UNIT



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1. THE PROJECT AT A GLANCE

The Project at a Glance

1	Name of the Project	Coconut Milk
2	Name of the entrepreneur/FPO/SHG/Cooperative	
3	Nature of proposed project	Proprietorship/Company/ Partnership
4	Registered office	
5	Project site/location	
6	Names of Partner (if partnership)	
7	No of shareholders (if company/FPC)	
8	Technical advisor	
9	Marketing advisor/partners	
10	Proposed project capacity	60 MT/annum (55, 65, 75,85, 95 and 100% capacity utilization in the 2nd, 3rd, 4th, 5th, 6th 7 7th year onwards respectively
11	Raw materials	matured coconut
12	Major product outputs	Coconut Milk
13	Total project cost (Lakhs)	24.77
	Land development, building & civil construction	6
	Machinery and equipments	13
	Utilities (Power & water facilities)	0.6
	Miscellaneous fixed assets	0.8
	Pre-operative expenses	0.60
	Contingencies	1.20
	Working capital margin	2.57
14	Working capital Management (In Lakhs)	
	Second Year	7.72
	Third Year	9.12
	Fourth Year	12.44
15	Means of Finance	
	Subsidy grant by MoFPI (max 10 lakhs)	8.67
	Promoter's contribution (min 20%)	4.95
	Term loan %	11.15
16	Debt-equity ratio	1.60 : 1
17	Profit after Depreciation, Interest & Tax	
	2nd year	7.74
	3rd year	9.16
	4th year	11.95





18	Average DSCR	2.18
	Benefit Cost Ratio	1.112837864
	Term Loan Payment	7 Years with 1 year grace period
	Pay Back Period for investment	2 Years

The benefit to cost ratio is less.

As we ae having two major by products also.

- A). Coconut Water selling price 10 rs. * approx. 750 bottles. = 7500 profit per day
- B). Coconut powder selling price 200 rs. * approx. 160 Kgs = 32000 profit per day.

2. GENERAL OVERVIEW AND INTRODUCTION

2.1 INTRODUCTION

- A single coconut palm may yield 100 coconuts annually, and each fruit requires a year to fully ripen. Mature coconuts, ovoid or ellipsoid in shape, 300–450 mm (12–18 inches) in length and 150–200 mm (6–8 inches) in diameter, have a thick fibrous husk surrounding the familiar single-seeded nut of commerce.
- For centuries, the coconut fruit of the coconut palm (Cocos nucifera L.) has been a great source of versatility. Providing food, oil, milk and medicine, countries around the world have been producing coconut products for income. It has probably been used by humans for centuries.
- Today, it is a common visual of dreamy relaxation and increasingly, a symbol of health. From the Asian tropics to South America, the coconut has certainly better market. Today, the leading producers in the world are Indonesia, the Philippines and India. Together, these countries account for over 75% of total coconut production globally.





- More recently, the coconut has become a common visual of dreamy relaxation and increasingly, a symbol of health. In 2015, the global packaged coconut water market was estimated to be more than \$1 billion, with the United States and Brazil leading in
- consumption and growth. It is also interesting to note that ready to drink (RTD) coconut milk beverages are growing in markets like China and the United States.
- The sales of coconut milk beverages in the United States have grown by three times over the past four years to 60 million Litres.

2.2 ORIGIN, DISTRIBUTION AND PRODUCTION OF COCONUT

- The origin of coconut palm is the subject of controversy. Indian mythology credits the creation of palm with its crown of leafy fronds to the sage Vishwamitra, to prop up his friend King Trishanku when the latter was literally thrown out of heaven by Indra for his misdeeds.
- The coconut (the fruit of the palm Cocos nucifera) is the Swiss Army knife of the plant kingdom; in one neat package it provides a high-calorie food, potable water, fiber that can be spun into rope, and a hard shell that can be turned into charcoal. What's more, until it is needed for some other purpose, it serves as a handy flotation device.
- No wonder people from ancient Austronesians to Captain Bligh pitched a few coconuts aboard before setting sail. (The mutiny of the Bounty is supposed to have been triggered by Bligh's harsh punishment of the theft of coconuts from the ship's store.)
- So extensively is the history of the coconut interwoven with the history of people traveling that Kenneth M. Olsen, PhD, a plant evolutionary biologist at Washington University in St. Louis, didn't expect to find much geographical structure to coconut





genetics when he and his colleagues set out to examine the DNA of more than 1300 coconuts from all over the world.

2.3 VARIETIES

- ✓ There are mainly two types of Coconuts trees-tall and dwarf. The tall grows up to 50-90 feet and starts bearing fruits after 7-10 years.
- ✓ Whereas, the dwarf grows up to 20-60 feet and begins fruiting after 4-5 years. Dwarf varieties have an average life span of 40-50 years, while tall varieties live up to 90-100 years.
- ✓ Also, the tall varieties are cross-pollinated, and dwarf ones are self-pollinated.
- ✓ There are some hybrid varieties of coconuts as well, combining features of both. Tall x Dwarf (TxD), Dwarf x Tall (DxT) are two main hybrids.

2.3.1 Important variety of Coconuts

Different Types of Coconuts That Grow Around the World:

- Malayan Yellow Dwarf Coconuts.
- ► Fiji Dwarf.
- ➢ Golden Malay.
- ➢ King Coconut.
- ➢ West Coast Tall Coconut.
- Macapuno Coconut.
- Panama Tall.
- Maypan Coconut.





- VHC1 Coconut
- East Coast Tall
- ➢ Tiptur Tall
- ➢ Dwarf Orange
- ➢ Green Dwarf

3. HEALTH BENEFITS AND NUTRITIONAL INFORMATION

HEALTH BENEFITS OF COCONUT.

- ✓ Studies have shown that the coconut kernel have a potential anti-diabetic activity useful for preventing diabetes.
- ✓ At the same time, coconut milk can possibly have other anti-diabetic activities, specifically the reversal of carbohydrate metabolizing enzymes, and the reversal of pancreatic damage by an amino acid called arginine.
- ✓ Another study further shows that coconut milk contains a protein which displays immune stimulatory activity.
- ✓ This protein has the potential to increase the levels of red and white blood cells, platelets, neutrophils, monocytes, eosinophil, B-lymphocytes, T-lymphocytes and Hb, all of which are important components in building the body's immune system.
- ✓ Various researchers have exploited the health benefits of the tropical palm over the years.





It has got many health promoting applications. The traditional uses of coconut in treatment of various diseases as listed below:

Diarrheal, Antipyretic, kidney inflammation, Diuretics, gonorrhoea treatment, Urogenital inflammation caused by Trichomonas vaginitis, Antipyretic, Oral contraceptive, Treatment of fever and malaria, Treatment of changes in the menstrual cycle. Recent researchers have reported several properties of coconut including Anti-atherosclerotic effect, Antibacterial, antifungal and antiviral effect, Anticaries effect, Antidiabetic effect, Antidermatophytic, Antihypertensive effect, Anti-inflammatory effect, Antineoplastic effect, Antioxidant effect, Antiparasitic effect, Antithrombotic effect, Cardio protective effect, Hepatoprotective effect, Hypolipidemic effect, in reducing the risks of abdominal obesity, Renal protective effect, etc.

3.1 NUTRITIONAL INFORMATION

Nutrition information table: values per 100g of edible portion

Nutrient	Value	% RDA	Nutrient	Value	% RDA
Major 1		Major Nutrients			
Energy	354 kcal	18%	Fat	33.5 g	167%
Carbohydrates	15.2 g	12%	Cholesterol	0 mg	0%
Protein	3.3 g	6%	Dietary Fibre	9 g	24%
Vita	amins		Minerals		
Folate	26 pg	6.5%	Sodium	20 mg	1.0%
Niacin	0.54 mg	3.0%	Potassium	356 mg	7.5%
Pantothenic acid	0.30 mg	6.0%	Calcium	14 mg	1.4%
Pyridoxine	0.05 mg	4.0%	Copper	0.44 mg	48.0%
Riboflavin	0.02 mg	1.5%	Iron	2.43 mg	30.0%
Thiamine	0.07 mg	5.5%	Magnesium	32 mg	8.0%
Vitamin C	3.3 mg	5.5%	Manganese	1.5 mg	65.0%
Vitamin A	0 IU	0.0%	Phosphorus	113 mg	16.0%





Vitamin E	0.24 mg	2.0%	Selenium	10.1 pg	18.0%
Vitamin K	0.2 pg	<1.0%	Zinc	1.1 mg	10.0%

4. CULTIVATION, BEARING & POST HARVEST MANAGEMENT

4.1 CULTIVATION & BEARING

Agro - climatic requirements Coconut is essentially a tropical plant but has been found to grow under varying agro climatic conditions. The mean annual temperature for optimum growth and maximum yield is stated to be 270C with a diurnal variation of 60C to 70C and relative humidity more than 60 %. The coconut palm thrives well up to an altitude of 600 m above MSL. The coconut palm thrives well under an evenly distributed annual rainfall ranging from 1000 mm to 3000 mm. However, a well distributed rainfall of about 2000 mm is the ideal rainfall for proper growth and higher yield.

Soil The coconut palm can tolerate wide range of soil conditions. But the palm does show certain growth preferences. A variety of factors such as drainage, soil depth, soil fertility and layout of the land has great influence on the growth of the palm. The major soil types that support coconut in India are laterite, alluvial, red sandy loam, coastal sandy and reclaimed soils with a pH ranging from 5.2 to 8.0.

Selection of Site Soil with a minimum depth of 1.2m and fairly good water holding capacity is preferred for coconut cultivation. Shallow soils with underlying hard rock, low lying areas subjected to water stagnation and clayey soils should be avoided. Proper supply of moisture either through well distributed rainfall or irrigation and sufficient drainage are essential for coconut.





Preparation of land Size of the pit depends on the soil type and water table. In laterite soils large pits of the size 1.2m x 1.2m x 1.2 m may be dug and filled up with loose soil, powdered cow dung and ash up to a depth of 60 cm before planting. In loamy soils, pits of size 1m x 1m x 1m filled with top soil to height of 50 cm is recommended. While filling the pits, two layers of coconut husk can be arranged at the bottom of the pit with concave surface facing upwards for moisture conservation. After arranging each layer, BHC 10% DP should be sprinkled on the husk to prevent termite attack. In laterite soils, common salt @ 2 kg per pit may be applied, six months prior, on the floor of the pit to soften the hard pans.

Spacing in general, square system of planting with a spacing of 7.5m x 7.5m is recommended for coconut. This will accommodate 177 palms per hectare. However, spacing of 7.5 to 10 m is practiced in various coconut growing regions of the country.

Planting Material & Planting Vigorous seedlings which are one-year-old, having minimum of six leaves and girth of 10 cm at the collar level should be selected for planting in the main field. Early splitting of leaves in the seedlings could be a criterion for selecting good seedlings. However, 18 - 24-month-old seedlings are preferred for planting in water logged areas. Planting the seedlings during May with the onset of pre-monsoon rain is ideal.

Varieties The tall varieties are extensively grown throughout India while dwarf is grown mainly for parent material in hybrid seed production and for tender coconuts. The tall varieties generally grown along the west coast is called West Coast Tall and along the east coast is called East Coast Tall. Benaulim is the tall variety grown in Goa and coastal Maharashtra. Laccadive Ordinary, Laccadive Micro, Tiptur Tall, Kappadam, Komadan and Andaman Ordinary are some of the tall varieties. Chow hat Dwarf Orange, Chowghat Dwarf Yellow, Chow hat Dwarf Green, Malayan Yellow Dwarf and Malayan Orange Dwarf are some of the dwarf varieties grown in India. Ganga bondam is a semi tall type grown in certain tracts of Andhra Pradesh.





Maintenance of Coconut Garden Regular manuring from the first year of planting is essential to ensure good vegetative growth, early flowering and bearing and high yield. Organic manure at the rate of 30 kg per palm per year may be applied with the onset of south west monsoon when soil moisture content is high. Different forms of organic manures like compost, farmyard manure, bonemeal, fish meal, neem cake, groundnut cake, gingelly cake, etc. could be used for this purpose. Green manure crops like sunhemp, glyricidia, dhaincha, etc. could also be grown as intercrops to incorporate in the coconut basins later.

Irrigation Coconut responds well to summer irrigation i.e., summer irrigation @ 40 litres per palm per week will increase the yield of nuts by 50%. Under basin irrigation, 200 litres per palm once in four days will be beneficial. In areas where water is scarce drip irrigation system can be adopted. The quantity of water recommended for drip irrigation in coconut is 66 per cent of the open pan evaporation.

Coconut based cropping system: - to maximise the utilisation of soil and sunlight in the coconut garden, intercropping can be adopted with a variety of crops like pineapple, banana, elephant foot yam, groundnut, chillies, sweet potato, tapioca etc. up to 8-10 years. During 10-22 years of age of the palms, crop like colocasia which can tolerate shade can be cultivated. In older plantations, perennials like cocoa, pepper, cinnamon, clove and nutmeg can be grown as mixed crops along with intercrops. Mixed farming by raising fodder grasses such as hybrid napier or guinea grass along with leguminous fodder crops in coconut garden has been found to be profitable which can support rearing of milch animals.

4.2 HARVESTING & POST HARVEST MANAGREMENT

- ✓ Coconuts are harvested at varying intervals in a year. The frequency differs in different areas depending upon the yield of the trees.
- ✓ In well maintained and high yielding gardens, bunches are produced regularly and harvesting is done once a month.





- ✓ Coconuts become mature in about 12 months after the opening of the spathe. It is the ripe coconut which is the source of major coconut products.
- ✓ Nuts which are eleven months old give fiber of good quality and can be harvested in the tracts where green husks are required for the manufacture of coiffure.
- \checkmark Economic life of the coconut palm is about 60 years.

5. PROCESSING & VALUE ADDITION: -



✓ Edible Products of Coconut include Coconut water, coconut milk, coconut cream, coconut oil, candy, desiccated coconut powder, coconut chutney, coconut laddoo & bites, lemonade, Coconut burfi, Coconut milk drink, Coconut milk powder, Coconut





yogurt, Coconut cheese, Coconut crisps, Coconut chips, coconut flour, coconut, jam, coconut mayonnaise, etc. apart from these, tender coconut (snow ball – minimally processed coconut) and Neera are high in demand. Coconut honey, coconut jiggery and coconut sugar are high value products for niche market.

6. MANUFACTURING PROCESS OF COCONUT MILK.

The following processing method/sequence to be taken care while processing the coconut milk.

Coconut milk refers to the oil-protein-water emulsions obtained by squeezing fresh grated coconut kernel. The undiluted and diluted are referred to as coconut milk and concentrated form as coconut cream. Coconut milk is obtained by extraction of fresh coconut wet gratings with/without water. This is an instant product, which can either be used directly/diluted with water to make various preparations such as fish & meat dishes, curries, sweets, deserts, puddings, cocktails, cakes, cookies, coconut jam, ice creams etc. It can also be used in the manufacture of bakery products and for flavouring food stuffs. Preserved forms of coconut milk such as canned cream or milk and dehydrated whole milk are now available in many coconut growing countries. Commercial production of these products has been promoted in the Philippines, Thailand, Indonesia, Western Samoa, Sri Lanka and Malaysia and to some extent in India. Indonesia is the leading exporter followed by Sri Lanka, Thailand and Philippines.

Coconut milk and cream is produced from 10-13 months old mature coconuts when the kernel is hard and thick. They are natural oil-in-water emulsions extracted from the mature coconut kernel. The difference between coconut milk and cream is the amount of fat in the products. It is important to categorize coconut milk products according to fat content. The Codex Standards for Aqueous coconut products states that coconut milk should contain





at least 10% fat, 2.7% non-fat solids, and 12.7-25.3% total solids. While coconut cream should contain at least 20% fat, 5.4% non-fat solids and 25.4-37.3% total solids.

To extract coconut milk for industrial manufacturing purposes, mature coconuts go through deshelling and paring. Pieces of kernels are then sent into industrial scale cutters and grinders. In integrated plants, the by-product coconut water is also collected by drilling the coconut before deshelling, or halving the coconuts after deshelling. Next, grated coconut kernel then goes into a series of screw presses to extract coconut milk. The residual kernel from this first press is then mixed with water before it is pressed again to increase extraction yield. Oil recovery yield can represent extraction yield. After extraction, coconut milk is filtered to remove large contaminants. It can then be standardized to a pre-determined level of fat and blended with other ingredients. Finally, coconut milk is pasteurized and aseptically filled into packages for transportation to global markets.

Coconut Milk	Coconut Cream





6.1 Flow Chart for Processing of Coconut.







7. LOCATION OF THE PROPOSED PROJECT AND LAND

- Coconut prefers to grow under tropical and subtropical climate. Traditional areas of coconut in India are the states of Kerala, Tamil Nādu, Karnataka, Andhra Pradesh, Orissa, Goa, West Bengal, Pondicherry, Maharashtra and Islands of Lakshadweep and Andaman and Nicobar.
- However, several states like Assam, Gujarat, Madhya Pradesh, Bihar, Tripura, Manipur, Nagaland and Arunachal Pradesh have emerged as non-traditional areas for the cultivation of coconut.
- Coconut is grown in more than 93 countries of the world and Indonesia, Philippines, India are the major producing countries of the world.
- The ideal locations for establishment of exclusive coconut milk processing unit are in the production clusters of coconut growing states.

8. MARKET DEMAND AND SUPPLY FOR COCONUT BASED PRODUCTS

Global producers- Country, Area, Production, Productivity and global market share

Country	Area	% Share	Production % Share		Productivity
			(million nuts)		(nuts/ha)
Indonesia	3571	29.8	14804	20.5	4530
Philippines	3517	29.3	14735	20.4	4196





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India	1975	16.5	20440	28.4	10119
Sri Lanka	440	3.7	3056	4.2	6623
Tanzania	128	1.1	554	0.8	1379
Brazil	250	2.1	2893	4.0	11923
Papua New Guinea	221	1.8	1483	2.1	6709
Thailand	202	1.7	809	1.1	4859
Others	1684	14.0	13321	18.5	5662
Total	11988	100.0	72095	100.0	5777

9. MARKETING STRATEGY FOR COCONUT MILK.

- ✓ Marketing strategy is a long-term, forward-looking approach and an overall game plan of any organization or any business with the fundamental goal of achieving a sustainable competitive advantage by understanding the needs and wants of customers.
- ✓ The increasing urbanization and income offer huge scope for marketing of fruit base products. Urban organized platforms such as departmental stores, malls, super markets can be attractive platforms to sell well packaged and branded coconut Based products.

10.DETAILED PROJECT ASSUMPTIONS

Detailed Project Assumptions					
Parameter	Assumption				
Capacity of the Coconut milk Unit	60	MT/annum			
Utilization of capacity	1st Year Implementation, 55% in second, 65% in third, 75% in fourth year, 85% in fifth, 95% in sixth & 100 % from seventh year onwards				
Working days per year	300	days			
Working hours per day	10	hours			
Interest on term and working capital	12%				





loan		
	Seven year with one year	
Repayment period	grace period is considered.	
Average prices of raw material	25	
Average sale prices per Kg	360	Rs/kg
	1 kg coconut milk form	
Coconut Milk	11.11 kg matured coconut	

- ✓ This model DPR for manufacturing unit is basically prepared as a template based on certain assumptions that may vary with capacity, location, raw materials availability etc.
- ✓ An entrepreneur can use this model DPR format and modify as per requirement and suitability.
- ✓ The assumptions made in preparation of this particular DPR are given in This DPR assumes expansion of existing unit by adding new line.
- ✓ Herewith in this DPR, we have considered the assumptions as listed below in the tables of different costs, which may vary as per region, seasons and machinery designs and supplier.
- 1. COCONUT cost considered @ Rs. 25/- per kg.
- 2. WATER cost considered @ Rs. 0.25/- per kg.
- Yield is considered as 9 %, which may vary depend on degree of maturation of the fruit, and fruit purchase is assumed as a bulk & in that 5% approx. will be eliminated as a rejection due to over ripened, decayed, diseased, rotten etc.
- 4. Machinery cost may also vary from vendor to vendor.
- \checkmark Land and civil infrastructures are assumed as already available with the entrepreneurs.
 - ✓ We took les sugar content as fruit is itself sweeter, cost can be reduced by increasing sugar content.









11. PROJECT START-UP COSTING SHEETS

Land and Building.

Land and Civil Infrastructures	
1. Land 550 sq. ft.	Assumed land already developed and has
2. Built up processing area 441 sq. Ft.	500 sq. ft. built in area. Rs. 6.00 Lakhs
Total	Rs. 6.00 Lakhs

• Land and civil infrastructures are assumed as already available with the entrepreneurs.

Still we have considered approx. 6 lac Rs. as a construction cost for safer side of the entrepreneur.

Machinery and Equipment: - Rs. 13.0 Lacs

Sr. No	Equipment	Quantity	Capacity	Amount (in Lakhs)
1	De huller	1	300 kg/hr	2
2	Shell breaker	1	350 pcs/hr.	0.7
3	Pulveriser	1	100 Kg/hr	0.5
4	Coconut milk extractor	1	60-65kg/hr.	1.5
	Filter			
5		2	Suitable	0.2
6	Raw milk silo	1	300 Ltr	0.5
7	Homogenizer	1	200 LPH	1.5
8	Spout pouch packing machine	1	400 BPH	0.6
9	Retort Machine	1	400 PPH	3
10	S.S tub	1	Suitable	0.3
11	Vacuum Pump	1	Suitable	0.4
12	Oven	1	Suitable	0.8
13	S.S trolley and tray	1	150 kg	0.5
14	Accessories	1	Standard	0.5
	TOTAL			13





Other costs: -

Utilities and Fittings: -

Utilities and Fittings						
1. Water	Rs. 0.6 Lacs total					
2. Power						

Other Fixed Assets: -

Other Fixed Assets							
1. Furniture & Fixtures	Rs. 0.8 Lacs total						
2. Plastic tray capacity							
3. Electrical fittings							

Pre-operative expenses

Pre-operative Expenses							
Legal	expenses,	Start-up	expenses,	0.6 Lac			
Establishment cost, consultancy fees, trials and			, trials and				
others.							
Total pre	operative expe	nses		0.6 Lac			

Contingency cost to be added as approx. 1.2 Lac.

So total startup cost at own land & Premise may be somewhat similar to **25.37 lacs**. This is according to survey done at X location India. This may vary on location, situation and design change over.





Working capital requirement (in Lacs)

working Capital I	Vequiteine	m (ns.		1)
		55%	65%	75%
	Period			
Particulars	(Days)	Year 2	Year 3	Year 4
Raw material stock	3	1.06	1.26	1.71
Work in progress	6	2.12	2.51	3.42
Packing material	10	0.48	0.57	0.77
Finished goods' stock	5	2.15	2.54	3.46
Receivables	10	4.29	5.07	6.92
Working expenses	7	0.19	0.23	0.31
Total current assets		10.29	12.17	16.59
Trade creditors		0.00	0.00	0.00
Working capital gap		10.29	12.17	16.59
Margin money (25%)		2.57	3.04	4.15
Bank finance		7.72	9.12	12.44

Working Capital Requirement (Rs. in Lakh)

12. INSTALLED CAPACITY OF THE COCONUT MILK MANUFACTURING UNIT

The maximum installed capacity of the Coconut Milk manufacturing unit in the present model project is proposed as 60 tons/annum or 200 kg/day Coconut Milk manufacturing. The unit is assumed to operate 300 days/annum @ 8-10 h/day. The 1st year is assumed to be construction/expansion period of the project; and in the 2nd year 55 percent capacity, 3rd year 65 percent capacity and 4th year onwards 75 percent capacity utilization is assumed in this model project.





Total Project Cost and Means of Finance (Rs. in Lakhs)

Particulars	Amount in Lakhs
i Land and building (20 x 32 x 12 ft -	Luning
LxBxH)	6
ii. Plant and machinery	13
iii. Utilities & Fittings	0.6
iv. Other Fixed assets	0.8
v. Pre-operative expenses	0.60
vi. Contingencies	1.20
vii. Working capital margin	2.57
Total project cost (i to vii)	24.77
Means Of finance	
i. Subsidy	8.67
ii. Promoters Contribution	4.95
iii. Term Loan (@10%)	11.15

Manpower Requirement

Manpower Requirement								
Ann								
Total Monthly Salary (Rs.)	No	Wages	Total Monthly	Amount				
Supervisor (can be the owner)	1	15000	15000	180000				
Technician	1	12000	12000	144000				
Semi-skilled	3	6000	18000	216000				
Sales man	1	8000	8000	96000				
		Total	53000	636000				





13.EXPENDITURE, REVENUE & PROFITABILITY ANALYSIS.

	Expenditu	re, Revenue a	and Pro	ofitabil	ity Ana	lysis		
		60	MT					
	Dontioulong			Y	ear			
	Particulars	1st	2nd	3rd	4th	5th	6th	7th
	Total Installed Capacity	367 MT						
А	(MT)	coconut / yr	33	39	45	51	57	60
	Capacity utilization (%)	Under Const.	55%	65%	75%	85%	95%	100%
В	Expenditure (Rs. in Lakh)	0						
	matured coconut (Av. Price	0.00	105 99	105 12	144 20	162 62	102 00	102.50
	W RS. 25/Kg)	0.00	105.88	125.13	144.38	103.03	182.88	192.50
	Packaging materials	0.00	1.98	4.08	0.95	0.12	0.84	1.20
	Solorios (lat vr only	0.00	0.70	0.85	0.95	1.00	1.21	1.27
	manager's salary)	1.80	6.36	6.36	6.36	6.36	6.36	6.36
	Repair & maintenance	0.00	0.70	0.80	0.90	0.90	0.90	0.90
	Insurance	0.30	0.30	0.30	0.30	0.30	0.30	0.30
	Miscellaneous expenses	0.50	2.30	2.30	2.30	2.30	2.30	2.30
	Total Expenditure	2.60	118.21	140.39	160.59	180.69	200.78	210.83
0	Total Sales Revenue (Rs.	0.00	100.00	1 = < 0.0	100.00			3 40 00
C	in Lakh)	0.00	132.00	156.00	180.00	204.00	228.00	240.00
	Sale of coconut Milk (Av. Sale Price @ Rs.400/kg)	0.00	132.00	156.00	180.00	204.00	228.00	240.00
	PBDIT (Total expTotal							
P	sales rev.) (Rs. in		12 50	1 = 71	10.41	00.01		20 1 5
D	Lakh)/Cash Inflows	-2.60	13.79	15.61	19.41	23.31	27.22	29.17
	Depreciation on civil works @ 5% per annum	0.30	0.29	0.27	0.26	0.24	0.23	0.23
	Depreciation on machinery @ 10% per annum	1.30	1.17	1.05	0.95	0.85	0.77	0.77
	Depreciation on other fixed assets @ 15% per annum	0.18	0.15	0.13	0.11	0.09	0.08	0.08

Ministr	V F P I y of Food Processing Industries Government of India		aar (aar (aar					, ,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,
	Interest on term loan @						aldy see 5000. A for one one of the second	
	12%	1.16	1.12	1.07	1.03	0.97	0.57	0.91
	Interest on working capital							
	@ 12%	0.00	0.93	1.09	1.49	1.49	1.49	1.49
	Profit after depreciation and							
Е	Interest (Rs. in Lakh)	-5.54	11.06	13.08	17.07	21.15	25.56	27.18
	Tax (assumed 30%) (Rs. in							
F	Lakh)	0.00	3.32	3.92	5.12	6.35	7.67	8.15
	Profit after depreciation,							
	Interest & Tax (Rs. in							
G	Lakh)	-5.54	7.74	9.16	11.95	14.81	17.89	19.02
	Surplus available for							
	repayment (PBDIT-Interest							
	on working Capital-Tax)	1.1.5		1 0 7	1.00	0.07	o	0.01
H	(Rs. in Lakh)	1.16	1.12	1.07	1.03	0.97	0.57	0.91
	Coverage available (Rs. in	1.16	1 10	1.07	1.02	0.07	0.57	0.01
1	Lakh)	1.16	1.12	1.07	1.03	0.97	0.57	0.91
- T	Total Debt Outgo (Rs. in	0.20	0.42	0.47	0.50	0.57	0 77	0.62
J	Lakh)	0.39	0.43	0.47	0.52	0.57	8.77	0.63
	Debt Service Coverage							
Κ	Ratio (DSCR)	3.00	2.62	2.28	1.97	1.69	0.07	1.44
	Average DSCR	2.18						
	Cash accruals (PBDIT-							
L	Interest-Tax) (Rs. in Lakh)	-3.76	9.35	10.61	13.26	16.00	18.97	20.10
Μ	Payback Period	2.5 Years						
	(on Rs. 25.37 Lakhs initial investment)							

14. REPAYMENT SCHEDULE

Year	Beginning	PMT	Interest	Principal	Ending Balance
1	11.14.816.16	1.54.646.39	1,15,940,88	38.705.51	10.76.110.65
2	10 76 110 65	1 54 646 39	1 11 915 51	42,730,88	10 33 379 78
3	10.33.379.78	1.54.646.39	1.07.471.50	47.174.89	9.86.204.89
4	10,00,017.10	1,0 1,0 10.09	1,07,171.00		7,00,201.07





	9,86,204.89	1,54,646.39	1,02,565.31	52,081.08	9,34,123.81
5	9,34,123.81	1,54,646.39	97,148.88	57,497.51	8,76,626.30
6	8,76,626.30	1,54,646.39	91,169.13	63,477.25	8,13,149.04
7	8,13,149.04	1,54,646.39	84,567.50	70,078.89	7,43,070.16
8	7,43,070.16	1,54,646.39	77,279.30	77,367.09	6,65,703.07
9	6,65,703.07	1,54,646.39	69,233.12	85,413.27	5,80,289.80
10	5,80,289.80	1,54,646.39	60,350.14	94,296.25	4,85,993.55
11	4,85,993.55	1,54,646.39	50,543.33	1,04,103.06	3,81,890.50
12	3,81,890.50	1,54,646.39	39,716.61	1,14,929.78	2,66,960.72
13	2,66,960.72	1,54,646.39	27,763.91	1,26,882.47	1,40,078.25
14	1,40,078.25	1,54,646.39	14,568.14	1,40,078.25	(0.00)
		21,65,049	10,50,233	11,14,816	(11,14,816)

15.ASSETS' DEPRECIATION (DOWN VALUE METHOD)

Assets'								
Depreciation								
(Down Value								
(Down value Mathod)						1	unto in T	altha
Method)						AIIIO	unis in I	Lakns
	1st	2nd	3rd	4 th	5th	6th	7th	8th
Particulars	Yr	Yr	Yr	Yr	yr	yr	yr	yr
Civil works	6.00	5.70	5.42	5.14	4.89	4.64	4.41	4.19
Depreciation	0.30	0.29	0.27	0.26	0.24	0.23	0.22	0.21
Depreciated								
value	5.70	5.42	5.14	4.89	4.64	4.41	4.19	3.98
Plant &								
Machinery	13.00	11.70	10.53	9.48	8.53	7.68	6.91	6.22
Depreciation	1.30	1.17	1.05	0.95	0.85	0.77	0.69	0.62
Depreciated								
value	11.70	10.53	9.48	8.53	7.68	6.91	6.22	5.60
Other Fixed	1.20	1.02	0.87	0.74	0.63	0.53	0.45	0.38





Assets								
Depreciation	0.18	0.15	0.13	0.11	0.09	0.08	0.07	0.06
Depreciated								
value	1.02	0.87	0.74	0.63	0.53	0.45	0.38	0.33
All Assets	20.20	18.42	16.81	15.36	14.04	12.85	11.77	10.79
Depreciation	1.78	1.61	1.45	1.32	1.19	1.08	0.98	0.89
Depreciated								
value	18.42	16.81	15.36	14.04	12.85	11.77	10.79	9.90

16.FINANCIAL ASSESSMENT OF THE PROJECT

Benefit Cost Ratio (BCR) and Net Present Worth (NPW)

Particulars	1st Yr	2nd Yr	3rd Yr	4 th Yr	5th yr	6th yr	7th yr	8th yr	
Capital cost (Rs. in Lakh)	24.77	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
Recurring cost (Rs. in Lakh)	2.60	118.21	140.39	160.59	180.69	210.83	210.83	210.83	
Total cost (Rs. in Lakh)	27.37	118.21	140.39	160.59	180.69	210.83	210.83	210.83	1259.76
Benefit (Rs. in Lakh)	0.00	132.00	156.00	180.00	204.00	240.00	240.00	240.00	
Total Depreciated value of all assets (Rs. in Lakh)								9.90	
Total benefits (Rs. in Lakh)	0.00	132.00	156.00	180.00	204.00	240.00	240.00	249.90	1401.90
Benefit-Cost Ratio (BCR): (Highly Profitable project)	1.113								
Net Present Worth (NPW):	142.15								





17.BREAK-EVEN ANALYSIS

Sr.			2nd		4 th				
No.	Particulars	1st Yr	Yr	3rd Yr	Yr	5th yr	6th yr	7th yr	8th yr
		Under							
	Capacity utilization (%)	Const.	55%	65%	75%	85%	95%	100%	100%
	Production MT/Annum		33	39	45	51	57	60	60
А	Fixed Cost (Rs. in Lakh)								
	Permanent staff salaries	1.8	6.36	6.36	6.36	6.36	6.36	6.36	6.36
	Depreciation on building @ 5% per annum	0.30	0.29	0.27	0.26	0.24	0.23	0.22	0.21
	Depreciation on machinery @ 10% per annum	1.30	1.17	1.05	0.95	0.85	0.77	0.69	0.62
	Depreciation on other fixed assets @ 15% per annum	0.18	0.15	0.13	0.11	0.09	0.08	0.07	0.06
	Interest on term loan	1.16	1.12	1.07	1.03	0.97	0.91	0.85	0.77
	Insurance	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3
	Total Fixed Cost (Rs. in								
	Lakh)	5.039	9.387	9.189	9.001	8.823	8.651	8.485	8.322
D	Sales Revenue (Rs. in	0	122	156	190	204	226	240	240
D C	Variable Cost (Rs. in Lakh)	U	152	150	100	204	220	240	240
C	wartable Cost (RS. III EdRI)								
	Price @ Rs.25/Kg)	0.00	105.88	125.13	144.38	163.63	182.88	192.50	192.50
	Packaging materials	0.00	1.98	2.34	2.70	3.06	3.42	3.60	3.60
	Casual staff salaries	0.00	4.86	4.86	4.86	4.86	4.86	4.86	4.86
	Utilities (Electricity, Fuel)	0.00	0.70	0.83	0.95	1.08	1.21	1.27	1.27
	Repair & maintenance	0.00	0.70	0.80	0.90	0.90	0.90	0.90	0.90
	Miscellaneous expenses	0.50	2.00	2.00	2.00	2.00	2.00	2.00	2.00
	Interest on working capital @ 12%	0.00	0.93	1.09	1.49	1.49	1.49	1.49	1.49
	Total Variable Cost (Rs.								
	in Lakh)	0.50	117.04	137.05	157.28	177.02	196.76	206.63	206.63
D	Break Even Point (BEP)								

Ministry of Food Processing Industries Government of India							NITEN DE				
	as % of sale	-	12.00	10.00	8.00	8.00	7.00	7.00	6.00		
	Break Even Point (BEP) in terms of sales value (Rs. in Lakhs)	-	15.84	15.60	14.40	16.32	15.96	16.80	14.40		

18.RAW MATERIAL REQUIREMENTS FOR THE UNIT.

- ✓ A sustainable food processing unit must ensure maximum capacity utilization and thus requires an operation of minimum 280-300 days per year to get reasonable profit. Therefore, ensuring uninterrupted raw materials supply requires maintenance of adequate raw material inventory.
- ✓ The processor must have linkage with producer organizations preferably FPCs through legal contract to get adequate quantity and quality of raw materials which otherwise get spoiled.
- ✓ In the coconut Milk manufacturing project, the unit requires 672 kg/day, 794 kg/day and 917 kg/day raw ripened fruit pulp at 55, 65 and 75 percent capacity utilization, respectively.
- ✓ If there are shortages in supply, then the entrepreneur can use other seasonal seeds / Spices for same purpose to achieve maximum capacity utilization for higher economic efficiency.
- ✓ The fruit must be plucked from plant at mature stage; and then stored below 25°C temperature.





a. Pie chart for better understanding of expenses of each head.







19. TYPICAL COCONUT MILK MANUFACTURING UNIT LAYOUT







• The figures depicted here are in feet.

20.MACHINERY SUPPLIERS

There are many machinery suppliers available within India for Green vegetables base products processing machineries and equipment. Some of the suppliers are:

- 1. Bajaj Process pack Limited, Noida, India
- 2. Shriyan Enterprises. Mumbai, India

21.LIMITATIONS OF THE DPR

- This DPR has provided only the basic standard components and methodology to be adopted by an entrepreneur while submitting a proposal under the Formalization of Micro Food Processing Enterprises Scheme of MoFPI.
- ii. This DPR is made to provide general methodological structure not for specific entrepreneur/crops/location. Therefore, information on the entrepreneur, forms and structure (proprietorship/partnership/cooperative/ FPC/joint stock company) of business, background of proposed project, location, raw material base/contract sourcing, entrepreneur's own SWOT analysis, market research, rationale of the project for specific location, community advantage/benefit, employment generation etc. are not given in detail.
- iii. The present DPR is based on certain assumptions on cost, prices, interest, capacity utilization, output recovery rate and so on. However, these assumptions in reality may vary across places, markets and situations; thus, the resultant calculations will also change accordingly.





22.GUIDELINES FOR THE ENTREPRENEURS

- i. The success of any prospective food processing project depends on how closer the assumptions made in the initial stage are with the reality of the targeted market/place/situation. Therefore, the entrepreneurs must do its homework as realistic as possible on the assumed parameters.
- ii. This model DPR must be made more comprehensive by the entrepreneur by including forms information the entrepreneur, and on structure (proprietorship/partnership/cooperative/ FPC/joint stock company) of entrepreneur's business, project location, raw material costing base/contract sourcing, detailed market research, comprehensive dehydrated product mix based on demand, rationale of the project for specific location, community advantage/benefit from the project, employment generation, production/availability of the raw materials/crops in the targeted area/clusters and many more relevant aspects for acceptance and approval of the competent authority.
- iii. The entrepreneur must be efficient in managing the strategic, financial, operational, material and marketing aspects of a business. In spite of the assumed parameter being closely realistic, a project may become unsustainable if the entrepreneur does not possess the required efficiency in managing different aspects of the business and respond effectively in changing situations.
- iv. The machineries should be purchased after thorough market research and satisfactory demonstration.





- v. The entrepreneur must ensure uninterrupted quality raw materials' supply and maintain optimum inventory levels for smooth operations management.
- vi. The entrepreneur must possess a strategic look to steer the business in upward trajectory.
- vii. The entrepreneur must maintain optimum (not more or less) inventory, current assets. Selecting optimum source of finance, not too high debt-equity ratio, proper capital budgeting and judicious utilization of surplus profit for expansion is must.
- viii. The entrepreneur must explore prospective markets through extensive research, find innovative marketing strategy, and maintain quality, adjust product mix to demand.
- ix. The entrepreneur must provide required documents on land, financial transaction, balance sheet, further project analysis as required by the competent authority for approval.
- x. The entrepreneur must be hopeful and remain positive in attitude while all situations.





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