

# Detailed Project Report

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Packing and Grading of Arecanut

SAMPLE

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SAMPLE

# DETAILED PROJECT REPORT

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## **Introduction**

Areca nut is produced around the world majorly in the countries like India, China, Bangladesh, Indonesia, Myanmar, Thailand and Malaysia amongst which India having the highest production of areca nut in the world and maximum area under cultivation for areca nut. The highest productivity for areca nut is in China having productivity of 4164.76 kg/ha followed by Myanmar with a productivity of 2264.76 kg/ha. India stand 4<sup>th</sup> in terms of productivity of Areca nut.

India is the major producer and consumer of areca nut in the world. Production of areca nut is concentrated in 6 states namely Karnataka, Kerala, Assam, Meghalaya, Tamil Nadu and West Bengal. Areca nut is the major plantation crop of coastal and southern districts of the country under assured irrigation facility. The ever increasing demand of areca products like paan, supari and gutkha has led to continuous increase in areca nut prices worldwide. Areca nut production and area figures show that Karnataka is leading state with 46% of area 47% of production.

Karnataka is the largest producer of Areca nut in India covering about 180.7 ha with a production of 269.2 thousand tones constituting about 48.5 per cent of total area and 52% of the total production in the country. The area under areca nut in Karnataka has almost doubled in 15 years.

Districts of Shimoga, Chikmagalur, Tumkur, Uttar Kannada and Dakshin Kannada are the major areca nut producers of Karnataka which together account for 60 percent of the area and 65% of the production in the state. Shimoga ranks first in area and production followed by Chikmagalur, Dakshin Kannada, and utara Kannada.

## About the Product

Arecanut is the nut of arecapalm. It is an important tropical palm, the nuts of which are used as masticator in a number of countries. Commercial cultivation of it is done only in India, Bangladesh and Sri Lanka.

Biological name of arecanut palm is *Arecacatechu* and it is a member of the family arecaceae or palmal. It is also called betelnut, as it is usually chewed with betel leaf and lime.

The main constituents of arecanut are polyphenols, fat, polysaccharides, fibre and protein. Besides these, nuts contain alkaloids viz arecaline (0.1-07%) and others in trace amounts such as arecaline suacoline and guvacine.

Every 100 gm of arecanut contains:

Carbohydrate 46.2g

Protein 4.2 g

Fat 4.2 g

Calcium 48 mg

Phosphorus 119 mg

Iron 1.4 mg

Vitamin A Trace

Vitamin B6 Trace

Calories 245

Digestive time 3 hrs

## Utility of the Product

**Traditional Use:** The practice of chewing the arecanut either alone, or in combination with betel leaves, lime, tobacco, camphor or spices the combination then being called tambula, has been in existence from time immemorial. Chewing is said to increase the production of saliva and gastric juices and thus aid digestion. It is believed to strengthen

the gums, the teeth, cleanses and deodorises the mouth. It is also an appetizer and a stimulant. The chewing habit is prevalent in other countries also, such as Nepal, Sri Lanka, Burma, Thailand South China, Sumatra, Affrica, Arabia, Pakisthan and Bangladesh.

**Socio Religious Purpose:** It has been called poogiphalam in Sanskrit literature and has been intimately interwoven with the religious and socio-culture practices of this country. It is a common practice even today, in Hindu religious ceremonies, to offer two leaves and one betelnut called Tambula to the image of God during worships. Persons held in esteem are offered of the pieces of arecanut with betel leaves, as a sign of respect and to welcome into the house. Again exchange of betelnut while entering, with betel leaves between marriage contracting parties, is an important part of betrothal ceremonies.

**Medicinal Uses:** With regard to the medicinal properties of the arecanut, it is used against leucoderma, leprosy, cough, fits, worms, anemia and obesity. Arecanut has also been mentioned for its use as a purgative and in an ointment along with several other ingredients for the treatment of nasal ulcers. arecanut is described as pungent, bitter, spicy and sweet and that it expels gas, removes phigm and bad odour and 29 kills worms. If arecanut is kept in fire for sometimes and is mixed in buttermilk along with turmeric, it is the best medicine for diarrhea, jaundice etc. Arecanut in the form of powder along with magnesium trecilinate, can be given to Gastric Ulster, patient after meals, since, it contains more calcium, it is good. If given to women, after delivery. It is the best medicine, even for constipation.

### **The Project**

Arecanut is harvested and primary processing happens at the farm gate by the grower members. The tender nut is harvested as a ripen fruit, which is then dehusked. It is cut into pieces, boiled with water and then dried in sunlight. Selling this processed arecanut in the market requires market ready product for selling. The arecanut needs to be graded and packed to be ready to be marketed.

The project envisages processing of arecanut with respect to packing and grading for value addition and marketing. The growers are the members of the society who provide raw material for processing. Typically a primary level (taluk) cooperative may take up processing activity.

### **Location**

Any Taluk level society in one of Arecnut growing districts areas like Shimoga, Dakshin Kannada, Chikmagalur, Tumkur, Uttar Kannada etc.

### **Capacity**

3888 MT of Arecanut per year

### **Vision**

To establish itself as a trustworthy institution preferred by grower members for sale of their arecanut and cocoa produce.

### **Mission**

To set-up and operationalize a grading and packing unit for the members to sell their produce at remunerative prices.

### **Objectives**

- Procuring Arecanut and Cocoa grown by member cultivators and if necessary, from other growers on an agency basis or on outright purchase basis.
- To enable aggregation and value addition to the product to realize better market price for benefit of members.
- Providing sale of Arecanut and Cocoa grown by member cultivators and to advance loans to members on the pledge of goods.

### **Processing of Arecanut**

1. Arecanut procured from farmers are directly put into fumigation chambers for sulphur fumigation so as to remove moisture, fungus / bacterial and other biological pest infestation.
2. Fumigated arecanut is taken out from the chambers after two day and put the same into the grading / sizing machine.
3. Mainly the arecanut is graded in different sizes.

4. After the mechanical grading/sizing, different sizes are manually checked so as to get rid of broken / disfigured nuts.
5. After quality grading, different varieties of nuts (mainly 4 grades) are packed in gunny bags with inner polythene lining.

## **Feasibility Analysis**

### **Commercial Feasibility**

In a highly competitive environment, cooperatives are ideal institutions to support the farmers because of their spread and reach as also their close affinity with the farming community. Cooperatives, if equipped with infrastructure, experience and expertise, can act as effective counter veiling forced in the market, for protecting the interest of the farmers. The need of the hour is to get access to the value addition process. In the case of areca, average value addition for graded and well packaged items is 10 to15%, over ungraded arecanut. Apart from that the market acceptability for graded areca is more than the ungraded one.

### **Raw Material Availability:**

The society will have ample raw material availability as areca is grown predominantly in northern Karnataka and all the grower members will be members of the society. The production of raw arecanut in the state is still in excess of arecanut processing capacity available in the region.

### **Packaging Material:**

The arecanut is packed in gunny bags for marketing. The gunny bags are easily available in the market. Each bag has a capacity of packing 70kgs of arecanut.

### **Marketing of Arecanut:**

Arecanut is consumed in raw as well as processed form. The practice of consuming raw arecanut both in their fresh and processed form prevails in the entire producing regions but the processed form of value based arecanut is consumed more and more out of the production belt.

### **Marketing Channel:**

In the primary market, the societies like CAMPCO and cooperative societies have been engaged in the assembling of arecanut in different areas. The general purpose of these marketing societies is to advance loans to the arecanut growers. They collect arecanut produce from the member farmers and sell it through commission agents to the wholesalers.

Mangalore is emerged as an arecanut assembling and market center. It has well network of cooperative marketing societies like SKACMS and CAMPCO. Since Mangalore chali or supari has its own unique brand and demand in the Northern India, more and more outside the state, wholesale traders are well settled in the area, they assess the demand of perspective buyers and keep them in touch with the prevailing prices.

Thus the cooperative society can directly sell the produce in the secondary market or wholesalers based In Mangalore market.

### **Technical Feasibility**

Supporting Machineries are Grading Machine, Packing Machine, handling machine, weighing machine, Computer, Electrification, DG set etc. Total cost for all these Machinery put together comes to Rs 14.00 lakh. Detailed costing is given at **Annex-1** to the Project Report. The machinery has a capacity of processing of 12.96 tonnes per day. The machinery is assumed to be run at a capacity utilization of 90%.

The machines are widely available in the domestic market for which the society will invite quotations from a number of suppliers. Maintenance and repair of the machines are simple and can be done in the local market.



The machine caters to the requirement of the society and matches the supply of raw arecanut grown by the members.

### **Institutional Capacity**

Cooperatives is one of the best possible institutions to process and market the produce of Arecanut for the following reasons:

- Ensures democratic functioning and transparency
- Ensure better price realization
- Managed by professional staff with technical know how
- Local know how and direct communication with grower members
- Established business for the cooperative
- Marketing federations like CAMPCO and MAMCO already available for marketing the produce.
- Professional staff available in the local market.
- Profits available with the grower members.

### **Business Model/ Revenue Model**

#### **Value Proposition**

The project is designed to provide value added high quality product in the wholesale market for 4 quality graded products. 50% of grade 1 quality product, 20% of grade 2 quality product, 15% of grade 3 quality product and 14% of grade 4 quality product is produced.

Differential pricing is reaped on differently graded products.

#### **Customer Segment**

The arecnut product can be sold to following customers:

1. Wholesale traders
2. Retail Traders
3. Commission agents
4. Marketing Societies like CAMPCO

Out of the above available options, the society can reap maximum benefits by selling the produce to wholesale traders, available in Mangalore market. The society will identify the wholesale traders and enter into an agreement with them to market its produce.

### **Revenue Streams**

The revenue is earned from the margin earned from selling the processed arecanut. The society can earn at least 5% margin from sale of processed arecanut.

### **Resources Required:**

Human Resources Reqd: Permanent staff of people will work on the project which includes a manager, 1 accounts officer, 3 office assistants and 3 supporting staff. The labour will be hired from the market on a contract basis for temporary period of time.

Physical Resources: Machinery and Equipments are available in the local market manufactured and supplied by the suppliers in the nearby markets. The society has already obtained quotations from suitable suppliers ensuring the quality of machinery and equipments and cost advantage.

Total built-up area requirement for implementation of project is 1570 square mts. Built-up area is available with the society.

Capital: 65% of the capital requirement will be funded by NCDC under Direct Funding scheme as a financial assistance in form of Term Loan. The remaining will be contributed by the society from its own contribution (35%).

### **Products:**

Processed arecanut will be available in 4 quality graded products from Grade 1 to Grade 4 depending on the size differentiation.

## **Financials**

### **Assumptions:**

The details of assumptions for the project to be taken up are available at **Annex 2**. The following assumptions are made for the implementation of the project:-

1. The project will be taken up by the society on its own land with a minimum built up area of 1600 sq mts. The society should be willing to contribute 35% of the project cost from its own funds. It should meet the direct funding guidelines of NCDC.
2. Average procurement price and average selling price for the processed arecanut have been taken based on the previous years average prices in the prevailing market trends.
3. Towards fixed expenses:
  - a. Repairs and maintenance at 2% of BC.
  - b. Insurance at 0.25% of BC
  - c. Admin Overhead – lumpsum
  - d. Salaries
  - e. Interest on term loan
  - f. Interest on Working capital
4. Towards variable expenses:
  - a. Labour hired on a contract basis
  - b. Utility like electricity and water usage charges
  - c. Packaging material like no. of bags
  - d. Diesel and Fumigation charges
  - e. Trade Charges, if any
5. Depreciation on WDV method for building @ 5% and plant & machinery @15%

**Project cost:**

The details of the project cost are attached as Annex-1. A brief of cost description is given below:

S. No.	Item	Sub-Components	Cost (in Rs. Lakh)
1	Civil Works	Procurement Hall, Grading and Packing area, Funigation Chambers, Site office, workers room, godown, sanitary and plumbing work	188.00
2	Machinery and equipments	Grading machine, weighing machine, Computer, DG set, Electrification	14.00
	<b>Total</b>		<b>202.00</b>

### Pattern of Funding:

The funding pattern for the project as given below:

Sl. No.	Source of funds	% of project cost	Amount (Rs. In lakhs)
1	Term loan from NCDC	65%	131.300
3	Society's share	35%	70.700
	Total	100%	202.000

### Most Important Terms and Conditions for project funding:

1. The loan will cover 65% of the total block cost of the project i.e. Rs. 202.00 lakh.
2. The loan will be given for a period of 5 years at an interest rate of 11.10%. The interest will be charged on a monthly compounding basis.
3. The repayments will be made on an annual basis.
4. A moratorium of 1 year will be provided for repayment of principle, interest will be repaid every year.

## Working Capital:

Total working capital requirements are at **Annex-3**. The working capital will be required for the following purposes:

1. Raw material for 1 month
2. Work in Progress for raw material and processing charges
3. Finished goods for 15 days
4. Receivables for 15 days

A total working capital works out to be Rs. 20.67 crore. The society will be able to meet its working capital requirement (75%) from commercial banks. Remaining Margin money (25%) for the same can be provided by NCDC. It may also be contributed by society from its own funds.

## Business Projections and Financial Indicators:

The yearly business projections are worked out for 5 years and attached at **Annex-4**. The key financial indicators are given below:

Internal Rate of Return	22%	The project has high IRR of 22%
Break even Point	35%	The plant will breakeven at a capacity utilization of 35% which augurs well for the project
DSCR	2.31%	Avg DSCR of greater than 1.5% means that
Payback Period	3 years and 5 months	The project will generated enough cash flows to service the loan in 3 years and 5 months.
Net Present Value at 12% Discounting Factor	6.82	Since NPV is positive the project will give positive returns and can be taken up for implementation

**Annexure - 1**

<b>DETAILS OF PROJECT COST</b>				
			(Rs. in lakhs)	
Sr. No.	Item	Built up area (Sq. Mtr)	Cost	Total
1	<b>Civil Works</b>			
	a) Procurement Hall	106.154	140.00	
	b) Grading and packing area	680.460		
	c) Fumigation Chambers (2)	47.752		
	d) Site Office, workers room etc	358.954		
	e) Loading Platform	35.64		
	f) Godwon	341.84	45.00	
	g) Sanitary & Plumbing works		3.00	
	<b>Total</b>	<b>1570.8</b>		<b>188.000</b>
2	<b>Equipments</b>	Description	Cost	Total
	a) Grading Machine (Locally fabricated)	With 3 HP Motor (1.62 MT/Hr)	2.30	
	b) Weighing Machine	300 kg capacity	0.20	
	c) Computer	3 terminals	1.50	
	d) DG Set	15 KV	3.00	
	h) Electrification		7.00	
	<b>Total</b>		<b>14.00</b>	<b>14.000</b>
	<b>Grand Total</b>			<b>202.000</b>

## Annexure - 2

Assumptions						
1	Nature of Unit			Areca Grading & Packaging Unit		
2	No. of Days of Operations			300 days/ year		
3	No. of Working Hours			8 hours / day		
4	Capacity of the Unit		12.96	TPD	of Areca =	3888 MT /Year
			12.83	TPD	of garbled areca =	3849.12 MT/Year
5	Product-Mix	a) Areca -Grade-1	50.0%	of total =	1944.00 MTs / year	
		b) Areca -Grade-2	20.0%	of total =	777.60 MTs / year	
		c) Areca -Grade-3	15.0%	of total =	583.20 MTs / year	
		d) Areca -Grade-4	14.0%	of total =	544.32 MTs / year	
		e)Waste	1.0%	of total =	38.88 MTs / year	
		<b>Total</b>		<b>100.00%</b>		
6	Av. Procurement Price of Areca(current price)			Rs. 2.100	lakhs/MT (5% increase yearly)	
7	Total value of Areca			Rs. 8,164.80	lakhs per year	
8	Selling Price of	Grade-1 @	Rs. 2.350	/MT &	Rs.4,568.40 lakhs per year	
		Grade-2 @	Rs. 2.200	/MT &	Rs.1,710.72 lakhs per year	
		Grade-3 @	Rs. 2.100	/MT &	Rs.1,224.72 MTs / year	
		Grade-4 @	Rs. 2.000	/MT &	Rs.1,088.64 lakhs per year	
		<b>Total Sale Revenue</b>				
9	Investments Now Proposed					
	Term Loan			Rs.131.30	lakhs	
	Society's own share			Rs.70.70	lakhs	
	<b>Total</b>			<b>Rs.202.00</b>	<b>lakhs</b>	
10	<b>FIXED Expenses</b>					
	1) Repairs & Maintenance	2.00%	of B-C	Rs.4.04 lakhs per year		
	2) Insurance	0.25%	of B-C	Rs.0.505 lakhs per year		
	3)Admn. Overhead (Postage, Stationery, Telephone etc)			Rs.1.500 lakhs (actual of the existing unit)		
	4) Salaries	Manager	1	Rs.45,000 pm		
		A/Cs Officer	1	Rs.8,000 pm		
		Office Assistant	4	Rs.24,000 pm		
		Others (Supporting Staff)	3	Rs.15,000 pm		
		<b>Total Salary</b>				Rs.14.80 per year (including 25% other addl. Benefit)
	5) Interest on term loan				11.10%	pa
	6) Interest on W_Capital				8.35%	pa
11	<b>VARIABLE Variable</b>					
	1) Processing Expenses ( on labour contract basis in the existing unit)	Rs.1,800	per MT	Rs.69.98 lakh per year		
	2) Electricity	15	units/day	@ Rs.5.75	Rs.86.25	per day
	<b>3) Consumable</b>					
	a) Diesel	15	ltrs/day	@ Rs.70	Rs.3.150	lakh per Year
	b) Bags	75077	nos / yr	@ Rs.69	Rs.51.803	lakh per Year
	c) Fumigation	Rs.35	/ MT	Rs.1.361 lakh per Year		
	d) Other items (Plastic covering)	27200	nos / yr	@ Rs.10	Rs.2.720	lakh per Year
	Total Value of Consumables /yr			Rs.59.03	lakh per Year	
	4) Trade Charges, if any (as per the existing unit)			Rs.59.05 lakhs/yr.		
K	Depreciation (Written Down)	Buildings	5%	of	Rs.188.00 lakhs	
		Plant & Machry.	15%	of	Rs.14.00 lakhs	
L	Loan Repayment Period			5 years		
M	Income Tax			33.66% of PBT		

## Annexure - 3

<b>WORKING CAPITAL REQUIREMENT</b>			
			(in Rs. Lakh)
<b>SN</b>	<b>Particulars</b>	<b>Period</b>	<b>100% Cap.</b>
1	Raw Material (1 month)	1 month	680.40
2	Work-in-Progress (Raw Material + Processing Charges)	1 month	686.23
3	Finished Goods	15 days	343.12
4	Receivables (Sales Revenue /24)	15 days	358.02
<b>A</b>	<b>Total Working Capital required</b>		<b>2067.77</b>
<b>D</b>	Margin Money	25%	516.94
<b>E</b>	Working Capital to be raised from Bank	75%	1550.83



## Annexure -4

CASHFLOW STATEMENT						
						(Rs. In lakh)
Particulars	Yr-1	Yr-2	Yr-3	Yr-4	Yr-5	
Capacity Utilisation	80%	85%	90%	90%	90%	
<b>A Investments</b>	188.81					
B Income (Sales Revenue)	6873.98	7303.61	7733.23	7733.23	7733.23	
<b>C Expenditure</b>						
<b>a. Fixed Exp.</b>						
i. Salaries	14.80	15.54	16.32	17.13	17.99	
ii. Repairs & Maint.	4.04	4.24	4.45	4.68	4.91	
iii. Insurance	0.51	0.51	0.51	0.51	0.51	
iv. Administrative Exp.	1.50	1.58	1.65	1.74	1.82	
v. Interest on Term Loan	14.57	13.66	10.02	6.38	2.73	
<b>Total (Fixed Exp.)</b>	<b>35.42</b>	<b>35.53</b>	<b>32.95</b>	<b>30.43</b>	<b>27.96</b>	
<b>b. Variable Exp.</b>						
i. Raw Material (Arecanut)	6531.84	6940.08	7348.32	7348.32	7348.32	
ii. Processing Charges	55.99	58.79	61.73	64.81	68.05	
iii. Consumables	47.23	49.59	52.07	54.67	57.40	
iv. Electricity	0.26	0.27	0.29	0.29	0.29	
v. Trade Charges	47.24	49.60	52.08	54.69	57.42	
vi. Interest on WC	103.60	110.07	116.54	116.54	116.54	
<b>Total (Variable Exp.)</b>	<b>6786.15</b>	<b>7208.40</b>	<b>7631.03</b>	<b>7639.33</b>	<b>7648.03</b>	
<b>Total Expenditure(C = a + b)</b>	<b>6821.57</b>	<b>7243.93</b>	<b>7663.98</b>	<b>7669.75</b>	<b>7675.99</b>	
D Gross Surplus	52.42	59.68	69.25	63.48	57.24	
E Buildings (Value)	188.00	178.60	169.67	161.19	153.13	
F Plant & Mach. & Other Assets (Value)	14.00	11.90	10.12	8.60	7.31	
G Depreciation - Civil Works	9.40	8.93	8.48	8.06	7.66	
H Depreciation - P&M & Other Assets	2.10	1.79	1.52	1.29	1.10	
I Total Depreciation (G+H)	11.50	10.72	10.00	9.35	8.75	
J Profit Before Tax	40.92	48.97	59.25	54.13	48.48	
K Tax	13.77	16.48	19.94	18.22	16.32	
L Profit After Tax	27.14	32.48	39.31	35.91	32.16	
M Loan repayment	0.00	18.76	18.76	18.76	18.76	
N Net Surplus	27.14	13.73	20.55	17.15	13.41	
O Net cashflow for IRR (Net Surplus+ Depre. + Int. + Loan Rep. - Invest.)	-135.59	56.86	59.33	51.64	43.65	
P IRR	21.59%					
Q Break Even (Fixed Exp. / (Income - Variable Exp.)	40%	37%	32%	32%	33%	
R Average BEP	35%					
S DSCR (Net Surplus + Depreciation + Loan Rep. + Int) / (Loan Rep.+ Int.)	3.65	1.75	2.06	2.05	2.03	
T Avg. DSCR :	2.31					
U Payback Period	3 years and 5 months					
V Net Present Value	6.82					