

PROJECT REPORT

Of

WOOD CUTTING UNIT

PURPOSE OF THE DOCUMENT

This particular pre-feasibility is regarding Wood Cutting unit.

The objective of the pre-feasibility report is primarily to facilitate potential entrepreneurs in project identification for investment and in order to serve his objective; the document covers various aspects of the project concept development, start-up, marketing, finance and management.

[We can modify the project capacity and project cost as per your requirement. We can also prepare project report on any subject as per your requirement.]

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PROJECT AT A GLANCE

- 1 Name of the Entrepreneur : xxxxxxxxx
- 2 Constitution (legal Status) : xxxxxxxxx
- 3 Father / Spouse Name : xxxxxxxxx
- 4 Unit Address : xxxxxxxxxxxxxxxxxxxxxxxxx
- District : xxxxxxx
Pin: xxxxxxx State: xxxxxxxxx
Mobile : xxxxxxx
- 5 Product and By Product : **WOODEN LOGS**
- 6 Name of the project / business activity proposed : **WOOD CUTTING UNIT**
- 7 Cost of Project : Rs.11.99 Lakhs
- 8 Means of Finance :
Term Loan Rs.7.29 Lakhs
Own Capital Rs.1.2 Lakhs
Working Capital Rs.3.5 Lakhs
- 9 Debt Service Coverage Ratio : 2.77
- 10 Pay Back Period : 5 Years
- 11 Project Implementation Period : 5-6 Months
- 12 Break Even Point : 35%
- 13 Employment : 8 Persons
- 14 Power Requirement : 6.00 HP
- 15 Major Raw materials : Hardwood or Softwood
- 16 Estimated Annual Sales Turnover (Max Capacity) : 76.27 Lakhs
- 17 Detailed Cost of Project & Means of Finance

COST OF PROJECT

(Rs. In Lakhs)

Particulars	Amount
Land	Own/Rented
Building / Shed 1200 Sq ft	6.00
Plant & Machinery	1.60
Furniture & Fixtures	0.50
Working Capital	3.89
Total	11.99

MEANS OF FINANCE

Particulars	Amount
Own Contribution	1.20
Working Capital(Finance)	3.50
Term Loan	7.29
Total	11.99

WOOD CUTTING UNIT



2. Introduction:

The wood carving artistry is about 400 years old. The products showcase the skill of the craftsmen of the region and intricate designs and carvings chiseled on wood, mostly sheesham wood being the raw material of choice. The most widely recognized assortments used to make Indian handiworks are teak, sheesham, sal, oak, mango, coal black and mahogany. Sandalwood, rosewood and pecan are the outlandish assortments and are costly and are utilized in delivering fine household items and improving things. These materials may have reformed the furniture business, however wood is obviously a staple material in furniture producing.

The wood-cutting process is defined in terms of the interactions between wood properties, cutting geometry, and the friction between the chip and the tool. In continuous observations, three basic types of chip were identified— each having generated a related quality of surface. Wood is, of course, a long- lasting and robust material and is the perfect choice for anyone looking for longevity from their furniture. Cutting processes work by causing fracture of

the material that is processed. Usually, the portion that is fractured away is in small sized pieces, called chips. Common cutting processes include sawing, shaping (or planing), broaching, drilling, grinding, turning and milling.



Whilst trees are round and we live in a mainly square or rectangular world, trees must therefore be processed into other forms. This processing can be summarized as:

- Primary processing – sawing logs into kants, and then to flat and square edged boards.
- Secondary processing – precision sawing and milling (including planing). This is where the term added value is derived.

Cutting processes, in general, and wood cutting processes, in particular, are complex to explain and describe. The cutting process is extremely complex, with many influencing factors, such as material properties, cutting tool geometry and cutting parameters. There has been a complete revival of the traditional and antique wood requirements, owing to its uniqueness and

demand in India and abroad. Indian artisans are experimenting with designs to create a blend of traditional and modern woodcraft.

3. Market Potential:

It very well might be noticed that the carpentry business is one of the quickest developing areas of the Indian economy. As indicated by an examination by the World Bank, India's coordinated furniture industry is required to develop 20% per annum throughout the following not many years and is projected to cross USD 32 billion by 2019, while the extravagance furniture market is relied upon to collect \$27.01 billion by 2020, enrolling a CAGR of 4.1% during the forecast period 2015-2020.

Market Reports on India Provides the Trending Market Research Report on “India Cutting Boards Market” under Consumer Goods category. The wood panel industry includes plywood sheets, engineered wood panels (MDF [Medium Density Fibre board’s] furniture board and particle board) and decorative surface products such as laminates. The Indian wood board industry is assessed to associate with INR 28,000 crore and is developing at the pace of 10-12% every year. This is driven by a solid interest for wood boards, chiefly for new lodging development (90% of the absolute interest) and the excess (10%) from redesign movement.

Engineered wood furniture goods are also gaining popularity in Indian cities. The main source of this is an ascent sought after for prepared to collect furniture in towns. Besides, the simplicity of purchasing from the E-trade stage is likewise promising the development of secluded and multifunctional furniture on the lookout for home embellishment and accommodation purposes.

4. Product Description:

4.1. **Product Uses-** The logs are used to make furniture's and other wooden craft. These wooden logs are carved from usually Teak, Mango & Babool trees, which are further processed & shaped to make the final products by the makers.

4.2. **Raw Material-** Hardwood or Softwood.

Average raw material cost of wooden logs per quintal will be Rs. 250-280 (Approx.)

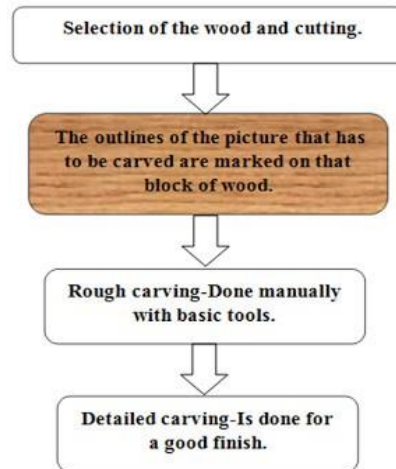
4.3. **Manufacturing Process:** There are two ways of wood cutting:

- **Sawing:** The procedure of severing the wood fibres in order to chop wood down to different measurements. Essential bandsaws can be from 100mm to 300mm wide. They can likewise accomplish a more prominent profundity of cut which is fundamental for preparing enormous logs, especially tropical logs. Sawing can be further divided into rip sawing and cross-cutting.
 - Rip sawing is the procedure of cutting wood along the grain or axis of the tree. Because all the fibres must be cut, it is essentially a chiselling process and requires a lot of energy. Much research and development has gone into reducing kerf (width of saw cut) and improving accuracy, which together reduce waste.
 - Cross-cutting is the process of cutting at right angles to the grain across all the fibres. The saw teeth scribe through the fibres like knives on either side of the cut. Many saws are required to do both processes with an inevitable loss of efficiency. There are two

principle types of saw, circular saws and bandsaws although reciprocating saws are sometimes found for special applications.

- Milling: Milling includes such processes as planing, routing and chipping. Abrasive sanding can be viewed as milling with a very large number of cutting points. The process of producing an accurate smooth surface or of shaping wood to profiles and other shapes is properly called rotary milling.
 - Planing and moulding is typically carried out on machines that can shape all four faces at one pass (hence four cutters, six cutters etc). With multi-knife cutter blocks, very high accuracy and rate of feed is possible – 300 metres per minute and more. In the joinery industry, very complex sections are machined.
 - Routing utilizes a single rotating cutter, often running at very high speed. They are often computer numerically controlled and cut in 5 axes so that very complex 3D shapes can be machined. In the small workshop the hand router is an invaluable and very versatile tool.
 - Abrasive. Because milling leaves a wave field, if the surface is to be painted or polished, it must be sanded smooth. Similarly surfaces produced in other ways such as veneering or after gluing, require sanding to a fine finish. In the manufacture of panels, abrasive sanding is used to calibrate panels to a precise thickness. Drum sanders are occasionally used for fine handwork, but for serious production wide belt sanders are used. These are capable

of remarkable accuracy and very fine finish. Power consumption is high.



5. Project Components:



5.1. **Land-** The required land for woodcraft making is estimated to be around 1200sqft.






5.2. **Civil Work-**

- **Workshop Area-** This area includes the wheel set up and foundation space for all equipments, work floor area, and necessary cutting, logging and polishing. Total workshop area is approx. 700Sqft.
- **Inventory Area-** This area includes the storage space for all the raw materials, tooling and storage space and finished goods. Total inventory area is approx. 300Sqft.
- **Office Area –** This space includes staff working region. Total workshop area is approx 200Sqft.

Land and building requirement may vary depending on the size of project. Civil work cost will be Rs 6 Lac (Approx.).

5.3. Tools & Machinery- Cutting tools during interaction with this anisotropic material are subjected to severe loads and transverse vibrations, thus, different wear characteristics and mechanisms are produced. Therefore, a fundamental understanding of wood machining properties, such as cutting tool wear, cutting forces, power consumption, and tensioning of cutting tools, gives the possibility of enhancing product quality, increasing production efficiency, or otherwise improving the machining process.

Circular saws	In primary sawmilling greater depth of cut can be achieved by using aligned pairs of saws. Because the angle at which the teeth meet the wood fibres changes with the curve of the saw, the efficiency is not as high as bandsaws. Circular saws can achieve very high accuracy, good finish and durability.	
Bandsaws	These saws comprise a thin endless band of steel running over two, occasionally three, pulleys.	

<p>Frame saws</p>	<p>It was a logical development to mechanize this and then to mount several saw blades together. These machines are known as frame saws and are now almost obsolete since a lot of wood is lost in sawdust (kerf) and it is a slow process to adjust and change blades.</p>	
<p>Hand saws</p>	<p>The basic tool in the wood cutting toolbox is a handsaw, which serve many purposes and are available in great variety.</p>	
<p>Planes</p>	<p>Used for smoothening out the rough surfaces, slice through wood with a very sharp blade.</p>	
<p>Router</p>	<p>The router is a high-powered tool that is useful for rounding off edges of piece of wood.</p>	
<p>Lathe</p>	<p>Using chisels of different shapes and sizes with a machine known as a lathe allows you to cut into blocks of wood and end up with cylindrical objects.</p>	

Average Machinery and equipments cost will be Rs. 160000 (Approx.) exclusive of GST & installation cost.

5.4. Miscellaneous Assets-

- ✓ Water Supply Arrangements
- ✓ Furniture
- ✓ Stationary

5.5. Power Requirement- The power requirement is estimated to be around 6 HP.

5.6. Man Power Requirement- Following manpower is required:

- Machine Operator-1
- Skilled/Unskilled Worker-2
- Helper-3
- 2 Skilled worker including a Manager and Accountant.

6.

**FINANCIAL
ASPECTS**

PROJECTED BALANCE SHEET					
PARTICULARS	I	II	III	IV	V
SOURCES OF FUND					
Capital Account					
Opening Balance	-	2.50	4.68	7.12	8.78
Add: Additions	1.20	-	-	-	-
Add: Net Profit	2.10	3.39	4.43	4.66	6.15
Less: Drawings	0.80	1.20	2.00	3.00	4.00
Closing Balance	2.50	4.68	7.12	8.78	10.93
CC Limit	3.50	3.50	3.50	3.50	3.50
Term Loan	6.48	4.86	3.24	1.62	-
Sundry Creditors	1.69	1.89	2.11	2.33	2.55
TOTAL :	14.16	14.94	15.96	16.23	16.98
APPLICATION OF FUND					
Fixed Assets (Gross)	8.10	8.10	8.10	8.10	8.10
Gross Dep.	0.89	1.68	2.38	3.00	3.55
Net Fixed Assets	7.21	6.42	5.72	5.10	4.55
Current Assets					
Sundry Debtors	2.31	2.74	3.08	3.44	3.81
Stock in Hand	3.56	4.02	4.50	5.00	5.53
Cash and Bank	1.09	1.76	2.66	2.69	3.09
TOTAL :	14.16	14.94	15.96	16.23	16.98
	-	-	-	-	-

PROJECTED PROFITABILITY STATEMENT					
PARTICULARS	I	II	III	IV	V
<u>A) SALES</u>					
Gross Sale	46.17	54.84	61.63	68.71	76.27
Total (A)	46.17	54.84	61.63	68.71	76.27
<u>B) COST OF SALES</u>					
Raw Material Consumed	33.75	37.87	42.12	46.51	51.03
Electricity Expenses	0.67	0.74	0.81	0.87	0.94
Repair & Maintenance	0.46	0.55	0.62	0.69	0.76
Labour & Wages	5.54	6.10	6.83	7.79	8.57
Depreciation	0.89	0.79	0.70	0.62	0.55
Cost of Production	41.32	46.04	51.07	56.48	61.85
Add: Opening Stock /WIP	-	2.43	2.75	3.09	3.45
Less: Closing Stock /WIP	2.43	2.75	3.09	3.45	3.83
Cost of Sales (B)	38.89	45.72	50.73	56.12	61.47
<u>C) GROSS PROFIT (A-B)</u>	7.28	9.13	10.89	12.59	14.80
	15.77%	16.64%	17.68%	18.32%	19.41%
D) Bank Interest (Term Loan)	0.79	0.65	0.47	0.29	0.11
ii) Interest On Working Capital	0.39	0.39	0.39	0.39	0.39
E) Salary to Staff	3.78	4.16	4.99	5.74	6.31
F) Selling & Adm Expenses Exp.	0.23	0.55	0.62	0.69	0.76
TOTAL (D+E)	5.19	5.74	6.46	7.10	7.57
H) NET PROFIT	2.10	3.39	4.43	5.49	7.23
	4.5%	6.2%	7.2%	8.0%	9.5%
I) Taxation	-	-	-	0.82	1.08
J) PROFIT (After Tax)	2.10	3.39	4.43	4.66	6.15

PROJECTED CASH FLOW STATEMENT					
PARTICULARS	I	II	III	IV	V
<u>SOURCES OF FUND</u>					
Own Contribution	1.20	-			
Reserve & Surplus	2.10	3.39	4.43	5.49	7.23
Depriciation & Exp. W/off	0.89	0.79	0.70	0.62	0.55
Increase In Cash Credit	3.50				
Increase In Term Loan	7.29	-	-	-	-
Increase in Creditors	1.69	0.21	0.21	0.22	0.23
TOTAL :	16.66	4.38	5.35	6.33	8.01
<u>APPLICATION OF FUND</u>					
Increase in Fixed Assets	8.10	-	-	-	-
Increase in Stock	3.56	0.46	0.48	0.50	0.53
Increase in Debtors	2.31	0.43	0.34	0.35	0.38
Repayment of Term Loan	0.81	1.62	1.62	1.62	1.62
Taxation	-	-	-	0.82	1.08
Drawings	0.80	1.20	2.00	3.00	4.00
TOTAL :	15.57	3.72	4.44	6.30	7.61
Opening Cash & Bank Balance	-	1.09	1.76	2.66	2.69
Add : Surplus	1.09	0.67	0.91	0.03	0.40
Closing Cash & Bank Balance	1.09	1.76	2.66	2.69	3.09

REPAYMENT SCHEDULE OF TERM LOAN							11.0%
Year	Particulars	Amount	Addition	Total	Interest	Repayment	CI Balance
I	Opening Balance						
	Ist Quarter	-	7.29	7.29	0.20	-	7.29
	IInd Quarter	7.29	-	7.29	0.20	-	7.29
	IIIRD Quarter	7.29	-	7.29	0.20	0.41	6.89
	Ivth Quarter	6.89	-	6.89	0.19	0.41	6.48
					0.79	0.81	
II	Opening Balance						
	Ist Quarter	6.48	-	6.48	0.18	0.41	6.08
	IInd Quarter	6.08	-	6.08	0.17	0.41	5.67
	IIIRD Quarter	5.67	-	5.67	0.16	0.41	5.27
	Ivth Quarter	5.27		5.27	0.14	0.41	4.86
					0.65	1.62	
III	Opening Balance						
	Ist Quarter	4.86	-	4.86	0.13	0.41	4.46
	IInd Quarter	4.46	-	4.46	0.12	0.41	4.05
	IIIRD Quarter	4.05	-	4.05	0.11	0.41	3.65
	Ivth Quarter	3.65		3.65	0.10	0.41	3.24
					0.47	1.62	
IV	Opening Balance						
	Ist Quarter	3.24	-	3.24	0.09	0.41	2.84
	IInd Quarter	2.84	-	2.84	0.08	0.41	2.43
	IIIRD Quarter	2.43	-	2.43	0.07	0.41	2.03
	Ivth Quarter	2.03		2.03	0.06	0.41	1.62
					0.29	1.62	
V	Opening Balance						
	Ist Quarter	1.62	-	1.62	0.04	0.41	1.22
	IInd Quarter	1.22	-	1.22	0.03	0.41	0.81
	IIIRD Quarter	0.81	-	0.81	0.02	0.41	0.40
	Ivth Quarter	0.40		0.40	0.01	0.41	-
					0.11	1.62	

Door to Door Period 60 Months
Mortatorium Period 6 Months
Repayment Period 54 Months

COMPUTATION OF CLOSING STOCK & WORKING CAPITAL					
PARTICULARS	I	II	III	IV	V
Finished Goods					
(15 Days requirement)	2.43	2.75	3.09	3.45	3.83
Raw Material					
(10 Days requirement)	1.13	1.26	1.40	1.55	1.70
Closing Stock	3.56	4.02	4.50	5.00	5.53

COMPUTATION OF WORKING CAPITAL REQUIREMENT			
Particulars	Amount	Margin(10%)	Net Amount
Stock in Hand	3.56		
Less:			
Sundry Creditors	1.69		
Paid Stock	1.87	0.19	1.68
Sundry Debtors	2.31	0.23	2.08
Working Capital Requirement			3.76
Margin			0.42
MPBF			3.76
Working Capital Demand			3.50

CALCULATION OF D.S.C.R					
PARTICULARS	I	II	III	IV	V
CASH ACCRUALS	2.99	4.18	5.13	5.28	6.70
Interest on Term Loan	0.79	0.65	0.47	0.29	0.11
Total	3.78	4.82	5.60	5.57	6.81
REPAYMENT					
Repayment of Term Loan	0.81	1.62	1.62	1.62	1.62
Interest on Term Loan	0.79	0.65	0.47	0.29	0.11
Total	1.60	2.27	2.09	1.91	1.73
DEBT SERVICE COVERAGE RATIO	2.36	2.13	2.68	2.92	3.93
AVERAGE D.S.C.R.			2.77		

Assumptions:

1. Production Capacity of a Wood Cutting unit is taken at 90 Quintal per day. First year, Capacity has been taken @ 50%.
2. Working shift of 10 hours per day has been considered.
3. Raw Material stock and Finished goods closing stock has been taken for 10-15 days.
4. Credit period to Sundry Debtors has been given for 15 days.
5. Credit period by the Sundry Creditors has been provided for 15 days.
6. Depreciation and Income tax has been taken as per the Income tax Act,1961.
7. Interest on working Capital Loan and Term loan has been taken at 11%.
8. Salary and wages rates are taken as per the Current Market Scenario.
9. Power Consumption has been taken at 6 HP.
10. Selling Prices & Raw material costing has been increased by 3% & 3% respectively in the subsequent years.

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