Pre-Feasibility

of

WOOD PROCESSING

and

PARTICLE BOARD INDUSTRY

by

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Pre-Feasibility study of Wood Processing and Particle Board Industry in Ifakara, Kilombero District, Morogoro Region, Tanzania

1- PURPOSE OF THE DOCUMENT:

The objective of this Pre-Feasibility study is to provide information for setting up a wood processing and particle board/chipboard manufacturing industry and to evaluate its viability under present circumstances.

2- PROJECT PROFILE:

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2.1-Opportunity Rational

Due to increase in population and need of constructing for new houses it is expected that demand for wood products such as processed lumber and chipboard will rise ultimately. Forest industry is a growing industry of the World, which can contribute positively in the GDP. This industry has reasonable potential to attract new markets both domestically and abroad by providing high quality seasoned, dried, graded lumber to international standards and also utilize low grade wood, off cuts, saw mill dust etc. to manufacture particle board for export and domestic use, helping boost exports and reduce imports in the country. The construction style has absolutely changed and demand of processed lumber, chipboard and laminated board has significantly increased. The development activities in the neighboring countries will also contribute in opportunities to enhance considerable export. Construction business is a demanding area and the open trade policy among East African Countries will increase demand more in future.

2.2-Project Brief

Cutting of forest wood logs by trained staff, proper seasoning/drying, surfacing to exact sizes/lengths and grading to international standards, chemically treat, if necessary, will increase the demand for export. Chipping of low-grade wood, off cuts, scrap wood in to flakes and gluing together these particles with an adhesive, under heat and pressure makes particle board or chipboard. This creates a rigid board with a relatively smooth surface. Chipboard is available in different densities i.e. 25mm, 18mm, 12mm, and 8mm. Chipboard is also laminated with melamine. Laminated chipboard is a high-quality material which complies with global safety standards. A wide range of colours and grains is available. Thanks to versatility, the melamine faced chipboard can be utilized in various applications such as wardrobes, kitchen cabinets, offices, furniture with aesthetically appealing surface.

2.3- Market Entry Timings

Tanzania is its way to progress and a number of commercial activities are in process. Now a days housing & construction sectors are declared as industry and these sectors are growing drastically. The growth of allied industries is normal practice therefore demand for lumber and chipboard has increased. Local industry is not able to cater the local demand and every year a considerable quantity of chipboard is imported from different parts of the world to meet the demand. Therefore, it is right time enter into this industrial sector but for high quality board and lumber definitely.

2.4-Business Legal Status

The status of the business will be a corporate entity and a limited company (LLC)

2.5-Project Capacity & Rational

Total cutting, seasoning/drying and surfacing to size ability will be 30,000 m3 per year
Total production capacity of chipboard plant will 100 m3 per day.

2.6.A- Project Investment

A-The Project has budgeted to cost the following:

Table 2.1

Particulars	**USD**
Land and buildings	250,000
Machinery & Equipment	1,949,620
Motor Vehicles	80,000
Furniture & Fixtures	8,000
Office equipment	8,000
Pre-Expenses	18,000
Others	5,000
Working Capital	200,000
Total	**2,518,520**

US Dollar 1.5 million will be provided by the Shareholders and rest will be generated from the business

2.6.B- Share Distributions in Business

i-	Tahir Mahmood Bhutta (USA)	400 shares
iii-	Khayyam Javaid Sethi (Pakistan)	175 shares
iv-	Ahmad Hassan Bhutta (USA)	200 shares
v-	Khurram Javaid Sethi (Pakistan)	175 shares
vi-	Javaid Mahmood Sethi (Pakistan)	50 shares

2.7- Proposed Product Mix

Teakwood cutting 50%
Indigenous varieties wood cutting 50%

Chipboard in finished form will be available in different sizes i.e. 25mm, 18mm, 12mm and 8mm.

However, the major demand is for 18mm and 12mm.

Percentage of Product mix for laminated sheets is:

18mm 50%
12mm 30%

Percentage of Product mix for non-Laminated sheets is:

18mm 15%
12mm 5%

2.8- Proposed Location:

Ifakara region is best location for a wood processing and chipboard manufacturing unit due to easy availability of raw material, cheap labour force, excessive water and availability of electrical connection. In chipboard industry mango, popular, Eucalyptus, Pendula Pine woods, wood off cut scrap and saw dust from other saw mills, are the main raw materials, whereas teak wood is good for furniture industry and can fetch good export market

This industry needs excessive water in the manufacturing process. It is important to select the site where raw materiel, electricity and water availability is easy. However, the other factors like easy access to roads, availability of labour, transportation cost and infrastructure facilities etc. are important considered before selecting the site.

2.9-Key Success Factors:

Following factors are the key in making this project profitable:

2.9.1- Alternative Material:

Chipboard industry may encounter a problem of availability of wood. Keeping in view the shortage of wood, the general wood scrap will be obtained from scrap yards in the country.

2.9.2- Regular Market Survey*:*

Regular surveys of the Timber Market should be conducted to have a fair idea about the availability of the raw materials and proper forecasting of problems. These types of surveys can help to find out the timely solutions for non-interrupted production cycle.

2.9.3- Proper Storage:

Proper forecasting for the future needs and planning for the storage of raw material will be treated as key demand of the project.

2.9.4- Future Trends:

In Tanzania, East Africa and Middle East, many macro and micro construction works are underway to overcome the needs of millions of houses, which should be considered a healthy sign for many industries including lumber and chipboard industry.

2.10- Strategic Recommendations:

2.10.1- Marketing*:*

The marketing of the project will be based on the following strong grounds:

- Contacts with importers and whole sellers in East Africa, Middle East, India, China and Pakistan.
- Participate in International construction exhibitions and trade shows
- Promotion schemes with domestic whole sellers
- Point of purchase displays
- Maintain high quality of product and reasonable price by better management

It is assumed that by using all above mentioned methods, project will be able to fetch considerable market share.

2.10.2- Pricing:

Lumber will be available in different grades, width, thickness or length necessary for construction, doors/windows or furniture industry. Different grades will have different prices. Chipboard will be available with or without lamination in different colours and grains surfaces. Different rates will be charged for both products. Product will be provided to importers and wholesaler at market prevailing rates, which could be different on the base of product quality.

2.10.3 Distribution:

The final product lumber and chipboard will be directly supplied to wholesaler, eliminating role of agencies. Distribution network of product is illustrated below:
Manufacturer – Wholesaler – Retailer – End user

3- MACROECONOMIC INDICATORS OF TANZANIA

3.1- Demography of Tanzania:

Nearly 60 million people live in Tanzania, one of the largest countries in Africa in terms of demographics. Immigrants make up only a small share of the population, while some 328 thousand Tanzanians live abroad. In the last decades, the East African nation has experienced remarkable population growth. In 2021, the population expanded by 3.00 percent, one of the highest rates in the world. Until 2050, roughly 130 million inhabitants might live in Tanzania.

Table 3-1

Population in 2022	59,734
Population Density	69.14 Person in one square kilometer
Population Growth (Percentage)	3.00%
Population Doubling Time	25 Years
Birth Rate	35.497 births per 1000 people

3.2- Population Growth:

At present, the annual population growth rate is around 3.00 percent. Tanzania's population will be twice over in less than 25 years. Dar es Salaam is the most thickly populated city and Zanzibar, Mwanza, Dodoma, Arusha are the other densely populated cities. Keeping in view the growth rate of population of the Tanzania as well as the neighboring Kenya, Brundi, Rwanda, Uganda, Malawi etc. It is likely that housing requirements will enhance and automatically demand for the lumber and chipboard will increase.

3.3- Housing Sector:

The housing need in Tanzania is estimated to be 3 million units with an annual increase of 200,000 units, according to Shelter Afrique, a Pan-African finance institution. The housing deficit in urban Tanzania is estimated to be 1.2 million units, of which 36 percent are in the eastern city of Dar es Salaam.
Tanzania's housing demand (affordable housing) is estimated at 200,000 housing units per annum with an existing housing deficit of 3,000,000 housing units.

4- SECTOR & INDUSTRY ANALYSIS

4.1-Sector Characteristics:

Lumber and Chipboard industry is basically agriculture based. Teak, Mkongo, Mninga, Mkurungu, Cypress pine, Pentula pine, Mango, Eucalyptus etc woods are raw material used for our production. In Chipboard we may also use the scrap wood and saw dust available with other saw mills in the country.

4.2-Chipboard Demand:

The demand of lumber and chipboard in Tanzania can be categorized into three broad groups of end users, Furniture Manufacturers, Construction and Housing Industry. There could be a very small percentage of other users.

***4.3- Furniture Manufacturer*:**

The furniture industry in Tanzania can be classified into following categories:

- manually Operated Units
- Semi-mechanized units
- Mechanized Units
- High-tech Manufacturing Units

Seasoned high-grade lumber, chipboard and plywood are the major inputs for the furniture industry, which is the biggest user of chipboard, accounts for approx. 60% of the total demand for the product. The wood used in furniture making generally comprises teak, cypress pine, mango, etc. Recently, chipboard is also extensively used for this purpose, which is considered a healthy sign for the chipboard industry. Although the quality of wood so far produced in the country has not improved up to the world standard, yet with the passage of time for product's diversified uses, easy to handle, economical and many other factors, similarly the use of chipboard is likely to increase.

5- PRODUCTION PROCESS:

5.1- Lumber production:

a- Receive wood logs from suppliers
b- Debark logs and store for 30/45 days
c- Cut to most suitable size and length based on the pith, sap wood, heart wood, maturity layer, diameter, length etc. of the logs (using horizontal and vertical saw mills)
d- Drying in Kiln (reduce moisture below 10%) for 3-4 weeks
e- Grade lumber based on twist, number ok knots, grain smoothness etc.
f- Surface four sides on automated plainer
g- Stake in bundle with lath inserts to avoid de-shaping
h- Wrap/cover with waterproof material and mark each bundle with Quality label
i- Ready for sale

5.2 Chipboard manufacturingl:

The chipboard plant is usually designed to operate continuously round the clock. Therefore, it is assumed that the proposed system will operate in 3 shifts per day (22.5 hours), with 300 working days per year.

a- Chip & Flake Manufacturing:

Raw material blended for the production is a mixture of chips, shavings and saw dust. Chips, shaving and saw dust are taken from different heaps into the flaking line in certain pre- set proposition guarantees the mixing of different types of wood species. Chips and shavings are transported to Knife-Ring Flakers and the sawdust is taken to a wet chip silo.

a- Flake Drying & Drying Screening:

The flakes are dried in the drying department, which consists of individual dryers. There are one Buttner dryer and one Bison dryer. All two dryers are equipped with burner for using both oil and dust as fuel. Using 100% of dust as fuel is possible. The dried material is screened in 3 Pcs sifters (1 screen for each dryer). All screens are equipped for 3 fractions (core, surface and dust). It is an option for a second screening in Air Classifier.

b- Gluing of Screened Flake:

The wooden practical flow is led from the particle silos, one for surface particles (the silos are not included in the delivery) via a horizontal Dozing Bin to a measuring unit in which the material flow is registered for the gluing system. The wooden particles are fed into a gluing drum, and further by belt conveyer to the forming stations. The screened and dried surface and core particles are separately glued in glue blending machines. There are two blending machines for core particles and one glue-blending machine for the surface particles. The Glue Preparation Department consists of mixing, dosing, metering tanks and pumps for supply of mixed glue to the Glue Blending machines. One mixture of glue for each layer can be prepared.

c- Forming & Press:

The forming stations consist of two units for the surface layer and one unit for the core layer. Forming is made on a Forming Belt Conveyor, which is the first part of 3 individual belt conveyors in front of the main press. The formed mat will be pre-pressed in a Roller Press with Belt. A Permanent Magnet and a Metal Detector is located before the pre- press. A trimming saw cuts the formed mat. The press is a multi–opening press with 10 levels in a frame construction and equipped with thermo oil heating, high- pressure hydraulics and system for automatic pressing without distance bars. The loading device with its tablet feeding system will ensure proper loading and unloading of the main press during same operation. The main press is heated with hot oil by a separate boiler. The boards are taken out of the unloading devices onto a belt conveyer with scale and through an automatic thickness meter with measure tolerance of 0.1 mm. The board weight and thickness will be registered before the board is fed to the cooling wheel.

d- Trimming Saws and Sanding:

Lines after the cooling wheel the boards are taken through a trimming saw for its longitudinal section before stacking on a Lifting Table. The stacked boards will be transported on a roller conveyer to the next Trimming Saw for the cross section of the board. The final size of the board is within the size of 2,400 – 2,500mm x 4,800 –5,200mm. This Trimming Saw and its feeding station with pusher is the first part of the Sanding Line. The sanding line is equipped with a conveyor system and the quality control station with turning wheel and stacking stations. The operator can classify boards into different grades and transport the boards into 5 different stacking stations.

e- Controls:

The raw material in feed system, Knife-Ring Flakers, Dyers and Sifters are all controlled from a separate indoors control panel. The automatic control of the production line is based on PLC system. To guarantee maximum performance of the plant it is divided into functional sections, which are controlled by separate PLC units. The main process parameters are monitored on a terminal in the main control room in front of the main press.

Process Flow Diagram --- Dryer Section Storage --- Tanks Screen Section --- Storage Tanks --- Glue Section --- Forming Section --- Press Refines Section --- Cooling Section --- Chipping Section --- Cutting Section --- Sanding Section

5.3- Plant & Machinery:

Normally the plant is imported from China.Total cost of plant and machinery is estimated to be TSH 5,244 million.

5.3.1- Detail of Machinery required for Chipboard:

Table – 1

Description	Qty	Price	Total
SAW MILL EQUIPMENT		**USD**	**USD**
36" Horizontal Band Saw Mill Screen Touch	2	9,100	18,200
Spare Carbide blades	50	110	5,500
Cabinet work vertical Band Saw	2	1,500	3,000
Blade welding machine	2	900	1,800
Blade sharpening machine	2	1,200	2,400
Spare Parts	20	120	2,400
Saw Mill edge cutter	2	2,400	4,800
Spare Electric Motors	2	1500	3,000
100 CBM Furnas oil fire heating Kiln	1	28,000	28,000
Heavy duty CNC six spindle four side moulder	1	53,000	53,000
CHIPPING SECTION EQUIPMENT			
Drum Chipper	1	30,000	30,000
Belt conveyor 800mmx4000mm	1	3,000	3,000
Silo 20CBM	1	8,400	8,400
Belt conveyor 800mmx4000mm	1	3,000	3,000
Crusher 460mm. 72 knives	1	36,000	36,000
Separator	1	24,000	24,000
Silo 35CBM	1	9,600	9,600
Belt conveyor 800mmx4000mm	1	3,000	3,000
DRYING & SCREENING SECTION			
Hot oil dryer	2	30,000	60,000
Belt conveyor 800mmx4000mm	2	3,000	6,000
Vibrating screen 3500x1800	1	24,000	24,000
Fine material crusher	1	15,600	15,600
1Separator	1	2,400	2,400
Dried material silo 50CBM	1	24,000	24,000
Belt conveyor 800mmx4000mm	1	3,000	3,000
Magnet	4	1,200	4,800
MIXING/GLUE SPREADING SECTION			
Core material ring glue blender	1	1,2960	1,2960
Fine material ring glue blender	1	11,520	11,520
Belt conveyor 800mmx4000mm	4	3,000	12,000
Glue pump	1	1,440	1,440
Glue pump Tank	1	1,200	1,200
FORMING AND PRESSING SECTION			
Diamond roller 2 head forming machine	1	115,200	115,200
Multi roller presses machine	1	58,000	58,000
Slab conveyor 1	1	5,040	5,040
Slab Transverse edge saw	1	10,080	10,080
Slab conveyor 2	1	5,040	5,040
Slab conveyor 3	1	5,040	5.040
Slab conveyor 4	1	5.040	5.040

Board Pusher	1	11,520	11,520
Board pushing & pulling machine	1	7,920	7,920
Loader 12 layers	1	36,000	36,000
Hot press 13 heating plates	1	237,600	237,600
Hydraulic system	1	79,200	79,200
Unloader	1	28,800	28,800
Board conveyor 400mm	1	2,880	2,880
Board roller conveyor	1	2,880	2,880
Roller conveyor	1	2,880	2,880
Cooling Turnover machine	1	12,240	12,240
Roller conveyor	1	3,600	3,600
Roller conveyor 3000	1	4,320	4,320
Longitudinal edge saw	1	11,520	11,520
Roller conveyor 3000	1	4,320	4,320
Inclined roller	1	4,320	4,320
Transverse edge saw	1	12,960	12,960
Automatic staking	1	9,360	9,360
Roller for Forklift	1	3,600	3,600
Simultaneous closing device	1	18,000	18,000
Accelerator slab conveyor 5	1	7,200	7,200
Simultaneous closing device	1	14,400	14,400
Transverse roller	1	4,320	4,320
SANDING SECTION			
Auto push board machine	1	4,320	4,320
Hydraulic lifter	1	5,040	5,040
Longitudinal roller feeing platform	1	4,320	4,320
4 HAV double sides calibration sanding machine	1	122,400	122,400
Longitudinal roller feeing platform	1	4,320	4,320
Automatic staker	1	7200	7,200
Dust collector for sanding machine	1	4,320	4,320
Sanding machine automatic control system	1	7,200	7,200
MELAMINE LAMINATION SECTION			
1400T melamine lamination hot press	1	78,000	78,000
Melamine control system	1	72,000	72,000
GENERAL SUPPORTING SECTION			
Thermal Oil Boiler 3 million/Kcal/Hour	1	94,000	94,000
Dust collector for whole workshop	1	43,200	43,200
Glu making machine	1	36,000	36,000
Electric Transformer	1	24,000	24,000
Cables & Panels	10	600	6,000
Air compressor 50KW	2	28,000	56,000
Generator 450KW	1	80,000	80,000
Forklift	3	20,000	60,000
Trucks	2	40,000	80,000
Loader	1	20,000	20,000
Cars	2	40,000	80,000
Office equipment			8,000
Office furniture			8,000
Total			**2,045,620**

6- POJECT PROFILE:

6.1- Land Requirement:

Minimum 10 acres land is required for the installation of the purposed plant. However, an ideal location must have the easy availability of raw material, manpower, road connections and other infrastructure facilities. Plot of 10 acres or more will be sufficient for current and future requirements of the project.
Land cost: 10acre @ 3,000,000 = TSH 30,000,000

6.2- Covered Area Requirement:

The buildings will include production hall, warehouses for storage of raw materials and finished goods and admin block for offices of production and administration staff 100,000 square feet. Building cost: 100,000 @ 30,000 = TSH 3,000,000,000

6.3 Utilities Requirements:

6.3.1-Water:

This project will require 4,000 litres water per day. As ground water is of required quality, therefore, water will be arranged from tube wells on site. Cost TSH 7,500,000

6.3.2- Power:

Power will be arranged through Tanzania Electric. The requirement of power is estimated at 1,300 KW at the proposed and expansion requirement of the project. Cost TSH 5,000,000

6.4- Oil/Lubricants:

Furnace oil for dryers and lubricants for the smooth functioning of the machines can be procured locally.

6.5- Raw Material:

This project will require about 120 tons (approx.) of wood per day at 80% operating level apart from glue and lamination sheet. This wood will be procured from areas around the project site. Glue and lamination sheet shall be imported. This project will be located in central Ifakara. There is forestry over 0.771 million acres in public sector.
The installation of this project will create incentives for farmers of surrounding areas for forestry. The company could launch a development program in these areas to guide the farmers and to promote forestry on commercial basis. This will also provide an ongoing solution for availability of raw material.

6.6- Time Schedule:

The estimated installation period is six months. The trial production could be expected during 7-8 months and commercial production will take place within three months after trial production.

6.7- Technical Know-How:

A highly qualified professional team of technical staff will be employed. Training facility for fresh qualified persons will help to fulfil human capital needs.

7- HUMAN RESOURCE REQUIREMENT:

7.1- Availability & Management of Human Resource:

The Chief Executive officer shall formulate the long-term policies and take strategic decisions. A team of professionals shall be engaged in order to manage the operational affairs of this project under the supervision of Managing Director.
The management of this project will comprise of:

- Factory Management
- Site Engineers
- Corporate Office Management
- Marketing Network
- Human Resource Requirement

Table 8-1

Position	Strength	Salary USD	Total USD
Managing Director	1	1,200	1,200
Director (CRM)	1	1,000	1,000
Director (Services)	1	1,000	1,000
HR Manager	1	600	600
Finance Manager	1	600	600
Sales Manager	1	600	600
Production Manager	1	800	800
Workshop Engineer	1	600	600
Officers	3	500	1,500
Office Assistants	3	400	1,200
Mill Shift In charge	3	500	1,500
Skilled worker	10	400	4,000
Semi-skilled workers	15	250	3,750
Unskilled workers	40	150	6,000
Total	**82**		**24,350**

7.3-Organizational Structure:

Organizational Set Up (see attached sheet) Table 8-2.

8- KEY ASSUMPTIONS:

Lumber Plant Production Assumptions:	
Maximum production Lumber processing	50CBM
Chipboard Plant Production Assumptions:	
Maximum Production /Installed Capacity Plant	
(100%) Sheets m3	100
Starting Capacity Utilization Chipboard Plant	60%
Annual Growth Rate in Capacity Utilization	10%
Maximum Capacity Utilization for the Project	70%
Working hours per Shift	8
Financial Projections:	
Project Life	10 Years
Debt	50%
Equity	50%
Interest on Long term Loan	14%
Debt tenure (Years)	5 Years
Number of instalments per year	2
Amortization (years)	5
Product Mix of Chipboard Plant:	**Ratio**
Lumber Hardwoods	50%
Lumber indigenous varieties	50%
Chipboard Laminated Sheets 18mm	50.0%
Chipboard Laminated Sheets 12mm	30.0%
Chipboard Non-Laminated Sheets 18mm	5.0%
Chipboard Non-Laminated Sheets 12mm	30.0%
Sale Price Assumptions for Chipboard:	
Hardwood Kiln dried grade per CBM	USD 240
Indigenous wood Kiln dried per CBM	USD 140
Lumber average price	USD 190
Chipboard Laminated Sheet 18mm – (per sheet)	USD 16
Chipboard Laminated Sheet 12mm – (per sheet)	USD 12
Chipboard Non-Laminated Sheet 18mm – (per sheet)	USD 9
Chipboard Non-Laminated Sheet 12mm – (per sheet)	USD 6
Chipboard average price – (per sheet)	USD 12.93
Sale Price Growth Rate of Sheet	5%
Operating Assumptions:	
Days Operational/Year	300 days
Operational/Month	25 days
No of Shifts/day	3 days
Cost of Goods Sold Assumptions:	
Lumber Average cost per CBM	USD 142,50
Average Cost per Sheet	USD 9.70
Average production per day (80% capacity)	1692 sheets
Price growth rate	5%
Electricity Cost for Plant	USD 140,000
Electricity Cost for Lighting	USD 6,000
Growth Rate	5.0%
Gas/Furnace Oil	USD 86,000
Growth Rate	5.0%

Machine Maintenance (Asset Value)	1.5%
Growth Rate	0.25%
Oil and Lubricants	USD 24,000
Growth Rate	5.0%
Insurance (Asset Value)	5.00%
General Administration and Selling Expenses Assumptions:	
Freight Cost	USD 47,200
Traveling Exp of the Sales Revenue	USD 6,400
Wages and Salaries	USD 304,560
Growth Rate	10.0%
Postage & Couriers	USD 1,000
Growth Rate	10%
Cash Flow Related Assumptions:	
Accounts Receivable Cycle (in Days)	30 days
Finished Goods Inventory (in Days)	10 days
Raw Material Inventory (in Days)	40 days
Glue	40 days
Lamination Paper	30 days
Working Process	3 days
Depreciation Assumptions:	
Depreciation Method	WDV
Plant & Machinery	10%
Land & Building	10%
Furniture and Fixture	10%
Vehicle	20%
Office equipment	30%

9- FINANCIAL PROJECTION

9.1- PROFIT & LOSS ACCOUNT

For the Year	1	2	3	4	5
Sale	6,520,920	7,452,480	7,918,260	8,384,040	9,315,600
Less cost of Sale	5,928,109	6,774,982	7,198,418	7,621,855	8,468,727
Gross Profit/(Loss)	**592,811**	**677,498**	**719,842**	**762,185**	**846,873**
Operating Expenses					
Administration & Selling Expenses	244,535	279,468	296,935	314,402	349,335
Financial Charges	257,576	261,110	226,545	185,627	160,451
Workers' Profit Participation Funds	1,633	4,247	6,240	9,760	1,142
	503,744	544,825	529,720	509,789	510,928
Profit Before Taxation	**89,067**	**132,673**	**190,122**	**252,397**	**335,945**
Income tax	26,720	39,802	57,037	75,719	100,783
Net Profit After Tax	**62,347**	**92,871**	**133,085**	**176,678**	**235,161**
Balance brought forward	0	62,347	155,218	288,304	464,981
	62,347	155,218	288,304	464,981	700,143
Retained Earning	62,347	155,218	288,304	464,981	700,143

9- FINANCIAL PROJECTION

9.2- BALANCE SHEET

CAPITAL AND LIABILITIES	1 YEAR	2	3	4	5
Paid up capital	40,000	40,000	40,000	40,000	40,000
Retained earning	62,347	155,218	288,304	464,981	700,143
Total equity	102,347	195,220	328,304	504,981	740,143
Long term loans	40,000	30,000	20,000	10,000	
Current Liabilities					
Short term bank Finance					
Creditors & other liabilities	3,303,560	2,932,137	3,070,851	3,472,645	3,649,625
Workers profit participation fund	14,228	17,322	42,684	56,912	71,140
Dividend payable	0	0	0	0	0
Tax payable	26,720	39,802	57,037	75,719	100,783
Total Current liabilities	3,344,508	2,989,261	3,170,572	3,605,276	3,821,548
Total Capital & Liabilities	**3,486,855**	**3,214,481**	**3,518,875**	**4,120,258**	**4,561,691**
ASSETS	1	2	3	4	5
Fixed Assets	3,314,560	3,314,560	3,314,560	3,314,560	3,314,560
Less depreciation	341,056	645,491	921,498	1,167,735	1,388,636
Net Fixed Assets	**2,973,504**	**2,669,069**	**2,393,062**	**2,146,825**	**1,925,924**
Pre-operating expenses	28,000	21,000	14,000	7,000	
Current Assets					
Trade Debtors	36,000	41,143	43,714	46,286	51,428
Stock in trade	264,951	272,526	845,526	1,661,931	2,291,339
Advances, prepayments & others	112,400	128,457	134,515	152,113	159,718
Cash & Bank Balances	72,000	82,286	88,058	106,103	133,282
Total Current Assets	485,351	524,412	1,111,813	1,966,433	2,635,767
Total Assets	**3,486,855**	**3,214,481**	**3,518,875**	**4,120,258**	**4,561,691**

9- FINANCIAL PROJECTION

9.3- CASH FLOW STSTEMENT

For the year	1	2	3	4	5
Net profit before tax	89,067	132,673	190,122	252,397	335,945
Add Depreciation	341,056	647,018	921,498	1,167,736	1,388,636
Pre-operating expenses	28,000	21,000	14,000	7,000	
Total	458,123	800,691	1,125,620	1,427,133	1,724,581
(Increase) Decrease in current assets					
Trade debtors	36,000	-41,143	-43,714	-46,285	-51,428
Stock in Trade	-264,951	-300,771	-915,039	-1,789,481	-2,485,008
Advances, Prepayments & others	-112,400	-128,457	-134,515	-152,112	-159,718
Increase/(Decrease in current Liabilities					
Creditors & other Liabilities	3,303,560	2,932,137	3,070,851	3,472,645	3,649,625
Short terms borrowings					
Change in working capital	72,000	-5,462	-2,162	6,271	2,441
Net inflow/outflow from operating activities	3,034,209	2,456,304	1,975,421	1,491,038	955,912
Cash from Financial Activities					
Prepayment of long-term loans		25,000,000	25,000,000	25,000,000	25,000,000
Repayment of sponsors loan	0	0	0	0	0
Tax paid	0	26,720	39,802	57,037	75,719
Dividend payment	0	0	0	0	0
Net increase/(decrease) in cash	0	25,026,720	25,039,802	25,057,037	25,075,719
Cash in begining of year	20,000	3,054,209	30,537,233	55,577,035	80,634,072

Cash balance at end of year	3,054,209	30,537,233	55,577,035	80,634,072	105,709,791