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*for a sustainable future*

## OCCASION

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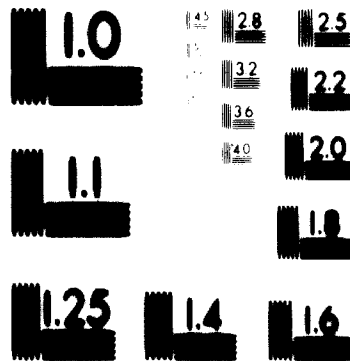
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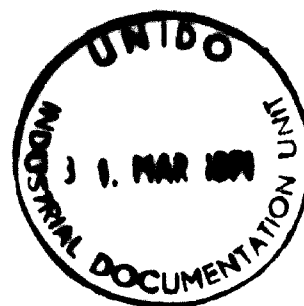
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INDUSTRIAL STUDIES AND DEVELOPMENT CENTRE

DAR-ES-SALAAM

02511



MOHAMEDALI HAIDERBHAI AND CO., PROPOSED SAW MILL EXTENSION

BP

DAR ES SALAAM,

AUGUST 10, 1970.

2502

DI/SK/666/2510.

MOHAMEDALI HAIDERBHAI & CO., PROPOSED SAW MILL EXTENSION

I. Introduction

Messrs. Mohamedali Haiderbhai and Co. of Dar es Salaam, P. O. Box 21250 have approached INDCENTRE in connection with the intended reconstruction and extension of their existing Saw Mill now operating in Changombe on a limited scale. They have already obtained land and started some preparatory work on their new plot No. 123 in the Pugu Rd. Industrial Area. They have also contacted the National Bank of Commerce for a loan of Shs. 100,000/- to cover a part of the total cost of the project. The Bank in turn has requested them to submit a pre-investment study report including description of the project and marketing possibilities as well as the profitability and liquidity analyses.

2. Summary and Conclusions.

1. The sponsors are a well established Company experienced in log and timber business and successfully operating a smaller saw mill.
2. At a fixed capital cost of Shs. 276,000/- and total investment of about Shs. 670,000/- they intend to reconstruct and extend the saw mill by adding a modern new vertical band saw and to move the plant into suitable new premises.
3. There exists sufficient local demand for sawn timber to enable the Company to market their total production of sawn timber without difficulties. Besides, there exist some possibilities to export a part of timber into neighbouring countries.
4. The Sponsors propose to undertake all necessary financing except for the portion being sought from the Bank (shs. 100,000/-).
5. The calculations and analyses which follow and which are based on sufficiently conservative assumptions show that the project is financially viable and sound. Operating at a realistic level of production it yields about 19% on equity or 15% on total investment. The internal rate of return is 20% and the payback period 5 years. Besides being commercially profitable the project will result in some additional employment by creating new working places in the enlarged saw mill and log and timber yards.
6. The liquidity analysis shows that the project can meet all costs and service its total debt with a wide margin of safety.

3. Description of the Project and Marketing Possibilities

The Company was established in Dar es Salaam some 30 years ago and is a family concern. They started to deal in logs in 1962 and in sawn timber (mostly Mninga) in 1968. The present activities of the Company comprise a profitable, though small Saw Mill in Changombe with a General Store on the same premises. They also operate a Bakery and conduct trucking business.

The plant in Changombe comprises a vertical band saw, a circular and a cross-cutting bench saw. At present, the capacity of the mill is about 125 cu.ft. of Mninga logs per day in one shift (8 hours) operation. The machines are installed under an open-sided timber framed shed. There is a small log yard and the rest of the plot is used as timber yard where sawn timber is stacked under a temporary timber structure. Although the production is well organized and the storage of both logs and timber is done in the best possible way, there seems to be no possibility for an expansion of activities due to the very limited space available.

The Company wishing to expand further has already acquired another plot (No. 123, Pugu Industrial Area) suitable to accommodate a larger saw mill with adequate log and timber yards. It is planned to erect three buildings of which the larger one (48x75 ft) will accommodate the saw mill proper, i.e. the machinery, while the two other (2x35x75 ft.) will be used for stacking of sawn timber and one of them will accommodate a three-room office as well. The buildings will have a total covered area of 8850 sq.ft and an offer has already been obtained from reputable contractors for the supply and erection of concrete spans and purlins including the necessary setting-out and excavation works.

The existing machinery will be removed from the present plot and installed in the new building. Besides, a new, larger vertical band saw will be purchased and thus the overall capacity of the saw mill increased from the present 125 cu.ft., to about 375 cu.ft of Mninga logs per day (8 hours) or about 110,000 cu.ft per year (290 days).

At a yield of 50% the logs will give about 55,000 cu.ft of sawn timber of various grades and sizes and bring in an annual revenue of approx. Shs. 1.22mil. The anticipated annual cost of production being about shs. 1.04 million this will result in a net income of about shs. 100,000/-, representing an adequate return of 15% on total investment.

The total fixed capital investment into the project amounts to shs. 276,000/- and includes the cost of land new buildings and site facilities as well as new and existing machinery. The necessary working capital is estimated to be shs. 394,000 providing for 2 months' stock of logs and other requirements to ensure smooth operation of the saw mill.

The raw material, i.e. Mninga logs are available to the company at the indicated average price, delivered to the Saw mill. Sufficient supply is anticipated in the future. As to the market for the final product there should be no difficulties in selling the sawn timber to contractors and furniture makers in Dar es Salaam, as in the case of the quantities produced at present. The Sponsors have a wide circle of customers and besides, there exist possibilities to export a part of their production.

In our calculation, ample provision was made for overheads, sales expenses, contingencies and sufficient working capital has been foreseen. Fixed capital cost and some other elements were indicated by the Sponsors.

Further details are provided by the Cost Calculation and Profitability Analysis, which shows that the project is viable and will be in a position to service its total debt without difficulty.

Cost Calculation and Profitability Analysis

Capacity of the Saw Mill :

Input 375 cu.ft. per day (8 hours), i.e. 20 - 25

Logs of 15 - 20 cu.ft each

Note : Capacity of the existing plant : 125 cu.ft.

Capacity of the additional plant: 250 cu.ft.

Operation: 290 days per year, one shift

A. Capital Cost Estimate

Shs.

1. Land and Land Improvements

Plot No. 123 in the Pugu Rd.

Industrial Area has been acquired.

15,000

2. Buildings and Site Facilities

The following buildings are foreseen:

Main Saw Mill Buidng,	48x75 ft.	=	3600 sq.ft.
Stacking godown I with office	35x75 "	=	2625 - " -
Stacking godown II	35x75 "	=	2625 - " -
Total covered area			<u>8850 sq.ft.</u>

Buildings are foreseen to be of light concrete structures with C.I. roofing. No walls are foreseen in the main saw mill building, while the stacking godowns (excl. office) will have a wall on one side only. (An offer has been obtained for the supply and erection of spans and purlins including setting out and excavation works for Shs. 65,000/-).  
Approximate total cost @ shs. 18/- sq.ft.

160,000

3. Machinery and Equipment

1 Vertical Band Saw with accessories. 40 HP, Italian make (Primaltini)		41,000
1 Vertical Band Saw 20 HP - existing	}	30,000
1 Circular Saw 15 Hp - " "		
1 Cross Cutting Saw Bench 5Hp - " -		
1 Sharpening Machine - " -		

Furniture and Fixtures	2,000
Spare Parts (10% of machinery)	7,000
Installation costs (15% of machinery)	11,000
Contingency (10% of the total)	10,000
	<u>101,000</u>

Total Fixed Capital Cost Estimate

1 Land and Land Improvements	15,000
2 Buildings and Site Facilities	160,000
3 Machinery and Equipment	101,000
	<u>276,000</u>

B. Mandpower Requirements

	<u>No.</u>	<u>Per month</u>	<u>Per year total Shs.</u>
Saw Doctor	1	700	8,400
Machine Operators	4	275	13,200
Helpers	8	200	19,200
Clerk	1	300	3,600
Watchman	1	180	2,200
Total	<u>15</u>		<u>46,600</u>

(Direct labour Shs. 40,800).

C. Raw Material Requirements per Year

Quantity sawn per day of 8 hours:	375 cu.ft.
Total requirement of logs per year (375 cu.ft. x 290 days)	108,750 cu.ft.
Cost of raw material (Mninga logs) at an average Shs. 8/- per cu.ft. delivered to the Saw Mill.	<u>870,000</u>

<b>D. <u>Depreciation</u></b>		
Buildings 4% p.a.		6,400
Machinery & equipment 12½% p.a.		12,600
		<hr/>
		19,000
		<hr/>
<b>E. <u>Overheads (annual)</u></b>		
Depreciation		19,000
Labour - indirect		5,800
Power, Water etc.		10,000
Maintenance & repairs		10,000
Insurance, legal fees, land rent		5,000
Postage, Phone and Telegrams, Stationery		4,000
Workmen Compensation, NPF contribution		2,500
Accounting Fee		3,000
Contingencies		3,000
		<hr/>
		62,300
		<hr/>
<b>F. <u>Working Capital</u></b>		
Raw material in stock (2 months)		145,000
Goods in process (15 days)		36,200
Finished goods (1 month)		101,400
Accounts receivable (1 month)		101,400
Cash on hand		10,000
		<hr/>
		394,000
		<hr/>
<b>G. <u>Total Capital Required</u></b>		
Fixed Capital		276,000
Working Capital		394,000
		<hr/>
		670,000
		<hr/>
<b>H. <u>Capitalization (suggested)</u></b>		
Equity		570,000
Loan		100,000
		<hr/>
		670,000
		<hr/>
<b>I. <u>Annual Cost of Production</u></b>		
Raw material		870,000
Direct Labour		40,800
Overheads		62,300
Interest (1st year)		9,000
Selling Expenses, Bad Debts (5% of Sales)		60,900
		<hr/>
		1,043,000
		<hr/>
<b>J. <u>Annual Sales Revenue</u></b>		
Input of Mninga logs p.a.	108,750 cu.ft.	
Yield of Sawn Timber: 50% =	54,375 " "	
Grade I (60%) 32,625 cu.ft. @ shs.29 =	Shs.	946,125
Grade II (40%) 21,750 " " @ Shs.12 =	Shs.	261,000
Waste wood 54,375 cu. ft. less 10%		
= 48,935 cu.ft. at 40 lb/cu.ft. =	1,957,400 lb.	
At shs. 1/- per 200 lb.	Shs.	9,875
		<hr/>
		1,217,000
		<hr/>

**K. Profit and Loss Statement**

Annual Sales Revenue	1,217,000
Less Annual Cost of Production	1,043,000
Gross Income	<u>174,000</u>
Less Tax 40%	69,600
Net Income	<u>104,400</u>
Return on Equity	18.30%
Return on Total Investment	15.6%
	*****

**Boris Hoeser**  
**Industrial Economist.**



Mohadedali Maiderbhai & Co.  
Saw Mill Extension

Enclosure No. 1

SCHEDULE OF REPAYMENT OF DEBT

(Shs. 100,000; 9%; 10 equal quarterly instalments, 1 year moratorium)

Year	Quarter Instalment	Outstanding Principal Debt	Repayment of Principal		Interest		Total Amount Payable	
			Quarterly	Total/Year	Quarterly	Total/Year	Quarterly	Per Annum
1	I-IV -	100,000	-	-	4 x 2,250	9,000		9,000
2	I	100,000	10,000		2,250		12,250	
	II	90,000	10,000	40,000	2,025	7,650	12,025	47,650
	III	80,000	10,000		1,800		11,800	
	IV	70,000	10,000		1,575		11,575	
3	I	60,000	10,000		1,350		11,350	
	II	50,000	10,000		1,125	4,050	11,125	44,050
	III	40,000	10,000	40,000	900		10,900	
	IV	30,000	10,000		675		10,675	
4	I	20,000	10,000	20,000	450	675	10,450	20,675
	II	10,000	10,000		225		10,225	
		<b>T O T A L</b>		100,000		21,375		121,375

Mohamedali Haiderbhai & Co.

Saw Mill Extension

Enclosure No.2

PROPOSED PROJECT CASE LOSS STATEMENT

Year	1	2	3	4	5	6	7	8
Operating Revenue	1,217,000	1,217,000	1,217,000	1,217,000	1,217,000	1,217,000	1,217,000	1,217,000
Less Cost of Production	1,034,000	1,034,000	1,034,000	1,034,000	1,034,000	1,034,000	1,034,000	1,034,000
	183,000	183,000	183,000	183,000	183,000	183,000	183,000	183,000
Less Interest	9,000	7,650	4,050	675	-	-	-	-
Income before Tax	174,000	175,350	178,950	182,325	183,000	183,000	183,000	183,000
Less Tax 40%	69,600	70,140	71,580	72,930	73,200	73,200	73,200	73,200
Net Income	104,400	105,210	107,370	109,395	109,800	109,800	109,800	109,800
Return on Equity %	18.3	18.4	18.8	19.2	19.3	19.3	19.3	19.3
Return on Total Investment %	15.6	15.7	16.0	16.3	16.4	16.4	16.4	16.4

**Rohamedali Maideebhai A. Co.**  
**SAN HALL Extension**

**Enclosure No. 3**

**PROJECTED CASH FLOW**

**CASH INFLOW**

Year	0	1	2	3	4	5	6	7	8
Profit after Tax	-	104,400	105,210	107,370	109,395	109,800	109,800	109,800	109,800
Depreciation	-	19,000	19,000	19,000	19,000	19,000	19,000	19,000	19,000
Total	-	123,400	124,210	126,370	128,395	128,800	128,800	128,800	128,800

**CASH OUTFLOW**

Fixed Capital	276,000	-	-	-	-	-	-	-	-
Working Capital	-	394,000	-	-	-	-	-	-	-
Loan Repayment	-	-	40,000	40,000	20,000	-	-	-	-
Net Cash Balance	(276,000)	(270,600)	34,210	86,370	108,395	128,800	128,800	128,800	128,800
Accumulated Cash	-	(546,600)	(452,390)	(376,020)	(267,625)	(138,829)	(10,025)	118,775	244,575

Mohamedali Maidaibhai A Co.  
Sam Mill Extension

Enclosure No.4

DISCOUNTED CASH FLOW ANALYSIS

CASH INFLOW

Year	0	1	2	3	4	5	6	7	8
Profit After Tax	-	104,400	105,210	107,370	109,395	109,800	109,800	109,800	109,800
Depreciation	-	19,000	19,000	19,000	19,000	19,000	19,000	19,000	19,000
Recovery of Working Capital	-	-	-	-	-	-	-	-	394,000
Salvage Value of Fixed Capital	-	-	-	-	-	-	-	-	124,000
Total Inflow	-	123,400	124,210	126,370	128,395	128,800	128,800	128,800	646,800

CASH OUTFLOW

Fixed Capital	276,000	-	-	-	-	-	-	-	-
Working Capital	-	394,000	-	-	-	-	-	-	-
Total Outflow	276,000	394,000	-	-	-	-	-	-	-
<b>NET CASH FLOW</b>	<b>(276,000)</b>	<b>(270,600)</b>	<b>124,210</b>	<b>126,370</b>	<b>128,395</b>	<b>128,800</b>	<b>128,800</b>	<b>128,800</b>	<b>646,800</b>

Mathandali Maiderthal & Co.  
San Hill Extension

Enclosure No.5

DISCOUNTED CASH FLOW ANALYSIS (Contd.)

Year	Net Cash Flow	Discounted at 20%		Discounted at 22%	
		Factor	Present Value	Factor	Present Value
0	(276,000)	1.000	(276,000)	1.000	(276,000)
1	(270,600)	.833	(225,410)	.820	(221,892)
2	124,210	.694	86,202	.672	83,469
3	126,370	.579	73,168	.551	69,630
4	128,396	.482	61,886	.451	57,906
5	128,800	.402	51,778	.370	47,656
6	128,800	.335	43,148	.303	39,026
7	128,800	.279	35,935	.249	32,071
8	646,800	.233	150,704	.204	131,947
			1,411		(36,187)

Internal Rate of Return = 20% +  
 Payback Period = 5 years

Mohamedali Haiderkhan & Co.  
Saw Mill Extension

ENCLOSURE NO.6

LIQUIDITY ANALYSIS

Year	0	1	2	3	4	5	6	7	8
<b>CASH INFLOW</b>									
Equity	180,000	396,000	-	-	-	-	-	-	-
Loan	100,000	-	-	-	-	-	-	-	-
Operating Revenue	-	1,217,000	1,217,000	1,217,000	1,217,000	1,217,000	1,217,000	1,217,000	1,217,000
Total Inflow	280,000	1,607,000	1,217,000	1,217,000	1,217,000	1,217,000	1,217,000	1,217,000	1,217,000
<b>CASH OUTFLOW</b>									
Fixed Capital Expenditure	276,000	-	-	-	-	-	-	-	-
Working Capital	-	394,000	-	-	-	-	-	-	-
Operating Cost	-	1,034,000	1,034,000	1,034,000	1,034,000	1,034,000	1,034,000	1,034,000	1,034,000
Interest on Loan	-	9,000	7,650	4,650	675	-	-	-	-
Corp. Tax	-	69,600	70,140	71,580	72,930	73,200	73,200	73,200	73,200
Loan Repayment	-	-	40,000	40,000	20,000	-	-	-	-
Total Outflow	276,000	1,506,600	1,151,790	1,149,630	1,127,605	1,107,200	1,107,200	1,107,200	1,107,200
Net Inflow	4,000	100,400	65,210	67,370	89,395	109,800	109,800	109,800	109,800
Accumulated Cash	4,000	104,400	169,610	236,980	326,375	436,175	545,975	655,775	765,575

**INDUSTRIAL STUDIES AND DEVELOPMENT CENTRE****MOHAMMAD I. HAIDERHAI****RABUILL ESTERHON**Ref. No. **IN/UK/666/8510****1. Capital Cost Estimate (Foreign exchange and local currency components)**

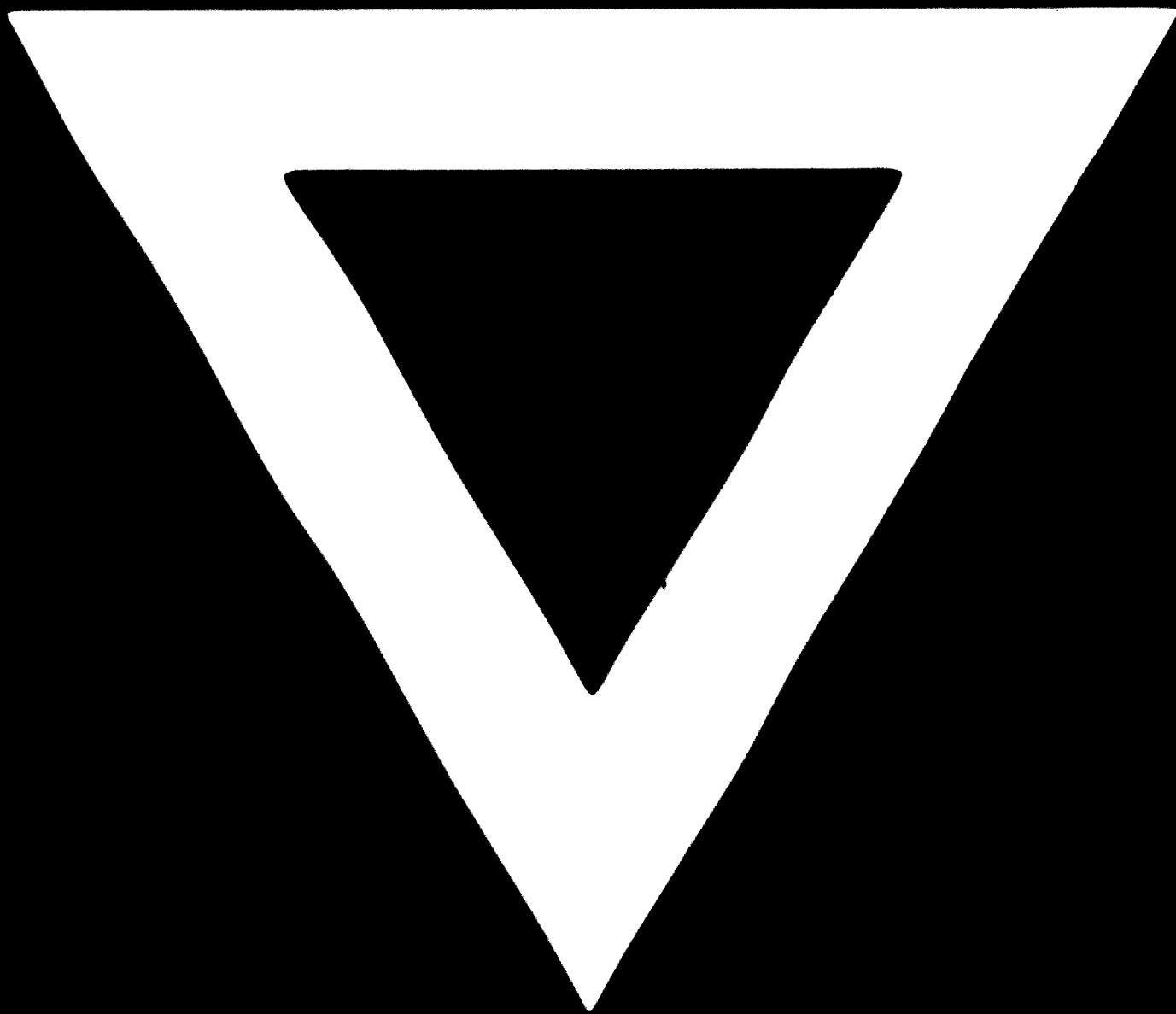
Item	Foreign Exchange Shs.	Local Currency Shs.	Total Shs
Land and land Improvements	-	15,000	15,000
Buildings	30,000	130,000	160,000
Machinery & Equipment	60,000	11,000	71,000
Spares	7,000	-	7,000
Installation, furniture	5,000	8,000	13,000
Contingency	5,000	5,000	10,000
<b>Total</b>	<b>107,000</b>	<b>169,000</b>	<b>276,000</b>

**2. Proposed Establishment Date**

About 6-8 months will be required for construction and installation works up to the start of operation.

**3. Financing : Private**

**C-536**



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