Investment Office ANRS

PROJECT PROFILE ON THE ESTABLISHMENT OF NAILS PRODUCING PLANT

Development Studies Associates (DSA)

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1. Executive Summary

This profile provides basic information on the technology and manufacturing of nails. The present demand for nails is estimated at 34,167 tons. The demand would grow to 85,954 tons by year 2010 Eth Calendar. The existing plants have production capacity of 48,043 tons per annum and new capacity is anticipated for the unsatisfied demand. Accordingly, the unsatisfied demand would grow from 6,128 tons in the year 2001 to 37,156 tons in the year 2010 unless massive investment is done in the field. .

Based on the demand projection, the proposed plant would have the production capacity of 1100 tons of nails on working 275 days a year.

The plant would provide employment opportunity for 22 persons. The total initial investment is Birr 6.54 million out of which Birr 2.4 million is for machinery and equipment.

According to the financial evaluation, the project will have a financial internal rate of return of 43.4% and its net present value discounted at 18 percent is Birr 9.18 million Birr.

2. Product Description and Application

Capped nails are used mainly in fixing corrugated iron sheet roofs, walls or fenced construction. The predominant roofing material in urban Ethiopia is galvanized corrugated iron sheet and capped nails are used in fixing the corrugated iron sheets.

Nails are product made from pieces of metal pointed at one end and flat or umbrella headed at the other. They join articles by being hammered through them.

The flat headed nails are consumed by construction workers for joining wooden structures and by carpenters; while the umbrella shaped nails are consumed in every building construction when galvanized sheets are used for roofing purpose. These products can be produced as per the required sizes.

3. Market Study, Plant Capacity and Production Program

3.1. Market Study

3.1.1. Present Supply and Demand

Nails are consumed in all construction works and in furniture and fixtures workshops. The current demand for the product is met through domestic production and imports. The share of imports and domestic production in the total supply of nails is shown in Table below

Table 1: Supply of Nails (tons)

Year (Eth Cal)	Domestic Production	Import	Total	Share of Import
1991	2,454	12,897	15,351	84%
1992	2,773	9,111	11,884	77%
1993	3,817	6,637	10,454	63%
1994	5,190	7,266	12,456	58%
1995	5,330	4,932	10,262	48%
1996	8,664	4,121	12,785	32%
1997	15,335	4,493	19,828	23%
1998	22,233	4,381	26,614	16%
1999	24,578	4,381	28,959	15%
2000	29,958	4,209	34,167	12%

Source: CSA. (Year 2000 projections)

The table shows the demand for nail has increased rapidly in recent years. The same is true for the domestic production as well as the import. The current demand has been established at 34, 167 tons.

3.1.2. Projected Demand

The future demand is calculated assuming the demand for nails to increase at an average of 10% per annum while the domestic production will increase at an average of 5%.

Table 2: Projected Demand & Demand Gap (tons)

Year	Projected demand	Domestic Production	Demand Gap
2001	37,584	31,456	6,128
2002	44,043	33,029	11,014
2003	48,745	34,680	14,065
2004	53,639	36,414	17,225
2005	59,592	38,235	21,357
2006	64,804	40,146	24,658
2007	69,876	42,154	27,722
2008	75,359	44,262	31,098
2009	80,771	46,475	34,297
2010	85,954	48,798	37,156

3.1.3. Pricing and Distribution

Since the product is demanded all over the country, wholesale network is an appropriate channel of distribution. The average price of nails is Birr 7000[1] per ton.

3.1.4. Plant Capacity

The selected plant can produce 1199 tons of nails in 275 working days of a year, at its full capacity level. The working days have been estimated based on market demand and discounting planned maintenance from the calendar days of the years.

3.1.5. Production Program

The production program is based on the time required for the adjustment of feedstock, labour and equipment to the technology selected.

- 75% of plant capacity during the 1st year
- 85% of plant capacity during the 2nd year
- 100% of plant capacity during the 3rd year

[1] . Source: CSA adjusted to the ongoing inflation.

Table 3: Machine Models and Type

Size of Nail	Machine Model	Unit Capacity (kg)	No.	Total Output Kg/day
BWG = 17 X19 3/4 "	A	70	3	210
BWG = 16 X 25 1 "	A	11	2	220
BWG = 15 X 32 1 1/4 "	B	175	1	175
BWG = 14 X 38 1 1/2 "	B	240	1	240
BWG = 13 X 45 1 3/4 "	B	385	1	385
BWG = 12 X 50 2 "	C	430		
BWG = 11 X 65 2 1/2 "	C	680	1	555
BWG = 10 X 76 3 "	C	1050	1	1050
BWG = 9 X 90 3 1/2"	D	1250		
BWG = 8 X 101 4 "	D	1800	1	1525
Total			**11**	**4360**

Full capacity production = 1100 ton per year

4. Raw Materials and Utilities

4.1. Availability and Source of Raw Materials

Wire Coil is available in Ethiopia. In the year 1998, for instance 3,156 tons of wires were produced.

4.2. Annual Requirement and Cost of Raw Materials and Utilities

Raw materials required for production of nails are:-

Table 4: Annual Raw Material Requirements

Item	Annual Requirement (ton)	Estimated Cost (in '000)		
		FC	LC	Total
Low Carbon steel wire	212	2000	200	2200
Cold-rolled steel sheet	11	100	25	125
Sawdust	1		10	10
Zinc	1.5	30	5	35
HC1	.5	2	1	3
Ammonium Chloride	19	30	2	32
Packing Material			10	10
Total		**2162**	**253**	**2415**

Industrial water of 250 m^3 and electric power of 157,080 kwh are required for this plant per annum. Total utility cost is estimated at Birr 87, 057 per annum.

Table 5: Annual Utility Usage

Item	Annual Requirement	Estimated Cost
Industrial water	250 m3	663
Electric power	157,080 kwh	86,394
Total		**87,057**

5. Location and Site

Any of the major cities of ANRS such as Bahir Dar, Combolcha, Gondar where there is better access to inputs and output markets.

6. Technology and Engineering

6.1. Production Process

Nail making does not require highly advanced knowledge or technique, and it's making capacity can freely be fixed according to the demand in the locality.

The plant can be built at any place without environmental restraint. The nail making plant can easily be expanded, rationalized, automated or can adopt a labour saving device.

Manufacturing of nails passes through the following steps.

- Feeding of wire coil to nail making machine
- Forming the bottom and top portion of nail and cutting on the nail making machine manufacturing of flat head nails ends here
- Manufacturing of the nail head on a washer making machine
- polishing of head part
- Feeding the head to the nail making machine
- Punching of the head to the nail and pressing to umbrella shape
- Galvanizing

Table 6: Installation

Section	Order	Machine & Model	No.
Nail Making	1	A	5
	2	B	3
	3	C	2
	4	D	1
Nail Polishing	5		1
Nail Packing	6	Hopper	1
		Nail Packer	1
Others	7	Nail Cutter Girder	1
	8	Double Chamber Electric Furnace	1
	9	Tempering Furnace	1
	10	Oil Bath for Heat Treatment	1
	11	Operation Panel	1
	12	Bench Drill	1
	13	Double Head Grinder	1

6.2. Machinery and Equipment

Table 7: Machinery and Equipment

Machines with Motors	No. Of set	Unit motor	Total kw
A Nail making Machine	5	1.5 kw	7.5 kw
B Nail making Machine	3	2.2 kw	6.6 kw
C Nail making Machine	2	3.7 kw	7.4 kw
D Nail making Machine	1	5.5 kw	5.5 kw
Nail polishing machine	1	7.5 kw	7.5 kw
Shaking type nail packer	1	1.5 kw	1.5 kw
Nail cutter grinder	1	0.4 kw	0.4 kw
Other			35.0 kw
Total			71.4 kw

The total machinery and equipment cost including spare parts is estimated at Birr 2, 400,000.

Alternative Technology

The alternative technology is to use full automation the total machinery cost of which is about Birr 7 million

Suppler Address:
Company Name: Hebei Superstar Pneumatic Nails Co., Ltd.
Company Address: #402 Jincheng Commerce, 486 Zhongshan Road, Shijiazhuang, Hebei,
China City/Town: Shijiazhuang Province/State: Hebei
Country/Region: China
Zip/Postal Code: 05000

6.3. Civil Engineering Cost

For the processing plant, stores and service rooms a building of 700 m^2 is required. Cost of building is estimated at Birr 1,400,000. Provision is made for adequate open space for movement during operation and future expansion possibilities. The plant requires a total of 1400 m^2 land of a lease value of 1 birr per m^2 ; annual lease expense of Birr 1400 is included.

7. Human Resource and Training Requirement

7.1. Human Resource

The human resource requirement is shown in Table 8.

Table 8: Human Resource Requirement

	Position	Qualification	No	Salary Per/person/ month	Total Salary per year
A	**Production**				
1	Manager	Mech. Eng.	1	4,500	54,000
2	Nail Making Technicians	Skilled	4	2,500	120,000
3	Nail Polishing Technicians	Semi-Skilled	1	1500	18,000
4	Nail Packing	Unskilled	2	850	20,400
5	Maintenance staff	Mech /elect	2	1500	36,000
6	Labourers	Unskilled	3	450	16,200
	Sub Total		13	11,300	264,600
B	**Support Staff**				
1	Chief stores, sales and finance	Accountant	1	2,000	24,000
2	Salesman	Skilled	1	1500	18,000
3	Secretary	skilled	1	850	10,200
4	Cashier/clerk	skilled	1	750	9,000
5	Store clerk	skilled	1	750	9,000
6	Security guard	Unskilled	2	350	8,400
7	Messenger/cleaner	unskilled	1	350	5,400
8	Driver	skilled	1	800	6,000
	Sub Total		9	7,350	66,000
	Total		**22**	**18,650**	**330,600**
	Benefits (20%)				**66120**
	Grand Total				**396,720**

7.2. Training

All operators need basic training so that they can be acquainted to the operation. This can be done during the commissioning period of the plant. Birr 40,000 is allotted for his purpose on annual basis and it is included in the working capital.

8. Financial Analysis

8.1. Underlying Assumption

The financial analysis of particleboard is based on the data provided in the preceding discussions and the following assumptions.

A. Construction and Finance

Box 1: Construction and Finance

Construction period	2 years
Source of finance	40% equity and 60% loan
Tax holidays	3 years
Bank interest rate	12%
Discount for cash flow	18%
Value of land	Based on lease rate of ANRS
Spare Parts, Repair & Maintenance	3% of fixed investment

B. Depreciation

Box 2: Depreciation

Building	5%
Machinery and equipment	10%
Office furniture	10%
Vehicles	20%
Pre-production (amortization)	20%

C. Working Capital (Minimum Days of Coverage)

Box 3: Working Capital

Raw Material-Local	30 days
Raw Material-Foreign	120 days
Factory Supplies in Stock	30 days
Spare Parts in Stock and Maintenance	30 days
Work in Progress	10 days
Finished Products	15 days
Accounts Receivable	30 days
Cash in Hand	30 days
Accounts Payable	30 days

8.2. Investment

The total investment cost of the project including working capital is estimated at Birr 6.5 million. Owners are assumed to contribute 40% of the finance in the form of equity while the remaining 60% is expected to be financed by long-term bank loan. The details are shown in Table 9.

Table 9: Total Initial Investment

Total Initial Investment	
Item	**Cost**
Land	**4,200.00**
Building and civil works	1,400,000.00
Office equipment	500,000.00
Vehicles	650,000.00
Plant machinery & equipment	2,400,000.00
Total Fixed Investment	***4,954,200.00***
Pre production capital expenditure	**247,710.00**
Total Initial Investment	***5,201,910.00***
Working capital at full capacity	**1,337,397.95**
Total	***6,539,307.95***

8.3. Production Cost at Full Capacity

The total production cost at full capacity is estimated at Birr 4.6 million. The details are shown at Table 10.

Table 10: Total Production at Full Capacity

Total Production Cost at full Capacity	
Items	**Cost**
1. Raw materials	**2,415,000.00**
2. Utilities	87,057.00
3. Wages and Salaries	396,720.00
4. Spares and Maintenance	**148,626.00**
Factory costs	***3,047,403.00***
5. Depreciation	**539,542.00**
6. Financial costs	**1,030,181.65**
Total Production Cost	***4,617,126.65***

8.4. Financial Evaluation

I. Profitability

According to the projected income statement the project will generate profit beginning from the first year of operation. Important ratios such as the gross net profit to total sales and Return on Investment are 27.42% and 27.42% in the first year and are gradually rising. The income statement and other profitability indicators show that the project is viable.

II. Breakeven Analysis

The breakeven point of the project is estimated by using income statement projection. Accordingly, the project will break even at 15.9% of capacity utilization.

III. Payback Period

Investment cost and income statement projection are used in estimating the project payback period. The projects will payback fully the initial investment less working capital in 3 years.

IV. Simple Rate of Return

Simple rate of return refers to the ratio of net profit plus interest to the total capital invested for a single year at full capacity operation. For the envisaged plant this equals to 43.4%. Thus, the simple rate of return is 5.10%.

V. Internal Rate of Return and Net Present Value

Based on cash flow statement the calculated IRR of the project is 43.5% and the net present value at 18 % discount is Birr 9,187,448.

9. Economic and Social Benefit and Justification

Based on the foregoing presentation and analysis, we can learn that the proposed project possesses wide range of benefits that complement the financial feasibility obtained earlier.

These benefits are listed as follows

A. Profit Generation

The project is found to be financially viable and earns a total profit of 25 million in ten years. Such result induces the project promoter to reinvest the profit which, therefore, increases the investment magnitude in the economy

B. Tax Revenue

With an increase in profit, both tax revenue and the tax base of the economy improves. Such result create additional fund for the government that will be used in expanding social and other basic services in the economy. Excluding the multiplier effect, this project alone will generate Birr 9.2 million tax revenue for the government.

C. Import Substitution and Foreign Exchange Saving

The analysis revealed the presence of strong dependence on imported particle boards. Thus, witch the advent of this project a portion of the import burden will be relieved. That is, based on the projected figure we learn that in the project life an estimated amount of Birr 69.5 million will be saved as a result of the proposed project. This will create room for the saved hard currency to be used in other vital and strategic sectors.

D. Employment and Income Generation

The proposed project is expected to create employment opportunity to several citizens of the country. That is, it will provide permanent employment to 22 citizens.

ANNEXES

Annex 1: Total Net Working Capital Requirements (in Birr)						
	CONSTRUCTION		PRODUCTION			
Capacity Utilization (%)	0	0	65%	75%	90%	100%
1. Total Inventory	0.0	0.0	1466166.3	1691730.3	2030076.4	2255640.5
Raw Materials in Stock- Total	0.0	0.0	631161.8	728263.6	873916.4	971018.2
Raw Material-Local	0.0	0.0	17940.0	20700.0	24840.0	27600.0
Raw Material-Foreign	0.0	0.0	613221.8	707563.6	849076.4	943418.2
Factory Supplies in Stock	0.0	0.0	2543.5	2934.8	3521.7	3913.0
Spare Parts in Stock and Maintenance	0.0	0.0	10538.9	12160.3	14592.4	16213.7
Work in Progress	0.0	0.0	63586.8	73369.3	88043.2	97825.8
Finished Products	0.0	0.0	127173.5	146738.7	176086.4	195651.5
2. Accounts Receivable	0.0	0.0	530400.0	612000.0	734400.0	816000.0
3. Cash in Hand	0.0	0.0	34304.2	39581.8	47498.1	52775.7
CURRENT ASSETS	0.0	0.0	1399708.7	1615048.5	1938058.2	2153397.9
4. Current Liabilities	0.0	0.0	530400.0	612000.0	734400.0	816000.0
Accounts Payable	0.0	0.0	530400.0	612000.0	734400.0	816000.0
TOTAL NET WORKING CAPITAL REQUIREMENTS	0.0	0.0	869308.7	1003048.5	1203658.2	1337397.9
INCREASE IN NET WORKING CAPITAL	0.0	0.0	869308.7	133739.8	200609.7	133739.8

Annex1: Continued						
	PRODUCTION					
Capacity Utilization (%)	100%	100%	100%	100%	100%	100%
1. Total Inventory	2255640.5	2255640.5	2255640.5	2255640.5	2255640.5	2255640.5
Raw Materials in Stock-Total	971018.2	971018.2	971018.2	971018.2	971018.2	971018.2
Raw Material-Local	27600.0	27600.0	27600.0	27600.0	27600.0	27600.0
Raw Material-Foreign	943418.2	943418.2	943418.2	943418.2	943418.2	943418.2
Factory Supplies in Stock	3913.0	3913.0	3913.0	3913.0	3913.0	3913.0
Spare Parts in Stock and Maintenance	16213.7	16213.7	16213.7	16213.7	16213.7	16213.7
Work in Progress	97825.8	97825.8	97825.8	97825.8	97825.8	97825.8
Finished Products	195651.5	195651.5	195651.5	195651.5	195651.5	195651.5
2. Accounts Receivable	816000.0	816000.0	816000.0	816000.0	816000.0	816000.0
3. Cash in Hand	52775.7	52775.7	52775.7	52775.7	52775.7	52775.7
CURRENT ASSETS	2153397.9	2153397.9	2153397.9	2153397.9	2153397.9	2153397.9
4. Current Liabilities	816000.0	816000.0	816000.0	816000.0	816000.0	816000.0
Accounts Payable	816000.0	816000.0	816000.0	816000.0	816000.0	816000.0
TOTAL NET WORKING CAPITAL REQUIREMENTS	1337397.9	1337397.9	1337397.9	1337397.9	1337397.9	1337397.9
INCREASE IN NET WORKING CAPITAL	0	0	0	0	0	0

Annex 2: Cash Flow Statement (in Birr)						
	CONSTRUCTION		PRODUCTION			
TOTAL CASH INFLOW	2600955	3938352.95	5392400	5691600	6854400	7561600
1. Inflow Funds	2600955	3938352.95	530400	81600	122400	81600
Total Equity	1040382	1575341.18	0	0	0	0
Total Long Term Loan	1560573	2363011.77	0	0	0	0
Total Short Term Finances	0	0	530400	81600	122400	81600
2. Inflow Operation	0	0	4862000	5610000	6732000	7480000
Sales Revenue	0	0	4862000	5610000	6732000	7480000
Interest on Securities	0	0	0	0	0	0
3. Other Income	0	0	0	0	0	0
TOTAL CASH OUTFLOW	2600955	2600955	4388947.51	3592622.6	4994231.98	5261457.15
4. Increase In Fixed Assets	2600955	2600955	0	0	0	0
Fixed Investments	2477100	2477100	0	0	0	0
Pre-production Expenditures	123855	123855	0	0	0	0
5. Increase in Current Assets	0	0	1399708.67	215339.795	323009.692	215339.795
6. Operating Costs	0	0	1959057.19	2252521.84	2692718.81	2986183.45
7. Corporate Tax Paid	0	0	0	0	932214.215	1092116.33
8. Interest Paid	0	0	1030181.65	470830.172	392358.477	313886.782
9.Loan Repayments	0	0	0	653930.795	653930.795	653930.795
10.Dividends Paid	0	0	0	0	0	0
Surplus(Deficit)	0	1337397.95	1003452.49	2098977.4	1860168.02	2300142.85
Cumulative Cash Balance	0	1337397.95	2340850.44	4439827.84	6299995.85	8600138.7

ANNEX 2: Continued						
	PRODUCTION					
TOTAL CASH INFLOW	7480000	7480000	7480000	7480000	7480000	7480000
1. Inflow Funds	0	0	0	0	0	0
Total Equity	0	0	0	0	0	0
Total Long Term Loan	0	0	0	0	0	0
Total Short Term Finances	0	0	0	0	0	0
2. Inflow Operation	7480000	7480000	7480000	7480000	7480000	7480000
Sales Revenue	7480000	7480000	7480000	7480000	7480000	7480000
Interest on Securities	0	0	0	0	0	0
3. Other Income	0	0	0	0	0	0
TOTAL CASH OUTFLOW	4991187.17	4990119.58	4935189.4	4226328.42	4226328.42	4226328.42
4. Increase In Fixed Assets	0	0	0	0	0	0
Fixed Investments	0	0	0	0	0	0
Pre-production Expenditures	0	0	0	0	0	0
5. Increase in Current Assets	0	0	0	0	0	0
6. Operating Costs	2986183.45	2986183.45	2986183.45	2986183.45	2986183.45	2986183.45
7. Corporate Tax Paid	1115657.84	1193061.95	1216603.46	1240144.97	1240144.97	1240144.97
8. Interest Paid	235415.086	156943.391	78471.6954	0	0	0
9. Loan Repayments	653930.795	653930.795	653930.795	0	0	0
10.Dividends Paid	0	0	0	0	0	0
Surplus(Deficit)	2488812.83	2489880.42	2544810.6	3253671.59	3253671.59	3253671.59
Cumulative Cash Balance	11088951.5	13578831.9	16123642.6	19377314.1	22630985.7	25884657.3

ANNEX 3: DISCOUNTED CASH FLOW-TOTAL CAPITAL INVESTED						
	CONSTRUCTION		PRODUCTION			
TOTAL CASH INFLOW	0.0	0.0	4862000.0	5610000.0	6732000.0	7480000.0
1. Inflow Operation	0.0	0.0	4862000.0	5610000.0	6732000.0	7480000.0
Sales Revenue	0.0	0.0	4862000.0	5610000.0	6732000.0	7480000.0
Interest on Securities	0.0	0.0	0.0	0.0	0.0	0.0
2. Other Income	0.0	0.0	0.0	0.0	0.0	0.0
TOTAL CASH OUTFLOW	2600955.0	2600955.0	2828365.9	2386261.6	3825542.7	4212039.6
3. Increase in Fixed Assets	2600955.0	2600955.0	0.0	0.0	0.0	0.0
Fixed Investments	2477100.0	2477100.0	0.0	0.0	0.0	0.0
Pre-production Expenditures	123855.0	123855.0	0.0	0.0	0.0	0.0
4. Increase in Net Working Capital	0.0	0.0	869308.7	133739.8	200609.7	133739.8
5. Operating Costs	0.0	0.0	1959057.2	2252521.8	2692718.8	2986183.5
6. Corporate Tax Paid	0.0	0.0	0.0	0.0	932214.2	1092116.3
NET CASH FLOW	-2600955.0	-2600955.0	2033634.1	3223738.4	2906457.3	3267960.4
CUMULATIVE NET CASH FLOW	-2600955.0	-5201910.0	-3168275.9	55462.5	2961919.8	6229880.2
Net Present Value (at 18%)	-2600955.0	-2204199.2	1460524.4	1962066.7	1499118.3	1428455.6
Cumulative Net present Value	-2600955.0	-4805154.2	-3344629.8	-1382563.1	116555.3	1545010.9

ANNEX 3: Continued						
	CONSTRUCTION		PRODUCTION			
TOTAL CASH INFLOW	0.0	0.0	4862000.0	5610000.0	6732000.0	7480000.0
1. Inflow Operation	0.0	0.0	4862000.0	5610000.0	6732000.0	7480000.0
Sales Revenue	0.0	0.0	4862000.0	5610000.0	6732000.0	7480000.0
Interest on Securities	0.0	0.0	0.0	0.0	0.0	0.0
2. Other Income	0.0	0.0	0.0	0.0	0.0	0.0
TOTAL CASH OUTFLOW	2600955.0	2600955.0	2828365.9	2386261.6	3825542.7	4212039.6
3. Increase in Fixed Assets	2600955.0	2600955.0	0.0	0.0	0.0	0.0
Fixed Investments	2477100.0	2477100.0	0.0	0.0	0.0	0.0
Pre-production Expenditures	123855.0	123855.0	0.0	0.0	0.0	0.0
4. Increase in Net Working Capital	0.0	0.0	869308.7	133739.8	200609.7	133739.8
5. Operating Costs	0.0	0.0	1959057.2	2252521.8	2692718.8	2986183.5
6. Corporate Tax Paid	0.0	0.0	0.0	0.0	932214.2	1092116.3
NET CASH FLOW	-2600955.0	-2600955.0	2033634.1	3223738.4	2906457.3	3267960.4
CUMULATIVE NET CASH FLOW	-2600955.0	-5201910.0	-3168275.9	55462.5	2961919.8	6229880.2
Net Present Value (at 18%)	-2600955.0	-2204199.2	1460524.4	1962066.7	1499118.3	1428455.6
Cumulative Net present Value	-2600955.0	-4805154.2	-3344629.8	-1382563.1	116555.3	1545010.9

ANNEX 4: NET INCOME STATEMENT (in Birr)					
	PRODUCTION				
	1	2	3	4	5
Capacity Utilization (%)	65%	75%	90%	100%	100%
1. Total Income	4862000.0	5610000.0	6732000.0	7480000.0	7480000.0
Sales Revenue	4862000.0	5610000.0	6732000.0	7480000.0	7480000.0
Other Income	0.0	0.0	0.0	0.0	0.0
2. Less Variable Cost	1804373.0	2081968.8	2498362.6	2775958.5	2775958.5
VARIABLE MARGIN	3057627.0	3528031.2	4233637.4	4704041.6	4704041.6
(In % of Total Income)	62.9	62.9	62.9	62.9	62.9
3. Less Fixed Costs	694226.2	710095.0	733898.2	749767.0	749767.0
OPERATIONAL MARGIN	2363400.8	2817936.2	3499739.2	3954274.6	3954274.6
(In % of Total Income)	48.6	50.2	52.0	52.9	52.9
4. Less Cost of Finance	1030181.7	470830.2	392358.5	313886.8	235415.1
5. GROSS PROFIT	1333219.2	2347106.0	3107380.7	3640387.8	3718859.5
6. Income (Corporate) Tax	0.0	0.0	932214.2	1092116.3	1115657.8
7. NET PROFIT	1333219.2	2347106.0	2175166.5	2548271.4	2603201.6
RATIOS (%)					
Gross Profit/Sales	27.42%	41.84%	46.16%	48.67%	49.72%
Net Profit After Tax/Sales	27.42%	41.84%	32.31%	34.07%	34.80%
Return on Investment	38.93%	45.41%	40.08%	43.77%	43.41%
Return on Equity	50.97%	89.73%	83.16%	97.42%	99.52%

ANNEX 4: Continued					
	PRODUCTION				
	6	7	8	9	10
Capacity Utilization (%)	100%	100%	100%	100%	100%
1. Total Income	7480000.0	7480000.0	7480000.0	7480000.0	7480000.0
Sales Revenue	7480000.0	7480000.0	7480000.0	7480000.0	7480000.0
Other Income	0.0	0.0	0.0	0.0	0.0
2. Less Variable Cost	2775958.5	2775958.5	2775958.5	2775958.5	2775958.5
VARIABLE MARGIN	4704041.6	4704041.6	4704041.6	4704041.6	4704041.6
(In % of Total Income)	62.9	62.9	62.9	62.9	62.9
3. Less Fixed Costs	570225.0	570225.0	570225.0	570225.0	570225.0
OPERATIONAL MARGIN	4133816.6	4133816.6	4133816.6	4133816.6	4133816.6
(In % of Total Income)	55.3	55.3	55.3	55.3	55.3
4. Less Cost of Finance	156943.4	78471.7	0.0	0.0	0.0
5. GROSS PROFIT	3976873.2	4055344.9	4133816.6	4133816.6	4133816.6
6. Income (Corporate) Tax	1193061.9	1216603.5	1240145.0	1240145.0	1240145.0
7. NET PROFIT	2783811.2	2838741.4	2893671.6	2893671.6	2893671.6
RATIOS (%)					
Gross Profit/Sales	53.17%	54.22%	55.26%	55.26%	55.26%
Net Profit After Tax/Sales	37.22%	37.95%	38.69%	38.69%	38.69%
Return on Investment	44.97%	44.61%	44.25%	44.25%	44.25%
Return on Equity	106.43%	108.53%	110.63%	110.63%	110.63%

ANNEX 5: Projected Balance Sheet (in Birr)

	CONSTRUCTION		PRODUCTION			
TOTAL ASSETS	2600955.0	6539307.9	8402927.1	10177702.3	11821338.0	13797278.7
1. Total Current Assets	0.0	1337397.9	3740559.1	6054876.3	8238054.0	10753536.7
Inventory on Materials and Supplies	0.0	0.0	644244.2	743358.7	892030.5	991145.0
Work in Progress	0.0	0.0	63586.8	73369.3	88043.2	97825.8
Finished Products in Stock	0.0	0.0	127173.5	146738.7	176086.4	195651.5
Accounts Receivable	0.0	0.0	530400.0	612000.0	734400.0	816000.0
Cash in Hand	0.0	0.0	34304.2	39581.8	47498.1	52775.7
Cash Surplus, Finance Available	0.0	1337397.9	2340850.4	4439827.8	6299995.9	8600138.7
Securities	0.0	0.0	0.0	0.0	0.0	0.0
2. Total Fixed Assets, Net of Depreciation	2600955.0	5201910.0	4662368.0	4122826.0	3583284.0	3043742.0
Fixed Investment	0.0	2477100.0	4954200.0	4954200.0	4954200.0	4954200.0
Construction in Progress	2477100.0	2477100.0	0.0	0.0	0.0	0.0
Pre-Production Expenditure	123855.0	247710.0	247710.0	247710.0	247710.0	247710.0
Less Accumulated Depreciation	0.0	0.0	539542.0	1079084.0	1618626.0	2158168.0
3. Accumulated Losses Brought Forward	0.0	0.0	0.0	0.0	0.0	0.0
4. Loss in Current Year	0.0	0.0	0.0	0.0	0.0	0.0
TOTAL LIABILITIES	2600955.0	6539307.9	8402927.1	10177702.3	11821338.0	13797278.7

5. Total Current Liabilities	0.0	0.0	530400.0	6120000.0	7344000.0	816000.0
Accounts Payable	0.0	0.0	530400.0	6120000.0	7344000.0	816000.0
Bank Overdraft	0.0	0.0	0.0	0.0	0.0	0.0
6. Total Long-term Debt	15605730.0	3923584.8	3923584.8	3269654.0	2615723.2	1961792.4
Loan A	15605730.0	3923584.8	3923584.8	3269654.0	2615723.2	1961792.4
Loan B	0.0	0.0	0.0	0.0	0.0	0.0
7. Total Equity Capital	10403820.0	2615723.2	2615723.2	2615723.2	2615723.2	2615723.2
Ordinary Capital	10403820.0	2615723.2	2615723.2	2615723.2	2615723.2	2615723.2
Preference Capital	0.0	0.0	0.0	0.0	0.0	0.0
Subsidies	0.0	0.0	0.0	0.0	0.0	0.0
8. Reserves, Retained Profits Brought Forward	0.0	0.0	0.0	1333219.2	3680325.1	5855491.6
9.Net Profit After Tax	0.0	0.0	1333219.2	2347106.0	2175166.5	2548271.4
Dividends Payable	0.0	0.0	0.0	0.0	0.0	0.0
Retained Profits	0.0	0.0	1333219.2	2347106.0	2175166.5	2548271.4

ANNEX 5: Continued

	PRODUCTION					
TOTAL ASSETS	15746549.5	17876429.9	20061240.5	22954912.1	25848583.7	28742255.3
1. Total Current Assets	13242349.5	15732229.9	18277040.5	21530712.1	24784383.7	28038055.3
Inventory on Materials and Supplies	991145.0	991145.0	991145.0	991145.0	991145.0	991145.0
Work in Progress	97825.8	97825.8	97825.8	97825.8	97825.8	97825.8
Finished Products in Stock	195651.5	195651.5	195651.5	195651.5	195651.5	195651.5
Accounts Receivable	816000.0	816000.0	816000.0	816000.0	816000.0	816000.0
Cash in Hand	52775.7	52775.7	52775.7	52775.7	52775.7	52775.7
Cash Surplus, Finance Available	11088951.5	13578831.9	16123642.6	19377314.1	22630985.7	25884657.3
Securities	0.0	0.0	0.0	0.0	0.0	0.0
2. Total Fixed Assets, Net of Depreciation	2504200.0	2144200.0	1784200.0	1424200.0	1064200.0	704200.0
Fixed Investment	4954200.0	4954200.0	4954200.0	4954200.0	4954200.0	4954200.0
Construction in Progress	0.0	0.0	0.0	0.0	0.0	0.0
Pre-Production Expenditure	247710.0	247710.0	247710.0	247710.0	247710.0	247710.0
Less Accumulated Depreciation	2697710.0	3057710.0	3417710.0	3777710.0	4137710.0	4497710.0
3. Accumulated Losses Brought Forward	0.0	0.0	0.0	0.0	0.0	0.0
4. Loss in Current Year	0.0	0.0	0.0	0.0	0.0	0.0
TOTAL LIABILITIES	15746549.5	17876429.9	20061240.5	22954912.1	25848583.7	28742255.3
5. Total Current Liabilities	816000.0	816000.0	816000.0	816000.0	816000.0	816000.0
Accounts Payable	816000	816000	816000.0	816000.0	816000.0	816000.0

	.0	.0				
Bank Overdraft	0.0	0.0	0.0	0.0	0.0	0.0
6. Total Long-term Debt	1307861.6	653930.8	0.0	0.0	0.0	0.0
Loan A	1307861.6	653930.8	0.0	0.0	0.0	0.0
Loan B	0.0	0.0	0.0	0.0	0.0	0.0
7. Total Equity Capital	2615723.2	2615723.2	2615723.2	2615723.2	2615723.2	2615723.2
Ordinary Capital	2615723.2	2615723.2	2615723.2	2615723.2	2615723.2	2615723.2
Preference Capital	0.0	0.0	0.0	0.0	0.0	0.0
Subsidies	0.0	0.0	0.0	0.0	0.0	0.0
8. Reserves, Retained Profits Brought Forward	8403763.1	1100696 4.7	13790775.9	16629517.3	19523188.9	22416860.5
9. Net Profit After Tax	2603201.6	2783811.2	2838741.4	2893671.6	2893671.6	2893671.6
Dividends Payable	0.0	0.0	0.0	0.0	0.0	0.0
Retained Profits	2603201.6	2783811.2	2838741.4	2893671.6	2893671.6	2893671.6