

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 7000¹ 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 m³ 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 m ³	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

Supplier 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 m² 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 m² land of a lease value of 1 birr per m² ; 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
<i>Factory costs</i>	<i>3,047,403.00</i>
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, with 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)

Annex 1: Total Net Working Capital Requirements (in Birr)						
		CONSTRUCTION		PRODUCTION		
Year 1 Utilization (%)	Year 2 Utilization (%)	1 Year 1	2 Year 1	3 Year 1	4 Year 1	Capacity Utilization (%)
1. Total Inventory	0.0	0.0	14661 66.3	16917 30.3	20300 76.4	2255640.5
Raw Materials in Stock- Total	0.0	0.0	63116 1.8	72826 3.6	87391 6.4	971018.2
Raw Material-Local	0.0	0.0	17940 .0	20700 .0	24840 .0	27600.0
Raw Material-Foreign	0.0	0.0	61322 1.8	70756 3.6	84907 6.4	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	12717 3.5	14673 8.7	17608 6.4	195651.5
2. Accounts Receivable	0.0	0.0	53040 0.0	61200 0.0	73440 0.0	816000.0
3. Cash in Hand	0.0	0.0	34304 .2	39581 .8	47498 .1	52775.7
CURRENT ASSETS	0.0	0.0	13997 08.7	16150 48.5	19380 58.2	2153397.9
4. Current Liabilities	0.0	0.0	53040 0.0	61200 0.0	73440 0.0	816000.0
Accounts Payable	0.0	0.0	53040 0.0	61200 0.0	73440 0.0	816000.0
TOTAL NET WORKING CAPITAL REQUIREMENTS	0.0	0.0	86930 8.7	10030 48.5	12036 58.2	1337397.9
INCREASE IN NET WORKING CAPITAL	0.0	0.0	86930 8.7	13373 9.8	20060 9.7	133739.8

Annex1: Continued

Annex1: Continued						
		PRODUCTION				
5	6	7	8	9	10	Capacity Utilization (%)
Capacity Utilization (%)						
	5					Capacity Utilization (%)
						Capacity Utilization (%)
1. Total Inventory	2255 640.5	2255 640.5	2255 640.5	2255 640.5	2255 640.5	2255640.5
Raw Materials in Stock-Total	9710 18.2	9710 18.2	9710 18.2	9710 18.2	9710 18.2	971018.2
Raw Material-Local	2760 0.0	2760 0.0	2760 0.0	2760 0.0	2760 0.0	27600.0
Raw Material-Foreign	9434 18.2	9434 18.2	9434 18.2	9434 18.2	9434 18.2	943418.2
Factory Supplies in Stock	3913. 0	3913. 0	3913. 0	3913. 0	3913. 0	3913.0
Spare Parts in Stock and Maintenance	1621 3.7	1621 3.7	1621 3.7	1621 3.7	1621 3.7	16213.7
Work in Progress	9782 5.8	9782 5.8	9782 5.8	9782 5.8	9782 5.8	97825.8
Finished Products	1956 51.5	1956 51.5	1956 51.5	1956 51.5	1956 51.5	195651.5
2. Accounts Receivable	8160 00.0	8160 00.0	8160 00.0	8160 00.0	8160 00.0	816000.0
3. Cash in Hand	5277 5.7	5277 5.7	5277 5.7	5277 5.7	5277 5.7	52775.7
CURRENT ASSETS	2153 397.9	2153 397.9	2153 397.9	2153 397.9	2153 397.9	2153397.9
4. Current Liabilities	8160 00.0	8160 00.0	8160 00.0	8160 00.0	8160 00.0	816000.0
Accounts Payable	8160 00.0	8160 00.0	8160 00.0	8160 00.0	8160 00.0	816000.0
TOTAL NET WORKING CAPITAL REQUIREMENTS	1337 397.9	1337 397.9	1337 397.9	1337 397.9	1337 397.9	1337397.9
INCREASE IN NET WORKING CAPITAL	0	0	0	0	0	0

Annex 2: Cash Flow Statement (in Birr)

Annex 2: Cash Flow Statement (in Birr)							
		CONSTRUCTION		PRODUCTION			
Year 1	Year 2	1	2	3	4	TOTAL CASH INFLOW	
							TOTAL CASH INFLOW
							TOTAL CASH INFLOW
		260					
		095	39383	53040		12240	
		5	52.95	0	81600	0	81600
1. Inflow Funds							
		104					
		038	15753	0	0	0	0
		2	41.18				
Total Equity							
		156					
		057	23630	0	0	0	0
		3	11.77				
Total Long Term Loan							
		0	0	53040	56100	67320	
Total Short Term Finances				0	81600	0	81600
2. Inflow Operation				48620	56100	67320	
		0	0	00	00	00	7480000
Sales Revenue				48620	56100	67320	
		0	0	00	00	00	7480000
Interest on Securities				0	0	0	0
3. Other Income				0	0	0	0
		260					
		095	26009	43889	35926	49942	
		5	55	47.51	22.6	31.98	5261457.15
TOTAL CASH OUTFLOW							
		260					
		095	26009	0	0	0	0
		5	55				
4. Increase In Fixed Assets							
		247					
		710	24771	0	0	0	0
		0	00				
Fixed Investments							
		123	12385	0	0	0	
		855	5	0	0	0	0
Pre-production Expenditures							
		0	0	13997	21533	32300	
				08.67	9.795	9.692	215339.795
5. Increase in Current Assets							

6. Operating Costs	0	0	19590 57.19	22525 21.84	26927 18.81	2986183.45
7. Corporate Tax Paid	0	0	0	0	93221 4.215	1092116.33
8. Interest Paid	0	0	10301 81.65	47083 0.172	39235 8.477	313886.782
9. Loan Repayments	0	0	0	65393 0.795	65393 0.795	653930.795
10. Dividends Paid	0	0	0	0	0	0
Surplus(Deficit)	0	13373 97.95	10034 52.49	20989 77.4	18601 68.02	2300142.85
Cumulative Cash Balance	0	13373 97.95	23408 50.44	44398 27.84	62999 95.85	8600138.7

ANNEX 2: Continued

ANNEX 2: Continued						
						PRODUCTION
5	6	7	8	9	10	TOTAL CASH INFLOW
						TOTAL CASH INFLOW
						TOTAL CASH INFLOW
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	7480	7480	7480	7480	7480	7480000
Sales Revenue	7480	7480	7480	7480	7480	7480000
Interest on Securities	0	0	0	0	0	0
3. Other Income	0	0	0	0	0	0
TOTAL CASH OUTFLOW	4991 187.1 7	4990 119.5 8	4935 189.4	4226 328.4 2	4226 328.4 2	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	2986 183.4 5	2986 183.4 5	2986 183.4 5	2986 183.4 5	2986 183.4 5	2986183.45
7. Corporate Tax Paid	1115 657.8 4	1193 061.9 5	1216 603.4 6	1240 144.9 7	1240 144.9 7	1240144.97
8. Interest Paid	2354 15.08 6	1569 43.39 1	7847 1.695 4	0	0	0

9. Loan Repayments	6539 30.79 5	6539 30.79 5	6539 30.79 5	0	0	0
10.Dividends Paid	0	0	0	0	0	0
Surplus(Deficit)	2488 812.8 3	2489 880.4 2	2544 810.6	3253 671.5 9	3253 671.5 9	3253671.59
Cumulative Cash Balance	1108 8951. 5	1357 8831. 9	1612 3642. 6	1937 7314. 1	2263 0985. 7	25884657.3

	55.0	99.2				
	-	-	-	-		
	26009	48051	33446	13825	1165	
Cumulative Net present Value	55.0	54.2	29.8	63.1	55.3	1545010.9

ANNEX 3: Continued						
		CONSTRUCTION		PRODUCTION		
Year 1	Year 2	1	2	3	4	TOTAL CASH INFLOW
Year 1				TOTAL CASH INFLOW		
1. Inflow Operation	0.0	0.0	48620 00.0	56100 00.0	6732 000.0	7480000.0
Sales Revenue	0.0	0.0	48620 00.0	56100 00.0	6732 000.0	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	26009 55.0	26009 55.0	28283 65.9	23862 61.6	3825 542.7	4212039.6
3. Increase in Fixed Assets	26009 55.0	26009 55.0	0.0	0.0	0.0	0.0
Fixed Investments	24771 00.0	24771 00.0	0.0	0.0	0.0	0.0
Pre-production Expenditures	12385 5.0	12385 5.0	0.0	0.0	0.0	0.0
4. Increase in Net Working Capital	0.0	0.0	86930 8.7	13373 9.8	2006 09.7	133739.8
5. Operating Costs	0.0	0.0	19590 57.2	22525 21.8	2692 718.8	2986183.5
6. Corporate Tax Paid	0.0	0.0	0.0	0.0	9322 14.2	1092116.3
NET CASH FLOW	- 26009 55.0	- 26009 55.0	- 20336 34.1	- 32237 38.4	- 2906 457.3	- 3267960.4
CUMULATIVE NET CASH FLOW	- 26009 55.0	- 52019 10.0	- 31682 75.9	- 55462 .5	- 2961 919.8	- 6229880.2
Net Present Value (at 18%)	- 26009	- 22041	14605 24.4	19620 66.7	1499 118.3	1428455.6

	55.0	99.2				
	-	-	-	-		
	26009	48051	33446	13825	1165	
Cumulative Net present Value	55.0	54.2	29.8	63.1	55.3	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		
Year 1	Year 2	1	2	3	4	TOTAL
ASSETS						
Year 1						
TOTAL ASSETS						
TOTAL ASSETS						
1. Total Current Assets	0.0	1337 397. 9	3740 559. 1	6054 876.3	8238 054.0	10753536.7
Inventory on Materials and Supplies	0.0	0.0	6442 44.2	7433 58.7	8920 30.5	991145.0
Work in Progress	0.0	0.0	6358 6.8	7336 9.3	8804 3.2	97825.8
Finished Products in Stock	0.0	0.0	1271 73.5	1467 38.7	1760 86.4	195651.5
Accounts Receivable	0.0	0.0	5304 00.0	6120 00.0	7344 00.0	816000.0
Cash in Hand	0.0	0.0	3430 4.2	3958 1.8	4749 8.1	52775.7
Cash Surplus, Finance Available	0.0	1337 397. 9	2340 850. 4	4439 827.8	6299 995.9	8600138.7
Securities	0.0	0.0	0.0	0.0	0.0	0.0
2. Total Fixed Assets, Net of Depreciation	2600 955. 0	5201 910. 0	4662 368. 0	4122 826.0	3583 284.0	3043742.0
Fixed Investment	0.0	2477 100. 0	4954 200. 0	4954 200.0	4954 200.0	4954200.0
Construction in Progress	2477 100. 0	2477 100. 0	0.0	0.0	0.0	0.0
Pre-Production Expenditure	1238 55.0	2477 10.0	2477 10.0	2477 10.0	2477 10.0	247710.0
Less Accumulated Depreciation	0.0	0.0	5395 42.0	1079 084.0	1618 626.0	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	2600 955. 0	6539 307. 9	8402 927. 1	1017 7702. 3	1182 1338. 0	13797278.7
5. Total Current Liabilities	0.0	0.0	5304 00.0	6120 00.0	7344 00.0	816000.0
Accounts Payable	0.0	0.0	5304 00.0	6120 00.0	7344 00.0	816000.0
Bank Overdraft	0.0	0.0	0.0	0.0	0.0	0.0
6. Total Long-term Debt	1560 573. 0	3923 584. 8	3923 584. 8	3269 654.0	2615 723.2	1961792.4
Loan A	1560 573. 0	3923 584. 8	3923 584. 8	3269 654.0	2615 723.2	1961792.4
Loan B	0.0	0.0	0.0	0.0	0.0	0.0
7. Total Equity Capital	1040 382. 0	2615 723. 2	2615 723. 2	2615 723.2	2615 723.2	2615723.2
Ordinary Capital	1040 382. 0	2615 723. 2	2615 723. 2	2615 723.2	2615 723.2	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	1333 219.2	3680 325.1	5855491.6
9. Net Profit After Tax	0.0	0.0	1333 219. 2	2347 106.0	2175 166.5	2548271.4
Dividends Payable	0.0	0.0	0.0	0.0	0.0	0.0
Retained Profits	0.0	0.0	1333 219. 2	2347 106.0	2175 166.5	2548271.4

ANNEX 5: Continued

							PRODUCTION
5	6	7	8	9	10	TOTAL	
ASSETS							TOTAL ASSETS
5							TOTAL ASSETS
1. Total Current Assets	1324 2349. 5	1573 2229. 9	1827 7040. 5	2153 0712. 1	2478 4383. 7		28038055.3
Inventory on Materials and Supplies	9911 45.0	9911 45.0	9911 45.0	9911 45.0	9911 45.0		991145.0
Work in Progress	9782 5.8	9782 5.8	9782 5.8	9782 5.8	9782 5.8		97825.8
Finished Products in Stock	1956 51.5	1956 51.5	1956 51.5	1956 51.5	1956 51.5		195651.5
Accounts Receivable	8160 00.0	8160 00.0	8160 00.0	8160 00.0	8160 00.0		816000.0
Cash in Hand	5277 5.7	5277 5.7	5277 5.7	5277 5.7	5277 5.7		52775.7
Cash Surplus, Finance Available Securities	1108 8951. 5	1357 8831. 9	1612 3642. 6	1937 7314. 1	2263 0985. 7		25884657.3
2. Total Fixed Assets, Net of Depreciation	2504 200.0	2144 200.0	1784 200.0	1424 200.0	1064 200.0		704200.0
Fixed Investment	4954 200.0	4954 200.0	4954 200.0	4954 200.0	4954 200.0		4954200.0
Construction in Progress	0.0	0.0	0.0	0.0	0.0		0.0
Pre-Production Expenditure	2477 10.0	2477 10.0	2477 10.0	2477 10.0	2477 10.0		247710.0
Less Accumulated Depreciation	2697 710.0	3057 710.0	3417 710.0	3777 710.0	4137 710.0		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	1574 6549. 5	1787 6429. 9	2006 1240. 5	2295 4912. 1	2584 8583. 7		28742255.3
5. Total Current Liabilities	8160	8160	8160	8160	8160		816000.0

	00.0	00.0	00.0	00.0	00.0	
Accounts Payable	8160	8160	8160	8160	8160	
Bank Overdraft	00.0	00.0	00.0	00.0	00.0	816000.0
	0.0	0.0	0.0	0.0	0.0	0.0
6. Total Long-term Debt	1307	6539				
	861.6	30.8	0.0	0.0	0.0	0.0
	1307	6539				
Loan A	861.6	30.8	0.0	0.0	0.0	0.0
Loan B	0.0	0.0	0.0	0.0	0.0	0.0
	2615	2615	2615	2615	2615	
7. Total Equity Capital	723.2	723.2	723.2	723.2	723.2	2615723.2
	2615	2615	2615	2615	2615	
Ordinary Capital	723.2	723.2	723.2	723.2	723.2	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
	8403	1100	1379	1662	1952	
8. Reserves, Retained Profits Brought Forward	763.1	6964.7	0775.9	9517.3	3188.9	22416860.5
	2603	2783	2838	2893	2893	
9. Net Profit After Tax	201.6	811.2	741.4	671.6	671.6	2893671.6
Dividends Payable	0.0	0.0	0.0	0.0	0.0	0.0
	2603	2783	2838	2893	2893	
Retained Profits	201.6	811.2	741.4	671.6	671.6	2893671.6