Investment Office ANRS

PROJECT PROFILE ON THE ESTABLISHMENT OF GRINDING STONES PRODUCTION

Development Studies Associates (DSA)

October 2008
Addis Ababa

Table of Contents

1. Executive Summary

This profile envisages the establishment of a plant in Amhara Region for the production of 1500 pairs of girding stones per year.

The present demand for grinding stone is estimated at 3000 pairs of grinding stones per annum. The demanded is expected to grow to 3300 and 7781 pairs of grindings stones by 2001 and 2010 years, respectively.

The total investment requirement is estimated at 2,762,107 out of which 1,5s00,000 or 54.3% is for machinery and equipment.

The plant will create employment opportunity for 24 persons.

The project is financially viable with an internal rate of return (IRR) 29.5% and a net present value (NPV) of Birr 2.1 million discounted at 18%.

2. Product Description and Application

Grinding stone is an implement for small-scale grain milling industries. It is made of abrasive material which in general including a wide range of materials extensively used in almost every branch of industry for cutting, polishing, grinding, etc of various materials. The abrasive materials employed are required to be hard, tough and sharp.

Depending upon its application and purpose, the grinding stone can be made of fire clay, magnetite, silicate of soda and bonding material mixed with resin. The ratio of abrasive to bonding material determines the hardness and density of the grinding stone. Grinding stones are made in different sizes, shape and specifications.

Grinding stones are mainly used for grinding of cereals into starch and flour. They are also required for grinding vitreous bricks, glass, granite, lather, porcelain and slate etc.

Roasted and hulled barley grain for making local "besso", coarsely crushed up and cleaned peas and beans for preparing "sbiro", dried and spiced peppers for preparation of "mitmitta", etc are all ground flour in the village mills using grinding stones.

3. Market Study, Plant Capacity and Production Program

3.1 Market Study

3.1.1 Present Demand and Supply

One of the varieties of work in which grinding stones perform (tool and cutter sharpening, cylindrical grinding, roll grinding, general and surface grinding) is the grinding of cereals into starch and flour. Grinding stone is mainly consumed by grain mills, the largest small scale industry in the country.

Since very recently the country has been importing required grinding stones from abroad. But today the production of same is started in the country by a plant called "BEZA INDUSTRY" established in Addis Ababa. Grinding stones produced by BEZA are well accepted in the Addis Ababa market.

According to data obtained from the external trade statistics of the Customs Authority (1990-20000[1]), the country has been importing about 3,249,447 kg (about 3,249 tons) mills and grinding stones for milling, grinding or pulling purposes for the last ten years with CIF value of Birr 17,878,035. This indicates that the annual average import of such items at national level is about 325 tons with equivalent CIF value of Birr 1,787,804.

Since the import of mills and grinding stone vary from year to year the current national effective demand (2000) is estimated on the basis of the last ten years' average supply of the product (325 tons). From the total import of grinding stones a certain percentage is used by Amhara Region's grain mill owners as spare part for their grain mills.

[1] Years in this document are in Ethiopian Calendar.

Information obtained from opportunity studies of "Grain Mill", made by DSA consultant in 2000, there are abut 3000 grain mills serving about 19 million population of Amhara Region This indicates that currently one mill is serving more than 6,333 people. However, there is no plant that produces either the grinding stone as spare part or the grain mills in the region. Since almost all people living in the urban centers and most people of the rural areas of the region use grain mills to grind their cereals and spices, the production of grinding stones and constructing small-scale grinding mills is very important to the wellbeing of women in particular and to the development of the region in general.

A knowledgeable person in grain mill business indicated that a grain mill requires about a pair of grinding stones every year on the average. Therefore the existing 3000 grain mills need 3000 pairs of stones. This indicates the current effective demand of grinding stones of the region.

3.1.2 Projected Demand

Traditionally rural village women use ordinary stone to grind their grain. This method is a hard way for flour making and is tedious and hazardous to the health of the women. Currently in the rural villages, the people use small-scale grinding mills to process their grain. A small-scale grinding mill serves a large number of households. Demand for grinding stones, in this case, is a derived demand from the need for grinding (flour) mills.

To indicate the demand for grinding stones of Amhara Region the following assumptions are developed:-

a) Demand for grinding mills and thus stones are related with the agriculture outputs, particularly cereals production and consumption as well as the growth in manufacturing sector.
b) The demand for grinding mills and thus stones will increase on the basis of the current average growth rates of agriculture (9.4%) and Industry (11%) sectors that is about 10%.
c) Demand projection is based on the current (2000) effective demand for grinding mills (3000) and thus 6000 pieces of stones.

As indicated in table 1 bellow, demand for grinding stones in Amhara region will increase from 6600 units (3300 pairs) in 2001 to 15562 units (7781 pairs) of stones in 2010.

Table 1

Demand Projections for Grinding Stones

Year	Grinding Mills	Grinding Stones
2001	3300	6600
2002	3630	7260
2003	3993	7986
2004	4392	8784
2005	4832	9664
2006	5315	10630
2007	5846	11692
2008	6430	12860
2009	7074	14148
2010	7781	15562

3.1.3 Pricing and Distribution

The current selling price of BEZA's product ranges from Birr 2200 to Birr 3000 for a pair of stones. (A pair of stones with 60 diameters weighs about 150 kg). To attract the market, the proposed plant is assumed to sell its product at Birr 2000 for a pair of stones. Grinding stones will be distributed though specialized distribution agents of hard wares having the relevant experience.

3.2 Plant Capacity

The production capacity of the plant is 225 tons (which is equivalent to about 1500 pairs) of grinding stone per annum, working a single shift (8 hours) a day for a total of 275 days. Production can be increased by working in two or three shifts at later stages if the product is warranted by the market.

3.3 Production Program

Considering the time required for skill development in operation and market penetration, the plant will operate at 75% and 85% of the installed capacity during the first and the second year respectively. Full capacity operation could be attained from third year onwards .

4. Raw Materials and Utilities

4.1 Availability and Source of Raw Materials

The main raw materials for grinding stone manufacturing are imported items obtained preferably from I*ndia or China*. The main items are:

- Silicon carbide
- Graphite
- Ferro Silicon
- Other materials like binders.

4.2 Annual Requirement and Cost of Raw Materials and Utilities

The annual cost of raw materials and utilities for the production of 1500 pairs of grinding are given in table 2.

Table 2
Materials Requirement

Material	Qty	Cost in Birr		
		F.C	L.C	Total
1. Silicon Carbide	48 ton	530,608	176,870	707,478
2. Graphite	36 ton	338,936	112,979	451,915
3. Ferro-Silicon	12 ton	132,652	44,217	176,869
Other misc. materials like binder etc		-	100,000	100,000
Sub Total		**1,002,196**	**434,066**	**1,436,262**
Utilities				
Power	25kw			33,000
Water	$1000m^3$			2,650
Sub total			**35,650**	**35,650**
Total		**1,002,196**	**469,716**	**1,471,912**

5. Location and Site

The location of grinding stones producing plant is better placed in towns situated around the center of the region to easily reach its customers. In this regard the proposed plant should be located in either Bahir Dar or Debre Tabour towns.

6. Technology and Engineering

6.1 Production Process

The production process of grinding stone comprises the following stages:

- Required ingredients, as per the desired application and purpose of the grinding stone are mixed with resin to prepare coated abrasive,
- Coated abrasives are mixed with resin and moulds are prepared and put under a hydraulic ram to exert pressure,

- Molded millstones are baked in oven at a required temperature and allowed to cool after baking,
- Millstone wheels are trued for outside diameter and finish,
- Wheels are finally tested for Speed.

The technical data and information are compiled from a document provided by the National Research Development Corporation of India.

6.2 Machinery and Equipment

The list of machinery and equipment required for manufacturing of grinding stones are given in Table 3. The total cost of machinery and equipment is Birr 1,500,000 out of which about 85% (Birr 1,275,000 is required in foreign currency.

Table 3

Machinery and Equipment

Description	Qty (pcs)
1. Crusher with fittings	1
2. Weighing scale	1
3. Ball mills with 7.5 HP motor	1
4. V-draught kneading mixer	1
5. Vibrating screen with dust accumulator	1
6. Hydraulic press	1
7. Misc. tools like heating kettle, mixing shovel sets	1
8. Testing equipment	1
9. Down draught kilns	1
10. Furnace/oven	1

6.3 Civil Engineering Cost

The total land required for the grinding stones manufacturing plant is 500m^2. The total built-up area is 300m^2. The estimated total cost of building at the rate of Birr 1,500m^2 amounts to Birr 450,000.

7. Human Resource and Training Requirement

7.1 Human Resource

The total human resource requirement for the plant is 24 persons. The estimated labor cost amounts to Birr 364,320. Table 4 depicts full details of the human resource requirement of the plant.

Table 4

Human Resource Requirement

Description	Qty.	Monthly Salary (Birr)	Annual Salary (Birr)
1. Manger/engineer	1	3,000	36,000
2. Accountant/clerk	1	1,500	18,000
3. Supervisor	1	2,000	24,000
4. Skilled workers(Operators & technicians)	10	15,000	180,000
5. Unskilled workers(Labourers)	10	3,500	42,000
6. Office boy	1	300	3,600
Total	**24**	**25,300**	**303,600**
Worker's benefit(20%)			60,720
Grand total			**364,320**

7.2 Training Requirement

Ten skilled production personnel need a five day on-the-job training on how to operate the machines. Estimated cost of training amounts to Birr 5,000.

8. Financial Analysis

8.1 Underlying Assumption

The financial analysis of grinding stone producing plant is based on the data provided in the preceding sections and the following assumptions.

A. Construction and Finance

Construction period	2 years
Source of finance	40% equity and 60% loan
Tax holidays	2 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

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

C. Working Capital (Minimum Days of Coverage)

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 2.8 million as shown in table 5 below. The Owner shall contribute 40% of the finance in the form of equity while the remaining 60% is to be financed by bank loan.

The foreign component of the project accounts to Birr 1.3 million or 49.2% of the total investment cost.

Table 5: Total initial investment

Items	**L.C**	**F.C**	**Total**
Land	1,500	-	1,500
Building and civil works	450,000	-	450,000
Office equipment	5,000	-	5,000
Vehicles	-	-	-
Plant machinery & equipment	225,000	1,275,000	1,500,000
Total fixed investment cost	*681,500*	*1,275,000*	*1,956,500*
Pre production capital expenditure*	97,825	-	97,825
Total initial investment	*779,325*	*1,275,000*	*2,054,325*
Working capital at full capacity	707,782		707.782
Total	***1,487,107***	***1,275,000***	***2,762,107***

**Pre-production capital expenditure includes - all expenses for pre-investment studies, consultancy fee during construction and expenses for company's establishment, project administration expenses, commission expenses, preproduction marketing and interest expenses during construction.*

8.3 Production Costs

The total production cost at full capacity operation is estimated at Birr 2.5 million (See Table 6). Raw materials and utilities account for 86.5%.

Table 6

Total Production Cost at full Capacity	
Items	**Cost**
1. Raw materials	**1,436,262.00**
2. Utilities	35,650.00
3. Wages and Salaries	364,320.00
4. Spares and Maintenance	**58,695.00**
Factory costs	***1,894,927.00***
5. Depreciation	**192,565.00**
6. Financial costs	**431,150.20**
Total Production Cost	***2,518,642.20***

8.4 Financial Evaluation

I. Profitability

According to the projected income statement, the project will generate profit beginning from first year of operation. Important ratios such as net profit to equity (Return on equity) and net profit and interest on total investment (return on total investment) are 19.29% and 24.92% 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 breakeven at 27.8% of capacity utilization.

III. Payback Period

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

IV. Simple Rate of Return

It is a ratio of net profit and interest to the total capital invested for a single year at full capacity operation. Thus the SRR of the project is calculated to be 24.7%.

V. Internal Rate of Return and Net Present Value

Based on the projected cash flow statement, the calculated IRR of the project is 29.5% and the net present value (NPV) is Birr 2.1 million.

VI. Sensitivity Analysis

The financial viability of the grinding stone processing plant will not be affected if prices of raw materials are increased by 10%.

9. Economic and Social Benefits and Justification

Based on the foregoing presentation and analysis, we can see that the proposed project possesses wide range of benefits that complement the financial feasibility obtained earlier. In general the envisaged project promotes the socio-economic goals and objectives stated in the strategic plan of the Amhara National Regional State. These benefits are listed as follows.

A. Profit Generation

The project is found to be financially viable and will earns on average a profit of Birr 0.6 million per year and Birr 5.9 million within the project life. Such result induces the project promoters to reinvest the profit which, therefore, increases the investment magnitude in the region.

B. Tax Revenue

In the project life under consideration, the region will collect about Birr 1.9 million from corporate tax payment alone (i.e. excluding income tax, sales tax and VAT). Such result creates additional fund for the regional government that will be used in expanding social and other basic services in the region.

C. Import Substitution and Foreign Exchange Saving

As there is only one local grinding stone production plant in the country, the commencement of this project relieves a portion of the import burden. That is, based on the projected figure we learn that in the project life an estimated amount of US Dollar 3.2 million will be saved as a result of the proposed project. This will create room for the saved hard currency to be allocated to other vital and strategic sectors

D. Employment and Income Generation

The proposed project is expected to create employment opportunity for 24 citizens of the region. Consequently the project creates income of Birr 364 thousand per year. This would be one of the commendable accomplishments of the project.

E. Pro Environment Project

The proposed production process is environment friendly.

F. Diversification and InterSectoral linkage.

The proposed project helps to diversify ANRS' and Ethiopian economy. It contributes to industrialization of the region as well as the county's economy.

ANNEXES

Annex 1: Total Net Working Capital Requirements (in Birr)						
	CONSTRUCTION		PRODUCTION			
	Year 1	Year 2	1	2	3	4
Capacity Utilization (%)	0	0	75%	85%	100%	100%
1. Total Inventory	0	0	861618.2	976500.6	1148824	1148824
Raw Materials in Stock- Total	0	0	363505.9	411973.4	484674.5	484674.5
Raw Material-Local	0	0	35514.49	40249.76	47352.65	47352.65
Raw Material-Foreign	0	0	327991.4	371723.6	437321.9	437321.9
Factory Supplies in Stock	0	0	1707.948	1935.674	2277.264	2277.264
Spare Parts in Stock and Maintenance	0	0	4802.318	5442.627	6403.091	6403.091
Work in Progress	0	0	42698.7	48391.86	56931.6	56931.6
Finished Products	0	0	85397.4	96783.72	113863.2	113863.2
2. Accounts Receivable	0	0	245454.5	278181.8	327272.7	327272.7
3. Cash in Hand	0	0	32724.82	37088.13	43633.09	43633.09
CURRENT ASSETS	0	0	776291.6	879797.2	1035056	1035056
4. Current Liabilities	0	0	245454.5	278181.8	327272.7	327272.7
Accounts Payable	0	0	245454.5	278181.8	327272.7	327272.7
TOTAL NET WORKING CAPITAL REQUIRMENTS	0	0	530837.1	601615.4	707782.8	707782.8
INCREASE IN NET WORKING CAPITAL	0	0	530837.1	70778.28	106167.4	0

Annex1: Total Net Working Capital Requirements (in Birr)						
	PRODUCTION					
	5	6	7	8	9	10
Capacity Utilization (%)	100%	100%	100%	100%	100%	100%
1. Total Inventory	1148824	1148824	1148824	1148824	1148824	1148824
Raw Materials in Stock-Total	484674.5	484674.5	484674.5	484674.5	484674.5	484674.5
Raw Material-Local	47352.65	47352.65	47352.65	47352.65	47352.65	47352.65
Raw Material-Foreign	437321.9	437321.9	437321.9	437321.9	437321.9	437321.9
Factory Supplies in Stock	2277.264	2277.264	2277.264	2277.264	2277.264	2277.264
Spare Parts in Stock and Maintenance	6403.091	6403.091	6403.091	6403.091	6403.091	6403.091
Work in Progress	56931.6	56931.6	56931.6	56931.6	56931.6	56931.6
Finished Products	113863.2	113863.2	113863.2	113863.2	113863.2	113863.2
2. Accounts Receivable	327272.7	327272.7	327272.7	327272.7	327272.7	327272.7
3. Cash in Hand	43633.09	43633.09	43633.09	43633.09	43633.09	43633.09
CURRENT ASSETS	1035056	1035056	1035056	1035056	1035056	1035056
4. Current Liabilities	327272.7	327272.7	327272.7	327272.7	327272.7	327272.7
Accounts Payable	327272.7	327272.7	327272.7	327272.7	327272.7	327272.7
TOTAL NET WORKING CAPITAL REQUIRMENTS	707782.8	707782.8	707782.8	707782.8	707782.8	707782.8
INCREASE IN NET WORKING CAPITAL	0	0	0	0	0	0

Annex 2: Cash Flow Statement (in Birr)						
	CONSTRUCTION		PRODUCTION			
	Year 1	Year 2	1	2	3	4
TOTAL CASH INFLOW	1027162.5	1734945.29	2495454.55	2582727.27	3049090.91	3000000
1. Inflow Funds	1027162.5	1734945.29	245454.545	32727.2727	49090.9091	0
Total Equity	410865	693978.117	0	0	0	0
Total Long Term Loan	616297.5	1040967.17	0	0	0	0
Total Short Term Finances	0	0	245454.545	32727.2727	49090.9091	0
2. Inflow Operation	0	0	2250000	2550000	3000000	3000000
Sales Revenue	0	0	2250000	2550000	3000000	3000000
Interest on Securities	0	0	0	0	0	0
3. Other Income	0	0	0	0	0	0
TOTAL CASH OUTFLOW	1027162.5	1027162.5	2620549.53	2177406.47	2474579.99	2525417.19
4. Increase In Fixed Assets	1027162.5	1027162.5	0	0	0	0
Fixed Investments	978250	978250	0	0	0	0
Pre-production Expenditures	48912.5	48912.5	0	0	0	0
5. Increase in Current Assets	0	0	776291.639	103505.552	155258.328	0
6. Operating Costs	0	0	1413107.69	1598818.38	1877384.42	1877384.42
7. Corporate Tax Paid	0	0	0	0	0	239240.822
8. Interest Paid	0	0	431150.205	198871.761	165726.467	132581.174
9.Loan Repayments	0	0	0	276210.779	276210.779	276210.779
10.Dividends Paid	0	0	0	0	0	0
Surplus(Deficit)	0	707782.791	-125094.99	405320.799	574510.915	474582.805
Cumulative Cash Balance	0	707782.791	582687.803	988008.602	1562519.52	2037102.32

Annex 2: Cash Flow Statement (in Birr): Continued						
	PRODUCTION					
	5	6	7	8	9	10
TOTAL CASH INFLOW	3000000	3000000	3000000	3000000	3000000	3000000
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	3000000	3000000	3000000	3000000	3000000	3000000
Sales Revenue	3000000	3000000	3000000	3000000	3000000	3000000
Interest on Securities	0	0	0	0	0	0
3. Other Income	0	0	0	0	0	0
TOTAL CASH OUTFLOW	2502215.49	2484883.28	2461681.58	2162269.09	2162269.09	2162269.09
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	1877384.42	1877384.42	1877384.42	1877384.42	1877384.42	1877384.42
7. Corporate Tax Paid	249184.41	264997.498	274941.086	284884.674	284884.674	284884.674
8. Interest Paid	99435.8805	66290.587	33145.2935	0	0	0
9. Loan Repayments	276210.779	276210.779	276210.779	0	0	0
10.Dividends Paid	0	0	0	0	0	0
Surplus(Deficit)	497784.511	515116.716	538318.421	837730.906	837730.906	837730.906
Cumulative Cash Balance	2534886.83	3050003.55	3588321.97	4426052.88	5263783.78	6101514.69

Annex 3: DISCOUNTED CASH FLOW-TOTAL CAPITAL INVESTED						
	CONSTRUCTION		PRODUCTION			
	Year 1	Year 2	1	2	3	4
TOTAL CASH INFLOW	0	0	2250000	2550000	3000000	3000000
1. Inflow Operation	0	0	2250000	2550000	3000000	3000000
Sales Revenue	0	0	2250000	2550000	3000000	3000000
Interest on Securities	0	0	0	0	0	0
2. Other Income	0	0	0	0	0	0
TOTAL CASH OUTFLOW	1027162.5	1027162.5	1943944.783	1669596.661	1983551.839	2116625.242
3. Increase in Fixed Assets	1027162.5	1027162.5	0	0	0	0
Fixed Investments	978250	978250	0	0	0	0
Pre-production Expenditures	48912.5	48912.5	0	0	0	0
4. Increase in Net Working Capital	0	0	530837.0935	70778.27913	106167.4187	0
5. Operating Costs	0	0	1413107.69	1598818.382	1877384.42	1877384.42
6. Corporate Tax Paid	0	0	0	0	0	239240.8218
NET CASH FLOW	-1027162.5	-1027162.5	306055.2165	880403.3389	1016448.161	883374.7582
CUMMULATIVE NET CASH FLOW	-1027162.5	-2054325	-1748269.78	-867866.445	148581.7167	1031956.475
Net Present Value (at 18%)	-1027162.5	-870476.695	219804.0912	535840.6524	524272.6538	386131.2482
Cumulative Net present Value	-1027162.5	-1897639.19	-1677835.1	-1141994.45	-617721.798	-231590.549

Annex 3: DISCOUNTED CASH FLOW-TOTAL CAPITAL INVESTED (Continued)						
	PRODUCTION					
	5	6	7	8	9	10
TOTAL CASH INFLOW	3000000	3000000	3000000	3000000	3000000	3000000
1. Inflow Operation	3000000	3000000	3000000	3000000	3000000	3000000
Sales Revenue	3000000	3000000	3000000	3000000	3000000	3000000
Interest on Securities	0	0	0	0	0	0
2. Other Income	0	0	0	0	0	0
TOTAL CASH OUTFLOW	2126568.83	2142381.918	2152325.506	2162269.094	2162269.094	2162269.094
3. 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
4. Increase in Net Working Capital	0	0	0	0	0	0
5. Operating Costs	1877384.42	1877384.42	1877384.42	1877384.42	1877384.42	1877384.42
6. Corporate Tax Paid	249184.4099	264997.4979	274941.086	284884.674	284884.674	284884.674
NET CASH FLOW	873431.1701	857618.0821	847674.494	837730.906	837730.906	837730.906
CUMMULATIVE NET CASH FLOW	1905387.645	2763005.727	3610680.221	4448411.127	5286142.033	6123872.939
Net Present Value (at 18%)	323546.4527	269227.7849	225513.7658	188871.5186	160060.609	135644.5839
Cumulative Net present Value	91955.90339	361183.6883	586697.4541	775568.9727	935629.5817	1071274.166
Net Present Value (at 18%)	**2098436.666**					
Internal Rate of Return	**29%**					

Annex 4: NET INCOME STATEMENT (in Birr)					
	PRODUCTION				
	1	2	3	4	5
Capacity Utilization (%)	75%	85%	100%	100%	100%
1. Total Income	2250000	2550000	3000000	3000000	3000000
Sales Revenue	2250000	2550000	3000000	3000000	3000000
Other Income	0	0	0	0	0
2. Less Variable Cost	1283534.19	1454672.082	1711378.92	1711378.92	1711378.92
VARIABLE MARGINE	966465.81	1095327.918	1288621.08	1288621.08	1288621.08
(In % of Total Income)	42.954036	42.954036	42.954036	42.954036	42.954036
3. Less Fixed Costs	322138.5	336711.3	358570.5	358570.5	358570.5
OPERATIONAL MARGINE	644327.31	758616.618	930050.58	930050.58	930050.58
(In % of Total Income)	28.63676933	29.74967129	31.001686	31.001686	31.001686
4. Less Cost of Finance	431150.2047	198871.761	165726.4675	132581.174	99435.88049
5. GROSS PROFIT	213177.1053	559744.857	764324.1125	797469.406	830614.6995
6. Income (Corporate) Tax	0	0	0	239240.8218	249184.4099
7. NET PROFIT	213177.1053	559744.857	764324.1125	558228.5842	581430.2897
RATIOS (%)					
Gross Profit/Sales	9.47%	21.95%	25.48%	26.58%	27.69%
Net Profit After Tax/Sales	9.47%	21.95%	25.48%	18.61%	19.38%
Return on Investment	24.92%	28.56%	33.67%	25.01%	24.65%
Return on Equity	19.29%	50.66%	69.18%	50.53%	52.63%

Annex 4: NET INCOME STATEMENT (in Birr):Continued					
	PRODUCTION				
	6	7	8	9	10
Capacity Utilization (%)	100%	100%	100%	100%	100%
1. Total Income	3000000	3000000	3000000	3000000	3000000
Sales Revenue	3000000	3000000	3000000	3000000	3000000
Other Income	0	0	0	0	0
2. Less Variable Cost	1711378.92	1711378.92	1711378.92	1711378.92	1711378.92
VARIABLE MARGINE	1288621.08	1288621.08	1288621.08	1288621.08	1288621.08
(In % of Total Income)	42.954036	42.954036	42.954036	42.954036	42.954036
3. Less Fixed Costs	339005.5	339005.5	339005.5	339005.5	339005.5
OPERATIONAL MARGINE	949615.58	949615.58	949615.58	949615.58	949615.58
(In % of Total Income)	31.65385267	31.65385267	31.65385267	31.65385267	31.65385267
4. Less Cost of Finance	66290.58699	33145.2935	0	0	0
5. GROSS PROFIT	883324.993	916470.2865	949615.58	949615.58	949615.58
6. Income (Corporate) Tax	264997.4979	274941.086	284884.674	284884.674	284884.674
7. NET PROFIT	618327.4951	641529.2006	664730.906	664730.906	664730.906
RATIOS (%)					
Gross Profit/Sales	29.44%	30.55%	31.65%	31.65%	31.65%
Net Profit After Tax/Sales	20.61%	21.38%	22.16%	22.16%	22.16%
Return on Investment	24.79%	24.43%	24.07%	24.07%	24.07%
Return on Equity	55.97%	58.07%	60.17%	60.17%	60.17%

Annex 5: Projected Balance Sheet (in Birr)						
	CONSTRUCTION		PRODUCTION			
	Year 1	Year 2	1	2	3	4
TOTAL ASSETS	1027163	2762108	3220739	3537001	4074205	4356223
1. Total Current Assets	0	707782.8	1358979	1867806	2597575	3072158
Inventory on Materials and Supplies	0	0	370016.2	419351.7	493354.9	493354.9
Work in Progress	0	0	42698.7	48391.86	56931.6	56931.6
Finished Products in Stock	0	0	85397.4	96783.72	113863.2	113863.2
Accounts Receivable	0	0	245454.5	278181.8	327272.7	327272.7
Cash in Hand	0	0	32724.82	37088.13	43633.09	43633.09
Cash Surplus, Finance Available	0	707782.8	582687.8	988008.6	1562520	2037102
Securities	0	0	0	0	0	0
2. Total Fixed Assets, Net of Depreciation	1027163	2054325	1861760	1669195	1476630	1284065
Fixed Investment	0	978250	1956500	1956500	1956500	1956500
Construction in Progress	978250	978250	0	0	0	0
Pre-Production Expenditure	48912.5	97825	97825	97825	97825	97825
Less Accumulated Depreciation	0	0	192565	385130	577695	770260
3. Accumulated Losses Brought Forward	0	0	0	0	0	0
4. Loss in Current Year	0	0	0	0	0	0
TOTAL LIABLITIES	1027163	2762108	3220739	3537001	4074205	4356223
5. Total Current Liabilities	0	0	245454.5	278181.8	327272.7	327272.7
Accounts Payable	0	0	245454.5	278181.8	327272.7	327272.7
Bank Overdraft	0	0	0	0	0	0
6. Total Long-term Debt	616297.5	1657265	1657265	1381054	1104843	828632.3
Loan A	616297.5	1657265	1657265	1381054	1104843	828632.3
Loan B	0	0	0	0	0	0
7. Total Equity Capital	410865	1104843	1104843	1104843	1104843	1104843
Ordinary Capital	410865	1104843	1104843	1104843	1104843	1104843
Preference Capital	0	0	0	0	0	0
Subsidies	0	0	0	0	0	0
8. Reserves, Retained Profits Brought Forward	0	0	0	213177.1	772922	1537246
9.Net Profit After Tax	0	0	213177.1	559744.9	764324.1	558228.6
Dividends Payable	0	0	0	0	0	0
Retained Profits	0	0	213177.1	559744.9	764324.1	558228.6

Annex 5: Projected Balance Sheet (in Birr): Continued						
	PRODUCTION					
	5	6	7	8	9	10
TOTAL ASSETS	4661442	5003559	5368877	6033608	6698339	7363070
1. Total Current Assets	3569942	4085059	4623377	5461108	6298839	7136570
Inventory on Materials and Supplies	493354.9	493354.9	493354.9	493354.9	493354.9	493354.9
Work in Progress	56931.6	56931.6	56931.6	56931.6	56931.6	56931.6
Finished Products in Stock	113863.2	113863.2	113863.2	113863.2	113863.2	113863.2
Accounts Receivable	327272.7	327272.7	327272.7	327272.7	327272.7	327272.7
Cash in Hand	43633.09	43633.09	43633.09	43633.09	43633.09	43633.09
Cash Surplus, Finance Available	2534887	3050004	3588322	4426053	5263784	6101515
Securities	0	0	0	0	0	0
2. Total Fixed Assets, Net of Depreciation	1091500	918500	745500	572500	399500	226500
Fixed Investment	1956500	1956500	1956500	1956500	1956500	1956500
Construction in Progress	0	0	0	0	0	0
Pre-Production Expenditure	97825	97825	97825	97825	97825	97825
Less Accumulated Depreciation	962825	1135825	1308825	1481825	1654825	1827825
3. Accumulated Losses Brought Forward	0	0	0	0	0	0
4. Loss in Current Year	0	0	0	0	0	0
TOTAL LIABLITIES	4661442	5003559	5368877	6033608	6698339	7363070
5. Total Current Liabilities	327272.7	327272.7	327272.7	327272.7	327272.7	327272.7
Accounts Payable	327272.7	327272.7	327272.7	327272.7	327272.7	327272.7
Bank Overdraft	0	0	0	0	0	0
6. Total Long-term Debt	552421.6	276210.8	0	0	0	0
Loan A	552421.6	276210.8	0	0	0	0
Loan B	0	0	0	0	0	0
7. Total Equity Capital	1104843	1104843	1104843	1104843	1104843	1104843
Ordinary Capital	1104843	1104843	1104843	1104843	1104843	1104843
Preference Capital	0	0	0	0	0	0
Subsidies	0	0	0	0	0	0
8. Reserves, Retained Profits Brought Forward	2095475	2676905	3295232	3936762	4601493	5266223
9. Net Profit After Tax	581430.3	618327.5	641529.2	664730.9	664730.9	664730.9
Dividends Payable	0	0	0	0	0	0
Retained Profits	581430.3	618327.5	641529.2	664730.9	664730.9	664730.9