

**PROFILE ON THE PRODUCTION OF UPPER
LEATHER**

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I. SUMMARY

This profile envisages the establishment of a plant for the production of upper leather with a capacity of 300 tones per annum. Upper leather products are intermediate products that are used to manufacture shoes

The demand for upper leather has been met both from domestic manufacturing and imports. The present (2012) demand for upper leather is estimated at 4,017,013 m² (3, 967,293 m² for the domestic market and 49,720 m² for export). The demand for upper leather, both for domestic and export market, is projected to reach 5,163,400 m² and 6,663,400 m² by the year 2017 and 2022, respectively.

The principal raw material required by the envisaged plant is finished leather of various grades, which is available locally.

The total investment cost of the project including working capital is estimated at Birr 4.99 million. From the total investment cost the highest share (Birr 3.76 million or 75.39%) is accounted by fixed investment cost followed by pre operation cost (Birr 716.29 thousand or 14.35%) and initial working capital (Birr 512.14 thousand or 10.26%). From the total investment cost Birr 1.05 million or 21.23 % is required in foreign currency.

The project is financially viable with an internal rate of return (IRR) of 30.79% and a net present value (NPV) of Birr 5.24 million, discounted at 10%.

The project can create employment for 23 persons. The establishment of such factory will have a foreign exchange saving and earning effect to the country by substituting the current imports and through export. The project will also create backward linkage with tannery subsector and forward linkage with leather shoe sub sector and also generates income for the Government in terms of tax revenue and payroll tax.

II. PRODUCT DESCRIPTION AND APPLICATION:

Upper leather is the top part of shoes which is attached to the sole. The product can be made from pure leather or polyvinyl chloride (PVC) leather cloth and nylon mesh. Upper leather demands high aesthetic quality, accuracy in stitching and finishing. It is an intermediate product that is used to manufacture shoes for local consumptions and export to different destinations.

III. MARKET STUDY AND DEMAND

A. MARKET STUDY

1. Past Supply And Present Demand

The requirement for upper leather has been met both from domestic manufacturing and imports. Recently, Ethiopia has also started to export upper leather to different destinations. The past domestic production, import and export of upper leather covering the period 2002--2011 is shown in Table 3.1 under.

Table 3.1
DOMESTIC PRODUCTION, IMPORT AND EXPORT OF UPPER LEATHER

Year	Domestic Production ¹ (‘000m ²)	Imports ² (Kg)	Exports ² (Kg)
2002	923	4,391	131
2003	520	4,999	-
2004	739	15,200	-
2005	685	5,077	30
2006	608	13,565	4,046
2007	1,052	69,350	31,314
2008	1,687	183,794	123,636
2009	3,884	130,470	34,848
2010	3,904	319,043	31,975
2011	3,904*	311,591	123,026

- *As the data for the Year 2011 is not published domestic production is assumed to be the same as year 2010.*

Source: - 1. *Report on Large & Medium Scale Manufacturing and Electricity Industries Survey.*
2. *Ethiopian Revenues and Customs Authority.*

As could be learnt from Table 3.1, the domestic production has an increasing trend. The general increasing trend could be easily seen when the data set is analyzed by grouping into different periods. During the period 2002- 2006, the production level was in the range of 520,000 m² to 923,000 m², with annual average of 695,000 m². During year 2007 and year 2008, it increased to about 1.05 million m² and 1.69 million m². Compared to the previous five years average it has increased by more than 100%. A substantial growth in the domestic production is observed during the recent three years of 2009--2011. During this period the yearly production has reached to a level of about 3.9 million m². Compared to year 2008 production in the recent three years has grown by more than two fold. Generally, domestic production of upper leather, which was about 695,000 m² during the period 2002--2006, has shown a huge increase (by more than seven fold) by reaching at about 3.9 million m² in the recent three years. This is believed to be due to the growing demand for leather shoe for the domestic and export market and the priority given to the sector.

The import also had an increasing trend although it is characterized by some fluctuations. Imported quantity, which was around 4,695 kg in the year 2002/03, has increased to a yearly average of 25,798 kg during the period 2004--2007. A huge increase of import is registered during the last four recent years (2008-2011). The yearly average imported quantity has reached to 157,132 kg and 315,317 kg during year 2008/09 and year 2010/11, respectively.

Export of upper leather from Ethiopia was negligible till year 2005. By the year 2006 a small amount (4,046 kg) was exported. Then, a general growth in export is registered although the data is characterized by erratic nature. During the last five years i.e.2007--2011, the yearly average quantity exported amounts to 68960 kg.

In order to estimate the present demand for the domestic and export market the following methodology and assumption are used.

- The data on the unit of measure for domestic production is in meter square (m²), while for import and export is in weight i.e. in kg. Therefore, to convert the weight in to m² on the average one kg of upper leather is assumed to be equivalent to 0.3674m².

- Recent three years average domestic production plus import and minus export is assumed to reflect the current (year 2012) effective domestic demand.
- To arrive at the current export level a 10% growth rate is applied by taking the exported quantity of year 2011 as a base.

Based on the above methodology and assumptions the present effective domestic demand for upper leather is estimated at 3,967,293 m².

During 2011 the exported quantity was 45,200 m² or 123,026 kg. Applying a 10% growth rate the current estimated present demand for export is 49,720 m².

2. Demand Projection

The demand for upper leather is a derived demand of leather shoes both for local and export needs. The demand for leather shoe in turn depends on incomes and population increases and thus local consumption assumed to increase by 5%, which is about the urban population growth. Export is assumed to grow by 15% per annum due to the special attention given to the export sector. The total projected demand, which is the domestic and export demand, the existing domestic production and the unsatisfied demand is given in Table 3.2.

As could be seen from Table 3.2, the unsatisfied demand will increase from 318.8 thousands meter square to 1,527.60 thousands meter square and 2,759.40 thousands meter square in the year 2018 and year 2022, respectively.

Table 3.2

PROJECTED DEMAND FOR UPPER LEATHER ('000 M²)

Year	Domestic Demand	Export	Total	Existing Production	Unsatisfied Demand
2013	4,165.6	57.2	4,222.8	3,904	318.80
2014	4,373.9	65.8	4,439.7	3,904	535.70
2015	4,592.6	75.6	4,667.6	3,904	763.60
2016	4,822.3	86.9	4,909.2	3,904	1,005.20
2017	5,063.4	100.0	5,163.4	3,904	1,259.40
2018	5,316.6	115.0	5,431.6	3,904	1,527.60
2019	5,582.4	132.2	5,714.6	3,904	1,810.60
2020	5,861.5	152.1	6,013.6	3,904	2,109.60
2021	6,154.6	174.9	6,329.5	3,904	2,425.50
2022	6,462.3	201.1	6,663.4	3,904	2,759.40

3. Pricing And Distribution

The current factory gate price of upper leather is Birr 20 per pair. This price is recommended for the envisage project.

Upper leather is an industrial input, which is mainly demanded by shoe producers. Hence, direct distribution to end users without involving intermediaries is recommended.

B. PLANT CAPACITY AND PRODUCTION PROGRAM

1. Plant Capacity

Based on the outcome of the market study and considering the economic scale of production, the envisaged plant will have annual production capacity of 208,605 pairs of leather uppers which is equivalent to 100,000 ft² leather uppers. This capacity is determined on the basis of a single shift of 8 hours per day and 300 working days per annum. Production can be increased, upon requirement, by introducing additional shifts.

2. Production Program

Assuming that enough time should be given for the project during the initial years for market penetration and skill development, the production is scheduled in such a way that the plant will start operation at 80% of its rated capacity which will increase to 90% in the second year. Full capacity production will be achieved in the third year and then after. Details of annual production program are given in Table 3.3.

Table 3.3

ANNUAL PRODUCTION PROGRAM

Sr. No.	Description	Unit of Measure	Production Year		
			1 st	2 nd	3 rd –10 th
1	Leather uppers	pair	166,884	187,745	208,605
2	Capacity	%	80	90	100

IV. MATERIALS AND INPUTS

A. RAW AND AUXILIARY MATERIALS

The major raw material required for the manufacture of leather upper for shoes is finished leather of various grades which is available locally. Auxiliary materials required for the manufacture of finished leather uppers are sewing thread, eyelets (round metal ring), and other accessories. The annual requirement of raw and auxiliary materials at full capacity operation of the envisaged plant is given in Table 4.1.

Table 4.1

RAW AND AUXILIARY MATERIALS REQUIREMENT AND COSTS

Sr. No.	Raw Materials	Unit of Measure	Required Qty.	Unit Price,	Cost (000 Birr)		
					F. C.	L.C.	Total
1	Finished	square ft	100,100	17.60		1,761.76	1,761.76
2	Sewing thread,	roll, pair,	lump sum			60.00	60.00
Total						1,821.76	1,821.76

B. UTILITIES

The utilities required as an input for the envisaged plant include electric power and water. The annual requirement of utility at full capacity operation of the plant along with the estimated costs is given in Table 4.2.

Table 4.2

ANNUAL UTILITIES REQUIREMENT AND COST

Sr. No.	Description	Unit of Measure	Required Qty	Unit Price, Birr/Unit	Cost, ('000 Birr)		
					F.C.	L.C.	Total
1	Electric	kWh	27,500	0.58		15.89	15.89
2	Water	m ³	200	10.00		2.00	2.00
Total						17.89	17.89

V. TECHNOLOGY AND ENGINEERING

A. TECHNOLOGY

1. Production Process

Leather upper manufacturing process consists of a wide range of operations which are stated briefly hereunder. The sequence of operations involved varies in relation to the design and type of shoes intended to be fabricated.

The leather upper components received from the cutting section are progressively assembled and stitched to produce a complete upper. The major operations involved in the manufacture of leather uppers are: skiving, edge (face) making; stitching; folding; perforating; finishing; packing and dispatching.

2. Environmental Impact

The envisaged plant does not have any pollutant emission to the environment. Thus, the project is environment friendly.

B. ENGINEERING

1. Machinery and Equipment

The list of plant machinery and equipment required for the manufacture of leather uppers along with the estimated costs is given in Table 5.1.

Table 5.1

LIST OF MACHINERY & EQUIPMENT AND ESTIMATED COSTS

Sr. No.	Description	Unit of Measure	Required Qty	Unit Price, Birr/Unit	Cost, ('000 Birr)		
					F.C.	L.C.	Total
1	Leather cutting machine, complete with accessories	set	3		127.176	31.794	158.970
2	Pattern making machine	set	2		84.784	21.196	105.980
3	Shaving machine, complete with motor and accessories	set	2		84.784	21.196	105.980
4	Bridling machine with motor	set	2		84.784	21.196	105.980
5	Upper skiving machine with motor	set	2		84.784	21.196	105.980
6	Upper sewing machine, treadle operated	set	20		169.568	42.392	211.960
7	PFAFF port bed high speed machine, with lining and ironing arrangement	set	2		84.784	21.196	105.980
8	Eye - letting machine, treadle operated	set	2		74.186	18.547	92.733
9	Upper folding and brushing machine/stamping machine	set	2		84.784	21.196	105.980
10	Stamping machine	set	2		74.186	18.547	92.733
11	Diesel generator	set	2		52.990	13.248	66.238
12	Miscellaneous machine tools	set	lump sum		52.990	13.248	66.238
Total					1,059.800	264.950	1,324.750

2. Land, Buildings and Civil Works

The total land area required for the envisaged plant is 500 m², out of which 400 m² will be built-up area. The total construction cost of buildings and civil works at a rate of Birr 4,500 per m² is estimated at Birr 1.8 million.

According to the Federal Legislation on the Lease Holding of Urban Land (Proclamation No 721/2004) in principle, urban land permit by lease is on auction or negotiation basis, however, the time and condition of applying the proclamation shall be determined by the concerned regional or city government depending on the level of development.

The legislation has also set the maximum on lease period and the payment of lease prices. The lease period ranges from 99 years for education, cultural research health, sport, NGO , religious and residential area to 80 years for industry and 70 years for trade while the lease payment period ranges from 10 years to 60 years based on the towns grade and type of investment.

Moreover, advance payment of lease based on the type of investment ranges from 5% to 10%.The lease price is payable after the grace period annually. For those that pay the entire amount of the lease will receive 0.5% discount from the total lease value and those that pay in installments will be charged interest based on the prevailing interest rate of banks. Moreover, based on the type of investment, two to seven years grace period shall also be provided.

However, the Federal Legislation on the Lease Holding of Urban Land apart from setting the maximum has conferred on regional and city governments the power to issue regulations on the exact terms based on the development level of each region.

In Addis Ababa, the City's Land Administration and Development Authority is directly responsible in dealing with matters concerning land. However, regarding the manufacturing sector, industrial zone preparation is one of the strategic intervention measures adopted by the City Administration for the promotion of the sector and all manufacturing projects are assumed to be located in the developed industrial zones.

Regarding land allocation of industrial zones if the land requirement of the project is below 5,000 m², the land lease request is evaluated and decided upon by the Industrial Zone Development and Coordination Committee of the City's Investment Authority. However, if the land request is above 5,000 m² the request is evaluated by the City's Investment Authority and passed with recommendation to the Land Development and Administration Authority for decision, while the lease price is the same for both cases.

Moreover, the Addis Ababa City Administration has recently adopted a new land lease floor price for plots in the city. The new prices will be used as a benchmark for plots that are going to be auctioned by the city government or transferred under the new “Urban Lands Lease Holding Proclamation.”

The new regulation classified the city into three zones. The first Zone is Central Market District Zone, which is classified in five levels and the floor land lease price ranges from Birr 1,686 to Birr 894 per m². The rate for Central Market District Zone will be applicable in most areas of the city that are considered to be main business areas that entertain high level of business activities.

The second zone, Transitional Zone, will also have five levels and the floor land lease price ranges from Birr 1,035 to Birr 555 per m². This zone includes places that are surrounding the city and are occupied by mainly residential units and industries.

The last and the third zone, Expansion Zone, is classified into four levels and covers areas that are considered to be in the outskirts of the city, where the city is expected to expand in the future. The floor land lease price in the Expansion Zone ranges from Birr 355 to Birr 191 per m² (see Table 5.2).

Table 5.2

NEW LAND LEASE FLOOR PRICE FOR PLOTS IN ADDIS ABABA

Zone	Level	Floor Price/m²
Central Market District	1 st	1686
	2 nd	1535
	3 rd	1323
	4 th	1085
	5 th	894
Transitional zone	1 st	1035
	2 nd	935
	3 rd	809
	4 th	685
	5 th	555
Expansion zone	1 st	355
	2 nd	299
	3 rd	217
	4 th	191

Accordingly, in order to estimate the land lease cost of the project profiles it is assumed that all new manufacturing projects will be located in industrial zones located in expansion zones. Therefore, for the profile a land lease rate of Birr 266 per m² which is equivalent to the average floor price of plots located in expansion zone is adopted.

On the other hand, some of the investment incentives arranged by the Addis Ababa City Administration on lease payment for industrial projects are granting longer grace period and extending the lease payment period. The criteria are creation of job opportunity, foreign exchange saving, investment capital and land utilization tendency etc. Accordingly, Table 5.3 shows incentives for lease payment.

Table 5.3

INCENTIVES FOR LEASE PAYMENT OF INDUSTRIAL PROJECTS

Scored Point	Grace Period	Payment Completion Period	Down Payment
Above 75%	5 Years	30 Years	10%
From 50 - 75%	5 Years	28 Years	10%
From 25 - 49%	4 Years	25 Years	10%

For the purpose of this project profile, the average i.e. five years grace period, 28 years payment completion period and 10% down payment is used. The land lease period for industry is 60 years.

Accordingly, the total land lease cost at a rate of Birr 266 per m² is estimated at Birr 133,000 of which 10% or Birr 13,300 will be paid in advance. The remaining Birr 119,700 will be paid in equal installments within 28 years i.e. Birr 4,275 annually.

VI. HUMAN RESOURCE AND TRAINING REQUIREMENT

A. HUMAN RESOURCE REQUIREMENT

The total human resource required for the envisaged plant is 23 persons. Details of human resource requirement along with the estimated annual labor costs including fringe benefits are given in Table 6.1.

Table 6.1

HUMAN RESOURCE REQUIREMENT AND LABOR COST

Sr. No.	Job Title	Quantity	Salary (Birr)	
			Monthly	Annual
1	Plant manager	1	4,000	48,000
2	Secretary	1	800	9,600
3	Accountant/clerk	1	850	10,200
4	Personnel	1	850	10,200
5	Salesman	1	800	9,600
6	Store keeper	1	800	9,600
7	Cashier	1	800	9,600
8	Production supervisor	1	1,500	18,000
9	Design expert	1	1,200	14,400
10	Skilled worker	6	3,300	39,600
11	Unskilled worker	4	1,600	19,200
12	Mechanic	1	1,000	12,000
13	Driver	1	750	9,000
14	Guard	2	800	9,600
Sub - total		23	19,050	228,600
Employees benefit, 20% of basic salary			3,810	45,720
Grand Total			22,860	274,320

B. TRAINING REQUIREMENT

The plant requires well - trained manpower in the design, cutting and stitching operations. For this the design expert and 6 skilled workers should be given a one month on – the – job training in one of the shoe factories in the country. The total cost of training is estimated at Birr 140,000.

VII. FINANCIAL ANALYSIS

The financial analysis of the upper leather project is based on the data presented in the previous chapters and the following assumptions:-

Construction period	1 year
Source of finance	30 % equity & 70 loan
Tax holidays	3 years
Bank interest	10%

Discount cash flow	10%
Accounts receivable	30 days
Raw material local	30 days
Work in progress	1 day
Finished products	30 days
Cash in hand	5 days
Accounts payable	30 days
Repair and maintenance	5% of machinery cost

A. TOTAL INITIAL INVESTMENT COST

The total investment cost of the project including working capital is estimated at Birr 4.99 million (See Table 7.1). From the total investment cost the highest share (Birr 3.76 million or 75.39%) is accounted by fixed investment cost followed by pre operation cost (Birr 716.29 thousand or 14.35%) and initial working capital (Birr 512.14 thousand or 10.26%). From the total investment cost Birr 1.05 million or 21.23 % is required in foreign currency.

Table 7.1

INITIAL INVESTMENT COST ('000 Birr)

Sr. No.	Cost Items	Local Cost	Foreign Cost	Total Cost	% Share
1	Fixed investment				
1.1	Land Lease	13.30		13.30	0.27
1.2	Building and civil work	1,800.00		1,800.00	36.06
1.3	Machinery and equipment	264.95	1,059.80	1,324.75	26.54
1.4	Vehicles	450.00		450.00	9.02
1.5	Office furniture and equipment	175.00		175.00	3.51
	Sub- total	2,703.25	1,059.80	3,763.05	75.39
2	Pre operating cost *				
2.1	Pre operating cost	389.74		389.74	7.81
2.2	Interest during construction	326.55		326.55	6.54
	Sub -total	716.29		716.29	14.35
3	Working capital **	512.26		512.26	10.26
	Grand Total	3,931.80	1,059.80	4,991.60	100

* *N.B Pre operating cost include project implementation cost such as installation, startup, commissioning, project engineering, project management etc and capitalized interest during construction.*

** *The total working capital required at full capacity operation is Birr 637.61 thousand. However, only the initial working capital of Birr 512.26 thousand during the first year of production is assumed to be funded through external sources. During the remaining years the working capital requirement will be financed by funds to be generated internally (for detail working capital requirement see Appendix 7.A.1).*

B. PRODUCTION COST

The annual production cost at full operation capacity is estimated at Birr 3.24 million (see Table 7.2). The cost of raw material account for 56.19% of the production cost. The other major components of the production cost are depreciation, financial cost and labor which account for 16.11%, 9.69% and 7.06%, respectively. The remaining 10.95% is the share of utility, marketing and distribution, repair and maintenance, labor overhead and administration cost. For detail production cost see Appendix 7.A.2.

Table 7.2

ANNUAL PRODUCTION COST AT FULL CAPACITY (YEAR THREE)

Items	Cost	%
Raw Material and Inputs	1,822.00	56.19
Utilities	18.00	0.56
Maintenance and repair	66.00	2.04
Labor direct	229.00	7.06
Labor overheads	46.00	1.42
Administration Costs	75.00	2.31
Land lease cost	-	-
Cost of marketing and distribution	150.00	4.63
Total Operating Costs	2,406.00	74.20
Depreciation	522.40	16.11
Cost of Finance	314.31	9.69
Total Production Cost	3,242.71	100

C. FINANCIAL EVALUATION

1. Profitability

Based on the projected profit and loss statement, the project will generate a profit through out its operation life. Annual net profit after tax will grow from Birr 693 thousand to Birr 1.17 million during the life of the project. Moreover, at the end of the project life the accumulated net cash flow amounts to Birr 11.41 million. For profit and loss statement and cash flow projection see Appendix 7.A.3 and 7.A.4 .respectively.

2. Ratios

In financial analysis financial ratios and efficiency ratios are used as an index or yardstick for evaluating the financial position of a firm. It is also an indicator for the strength and weakness of the firm or a project. Using the year-end balance sheet figures and other relevant data, the most important ratios such as return on sales which is computed by dividing net income by revenue, return on assets (operating income divided by assets), return on equity (net profit divided by equity) and return on total investment (net profit plus interest divided by total investment) has been carried out over the period of the project life and all the results are found to be satisfactory.

3. Break-even Analysis

The break-even analysis establishes a relationship between operation costs and revenues. It indicates the level at which costs and revenue are in equilibrium. To this end, the break-even point for capacity utilization and sales value estimated by using income statement projection are computed as followed.

$$\text{Break- Even Sales Value} = \frac{\text{Fixed Cost} + \text{Financial Cost}}{\text{Variable Margin ratio (\%)}} = \text{Birr } 1,464,115$$

$$\text{Break -Even Capacity utilization} = \frac{\text{Break- even Sales Value}}{\text{Sales revenue}} \times 100 = 35 \%$$

4. Pay-back Period

The pay- back period, also called pay- off period is defined as the period required for recovering the original investment outlay through the accumulated net cash flows earned by the project.

Accordingly, based on the projected cash flow it is estimated that the project's initial investment will be fully recovered within 3 years.

5. Internal Rate of Return

The internal rate of return (IRR) is the annualized effective compounded return rate that can be earned on the invested capital, i.e., the yield on the investment. Put another way, the internal rate of return for an investment is the discount rate that makes the net present value of the investment's income stream total to zero. It is an indicator of the efficiency or quality of an investment. A project is a good investment proposition if its IRR is greater than the rate of return that could be earned by alternate investments or putting the money in a bank account. Accordingly, the IRR of this project is computed to be 30.79% indicating the viability of the project.

6. Net Present Value

Net present value (NPV) is defined as the total present (discounted) value of a time series of cash flows. NPV aggregates cash flows that occur during different periods of time during the life of a project in to a common measuring unit i.e. present value. It is a standard method for using the time value of money to appraise long-term projects. NPV is an indicator of how much value an investment or project adds to the capital invested. In principle, a project is accepted if the NPV is non-negative. Accordingly, the net present value of the project at 10% discount rate is found to be Birr 5.24 million which is acceptable. For detail discounted cash flow see Appendix 7.A.5.

D. ECONOMIC AND SOCIAL BENEFITS

The project can create employment for 23 persons. The project will generate Birr 2.37 million in terms of tax revenue. The establishment of such factory will have a foreign exchange saving effect to the country by substituting the current imports and foreign earning effect through export. The project will also create backward linkage with the tannery subsector and forward linkage with leather shoe sub sector and also generate other income for the Government.

Appendix 7.A

FINANCIAL ANALYSES SUPPORTING TABLES

Appendix 7.A.1
NET WORKING CAPITAL (in 000 Birr)

Items	Year 2	Year 3	Year 4	Year 5	Year 6	Year 7	Year 8	Year 9	Year 10	Year 11
Total inventory	364.40	409.95	455.50	455.50	455.50	455.50	455.50	455.50	455.50	455.50
Accounts receivable	162.90	181.70	200.50	200.50	200.86	200.86	200.86	200.86	200.86	200.86
Cash-in-hand	4.62	5.20	5.78	5.78	5.84	5.84	5.84	5.84	5.84	5.84
CURRENT ASSETS	531.92	596.85	661.78	661.78	662.19	662.19	662.19	662.19	662.19	662.19
Accounts payable	19.67	22.13	24.58	24.58	24.58	24.58	24.58	24.58	24.58	24.58
CURRENT LIABILITIES	19.67	22.13	24.58	24.58	24.58	24.58	24.58	24.58	24.58	24.58
TOTAL WORKING CAPITAL	512.26	574.73	637.19	637.19	637.61	637.61	637.61	637.61	637.61	637.61

Appendix 7.A.2
PRODUCTION COST (in 000 Birr)

Item	Year 2	Year 3	Year 4	Year 5	Year 6	Year 7	Year 8	Year 9	Year 10	Year 11
Raw Material and Inputs	1,458	1,640	1,822	1,822	1,822	1,822	1,822	1,822	1,822	1,822
Utilities	14	16	18	18	18	18	18	18	18	18
Maintenance and repair	53	59	66	66	66	66	66	66	66	66
Labour direct	183	206	229	229	229	229	229	229	229	229
Labour overheads	37	41	46	46	46	46	46	46	46	46
Administration Costs	60	68	75	75	75	75	75	75	75	75
Land lease cost	0	0	0	0	4	4	4	4	4	4
Cost of marketing and distribution	150	150	150	150	150	150	150	150	150	150
Total Operating Costs	1,955	2,180	2,406	2,406	2,410	2,410	2,410	2,410	2,410	2,410
Depreciation	522	522	522	522	522	90	90	90	90	90
Cost of Finance	0	359	314	269	225	180	135	90	45	0
Total Production Cost	2,477	3,062	3,243	3,198	3,157	2,679	2,634	2,590	2,545	2,500

Appendix 7.A.3
INCOME STATEMENT (in 000 Birr)

Item	Year 2	Year 3	Year 4	Year 5	Year 6	Year 7	Year 8	Year 9	Year 10	Year 11
Sales revenue	3,338	3,755	4,172	4,172	4,172	4,172	4,172	4,172	4,172	4,172
Less variable costs	1,805	2,030	2,256	2,256	2,256	2,256	2,256	2,256	2,256	2,256
VARIABLE MARGIN	1,533	1,725	1,916	1,916	1,916	1,916	1,916	1,916	1,916	1,916
in % of sales revenue	45.93	45.93	45.93	45.93	45.93	45.93	45.93	45.93	45.93	45.93
Less fixed costs	672	672	672	672	677	244	244	244	244	244
OPERATIONAL MARGIN	861	1,052	1,244	1,244	1,239	1,672	1,672	1,672	1,672	1,672
in % of sales revenue	25.79	28.02	29.81	29.81	29.71	40.08	40.08	40.08	40.08	40.08
Financial costs		359	314	269	225	180	135	90	45	0
GROSS PROFIT	861	693	929	974	1,015	1,493	1,538	1,582	1,627	1,672
in % of sales revenue	25.79	18.46	22.27	23.35	24.32	35.78	36.85	37.93	39.01	40.08
Income (corporate) tax	0	0	0	0	0	448	461	475	488	502
NET PROFIT	861	693	929	974	1,015	1,045	1,076	1,108	1,139	1,171
in % of sales revenue	25.79	18.46	22.27	23.35	24.32	25.04	25.80	26.55	27.30	28.06

Appendix 7.A.4

CASH FLOW FOR FINANCIAL MANAGEMENT (in 000 Birr)

Item	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6	Year 7	Year 8	Year 9	Year 10	Year 11	Scrap
TOTAL CASH INFLOW	4,153	4,196	3,757	4,174	4,172	4,172	4,172	4,172	4,172	4,172	4,172	2,057
Inflow funds	4,153	858	2	2	0	0	0	0	0	0	0	0
Inflow operation	0	3,338	3,755	4,172	4,172	4,172	4,172	4,172	4,172	4,172	4,172	0
Other income	0	0	0	0	0	0	0	0	0	0	0	2,057
TOTAL CASH OUTFLOW	4,153	2,813	3,054	3,234	3,124	3,084	3,487	3,455	3,424	3,392	2,912	0
Increase in fixed assets	4,153	0	0	0	0	0	0	0	0	0	0	0
Increase in current assets	0	532	65	65	0	0	0	0	0	0	0	0
Operating costs	0	1,805	2,030	2,256	2,256	2,260	2,260	2,260	2,260	2,260	2,260	0
Marketing and Distribution cost	0	150	150	150	150	150	150	150	150	150	150	0
Income tax	0	0	0	0	0	0	448	461	475	488	502	0
Financial costs	0	327	359	314	269	225	180	135	90	45	0	0
Loan repayment	0	0	449	449	449	449	449	449	449	449	0	0
SURPLUS (DEFICIT)	0	1,383	704	940	1,048	1,088	685	717	748	780	1,260	2,057
CUMULATIVE CASH BALANCE	0	1,383	2,087	3,027	4,075	5,163	5,848	6,565	7,313	8,093	9,353	11,410

Appendix 7.A.5
DISCOUNTED CASH FLOW (in 000 Birr)

Item	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6	Year 7	Year 8	Year 9	Year 10	Year 11	Scrap
TOTAL CASH INFLOW	0	3,338	3,755	4,172	4,172	4,172	4,172	4,172	4,172	4,172	4,172	2,057
Inflow operation	0	3,338	3,755	4,172	4,172	4,172	4,172	4,172	4,172	4,172	4,172	0
Other income	0	0	0	0	0	0	0	0	0	0	0	2,057
TOTAL CASH OUTFLOW	4,665	2,017	2,243	2,406	2,406	2,410	2,858	2,872	2,885	2,898	2,912	0
Increase in fixed assets	4,153	0	0	0	0	0	0	0	0	0	0	0
Increase in net working capital	512	62	62	0	0	0	0	0	0	0	0	0
Operating costs	0	1,805	2,030	2,256	2,256	2,260	2,260	2,260	2,260	2,260	2,260	0
Marketing and Distribution cost	0	150	150	150	150	150	150	150	150	150	150	0
Income (corporate) tax		0	0	0	0	0	448	461	475	488	502	0
NET CASH FLOW	-4,665	1,321	1,512	1,766	1,766	1,762	1,314	1,300	1,287	1,274	1,260	2,057
CUMULATIVE NET CASH FLOW	-4,665	-3,344	-1,832	-66	1,699	3,461	4,775	6,076	7,363	8,636	9,896	11,954
Net present value	-4,665	1,201	1,250	1,327	1,206	1,094	742	667	600	540	486	793
Cumulative net present value	-4,665	-3,464	-2,215	-888	318	1,412	2,154	2,821	3,421	3,961	4,447	5,241

NET PRESENT VALUE 5,241
INTERNAL RATE OF RETURN 30.79%
NORMAL PAYBACK 3 years