PROFILE ON THE PRODUCTION OF LEATHER SOLE

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I. SUMMARY

This profile envisages the establishment of a plant for the production of leather sole with a capacity of 90,000 pairs per annum, out of which 67,500 pairs will be men's sole, 13,500 pairs ladies' sole, and 9,000 pairs children's sole. Leather sole is the bottom part of shoes made of leather and is one of the component parts of shoes.

The demand for leather sole is met through import and domestic production. The present (2012) demand for leather sole is estimated at 475,000 pairs. The demand for leather sole is projected to reach 765 pairs and 1,232 pairs by the year 2017 and 2022, respectively.

The principal raw materials required are finished leather and/or rejects of hide leather producing plants, rubber sheets, cementing adhesive, etc. The finished leather and hide leather rejects are locally available, while rubber sheets and cementing adhesives have to be imported.

The total investment cost of the project including working capital is estimated at Birr 8.40 million. From the total investment cost, the highest share (Birr 6.66 million or 79.31%) is accounted by fixed investment cost followed by pre operation cost (Birr 1.36 million or 16.18%) and initial working capital (Birr 379.59 thousand or 4.51%). From the total investment cost, Birr 2.56 million or 30.47% is required in foreign currency.

The project is financially viable with an internal rate of return (IRR) of 31.73% and a net present value (NPV) of Birr 9.44 million, discounted at 10%.

The project can create employment for 35 persons. The establishment of such factory will have a foreign exchange saving effect to the country by substituting the current imports. The project will also create backward linkage with tanneries and forward linkage with the shoe manufacturing sub sector and also generates income for the Government in terms of tax revenue and payroll tax.

II. PRODUCT DESCRIPTION AND APPLICATION

Leather sole is the bottom part of shoes made of leather and is one of the component parts of shoes, especially leather shoes which have high value as compared to those made from other raw materials. By designation, leather soles can be manufactured for men, women and children.

III. MARKET STUDY AND PLANT CAPACITY

A. MARKET STUDY

1. Past Supply and Present Demand

Leather sole is one of the main inputs in the manufacturing of shoes, especially leather shoes. The demand for shoe soles is derived demand from the demand and production of leather shoes. This means that the demand or requirement for leather soles directly corresponds to the amount of shoes to be produced with leather sole.

The demand for leather soles is at present met from both local production and import. According to the Central Statistical Agency publication "Report on Large and Medium Scale Manufacturing and Electricity Industries Survey" issued in August 2011, the existing shoe factories have consumed a total of 120 tons of leather sole in the year 2009/10. Information from knowledgeable people reveals that of the total leather soles consumed about 10% is from import and the remaining 90% from domestic source. This means that the share of domestic production and import is 108 tons and 12 tons, respectively. Assuming that the leather shoe sub-sector has grown by 5% annually in the past two years, the current (year 2012) effective demand for leather sole is estimated at 132 tons. One tone of leather sole on the average is equivalent to 3,600 pairs. Therefore, the total present demand is 475,000 pairs.

Comparison of the estimated local production/supply (108 tons or 388,000 pairs) and current demand (132 tons or 475,000 pairs) indicates that there is a supply gap of 24 tons or 86,400 pairs of leather sole.

2. Demand Projection

Demand for leather soles is a derived demand and production of leather shoe. The demand for leather shoe in turn is influenced by urban population growth, income, and changes in way of life. Since the leather sector is one of the priority areas in the manufacturing sector, shoe production for the domestic and export market is expected to increase in the near future. Considering the above situations, the demand for leather soles is assumed to grow by 10% per annum. The projected demand, existing production and supply gap, is given in Table 3.1.

Table 3.1

PROJECTED DEMAND FOR LEATHER SOLE (000 PAIRS)

Year	Total Demand	Existing Supply	Unsatisfied Demand
2013	522.5	388	134.5
2014	574.8	388	186.8
2015	632.2	388	244.2
2016	695.4	388	307.4
2017	765.0	388	377.0
2018	841.5	388	453.5
2019	925.6	388	537.6
2020	1,018.2	388	630.2
2021	1,120.0	388	732.0
2022	1,232.0	388	844.0

3. Pricing and Distribution

According to Central Statistical Agency, Report on Large & Medium Scale Manufacturing and Electricity Industries Survey (2011), the average producer's price per pair of sole is Birr 81. Allowing 10% for price increase in the past two years a factory gate price of Birr 90 is recommended.

The plant can sell its product directly to the end-users, i.e., leather shoe manufacturing enterprises and other shoe manufacturers.

B. PLANT CAPACITY AND PRODUCTION PROGRAM

1. Plant Capacity

Based on the demand projection in the market study section, the plant is envisaged to have a production capacity of 90,000 pairs of leather soles per annum, out of which 67,500 pairs will be men's sole, 13,500 pairs ladies' sole, and 9,000 pairs children's sole. This capacity is proposed on the basis of a single shift of 8 hours per day and 300 working days per year.

2. Production Program

Considering the time required in the initial years of operation for market penetration and technical skill development, the plant will start operation at 75% of its installed capacity which will grow to 85% in the second year. Full capacity production will be achieved in the third year and onwards. Details of annual production program are shown in Table 3.3.

Table 3.3

ANNUAL PRODUCTION PROGRAM

Sr. No.	Description	Unit of Measure	Production Year		
			1st	2nd	3rd & Onwards
1	Leather sole for men	Pair	50,625	57,375	67,500
2	Leather sole for ladies	Pair	10,125	11,475	13,500
3	Leather sole for children	Pair	6,750	7,650	9,000
Total			**67,500**	**76,500**	**90,000**
4	Capacity utilization rate	%	75	85	100

IV. MATERIALS AND INPUTS

A. RAW MATERIALS

The major raw materials required for the manufacturing of leather sole are finished leather and/or rejects of hide leather producing plants, rubber sheets, cementing adhesive, etc. The finished leather and hide leather rejects are locally available, while rubber sheets and cementing adhesives have to be imported. Details of the raw materials requirement at full capacity operation of the plant and the estimated costs are given in Table 4.1.

Table 4.1

ANNUAL RAW MATERIALS REQUIREMENT AT FULL CAPACITY AND ESTIMATED COST

Sr. No.	Raw Materials	Unit of Measure	Required Qty	Unit Price, Birr/Unit	Cost (000 Birr)		
					F. C.	L.C.	Total
1	Finished leather	kg	2,550	446.08		1137.50	1,137.50
2	Rubber sheet	m^2	270		35.00	8.75	43.75
3	Cementing adhesive	kg	lump sum		21.00	5.25	26.25
Grand Total					**56.00**	**1151.50**	**1,207.50**

B. AUXILIARY MATERIALS

The auxiliary materials required for the envisaged plant are plastic bags and twine rope, which are locally available. The annual requirement for auxiliary materials at full capacity of the plant and the estimated costs are given in Table 4.2.

Table 4.2

ANNUAL AUXILIARY MATERIALS REQUIREMENT AT FULL CAPACITY AND COST

Sr. No.	Description	Unit of Measure	Quantity	Unit Price (Birr)	Cost ('000 Birr)		
					F. C.	L.C.	Total
1	Plastic bag	pc	300	6.00	-	1.80	1.80
2	Twine rope	kg	4	12.00	-	0.05	0.05
Grand Total						**1.85**	**1.85**

C. UTILITIES

Utilities required for the plant are electric power and water. The annual power and utilities requirement of the plant at full capacity operation and the estimated costs are given in Table 4.3.

Table 4.3

ANNUAL UTILITIES REQUIREMENT AT FULL CAPACITY AND COST

Sr. No.	Description	Unit of Measure	Annual Requirement	Unit Price, Birr/Unit	Cost, ('000 Birr)		
					F.C.	L.C.	Total
1	Electric power	kWh	32,000	0.5778	-	18.49	18.49
2	Water	m^3	350	10	-	3.50	3.50
Grand Total						**21.99**	**21.99**

V. TECHNOLOGY AND ENGINEERING

A. TECHNOLOGY

1. Production Process

The major operations involved in the production of leather soles are leather cutting, leather sole splitting, roughing, trimming, edge making, stamping and cementing.

The required sizes of leather are cut by hydraulic clicking machine. Roughing operation helps to make the surface ready for cementing with the rubber sheet. After cutting the required size, the edges of the leather sole are trimmed off by trimming machine. Then follows edging of the leather soles. Edging operation is the task of improving the edges of the soles until smooth and satisfactory finishes are obtained.

Stamping and cementing are the major operations carried out successively. Hence, all the leather sole pieces prepared previously are now fixed together and cemented by using the adhesive.

2. Environmental Impact

The envisaged plant does not have any emission of pollutants. Thus the project is environment friendly.

B. ENGINEERING

1. Machinery and Equipment

The total cost of machinery and equipment is estimated at Birr 3,202,980, out of which Birr 2,562,384 will be required in foreign currency. The list of plant machinery and equipment required for the envisaged plant and the corresponding estimated costs are presented in Table 5.1.

Table 5.1

MACHINERY & EQUIPMENT AND ESTIMATED COST

Sr. No.	Description	Unit of Measure	Required Qty	Cost ('000 Birr)		
				F.C.	L.C.	Total
1	Roughing machine	set	1	205.0	51.2	256.2
2	Sole stamping and marking machine	set	1	256.2	64.1	320.3
3	Sole edge cementing machine	set	1	256.2	64.1	320.3
4	Sole drier	set	1	205.0	51.2	256.2
5	Double side laminating machine	set	1	256.2	64.1	320.3
6	Automatic splitting machine	set	1	230.6	57.7	288.3
7	Automatic sole producing machine	set	1	358.7	89.7	448.4
8	Hydraulic press	set	1	256.2	64.1	320.3
9	Band pressing machine	set	1	281.9	70.5	352.3
10	Decorating machine	set	1	256.2	64.1	320.3
Grand Total				**2,562.4**	**640.6**	**3,203.0**

2. Land, Buildings and Civil Works

The total area of land required for the envisaged plant is 600 square meters, of which 500 square meters will be a built - up area. The total cost of buildings and civil works at an assumed average construction rate of Birr 4,500 per square meter is estimates at Birr 2.25 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 m^2, 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 m^2, 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 m^2. 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 m^2 .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 m^2 (see Table 5.2).

Table 5.2

NEW LAND LEASE FLOOR PRICE FOR PLOTS IN ADDIS ABABA

Zone	Level	Floor Price/m^2
Central Market District	1st	1686
	2nd	1535
	3rd	1323
	4th	1085
	5th	894
Transitional zone	1st	1035
	2nd	935
	3rd	809
	4th	685
	5th	555
Expansion zone	1st	355
	2nd	299
	3rd	217
	4th	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 m^2 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 criterions 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 m^2 is estimated at Birr 159,600 of which 10% or Birr 15,960 will be paid in advance. The remaining Birr 143,640 will be paid in equal installments with in 28 years i.e. Birr 5,130 annually.

NB: The land issue in the above statement narrates or shows only Addis Ababa's city administration land lease price, policy and regulations.

Accordingly the project profile prepared based on the land lease price of Addis Ababa region.

To know land lease price, police and regulation of other regional state of the country updated information is available at Ethiopian Investment Agency's website www.eia.gov.et on the factor cost.

VI. HUMAN RESOURCE AND TRAINING REQUIREMENT

A. HUMAN RESOURCE REQUIREMENT

The total human resource required for the envisaged plant is 35 persons. The human resource requirement and the estimated cost including the fringe benefits are shown in Table 6.1.

Table 6.1

HUMAN RESOURCE REQUIREMENT AND ESTIMATED ANNUAL LABOR COST

Sr. No.	Job Title	Required No. of Persons	Salary, Birr	
			Monthly	Annual
1	Plant manager	1	4,500	54,000
2	Secretary	1	800	9,600
3	Accountant	1	1,100	13,200
4	Purchaser	1	800	9,600
5	Personnel	1	1,000	12,000
6	Salesperson	1	900	10,800
7	Store keeper	1	900	10,800
8	Cashier	1	900	10,800
9	Production supervisor	1	1,200	14,400
12	Mechanic	1	900	10,800
13	Electrician	1	900	10,800
14	Skilled worker	6	3,600	43,200
14	Semi - skilled worker	8	4,000	48,000
15	Production worker	6	2,400	28,800
16	Driver	1	800	9,600
17	Guard	3	1,200	14,400
Total		**35**	**25,900**	**310,800**

B. TRAINING REQUIREMENT

Three weeks on – the –job training should be given for 14 production operators and one production supervisor in the leather and leather products institute. The total cost of training is estimated at Birr 180,000.

VII. FINANCIAL ANALYSIS

The financial analysis of the leather sole 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
Raw material imported	120 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 8.40 million (see Table 7.1). From the total investment cost, the highest share (Birr 6.66 million or 79.31%) is accounted by fixed investment cost followed by pre operation cost (Birr 1.36 million

or 16.18%) and initial working capital (Birr 379.59 thousand or 4.51%). From the total investment cost, Birr 2.56 million or 30.47% 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	15.96		15.96	0.19
1.2	Building and civil work	2,250.00		2,250.00	26.76
1.3	Machinery and equipment	640.60	2,562.40	3,203.00	38.09
1.4	Vehicles	950.00		950.00	11.30
1.5	Office furniture and equipment	250.00		250.00	2.97
	Sub- total	**4,106.56**	**2,562.40**	**6,668.96**	**79.31**
2	**Pre operating cost ***				
2.1	Pre operating cost	810.15		810.15	9.63
2.2	Interest during construction	550.11		550.11	6.54
	Sub- total	**1,360.26**		**1,360.26**	**16.18**
3	**Working capital****	**379.59**		**379.59**	**4.51**
	Grand Total	**5,846.41**	**2,562.40**	**8,408.81**	**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 515.98 thousand. However, only the initial working capital of Birr 379.59 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 4.51 million (see Table 7.2). The cost of raw material account for 26.76% of the production cost. The other major

components of the production cost are depreciation and financial cost which account for 24.52%, and 11.72%, respectively. The remaining 36.99% is the share of repair and maintenance, utility, direct labor, and labor overhead. For detail production cost see Appendix 7.A.2.

Table 7.2

ANNUAL PRODUCTION COST AT FULL CAPACITY (YEAR THREE)

Items	Cost (000 Birr)	%
Raw Material and Inputs	1,209.00	26.76
Utilities	22.00	0.49
Maintenance and repair	160.00	3.54
Labor direct	311.00	6.88
Labor overheads	78.00	1.73
Administration Costs	350.00	7.75
Land lease cost	-	-
Cost of marketing and distribution	750.00	16.60
Total Operating Costs	**2,880.00**	**63.76**
Depreciation	1,107.63	24.52
Cost of Finance	529.48	11.72
Total Production Cost	**4,517.11**	**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 1.06 million to Birr 2.31 million during the life of the project. Moreover, at the end of the project life the accumulated net cash flow amounts to Birr 20.25 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.

$$\text{Break -Even Sales Value} = \frac{\text{Fixed Cost + Financial Cost}}{\text{Variable Margin ratio (\%)}} = \text{Birr } 2{,}806{,}491$$

$$\text{Break- Even Capacity utilization} = \frac{\text{Break -even Sales Value}}{\text{Sales revenue}} \times 100 = 45\%$$

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 31.73% 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 9.44 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 35 persons. The project will generate Birr 4.72 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. The project will also create backward linkage with tanneries and forward linkage with the shoe manufacturing sub sector and also generates 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	211.58	241.80	302.25	302.25	302.25	302.25	302.25	302.25	302.25	302.25
Accounts receivable	186.75	204.50	240.00	240.00	240.43	240.43	240.43	240.43	240.43	240.43
Cash-in-hand	8.74	9.99	12.49	12.49	12.56	12.56	12.56	12.56	12.56	12.56
CURRENT ASSETS	**407.07**	**456.29**	**554.74**	**554.74**	**555.23**	**555.23**	**555.23**	**555.23**	**555.23**	**555.23**
Accounts payable	27.48	31.40	39.25	39.25	39.25	39.25	39.25	39.25	39.25	39.25
CURRENT LIABILITIES	**27.48**	**31.40**	**39.25**	**39.25**	**39.25**	**39.25**	**39.25**	**39.25**	**39.25**	**39.25**
TOTAL WORKING CAPITAL	**379.59**	**424.89**	**515.49**	**515.49**	**515.98**	**515.98**	**515.98**	**515.98**	**515.98**	**515.98**

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	846	967	1,209	1,209	1,209	1,209	1,209	1,209	1,209	1,209
Utilities	15	18	22	22	22	22	22	22	22	22
Maintenance and repair	112	128	160	160	160	160	160	160	160	160
Labour direct	218	249	311	311	311	311	311	311	311	311
Labour overheads	55	62	78	78	78	78	78	78	78	78
Administration Costs	245	280	350	350	350	350	350	350	350	350
Land lease cost	0	0	0	0	5	5	5	5	5	5
Cost of marketing and distribution	750	750	750	750	750	750	750	750	750	750
Total Operating Costs	**2,241**	**2,454**	**2,880**	**2,880**	**2,885**	**2,885**	**2,885**	**2,885**	**2,885**	**2,885**
Depreciation	1,108	1,108	1,108	1,108	1,108	115	115	115	115	115
Cost of Finance	0	605	529	454	378	303	227	151	76	0
Total Production Cost	**3,349**	**4,167**	**4,517**	**4,441**	**4,371**	**3,303**	**3,227**	**3,151**	**3,076**	**3,000**

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	4,410	5,040	5,670	6,300	6,300	6,300	6,300	6,300	6,300	6,300
Less variable costs	1,491	1,704	2,130	2,130	2,130	2,130	2,130	2,130	2,130	2,130
VARIABLE MARGIN	**2,919**	**3,336**	**3,540**	**4,170**	**4,170**	**4,170**	**4,170**	**4,170**	**4,170**	**4,170**
in % of sales revenue	66.19	66.19	62.43	66.19	66.19	66.19	66.19	66.19	66.19	66.19
Less fixed costs	1,858	1,858	1,858	1,858	1,863	870	870	870	870	870
OPERATIONAL MARGIN	**1,061**	**1,478**	**1,682**	**2,312**	**2,307**	**3,300**	**3,300**	**3,300**	**3,300**	**3,300**
in % of sales revenue	24.07	29.33	29.67	36.70	36.62	52.38	52.38	52.38	52.38	52.38
Financial costs		605	529	454	378	303	227	151	76	0
GROSS PROFIT	**1,061**	**873**	**1,153**	**1,859**	**1,929**	**2,997**	**3,073**	**3,149**	**3,224**	**3,300**
in % of sales revenue	24.07	17.33	20.33	29.50	30.62	47.58	48.78	49.98	51.18	52.38
Income (corporate) tax	0	0	0	0	0	899	922	945	967	990
NET PROFIT	**1,061**	**873**	**1,153**	**1,859**	**1,929**	**2,098**	**2,151**	**2,204**	**2,257**	**2,310**
in % of sales revenue	24.07	17.33	20.33	29.50	30.62	33.30	34.14	34.98	35.82	36.67

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	**7,479**	**5,367**	**5,044**	**5,678**	**6,300**	**6,300**	**6,300**	**6,300**	**6,300**	**6,300**	**6,300**	**2,432**
Inflow funds	7,479	957	4	8	0	0	0	0	0	0	0	0
Inflow operation	0	4,410	5,040	5,670	6,300	6,300	6,300	6,300	6,300	6,300	6,300	0
Other income	0	0	0	0	0	0	0	0	0	0	0	2,432
TOTAL CASH OUTFLOW	**7,479**	**3,198**	**3,865**	**4,264**	**4,090**	**4,020**	**4,843**	**4,790**	**4,737**	**4,684**	**3,875**	**0**
Increase in fixed assets	7,479	0	0	0	0	0	0	0	0	0	0	0
Increase in current assets	0	407	49	98	0	0	0	0	0	0	0	0
Operating costs	0	1,491	1,704	2,130	2,130	2,135	2,135	2,135	2,135	2,135	2,135	0
Marketing and Distribution cost	0	750	750	750	750	750	750	750	750	750	750	0
Income tax	0	0	0	0	0	0	899	922	945	967	990	0
Financial costs	0	550	605	529	454	378	303	227	151	76	0	0
Loan repayment	0	0	756	756	756	756	756	756	756	756	0	0
SURPLUS (DEFICIT)	**0**	**2,169**	**1,179**	**1,414**	**2,210**	**2,280**	**1,457**	**1,510**	**1,563**	**1,616**	**2,425**	**2,432**
CUMULATIVE CASH BALANCE	**0**	**2,169**	**3,348**	**4,762**	**6,971**	**9,251**	**10,708**	**12,218**	**13,780**	**15,396**	**17,821**	**20,253**

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**	**4,410**	**5,040**	**5,670**	**6,300**	**6,300**	**6,300**	**6,300**	**6,300**	**6,300**	**6,300**	**2,432**
Inflow operation	0	4,410	5,040	5,670	6,300	6,300	6,300	6,300	6,300	6,300	6,300	0
Other income	0	0	0	0	0	0	0	0	0	0	0	2,432
TOTAL CASH OUTFLOW	**7,859**	**2,286**	**2,545**	**2,880**	**2,880**	**2,885**	**3,784**	**3,807**	**3,830**	**3,852**	**3,875**	**0**
Increase in fixed assets	7,479	0	0	0	0	0	0	0	0	0	0	0
Increase in net working capital	380	45	91	0	0	0	0	0	0	0	0	0
Operating costs	0	1,491	1,704	2,130	2,130	2,135	2,135	2,135	2,135	2,135	2,135	0
Marketing and Distribution cost	0	750	750	750	750	750	750	750	750	750	750	0
Income (corporate) tax		0	0	0	0	0	899	922	945	967	990	0
NET CASH FLOW	**-7,859**	**2,124**	**2,495**	**2,790**	**3,420**	**3,415**	**2,516**	**2,493**	**2,470**	**2,448**	**2,425**	**2,432**
CUMULATIVE NET CASH FLOW	**-7,859**	**-5,735**	**-3,240**	**-450**	**2,970**	**6,385**	**8,900**	**11,393**	**13,864**	**16,311**	**18,736**	**21,168**
Net present value	-7,859	1,931	2,062	2,096	2,336	2,120	1,420	1,279	1,152	1,038	935	938
Cumulative net present value	-7,859	-5,928	-3,866	-1,770	566	2,686	4,106	5,386	6,538	7,576	8,511	9,449

NET PRESENT VALUE	9,449
INTERNAL RATE OF RETURN	31.73%
NORMAL PAYBACK	3 years