PROFILE ON THE PRODUCTION OF SANDALS

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I. SUMMARY

This profile envisages the establishment of a plant for the production of sandals with a capacity of 10,000 pairs per annum. Sandal is a light open shoe that is held on by straps across the instep or around the heel or ankles, usually worn during warm weather.

The demand for sandals is met through both local production and imports. The present (2012) unsatisfied demand is estimated at 18,302 pairs. The unsatisfied demand for sandals is projected to reach 30,710 pairs and 53,979 pairs by the year 2017 and 2022, respectively.

The principal raw materials required are upper leather, lining leather, insoles, sewing thread, tacks, adhesive, PVC soles which are available locally.

The total investment cost of the project including working capital is estimated at Birr 2.78 million. From the total investment cost the highest share (Birr 2.08 million or 74.79%) is accounted by fixed investment cost followed by pre operation cost (Birr 406.46 thousand or 14.61%) and initial working capital (Birr 289.71 thousand or 10.41%). From the total investment cost, Birr 652.60 thousand or 23.45% is required in foreign currency.

The project is financially viable with an internal rate of return (IRR) of 27.51% and a net present value (NPV) of Birr 2.50 million, discounted at 10%.

The project can create employment for 19 persons. The establishment of such factory will have a foreign exchange earning effect through export and foreign exchange saving effect to the country by substituting the current imports. The project will also create backward linkage with tanneries; plastic and textile sub sectors and also generates income for the Government in terms of tax revenue and payroll tax.

II. PRODUCT DESCRIPTION AND APPLICATION

Leather sandal is a light open shoe that is held on by straps across the instep or around the heel or ankles, usually worn during warm weather. Leather sandal is footwear characterized by softness

and light weight. The product has been used by both men and women who mostly dwell in urban areas. The main target users will be the urban population

III. MARKET STUDY AND PLANT CAPACITY

A. MARKET STUDY

1. Past Supply and Present Demand

The requirement for leather sandals has been met from domestic production and imports. Ethiopia also exports some amount of leather sandals to the international market. The data for import and export of the product is available from Ethiopian Revenues & Customs Authority. However, the data for domestic production of leather sandals is not available from the CSA`s Report on Large & Medium Scale Manufacturing and Electricity Industries Survey due to aggregation problem. Hence, in order to analyze the unsatisfied demand for the product the import and export data covering the period 2002--2011 is presented in Table 3.1.

Table 3.1

IMPORT AND EXPORT OF LEATHER SANDALS (PAIRS)

Year	Import	Export
2002	5,634	---
2003	42	---
2004	25,810	29
2005	3,226	6,200
2006	5,050	6
2007	6,373	2,300
2008	142	860
2009	28,228*	8
2010	2,392	110
2011	2,170	---

Source: *- Ethiopian Revenues and Customs Authority.*

**Data for year 2009 is obtained in kg. To convert into pairs 700 grams is assumed to be one pair.*

As could be seen from Table 3.1, the imported and exported quantity of leather sandals in the past ten years do not show any trend and is characterized by huge fluctuations from year to year. For instance, the imported quantity during year 2002--2007 ranged from the lowest 42 pairs (2003) to the highest 25,810 pairs (2004), with a mean figure of 7,689 pairs. During the period 2008--2011 the imported quantity ranged from the lowest 142 pairs (2008) to the highest 28,228 pairs (2009), with a mean figure of 8,233 pairs.

Similarly to import, the exported quantity was fluctuating highly from year to year. For instance, the imported quantity in the year 2005 was exceptionally high which stood at 6,200 pairs. But in the next year of 2006 it fell to only 6 pairs and again increased to 2,300 pairs in the year 2007. During 2008--2011 the exported quantity ranged from nil (2011) to 860 pairs (2008), with a yearly mean figure of 250 pairs.

In the absence of the trend in the data set, the average quantity imported in the past 10 years, which is 7,907 pairs, is assumed to reflect the unsatisfied domestic demand for year 2011. By applying 5% annual growth rate current (year 2012) unsatisfied domestic demand for leather sandals is estimated at 8,302 pairs.

The export market for leather sandals is very wide if the product is produced with attractive design and quality leather. The highest quantity exported was in year 2005 and year 2007, which amounts to 6,200 pairs and 2,300 pairs, respectively. Hence, due to the various incentives provided by the government to exporting industries a substantial amount of leather sandals can be exported to neighboring African countries and other parts of the world. For the purpose of this project, conservatively a current export market demand for 10,000 pairs is assumed to exist.

2. Demand Projection

Demand for leather sandals depends on the increase in number of consumers, urbanization and incomes. Considering the sustainable growth of gross national product (GDP), population growth and new needs to arise, the unsatisfied demand for local consumption is assumed to increase by 5% and exports by 15%. Based on the above mentioned current unsatisfied domestic demand and export, future demand is projected as shown in Table 3.2.

Table 3.2

PROJECTED DEMAND FOR LEATHER SANDALS (PAIRS)

Year	Domestic Unsatisfied Demand	Export Demand	Total Demand
2013	8,717	11,500	20,217
2014	9,153	13,225	22,378
2015	9,610	15,209	27,100
2016	10,091	17,490	27,581
2017	10,596	20,114	30,710
2018	11,125	23,130	34,255
2019	11,682	26,600	38,282
2020	12,266	30,590	42,856
2021	12,879	35,179	48,058
2022	13,523	40,456	53,979

The total unsatisfied domestic and export demand for leather sandals will grow from 20,217 pairs in the year 2013 to 34,255 pairs and 53,979 pairs by the year 2018 and year 2022, respectively.

3. Pricing and Distribution

Depending on the design and the quality of leather, current retail price of leather sandals range from Birr 250 to Birr 400. This means, current average retail price is Birr 325. Allowing 25% margin for distributors and retailers the recommended factory gate price is Birr 260.

Leather sandals are consumer items demanded by the majority of the urban population. Taking this in to consideration the product has to reach the end users through distributors and retailers of shoe throughout the country. As to export, the product will be sold to agents of overseas buyers or arrangements will be made with importers in the importing countries.

B. PLANT CAPACITY AND PRODUCTION PROGRAM

1. Plant Capacity

Based on the outcome of the market study, the envisaged plant will have a production capacity of 10,000 pairs of ladies leather sandals per annum. This capacity is proposed on the basis of a single shift of 8 hours per day and 300 working days per annum.

2. Production Program

Considering the time required for market penetration and skill development, the plant is assumed to start production at 75% of its installed capacity which will grow to 85% in the second year. Full capacity production can 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	Ladies leather sandals	pair	7,500	8,500	10,000
2	Capacity utilization rate	%	75	85	100

IV. MATERIALS AND INPUTS

A. RAW MATERIALS

The major raw materials required for the manufacture of ladies leather sandals are upper leather, lining leather, insoles, sewing thread, eyelets, tacks, adhesive, PVC soles, etc. The raw materials and related inputs required by the envisaged plant are available locally. The annual raw

and auxiliary materials requirement and cost at full operation capacity of the plant is depicted in Table 4.1.

Table 4.1

ANNUAL RAW MATERIALS REQUIREMENT AND COST

Sr. No.	Raw Materials	Unit of Measure	Required Qty	Unit Price, Birr/Unit	Total cost (`000 Birr)
1	Upper leather	square ft	20,000	25.00	500.00
2	Lining leather	square ft	17,500	12.50	218.75
3	PVS soles	pair	10,000	20.00	200.00
4	Insoles	kg	1,500	35.00	52.50
5	Sewing thread	kg	10	250.00	2.50
6	Adhesive	kg	500	35.00	17.50
8	Tacks	kg	156	224.36	35.00
9	Counters and toe putts	pc	1,600	20.00	32.00
10	Other materials like element late heel and top lifts etc	set	lump sum		30.00
Total					**1,088.25**

The only auxiliary material required for the envisaged plant is carton box for packing the product. Thus, 10,000 carton boxes will be required at full production of the plant, and the total annual cost is estimated at Birr 55,000.

B. UTILITIES

The utilities required by the envisaged plant are electric power and water. The annual requirement for electric power and water at full capacity operation of the plant along with the estimated costs are shown in Table 4.2.

Table 4.2

ANNUAL UTILITIES REQUIREMENT AND COST

Sr. No.	Description	Unit of Measure	Required Qty	Unit Price, Birr/Unit	Total cost (`Birr)
1	Electric power	kWh	5,000	0.58	2,889
2	Water	m^3	150	10.00	1,500
Total					**4,389**

V. TECHNOLOGY AND ENGINEERING

A. TECHNOLOGY

1. Production Process

The manufacturing process of leather sandals first involves cutting out the upper components from leather and the linings and insoles from leather or fabric and man made sheets. Then the edges of the upper components are tapered, or skived, to reduce the bulk of seams. The eyelets are then inserted in lacing styles and the various upper components are stitched and cemented together.

The insoles are then attached temporarily to the bottom of the last by tacks, and the heel stiffeners and the toe puffs, which respectively help to shape the backs and toes, are located. Cement lasting, involves stretching the edge of the upper round the last bottom and attaching it to the insole bottom with cement. After removing the tacks holding the insole to the last, the shoes are conditioned, the shanks which stiffen up the waist of the shoe (sandals) are attached to the insoles, and the sole units are stuck on to the bottom. The final manufacturing stage involves cleaning, inspecting and packing.

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

Total cost of machinery and equipment is estimated at Birr 815,751. Of the total cost Birr 652,601 is required in foreign currency. The list of plant machinery and equipment required for the project along with the estimated costs are shown in Table 5.1.

Table 5.1

MACHINERY & EQUIPMENT AND ESTIMATED COST

Sr. No.	Description	Unit	Qty	Cost ('000 Birr)		
				F.C.	L.C.	Total
1	Strap cutting machine	set	1	76.601	19.150	95.751
2	Cementing sewing machine	set	3	204.000	51.000	255.000
3	Cementing air press double bed	set	2	120.000	30.000	150.000
4	Double ended buffing machine with exhaust motor I.H.P	set	2	120.000	30.000	150.000
5	Tools and equipment	set	1	36.000	9.000	45.000
6	Straps fitting machine	set	2	96.000	24.000	120.000
Grand Total				**652.601**	**163.150**	**815.751**

2. Land, Buildings and Civil Works

The total area of land required for the envisaged project is 750 m^2, out of which 250 m^2 will be built – up area. The total cost of construction and civil works at the rate of Birr 4,500 per m^2 is estimated at Birr 1.125 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 199,500 of which 10% or Birr 19,950 will be paid in advance. The remaining Birr 179,550 will be paid in equal installments with in 28 years i.e. Birr 6,413 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 19 persons. Details of human resource requirement and the annual labor costs including fringe benefits are shown in Table 6.1.

Table 6.1

HUMAN RESOURCE REQUIREMENT AND LABOR COST

Sr. No.	Job Title	No. of Persons	Salary, Birr	
			Monthly	Annual
1	Plant manager	1	4,000	48,000
2	Secretary	1	800	9,600
3	Personnel	1	850	10,200
4	Sales person	1	800	9,600
5	Store keeper	1	800	9,600
6	Cashier	1	850	10,200
7	Accountant - clerk	1	800	9,600
8	Production supervisor	1	1,500	18,000
9	Mechanic	1	850	10,200
10	Designer	1	1,200	14,400
11	Skilled workers	4	2,200	26,400
12	Production worker	2	800	9,600
13	Driver	1	750	9,000
14	Guard	2	800	9,600
Sub - total		**19**	**17,000**	**204,000**
Employees benefit, 20% of basic salary				44,800
Total				**244,800**

B. TRAINING REQUIREMENT

Four skilled workers, a design expert and a mechanic should be given a 3 weeks on – the – job training by the advanced technician of the equipment supplier in the manufacturing technology and maintenance of equipment. The total training cost is estimated at Birr 12,000.

VII. FINANCIAL ANALYSIS

The financial analysis of the ladies' sandals 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 2.78 million. From the total investment cost the highest share (Birr 2.08 million or 74.79%) is accounted by fixed investment cost followed by pre operation cost (Birr 406.46 thousand or 14.61%) and initial working capital (Birr 289.71 thousand or 10.41%). From the total investment cost, Birr 652.60 thousand or 23.45% 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	19.95		19.95	0.72
1.2	Building and civil work	1,125.00		1,125.00	40.44
1.3	Machinery and equipment	163.15	652.60	815.75	29.32
1.4	Vehicles	0.00		0.00	0.00
1.5	Office furniture and equipment	125.00		125.00	4.49
	Sub- total	**1,433.10**	**652.60**	**2,085.70**	**74.97**
2	**Pre operating cost ***				
2.1	Pre operating cost	224.47		224.47	8.07
2.2	Interest during construction	181.99		181.99	6.54
	Sub -total	**406.46**		**406.46**	**14.61**
3	**Working capital**	**289.71**		**289.71**	**10.41**
	Grand Total	**2,129.27**	**652.60**	**2,781.87**	**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 409.14 thousand. However, only the initial working capital of Birr 289.71 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 2.09 million (see Table 7.2). The cost of raw material account for 54.46% of the production cost. The other major components of the production cost are depreciation, labour and financial cost, which account for 12.65%, 9.72% and 8.35%, respectively. The remaining 14.82% is the share of utility, marketing and distribution, repair and maintenance, labour 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	1,143.00	54.46
Utilities	4.00	0.19
Maintenance and repair	41.00	1.95
Labor direct	204.00	9.72
Labor overheads	41.00	1.95
Administration Costs	75.00	3.57
Land lease cost	-	-
Cost of marketing and distribution	150.00	7.15
Total Operating Costs	**1,658.00**	**79.00**
Depreciation	265.54	12.65
Cost of Finance	175.17	8.35
Total Production Cost	**2,098.71**	**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 349 thousand to Birr 615 thousand during the life of the project. Moreover, at the end of the project life the accumulated net cash flow amounts to Birr 5.79 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.

$$\text{Break -Even Sales Value} = \frac{\text{Fixed Cost + Financial Cost}}{\text{Variable Margin ratio (\%)}} = \text{Birr } 989{,}390$$

$$\text{Break- Even Capacity utilization} = \frac{\text{Break- even Sales Value}}{\text{Sales revenue}} \times 100 = 38\ \%$$

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 4 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 27.51% 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 principal 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 2.50 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 19 persons. The project will generate Birr 1.56 million in terms of tax revenue. The establishment of such factory will have a foreign exchange earning potential through export and foreign exchange saving effect to the country by substituting the current imports. The project will also create backward linkage with tanneries; plastic and textile sub sectors 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	200.03	228.60	285.75	285.75	285.75	285.75	285.75	285.75	285.75	285.75
Accounts receivable	100.47	113.03	138.17	138.17	138.70	138.70	138.70	138.70	138.70	138.70
Cash-in-hand	3.51	4.01	5.01	5.01	5.10	5.10	5.10	5.10	5.10	5.10
CURRENT ASSETS	**304.00**	**345.64**	**428.93**	**428.93**	**429.55**	**429.55**	**429.55**	**429.55**	**429.55**	**429.55**
Accounts payable	14.29	16.33	20.42	20.42	20.42	20.42	20.42	20.42	20.42	20.42
CURRENT LIABILITIES	**14.29**	**16.33**	**20.42**	**20.42**	**20.42**	**20.42**	**20.42**	**20.42**	**20.42**	**20.42**
TOTAL WORKING CAPITAL	**289.71**	**329.31**	**408.51**	**408.51**	**409.14**	**409.14**	**409.14**	**409.14**	**409.14**	**409.14**

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	800	914	1,143	1,143	1,143	1,143	1,143	1,143	1,143	1,143
Utilities	3	3	4	4	4	4	4	4	4	4
Maintenance and repair	29	33	41	41	41	41	41	41	41	41
Labour direct	143	163	204	204	204	204	204	204	204	204
Labour overheads	29	33	41	41	41	41	41	41	41	41
Administration Costs	53	60	75	75	75	75	75	75	75	75
Land lease cost	0	0	0	0	6	6	6	6	6	6
Cost of marketing and distribution	150	150	150	150	150	150	150	150	150	150
Total Operating Costs	**1,206**	**1,356**	**1,658**	**1,658**	**1,664**	**1,664**	**1,664**	**1,664**	**1,664**	**1,664**
Depreciation	266	266	266	266	266	58	58	58	58	58
Cost of Finance	0	200	175	150	125	100	75	50	25	0
Total Production Cost	**1,471**	**1,822**	**2,099**	**2,074**	**2,055**	**1,822**	**1,797**	**1,772**	**1,747**	**1,722**

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	1,820	2,340	2,600	2,600	2,600	2,600	2,600	2,600	2,600	2,600
Less variable costs	1,056	1,206	1,508	1,508	1,508	1,508	1,508	1,508	1,508	1,508
VARIABLE MARGIN	**764**	**1,134**	**1,092**	**1,092**	**1,092**	**1,092**	**1,092**	**1,092**	**1,092**	**1,092**
in % of sales revenue	42.00	48.44	42.00	42.00	42.00	42.00	42.00	42.00	42.00	42.00
Less fixed costs	416	416	416	416	422	214	214	214	214	214
OPERATIONAL MARGIN	**349**	**718**	**676**	**676**	**670**	**878**	**878**	**878**	**878**	**878**
in % of sales revenue	19.17	30.69	26.02	26.02	25.77	33.77	33.77	33.77	33.77	33.77
Financial costs		200	175	150	125	100	75	50	25	0
GROSS PROFIT	**349**	**518**	**501**	**526**	**545**	**778**	**803**	**828**	**853**	**878**
in % of sales revenue	19.17	22.13	19.28	20.24	20.96	29.92	30.89	31.85	32.81	33.77
Income (corporate) tax	0	0	0	158	163	233	241	248	256	263
NET PROFIT	**349**	**518**	**501**	**368**	**381**	**545**	**562**	**580**	**597**	**615**
in % of sales revenue	19.17	22.13	19.28	14.17	14.67	20.95	21.62	22.29	22.97	23.64

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	**2,310**	**2,306**	**2,342**	**2,604**	**2,600**	**2,600**	**2,600**	**2,600**	**2,600**	**2,600**	**2,600**	**1,286**
Inflow funds	2,310	486	2	4	0	0	0	0	0	0	0	0
Inflow operation	0	1,820	2,340	2,600	2,600	2,600	2,600	2,600	2,600	2,600	2,600	0
Other income	0	0	0	0	0	0	0	0	0	0	0	1,286
TOTAL CASH OUTFLOW	**2,310**	**1,692**	**1,848**	**2,167**	**2,216**	**2,204**	**2,248**	**2,231**	**2,213**	**2,196**	**1,928**	**0**
Increase in fixed assets	2,310	0	0	0	0	0	0	0	0	0	0	0
Increase in current assets	0	304	42	83	0	1	0	0	0	0	0	0
Operating costs	0	1,056	1,206	1,508	1,508	1,514	1,514	1,514	1,514	1,514	1,514	0
Marketing and Distribution cost	0	150	150	150	150	150	150	150	150	150	150	0
Income tax	0	0	0	0	158	163	233	241	248	256	263	0
Financial costs	0	182	200	175	150	125	100	75	50	25	0	0
Loan repayment	0	0	250	250	250	250	250	250	250	250	0	0
SURPLUS (DEFICIT)	**0**	**614**	**494**	**437**	**384**	**396**	**352**	**369**	**387**	**404**	**672**	**1,286**
CUMULATIVE CASH BALANCE	**0**	**614**	**1,108**	**1,545**	**1,929**	**2,325**	**2,677**	**3,046**	**3,433**	**3,838**	**4,510**	**5,796**

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**	**1,820**	**2,340**	**2,600**	**2,600**	**2,600**	**2,600**	**2,600**	**2,600**	**2,600**	**2,600**	**1,286**
Inflow operation	0	1,820	2,340	2,600	2,600	2,600	2,600	2,600	2,600	2,600	2,600	0
Other income	0	0	0	0	0	0	0	0	0	0	0	1,286
TOTAL CASH OUTFLOW	**2,600**	**1,245**	**1,436**	**1,658**	**1,817**	**1,828**	**1,898**	**1,905**	**1,913**	**1,920**	**1,928**	**0**
Increase in fixed assets	2,310	0	0	0	0	0	0	0	0	0	0	0
Increase in net working capital	290	40	79	0	1	0	0	0	0	0	0	0
Operating costs	0	1,056	1,206	1,508	1,508	1,514	1,514	1,514	1,514	1,514	1,514	0
Marketing and Distribution cost	0	150	150	150	150	150	150	150	150	150	150	0
Income (corporate) tax		0	0	0	158	163	233	241	248	256	263	0
NET CASH FLOW	**-2,600**	**575**	**904**	**942**	**783**	**772**	**702**	**695**	**687**	**680**	**672**	**1,286**
CUMULATIVE NET CASH FLOW	**-2,600**	**-2,025**	**-1,121**	**-179**	**605**	**1,377**	**2,079**	**2,774**	**3,461**	**4,141**	**4,813**	**6,099**
Net present value	-2,600	523	747	708	535	479	396	356	321	288	259	496
Cumulative net present value	-2,600	-2,077	-1,330	-622	-87	392	789	1,145	1,466	1,754	2,013	2,509

NET PRESENT VALUE	2,509
INTERNAL RATE OF RETURN	27.51%
NORMAL PAYBACK	4 years