PROFILE ON THE PRODUCTION OF LEATHER GLOVES

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I. SUMMARY

This profile envisages the establishment of a plant for the production of leather hand gloves with a capacity of 36,000 pairs per annum. Leather hand gloves are used for protective purposes in all sorts of activities, especially in factories, workshops, and construction and service sectors and for sports.

The country`s requirement of leather hand gloves is met through local production and import. The present (2012) unsatisfied local demand and export demand for leather hand gloves is estimated at 597,153 pairs. The unsatisfied local demand and export demand for the product is projected to reach 829,603 pairs and 1.26 million pairs by the years 2017 and 2025, respectively.

The principal raw materials required are upper leather and lining fabric which are available locally, and locks, zippers, buckles, assorted thread and others which have to be imported.

The total investment cost of the project including working capital is estimated at Birr 14.12 million. From the total investment cost the highest share (Birr 12.23 million or 86.57%) is accounted by fixed investment cost followed by pre operation cost (Birr 1.48 million or 10.51%) and initial working capital (Birr 412.62 thousand or 2.92%). From the total investment cost, Birr 5.60 million or 39.63% is required in foreign currency.

The project is financially viable with an internal rate of return (IRR) of 21.98% and a net present value (NPV) of Birr 8.15 million, discounted at 10%.

The project can create employment for 32 persons. The establishment of such factory will have a foreign exchange saving and earning effect to the country by substituting the current imports and exporting its products to the international market. The project will also create backward linkage with the livestock and textile sectors and also generates income for the Government in terms of tax revenue and payroll tax.

II. PRODUCT DESCRIPTION AND APPLICATION

Leather hand gloves are products of leather and used for protective purposes. Leather hand gloves are used as protective in all sorts of activities, especially in factories, workshops, and construction and service sectors and for sports.

III. MARKET STUDY AND PLANT CAPACITY

A. MARKET STUDY

1. Past Supply and Present Demand

The demand for leather gloves is met both from domestic production and imports. Ethiopia also exports a very small amount of leather gloves to the world market. However, domestic production data for gloves is not available from Report on Large & Medium Scale Manufacturing and Electricity Industries Survey of CSA. Hence, to estimate the unsatisfied domestic demand and export potential of the product, data obtained on import and export of leather gloves from the Ethiopian Revenues and Customs Authority is utilized (see Table 3.1).

As could be seen from Table 3.1, Ethiopia imports different kinds of leather gloves such as sports, protective and other types. Import of leather gloves in the past ten years has been very erratic although a general increasing trend is observed especially in the recent six years. The imported quantity which was about 101,400 kg in the year 2002--2003 has plummeted to a level of about 53,300 kg during the period 2004--2005. Import has again started to increase at a substantial rate starting year 2006. During the period 2006--2011, the yearly level of import ranged from the lowest 95,974 kg (year 2008) to the highest 183,894 kg (year 2009), with a mean figure of 136,687 kg. Of the total imported quantity in the past five years the share of sports gloves is about 1% and the remaining 99% is the share of protective and other gloves.

Table 3.1

IMPORTS AND EXPORTS OF LEATHER GLOVES (KG)

Year	Import of Sport Gloves	Import of Protective Gloves	Import of Other Than Sport Gloves	Total Import	Total Export
2002	67	9,353	92,094	101,514	20
2003	593	9,183	91,474	101,250	41
2004	227	10,181	24,753	35,161	0
2005	2,537	8,983	59,947	71,467	0
2006	889	58,809	78,421	138,119	0
2007	1,085	31,940	90,875	123,900	0
2008	1,438	39,812	54,724	95,974	211
2009	-	48,259	135,635	183,894	116
2010	443	29,992	80,152	110,587	6,629
2011	1,266	30,848	135,536	167,650	9,500

Source: - *Ethiopian Revenue and Customs Authority.*

Export of leather gloves from Ethiopia is a recent phenomenon. As could be seen from Table 3.1, there was no exported quantity during the period 2002-2009, except a small amount in year 2008 and 2009, which amounts to 200 kg. However, exported quantity has suddenly jumped to 6,629 kg and 9,500 kg during year 2010 and 2011, respectively. This shows that if leather gloves are produced at the desired quality and competitive price, there is a wide export potential market.

In order to estimate the present unsatisfied domestic demand, the imported quantity of the recent three years, which is 154,044 kg, is assumed to fairly reflect the demand for the year 2011. By applying a 5% growth rate the current (year 2012) domestic unsatisfied demand is set at 167,746 kg. With regard to export a 20% growth is applied by taking the exported quantity of year 2011 as a base. Accordingly, the export demand is estimated at 11,400 kg.

The weight of a pair of gloves varies depending on size and the type of leather used. For the purpose of this project a pair of leather gloves is assumed to weigh about 0.300 kg based on the average data calculated from import statistics. Therefore, the present unsatisfied domestic demand in pairs will be 559,153. The number of gloves to be exported is also calculated to be 38,000 pairs.

2. Demand Projection

The demand for leather gloves is expected to grow with the development of the manufacturing and construction sector as well as the recreational and/or sports sector. The industrial sector is forecasted to grow by 20% per annum during the GTP period. The sports and recreational activities are also expanding at a faster rate. Considering the above factors 5% annual growth rate is assumed conservatively in forecasting the future unsatisfied demand for the domestic market.

Ethiopia has a comparative advantage in leather products in the world market. So, if leather gloves are produced at the desired quality and competitive prices the world market is very wide. For this reason, a 25% annual growth rate is applied in forecasting the amount of gloves to be exported. Therefore, forecasted domestic unsatisfied demand and demand to be generated from export is depicted in Table 3.2.

Table 3.2

PROJECTED UNSATISFIED DOMESTIC DEMAND AND EXPORTS (PAIR)

Year	Domestic Unsatisfied Demand	Demand For Export
2013	587,110	47,500
2014	616,466	59,375
2015	647,289	74,219
2016	679,654	92,773
2017	713,636	115,967
2018	749,318	144,958
2019	786,784	181,198
2020	826,124	226,498
2021	867,430	283,122
2022	910,801	353,902

The unsatisfied domestic demand for leather gloves will increase from 587,110 pairs in the year 2013 to 749,318 pairs and 910,801 pairs in the year 2018 and 2022, respectively. The amount to be exported will also increase from 47,500 pairs in the year 2013 to 144,958 pairs and 353,902 pairs in the year 2018 and year 2022, respectively.

3. Pricing and Distribution

The prices of protective gloves in the retail market ranges from Birr 120-170 per pair. The price of sport type gloves ranges from Birr 250-350 per pair. This gives an average retail price of Birr 145 per pair of protective gloves and Birr 300 per pair for sports gloves. Allowing a profit margin of 25% for distributers and retailers, the recommended factory gate price for protective and sports gloves is Birr 116 and Birr 240 per pair, respectively.

Because the product will be a consumer good, distribution of the product will be through wholesalers from the factory-gate. For that of the export, it will be sold through agents or requires arranging the distribution with the importer abroad.

B. PLANT CAPACITY AND PRODUCTION PROGRAM

1. Plant Capacity

Because of the fact that there can be variety of leather gloves and different methods of manufacturing, 3 types of leather hand gloves: for kitchen, agro industrial works, and for cold season application are considered for production while proposing the annual production capacity of the envisaged plant. Thus based on the projected demand gap in the market study and considering the minimum economic scale of production, the plant is planned to have a capacity of 36,000 pairs of leather hand gloves comprising 4,000 pairs of leather hand gloves for kitchen use, 30,000 pairs for agro industrial works, and 2,000 pairs for cold season application per annum. This capacity is proposed on the basis of a single shift of 8 hours per day and 300 working days per annum. The annual production, upon requirement, can be increased by increasing the production shifts per day.

2. Production Program

Assuming that the plant requires enough time to penetrate into the market and to develop skills in the design and manufacturing of the product, the plant will start operation at 70% of the 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 the 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 _ 10th
1	Leather hand gloves	pair	25,200	30,600	36,000
2	Capacity utilization	%	70	85	100

IV. MATERIALS AND INPUTS

A. RAW MATERIALS

The major raw materials required for leather gloves production consists of upper leather and lining fabric which are available locally, and locks, zippers, buckles, assorted thread and others which have to be imported. The annual raw materials requirement of the envisaged plant at full capacity operation and the estimated costs are indicated in Table 4.1.

Table 4.1

ANNUAL RAW MATERIALS REQUIREMENT AND COST

Sr. No.	Raw Materials	Unit of Measure	Qty.	Unit Price, Birr/Unit	Cost (000 Birr)		
					F. C.	L.C.	Total
1	Upper leather	m^2	10,000	79.60		796.00	796.00
2	Lining fabrics	m^2	6,000	70.00		420.00	420.00
3	Locks	number	2,000	1.75	2.80	0.70	3.50
4	Zippers	number	3,000	5.25	12.60	3.15	15.75
5	Buckles	number	1,500	4.45	5.34	1.34	6.67
6	Thread, assorted	km	1,500	5.85	7.02	1.75	8.78
7	Miscellaneous	set	lump sum			35.00	35.00
Grand Total					**27.76**	**1,257.94**	**1,285.70**

The only auxiliary material required for the envisaged plant is polypropylene bag which can be available locally. The annual requirement for polypropylene bag at full capacity operation of the plant is 36,000 pieces, the cost of which is estimated at Birr 27,000.

B. UTILITIES

Electric power and water are the only utilities required for the envisaged plant. Details of the annual requirement for utilities at full capacity operation of the plant are shown in Table 4.2.

Table 4.2

ANNUAL UTILITIES REQUIREMENT AT FULL CAPACITY AND COST

Sr. No.	Description	Unit of Measure	Required Qty.	Unit Price, Birr/Unit	Cost, ('000 Birr)		
					F.C.	L.C.	Total
1	Electric power	kWh	20,000	0.5778		11.50	11.55
2	Water	m3	500	10.00		5.00	5.00
Total						**16.55**	**16.55**

V. TECHNOLOGY AND ENGINEERING

A. TECHNOLOGY

1. Production Process

The principal operations involved in leather hand gloves production are cutting, skiving, folding, stitching, splitting, inspecting and packing.

Cutting is performed either by hand, with the aid of knife and templates or in the clicking machine. It is an important operation in order to obtain consistent production and a satisfactory final appearance of the product. The same applies to the cutting of straps and belts with the strap cutter and cardboard reinforcements with the guillotine cutter.

Skiving and folding is done to secure straight and even edges. Stitching, done on sewing machine of different types, must take into consideration the materials to be sewn together, thread, needle, stitch length, etc. Splitting is sometimes required to reduce the thickness of leather or other sheet materials to be used.

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 plant machinery and equipment to be employed for manufacturing of leather hand gloves intended to be produced in the envisaged plant will be similar for most of the operations. There are only few equipment required for individual operations attached to specific product. The list of plant machinery and equipment required and the estimated costs are given 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	Hydraulic clicking machine	set	1	672	168	840
2	Guillotine cutter	set	1	560	140	700
3	Strap cutter	set	1	616	154	770
4	Splitting machine	set	1	560	140	700
5	Skiving machine	set	2	896	224	1,120
6	Folding machine	set	1	504	126	630
7	Sewing machine	set	10	1,344	336	1,680
8	Hand tools	set	1	448	112	560
Grand Total				**5,600**	**1,400**	**7,000**

2. Land, Buildings and Civil Works

The total area of land required for the envisaged plant is 1,200 m^2, out of which 900 m^2 is a built-up area that includes processing area, raw material stock area, offices, etc. The construction cost of buildings and civil works at a construction rate of Birr 4,500 per square meter is estimated at Birr 4.05 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 319,200 of which 10% or Birr 31,920 will be paid in advance. The remaining Birr 287,280 will be paid in equal installments with in 28 years i.e. Birr 10,260 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 requirement of the envisaged project is 32 persons. Details of the human resource requirement and the estimated annual labor cost including fringe benefits are given in Table 6.1.

Table 6.1

HUMAN RESOURCE REQUIREMENT AND ESTIMATED LABOR COST

Sr. No.	Job Title	Req. 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	Accountant	1	800	9,600
5	Cashier	1	800	9,600
6	Salesperson	1	800	9,600
7	Purchaser	1	800	9,600
8	Store keeper	1	800	9,600
9	Production supervisor	1	1,800	21,600
10	Design expert	1	1,600	19,200
11	Mechanic	1	850	10,200
12	Skilled worker	14	7,000	84,000

13	Semi-skilled worker	4	1,800	21,600
14	Driver	1	750	9,000
15	Guard	2	800	9,600
Sub - total		**32**	**24,250**	**291,000**
Employees benefit, 20% of basic salary			**4,850**	**58,200**
Total			**29,100**	**349,200**

B. TRAINING REQUIREMENT

The production supervisor, a mechanic, the design expert and 14 skilled production workers have to be given a 3 weeks on – the job training on production technology, equipment maintenance and product design by an advanced technician of the equipment supplier during machinery erection and commissioning. The total cost of training is estimated at Birr 200,000.

VII. FINANCIAL ANALYSIS

The financial analysis of the leather hand glove 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 14.12 million (see Table 7.1). From the total investment cost the highest share (Birr 12.23 million or 86.57%) is accounted by fixed investment cost followed by pre operation cost (Birr 1.48 million or 10.51%) and initial working capital (Birr 412.62 thousand or 2.92%). From the total investment cost, Birr 5.60 million or 39.63% 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	31.92		31.92	0.23
1.2	Building and civil work	4,050.00		4,050.00	28.66
1.3	Machinery and equipment	1,400.00	5,600.00	7,000.00	49.54
1.4	Vehicles	900.00		900.00	6.37
1.5	Office furniture and equipment	250.00		250.00	1.77
	Sub- total	**6,631.92**	**5,600.00**	**12,231.92**	**86.57**
2	**Pre operating cost ***				
2.1	Pre operating cost	560.00		560.00	3.96
2.2	Interest during construction	924.32		924.32	6.54
	Sub -total	**1,484.32**		**1,484.32**	**10.51**
3	**Working capital ****	**412.62**		**412.62**	**2.92**
	Grand Total	**8,528.86**	**5,600.00**	**14,128.86**	**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 563.67 thousand. However, only the initial working capital of Birr 412.62 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 5.90 million (see Table 7.2). The cost of depreciation account for 31.81% of the production cost. The other major components of the production cost are raw material and financial cost and labor, which account for 22.22%, 15.06% and 4.93%, respectively. The remaining 25.95% is the share of utility, 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 (000 Birr)**	**%**
Raw Material and Inputs	1,312.70	22.22
Utilities	16.55	0.28
Maintenance and repair	210.00	3.56
Labor direct	291.00	4.93
Labor overheads	58.20	0.99
Administration Costs	500.00	8.46
Land lease cost	-	-
Cost of marketing and distribution	750.00	12.70
Total Operating Costs	**3,138.45**	**53.13**
Depreciation	1,879.00	31.81
Cost of Finance	889.66	15.06
Total Production Cost	**5,907.11**	**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 689 thousand million to Birr 2.65 million during the life of the project. Moreover, at the end of the project life the accumulated net cash flow amounts to Birr 21.08 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.

$$\text{Break- Even Sales Value} = \frac{\text{Fixed Cost + Financial Cost}}{\text{Variable Margin ratio (\%)}} = \text{Birr } 3{,}953{,}859$$

$$\text{Break -Even Capacity utilization} = \frac{\text{Break- even Sales Value}}{\text{Sales revenue}} \times 100 = 55\%$$

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 5 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 21.98 % 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 8.15 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 32 persons. The project will generate Birr 6.15 million in terms of tax revenue. The establishment of such factory will have a foreign exchange saving and earning effect to the country by substituting the current imports and exporting its products to the international market. The project will also create backward linkage with the livestock and textile sectors and also generates income for the Government in terms of payroll tax.

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	229.72	262.54	328.18	328.18	328.18	328.18	328.18	328.18	328.18	328.18
Accounts receivable	201.83	221.73	261.54	261.54	262.39	262.39	262.39	262.39	262.39	262.39
Cash-in-hand	10.30	11.77	14.71	14.71	14.85	14.85	14.85	14.85	14.85	14.85
CURRENT ASSETS	**441.85**	**496.04**	**604.42**	**604.42**	**605.42**	**605.42**	**605.42**	**605.42**	**605.42**	**605.42**
Accounts payable	29.23	33.40	41.75	41.75	41.75	41.75	41.75	41.75	41.75	41.75
CURRENT LIABILITIES	**29.23**	**33.40**	**41.75**	**41.75**	**41.75**	**41.75**	**41.75**	**41.75**	**41.75**	**41.75**
TOTAL WORKING CAPITAL	**412.62**	**462.64**	**562.67**	**562.67**	**563.67**	**563.67**	**563.67**	**563.67**	**563.67**	**563.67**

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	919	1,050	1,313	1,313	1,313	1,313	1,313	1,313	1,313	1,313
Utilities	12	13	17	17	17	17	17	17	17	17
Maintenance and repair	147	168	210	210	210	210	210	210	210	210
Labour direct	204	233	291	291	291	291	291	291	291	291
Labour overheads	41	47	58	58	58	58	58	58	58	58
Administration Costs	350	400	500	500	500	500	500	500	500	500
Land lease cost	0	0	0	0	10	10	10	10	10	10
Cost of marketing and distribution	750	750	750	750	750	750	750	750	750	750
Total Operating Costs	**2,422**	**2,661**	**3,138**	**3,138**	**3,149**	**3,149**	**3,149**	**3,149**	**3,149**	**3,149**
Depreciation	1,879	1,879	1,879	1,879	1,879	187	187	187	187	187
Cost of Finance	0	1,017	890	763	635	508	381	254	127	0
Total Production Cost	**4,301**	**5,557**	**5,907**	**5,780**	**5,663**	**3,844**	**3,717**	**3,590**	**3,463**	**3,336**

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	4,990	6,415	7,128	7,128	7,128	7,128	7,128	7,128	7,128	7,128
Less variable costs	1,672	1,911	2,388	2,388	2,388	2,388	2,388	2,388	2,388	2,388
VARIABLE MARGIN	**3,318**	**4,504**	**4,740**	**4,740**	**4,740**	**4,740**	**4,740**	**4,740**	**4,740**	**4,740**
in % of sales revenue	66.49	70.21	66.49	66.49	66.49	66.49	66.49	66.49	66.49	66.49
Less fixed costs	2,629	2,629	2,629	2,629	2,639	947	947	947	947	947
OPERATIONAL MARGIN	**689**	**1,875**	**2,111**	**2,111**	**2,100**	**3,792**	**3,792**	**3,792**	**3,792**	**3,792**
in % of sales revenue	13.81	29.23	29.61	29.61	29.47	53.20	53.20	53.20	53.20	53.20
Financial costs		1,017	890	763	635	508	381	254	127	0
GROSS PROFIT	**689**	**858**	**1,221**	**1,348**	**1,465**	**3,284**	**3,411**	**3,538**	**3,665**	**3,792**
in % of sales revenue	13.81	13.38	17.13	18.91	20.55	46.07	47.85	49.64	51.42	53.20
Income (corporate) tax	0	0	0	404	439	985	1,023	1,061	1,100	1,138
NET PROFIT	**689**	**858**	**1,221**	**944**	**1,025**	**2,299**	**2,388**	**2,477**	**2,566**	**2,655**
in % of sales revenue	13.81	13.38	17.13	13.24	14.39	32.25	33.50	34.75	35.99	37.24

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	**12,792**	**6,356**	**6,419**	**7,136**	**7,128**	**7,128**	**7,128**	**7,128**	**7,128**	**7,128**	**7,128**	**3,950**
Inflow funds	12,792	1,366	4	8	0	0	0	0	0	0	0	0
Inflow operation	0	4,990	6,415	7,128	7,128	7,128	7,128	7,128	7,128	7,128	7,128	0
Other income	0	0	0	0	0	0	0	0	0	0	0	3,950
TOTAL CASH OUTFLOW	**12,792**	**3,788**	**5,003**	**5,407**	**5,576**	**5,496**	**5,913**	**5,824**	**5,735**	**5,646**	**4,286**	**0**
Increase in fixed assets	12,792	0	0	0	0	0	0	0	0	0	0	0
Increase in current assets	0	442	54	108	0	1	0	0	0	0	0	0
Operating costs	0	1,672	1,911	2,388	2,388	2,399	2,399	2,399	2,399	2,399	2,399	0
Marketing and Distribution cost	0	750	750	750	750	750	750	750	750	750	750	0
Income tax	0	0	0	0	404	439	985	1,023	1,061	1,100	1,138	0
Financial costs	0	924	1,017	890	763	635	508	381	254	127	0	0
Loan repayment	0	0	1,271	1,271	1,271	1,271	1,271	1,271	1,271	1,271	0	0
SURPLUS (DEFICIT)	**0**	**2,568**	**1,417**	**1,729**	**1,552**	**1,632**	**1,215**	**1,304**	**1,393**	**1,482**	**2,842**	**3,950**
CUMULATIVE CASH BALANCE	**0**	**2,568**	**3,985**	**5,714**	**7,265**	**8,898**	**10,112**	**11,416**	**12,809**	**14,291**	**17,132**	**21,082**

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**	**4,990**	**6,415**	**7,128**	**7,128**	**7,128**	**7,128**	**7,128**	**7,128**	**7,128**	**7,128**	**3,950**
Inflow operation	0	4,990	6,415	7,128	7,128	7,128	7,128	7,128	7,128	7,128	7,128	0
Other income	0	0	0	0	0	0	0	0	0	0	0	3,950
TOTAL CASH OUTFLOW	**13,205**	**2,472**	**2,761**	**3,138**	**3,544**	**3,588**	**4,134**	**4,172**	**4,210**	**4,248**	**4,286**	**0**
Increase in fixed assets	12,792	0	0	0	0	0	0	0	0	0	0	0
Increase in net working capital	413	50	100	0	1	0	0	0	0	0	0	0
Operating costs	0	1,672	1,911	2,388	2,388	2,399	2,399	2,399	2,399	2,399	2,399	0
Marketing and Distribution cost	0	750	750	750	750	750	750	750	750	750	750	0
Income (corporate) tax		0	0	0	404	439	985	1,023	1,061	1,100	1,138	0
NET CASH FLOW	**-13,205**	**2,518**	**3,654**	**3,990**	**3,584**	**3,540**	**2,994**	**2,956**	**2,918**	**2,880**	**2,842**	**3,950**
CUMULATIVE NET CASH FLOW	**-13,205**	**-10,686**	**-7,032**	**-3,043**	**541**	**4,081**	**7,075**	**10,031**	**12,949**	**15,829**	**18,671**	**22,620**
Net present value	-13,205	2,289	3,020	2,997	2,448	2,198	1,690	1,517	1,361	1,221	1,096	1,523
Cumulative net present value	-13,205	-10,915	-7,895	-4,898	-2,450	-252	1,438	2,955	4,316	5,537	6,633	8,156

NET PRESENT VALUE	8,156
INTERNAL RATE OF RETURN	21.98%
NORMAL PAYBACK	5 years