

**PROFILE ON THE PRODUCTION OF  
BLANKET**

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## **I. SUMMARY**

This profile envisages the establishment of a plant for the production of blanket with a capacity of 450,000 pieces per annum. Blanket is a piece of woven warm fabric, usually produced from wool, synthetic or cotton yarn for use as a bed covering and a night wear.

The country's requirement of blanket is met through local production and import. The present (2012) demand for blanket is estimated at 2.38 million pieces. The demand for the product is projected to reach 3.19 million pieces and 3.88 pieces by the year 2018 and 2022.

The principal raw materials required are acrylic waste fiber, cotton yarn, ribbons and threads. Acrylic waste fiber is imported while cotton yarn, ribbons and threads are available locally.

The total investment cost of the project including working capital is estimated at Birr 54.02 million. From the total investment cost the highest share (Birr 39.44 million or 73.01%) is accounted by fixed investment cost followed by initial working capital (Birr 9.99 million or 18.49%) and pre operation cost (Birr 4.59 million or 8.50%). From the total investment cost Birr 18.12 million or 33.54% is required in foreign currency.

The project is financially viable with an internal rate of return (IRR) of 24.05% and a net present value (NPV) of Birr 39.76 million discounted at 10%.

The project can create employment for 132 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 the textile sector and also generates income for the Government in terms of tax revenue and payroll tax.

## **II. PRODUCT DESCRIPTION AND APPLICATION**

A blanket is a piece of woven warm fabric, usually produced from wool, synthetic or cotton yarn (usually from cotton waste) for use as a bed covering and a night wear. Nowadays, blankets are replacing the traditional hand woven "bana", gabi and buluco in rural areas.

Blankets are manufactured in standard sizes. The standards are based on the surface area and the specific weight of the blankets. Accordingly, cotton blankets could be light weight or medium weight. Light weight blankets have a specific weight of 550 gm/m<sup>2</sup>. Medium weight blankets have a specific weight of 1000gm/m<sup>2</sup>. Standard blankets have sizes of 160X220 cm<sup>2</sup>. Family size blankets and either 180X220 cm<sup>2</sup> or 200X220cm<sup>2</sup>.

### III. MARKET STUDY AND PLANT CAPACITY

#### A. MARKET STUDY

##### 1. Past Supply and Present Demand

The demand for blankets is met through imports and domestic production. Domestic manufacturers of the product include Debre Berhan Blanket Factory, KK PLC, DH GEDA and others. Exports of blankets are negligible; they constituted an insignificant proportion of domestic production (0.007% on the average). The total domestic supply of blankets i.e. imported and domestically produced blankets net of exports, during 2000 - 2011 is depicted in Table 3.1.

**Table 3.1**  
**TOTAL SUPPLY OF BLANKETS**

Year	Import <sup>1</sup>		Domestic Production <sup>2</sup>	Export <sup>2</sup>		Total Supply
	Tons	Pieces	Pieces	Kg	Pieces	Pieces
2000	1,115,000	446,000	969,572	-	-	1,415,572
2001	1,714,000	685,600	614,459	-	-	1,300,059
2002	1,661,000	664,400	914,305	-	-	1,578,705
2003	4,332,000	1,732,800	987,268	-	-	2,720,068
2004	2,955,000	1,182,000	1,097,729	550	220	2,279,509
2005	3,777,000	1,510,800	1,588,162	-	-	3,098,962
2006	3,255,000	1,302,000	854,828	385	154	2,156,674
2007	2,032,000	812,800	474,636	10	4	1,287,432
2008	1,803,000	721,200	718,069	110	44	1,439,225
2009	1,251,000	500,400	2,262,733	74	30	2,763,103
2010	1,206,000	482,400	*2,262,733	163	65	2,745,068
2011	1,210,000	484,000	*2,262,733	-	-	2,746,733

\* - 2009 production is taken for the years 2010/11 since the data is not published by CSA

**Source:** - 1. Ethiopian Revenues & Customs Authority for Import.

2. CSA for Domestic Production.

As can be seen from Table 3.1, total supply of blanket varied from 1,287,432 pieces in 2007 to 3,098,962 pieces in 2005. Total supply of the product exhibited an annual average growth of about 12 % and averaged at 2,127,597 pieces during the period under reference. Applying the average annual growth rate of the total supply, the current effective demand for the product is estimated at 2,382,904 pieces. Domestic production, on the average, covered about 59% of the total blanket supply during this period though it is facing increased competition from imported products mainly from China.

## 2. Projected Demand

The demand for blankets is directly related to population growth, urbanization and income. Therefore, a conservative annual growth rate of 5% is applied to project the future demand for the product. Given the 59% average share of domestic production, the future unsatisfied demand for the product is considered to be 41% of the projected demand for the product (see Table 3.2).

**Table 3.2**  
**PROJECTED DEMAND FOR BLANKETS (pieces)**

<b>Year</b>	<b>Projected Demand</b>	<b>Share of Existing Firms</b>	<b>Unsatisfied Demand</b>
2013	2,502,049	1,476,209	1,025,840
2014	2,627,152	1,550,020	1,077,132
2015	2,758,509	1,627,520	1,130,989
2016	2,896,435	1,708,897	1,187,538
2017	3,041,256	1,794,341	1,246,915
2018	3,193,319	1,884,058	1,309,261
2019	3,352,985	1,978,261	1,374,724
2020	3,520,634	2,077,174	1,443,460
2021	3,696,662	2,181,031	1,515,631
2022	3,881,500	2,290,085	1,591,415

As can be seen from Table 3.2, the unsatisfied demand for blanket will grow from 1,025,840 pieces in the year 2013 to 1,309,261pieces and 1,591,415 pieces by the year 2018 and 2022, respectively.

### **3. Pricing and Distribution**

Based on the recent import data obtained from Customs Authority a factory gate price of Birr 54,912.40 per ton or Birr 137.28 per piece is recommended. The product will find its market outlet through the existing wholesale and retail channels.

## **B. PLANT CAPACITY AND PRODUCTION PROGRAM**

### **1. Plant Capacity**

The basic determinant factors to be considered prior to determining the plant capacity are the outcome of the market study, available supply volume of raw materials and certified output capacity of production machineries available in the market and the corresponding cost. Accordingly, the daily production capacity of the envisaged factory is selected to be 1,500 pieces. Therefore, based on 300 working days per annum, one shifts of eight hours each per day the annual production capacity of the envisaged factory is set at 450,000 pieces.

### **2. Production Program**

The plant will initially operate at 75 % of its rated capacity. During the second and third years, the plant will operate at 85 % and 100 % of its full capacity, respectively. The capacity build-up is required to introduce the operators and technicians with the new machines and to penetrate the blanket market.

## **IV. RAW MATERIALS AND INPUTS**

### **A. RAW MATERIALS**

The main raw materials are acrylic waste fiber, cotton yarn, ribbons and threads. Acrylic waste fiber is imported and cotton yarn, ribbons and threads are available locally from Almeda Textile Share Company, Ethio-Japan Nylon Factory and Edget thread Factory. The auxiliary raw materials are plastic bag, Hessian cloth and steel strapping for packing of produced blanket. The quantity required and their costs are shown in Table 4.1.

**Table 4.1**

**ANNUAL RAW MATERIAL REQUIREMENT AND COST AT  
FULL PLANT CAPACITY**

Description	Unit of Measure	Qty.	Unit Cost '000 Birr	Total Cost '000 Birr
<b>A. Direct Raw Materials</b>				
Acrylic Waste	Tons	1,619.21	11.00	17,811.29
Cotton Yarn	Tons	122.01	28.00	3,416.20
Ribbon	Km	3,571.48	0.75	2,678.61
Sewing thread	Tons	0.76	57.25	43.49
<b>Sub Total</b>				<b>23,949.58</b>
<b>B. Auxiliary Materials</b>				
Plastic bag	Pcs	453,612.60	0.030	13,608.38
Hessian Cloth	Tons	4,312.80	0.275	1,186.02
Steel Strapping	Tons	3.60	49.00	176.40
<b>Sub Total</b>				<b>14,970.80</b>
<b>Grand Total</b>				<b>38,920.38</b>

**B. UTILITIES**

Electricity, fuel oil and water are the basic utilities required by the plant. Annual requirements of utilities at full capacity operation of the plant and their costs are depicted in Table 4.2.

**Table 4.2**

**ANNUAL UTILITIES REQUIREMENT AND ESTIMATED COSTS**

Sr. No.	Description	Quantity	Unit Price (Birr)	Total Price (Birr)
1	Electricity (kWh)	1,080,000	0.58	626,400
2	Water (m <sup>3</sup> )	58,000	10	580,000
	<b>Total</b>			<b>1,206,400</b>

## **V. TECHNOLOGY AND ENGINEERING**

### **A. TECHNOLOGY**

#### **1. Production Process**

The production process involves opening, blending, carding and ring spinning followed by cone winding to provide the weft yarn from source colored synthetic waste fiber Two-fold cotton yarns are used for making warps. Additional but minor processes are blending, winding, warping, shearing, polishing, sewing and packing. After the warp is prepared, weaving of weft and warp takes place by using shuttle less, flexible rapier 100 m<sup>2</sup>. Then, raising of the woven blanket follows. The raised blanket is cut, sewn and packed in bales. The envisaged project doesn't involve waste treatment.

#### **2. Environmental Impact**

In terms of emissions, envisaged plant production is not polluting. However one of the raw materials used i.e. acrylic waste is not biodegradables. So, to overcome this environmental problem the wastes during production should be recycled in the process with no additional investment for environmental protection.

### **B. ENGINEERING**

#### **1. Machinery and Equipment**

The list of machinery and equipment required by the project is shown in Table 5.1. The cost of machinery and equipment is estimated to be Birr 23.5 million.

**Table 5.1**

**LIST OF MACHINERY AND EQUIPMENT REQUIRED**

Sr. No.	Description	Qty	Unit cost ('000Birr)		Total cost ('000Birr)		
			FC	LC	FC	LC	Total
1	Blending line	1	480.0	-	480	-	480
2	Telescopic cyclones	2	102.0	-	204	-	204
3	Card set	4	1800.0	-	7,200	-	7,200
4	Carding accessories	1	204.0	-	204	-	204
5	Deducting machine	1	81.0	-	81	-	81
6	Spinning frame double	2	840.0	-	1,680	-	1,680
7	Spinning frame single	1	472.5	-	473	-	473
8	Spinning accessories	1	157.5	-	158	-	158
9	Cone winder, & spindles	6	48.0	-	288	-	288
10	Warping & bearing machine	1	252.0	-	252	-	252
11	Wrapper accessories	1	52.5	-	53	-	53
12	Weaving machine	36	142.5	-	5,130	-	5,130
13	Raising machine	1	384.0	-	384	-	384
14	Roller machine	2	138.0	-	276	-	276
15	Shearing and polishing machine	2	240.0	-	480	-	480
16	Sewing machine	12	3.8	-	45	-	45
17	Bale press	1	112.5	-	113	-	113
18	Ducting	1	60.0	-	60	-	60
19	Cutters and blades		18.0	-	-	-	-
20	Air conditioner	2	82.8	-	166	-	166
21	Compressor	2	198.0	-	396	-	396
	<b>Total FOB</b>	-	-	-	<b>18,121</b>	-	18,121
	Port handling, bank charge, Insurance, inland transport etc. ( 30% of FOB)	-	-	-		5,436	5,436
	<b>Grand Total</b>				<b>18,121</b>	<b>5,436</b>	<b>23,557</b>

**2. Land, Building and Civil Works**

The total area of land required by the project is estimated to be 5,000 m<sup>2</sup>, out of which 2,750 m<sup>2</sup> will be built-up area. The cost of building and civil work at a rate of Birr 5,000 per m<sup>2</sup> is estimated at Birr 13.75 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 5000 m<sup>2</sup>, 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<sup>2</sup>, 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<sup>2</sup>. 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<sup>2</sup>. 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<sup>2</sup> (see Table 5.2).

**Table 5.2**

**NEW LAND LEASE FLOOR PRICE FOR PLOTS IN ADDIS ABABA**

<b>Zone</b>	<b>Level</b>	<b>Floor price/m<sup>2</sup></b>
Central Market District	1 <sup>st</sup>	1686
	2 <sup>nd</sup>	1535
	3 <sup>rd</sup>	1323
	4 <sup>th</sup>	1085
	5 <sup>th</sup>	894
Transitional zone	1 <sup>st</sup>	1035
	2 <sup>nd</sup>	935
	3 <sup>rd</sup>	809
	4 <sup>th</sup>	685
	5 <sup>th</sup>	555
Expansion zone	1 <sup>st</sup>	355
	2 <sup>nd</sup>	299
	3 <sup>rd</sup>	217
	4 <sup>th</sup>	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<sup>2</sup> which is equivalent to the average floor price of plots located in expansion zone is adopted.

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

**Table 5.3**

**INCENTIVES FOR LEASE PAYMENT OF INDUSTRIAL PROJECTS**

<b>Scored Point</b>	<b>Grace Period</b>	<b>Payment Completion Period</b>	<b>Down Payment</b>
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<sup>2</sup> is estimated at Birr 1,330,000 of which 10% or Birr 133,000 will be paid in advance. The remaining Birr 1,197,000 will be paid in equal installments within 28 years i.e. Birr 42,750 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, policy and regulation of other regional state of the country updated information is available at Ethiopian Investment Agency's website [www.eia.gov.et](http://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 plant is 132 persons. Details of human resource and estimated annual cost are indicated in Table 6.1.

**Table 6.1**

**HUMAN RESOURCE REQUIREMENT AND ESTIMATED COST (BIRR)**

<b>Sr. No</b>	<b>Description</b>	<b>No.</b>	<b>Monthly Salary Per Person</b>	<b>Annual Salary (Birr)</b>
1	General Manager	1	6,000	72,000
2	Executive secretary	1	2,200	26,400
3	Production and technical manager	1	4,500	54,000
4	commercial manager	1	4,500	54,000
5	HR manager	1	4,500	54,000
6	Finance Manager	1	4,500	54,000
7	Production head	1	3,500	42,000
8	Technical head	1	3,500	42,000
9	personnel	1	2,800	33,600
10	supervisors	2	5,000	60,000
11	Foremen	15	30,000	360,000
12	Operators	36	57,600	691,200
13	Assistance operator	36	43,200	518,400
14	Mechanics	6	10,800	129,600
15	Electricians	6	10,800	129,600
16	General Service Head	1	2,400	28,800
17	Store Head	1	3,500	42,000
18	Accountants	3	7,500	90,000
19	senior secretaries	4	7,200	86,400
20	purchaser	1	2,000	24,000
21	sales officers	2	5,000	60,000
22	cashier	1	1,600	19,200
23	Guard	6	4,800	57,600
24	Drivers	3	3,600	43,200
	<b>Sub - Total</b>	<b>132</b>	<b>231,000</b>	<b>2,772,000</b>
	Employee's Benefit (20% of basic salary)			693,000
	<b>Grand - Total</b>	<b>132</b>		<b>3,465,000</b>

**B. TRAINING REQUIREMENT**

Supervisors, foreman, and operators, mechanics & electricians need to be given on job training for about two weeks by qualified personnel of machinery supplier and as

well by the textile institute available in the center. The training cost is estimated at about Birr 150,000.

## **VII. FINANCIAL ANALYSIS**

The financial analysis of the blanket 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 days
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 54.02 million (See Table 7.1). From the total investment cost the highest share (Birr 39.44 million or 73.01%) is accounted by fixed investment cost followed by initial working capital (Birr 9.99 million or 18.49%) and pre operation cost (Birr 4.59 million or 8.50%). From the total investment cost Birr 18.12 million or 33.54% is required in foreign currency.

**Table 7.1**

**INITIAL INVESTMENT COST ( '000 Birr)**

<b>Sr. No</b>	<b>Cost Items</b>	<b>Local Cost</b>	<b>Foreign Cost</b>	<b>Total Cost</b>	<b>% Share</b>
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<b>1</b>	<b>Fixed investment</b>				
1.1	Land Lease	133.00		133.00	0.25
1.2	Building and civil work	13,750.00		13,750.00	25.45
1.3	Machinery and equipment	5,436.00	18,121.00	23,557.00	43.61
1.4	Vehicles	1,500.00		1,500.00	2.78
1.5	Office furniture and equipment	500.00		500.00	0.93
	<b>Sub total</b>	<b>21,319.00</b>	<b>18,121.00</b>	<b>39,440.00</b>	<b>73.01</b>
<b>2</b>	<b>Pre operating cost *</b>				
2.1	Pre operating cost	1,056.71		1,056.71	1.96
2.2	Interest during construction	3,534.16		3,534.16	6.54
	<b>Sub total</b>	<b>4,590.87</b>		<b>4,590.87</b>	<b>8.50</b>
<b>3</b>	<b>Working capital **</b>	<b>9,991.22</b>		<b>9,991.22</b>	<b>18.49</b>
	<b>Grand Total</b>	<b>35,901.09</b>	<b>18,121.00</b>	<b>54,022.09</b>	<b>100.00</b>

\* 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 13.55 million. However, only the initial working capital of Birr 9.99 million 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 54.77 million (see Table 7.2). The cost of raw material account for 71.06% of the production cost. The other major components of the production cost are depreciation, financial cost and labour, which account for 10.63%, 6.21% and 5.06% respectively. The remaining 6.97% 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)**

<b>Items</b>	<b>Cost (in 000 Birr)</b>	<b>%</b>
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Raw Material and Inputs	38,920	71.06
Utilities	1,206	2.20
Maintenance and repair	707	1.29
Labor direct	2,772	5.06
Labor overheads	693	1.27
Administration Costs	500	0.91
Land lease cost	0	0.00
Cost of marketing and distribution	750	1.37
<b>Total Operating Costs</b>	<b>45,548</b>	<b>83.16</b>
Depreciation	5,823	10.63
Cost of Finance	3,402	6.21
<b>Total Production Cost</b>	<b>54,773</b>	<b>100.00</b>

## C. FINANCIAL EVALUATION

### 1. Profitability

Based on the projected profit and loss statement, the project will generate a profit throughout its operation life. Annual net profit after tax will grow from Birr 9.55 million to Birr 10.91 million during the life of the project. Moreover, at the end of the project life the accumulated net cash flow amounts to Birr 98.85 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.

$$\text{Brake Even Sales Value} = \frac{\text{Fixed Cost} + \text{Financial Cost}}{\text{Variable Margin ratio (\%)}} = \text{Birr } 25,946,000$$

$$\text{Brake Even Capacity utilization} = \frac{\text{Break even Sales Value}}{\text{Sales revenue}} \times 100 = 38.71\%$$

#### **4. Pay-back Period**

The payback 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 24.05% 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 39.76 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 132 persons. The project will generate Birr 21.92 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 the textile sector 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)**

<b>Items</b>	<b>Year 2</b>	<b>Year 3</b>	<b>Year 4</b>	<b>Year 5</b>	<b>Year 6</b>	<b>Year 7</b>	<b>Year 8</b>	<b>Year 9</b>	<b>Year 10</b>	<b>Year 11</b>
Total inventory	7,297.57	8,270.58	9,730.10	9,730.10	9,730.10	9,730.10	9,730.10	9,730.10	9,730.10	9,730.10
Accounts receivable	2,862.41	3,235.73	3,795.71	3,795.71	3,799.27	3,799.27	3,799.27	3,799.27	3,799.27	3,799.27
Cash-in-hand	48.66	55.15	64.88	64.88	65.48	65.48	65.48	65.48	65.48	65.48
<b>CURRENT ASSETS</b>	<b>10,208.64</b>	<b>11,561.46</b>	<b>13,590.69</b>	<b>13,590.69</b>	<b>13,594.84</b>	<b>13,594.84</b>	<b>13,594.84</b>	<b>13,594.84</b>	<b>13,594.84</b>	<b>13,594.84</b>
Accounts payable	217.42	246.41	289.89	289.89	289.89	289.89	289.89	289.89	289.89	289.89
<b>CURRENT LIABILITIES</b>	<b>217.42</b>	<b>246.41</b>	<b>289.89</b>	<b>289.89</b>	<b>289.89</b>	<b>289.89</b>	<b>289.89</b>	<b>289.89</b>	<b>289.89</b>	<b>289.89</b>
<b>TOTAL WORKING CAPITAL</b>	<b>9,991.22</b>	<b>11,315.05</b>	<b>13,300.79</b>	<b>13,300.79</b>	<b>13,304.95</b>	<b>13,304.95</b>	<b>13,304.95</b>	<b>13,304.95</b>	<b>13,304.95</b>	<b>13,304.95</b>

**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	29,190	33,082	38,920	38,920	38,920	38,920	38,920	38,920	38,920	38,920
Utilities	905	1,025	1,206	1,206	1,206	1,206	1,206	1,206	1,206	1,206
Maintenance and repair	530	601	707	707	707	707	707	707	707	707
Labour direct	2,079	2,356	2,772	2,772	2,772	2,772	2,772	2,772	2,772	2,772
Labour overheads	520	589	693	693	693	693	693	693	693	693
Administration Costs	375	425	500	500	500	500	500	500	500	500
Land lease cost	0	0	0	0	43	43	43	43	43	43
Cost of marketing and distribution	750	750	750	750	750	750	750	750	750	750
<b>Total Operating Costs</b>	<b>34,349</b>	<b>38,829</b>	<b>45,548</b>	<b>45,548</b>	<b>45,591</b>	<b>45,591</b>	<b>45,591</b>	<b>45,591</b>	<b>45,591</b>	<b>45,591</b>
Depreciation	5,823	5,823	5,823	5,823	5,823	600	600	600	600	600
Cost of Finance	0	3,888	3,402	2,916	2,430	1,944	1,458	972	486	0
<b>Total Production Cost</b>	<b>40,172</b>	<b>48,539</b>	<b>54,773</b>	<b>54,287</b>	<b>53,844</b>	<b>48,135</b>	<b>47,649</b>	<b>47,163</b>	<b>46,677</b>	<b>46,191</b>

**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	46,332	52,510	61,776	61,776	61,776	61,776	61,776	61,776	61,776	61,776
Less variable costs	33,599	38,079	44,798	44,798	44,798	44,798	44,798	44,798	44,798	44,798
<b>VARIABLE MARGIN</b>	<b>12,733</b>	<b>14,431</b>	<b>16,978</b>	<b>16,978</b>	<b>16,978</b>	<b>16,978</b>	<b>16,978</b>	<b>16,978</b>	<b>16,978</b>	<b>16,978</b>
in % of sales revenue	27.48	27.48	27.48	27.48	27.48	27.48	27.48	27.48	27.48	27.48
Less fixed costs	6,573	6,573	6,573	6,573	6,615	1,393	1,393	1,393	1,393	1,393
<b>OPERATIONAL MARGIN</b>	<b>6,160</b>	<b>7,859</b>	<b>10,405</b>	<b>10,405</b>	<b>10,362</b>	<b>15,585</b>	<b>15,585</b>	<b>15,585</b>	<b>15,585</b>	<b>15,585</b>
in % of sales revenue	13.30	14.97	16.84	16.84	16.77	25.23	25.23	25.23	25.23	25.23
Financial costs		3,888	3,402	2,916	2,430	1,944	1,458	972	486	0
<b>GROSS PROFIT</b>	<b>6,160</b>	<b>3,971</b>	<b>7,003</b>	<b>7,489</b>	<b>7,932</b>	<b>13,641</b>	<b>14,127</b>	<b>14,613</b>	<b>15,099</b>	<b>15,585</b>
in % of sales revenue	13.30	7.56	11.34	12.12	12.84	22.08	22.87	23.65	24.44	25.23
Income (corporate) tax	0	0	0	0	0	4,092	4,238	4,384	4,530	4,675
<b>NET PROFIT</b>	<b>6,160</b>	<b>3,971</b>	<b>7,003</b>	<b>7,489</b>	<b>7,932</b>	<b>9,549</b>	<b>9,889</b>	<b>10,229</b>	<b>10,569</b>	<b>10,909</b>
in % of sales revenue	13.30	7.56	11.34	12.12	12.84	15.46	16.01	16.56	17.11	17.66

**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
<b>TOTAL CASH INFLOW</b>	<b>40,497</b>	<b>60,075</b>	<b>52,539</b>	<b>61,819</b>	<b>61,776</b>	<b>61,776</b>	<b>61,776</b>	<b>61,776</b>	<b>61,776</b>	<b>61,776</b>	<b>61,776</b>	<b>25,222</b>
Inflow funds	40,497	13,743	29	43	0	0	0	0	0	0	0	0
Inflow operation	0	46,332	52,510	61,776	61,776	61,776	61,776	61,776	61,776	61,776	61,776	0
Other income	0	0	0	0	0	0	0	0	0	0	0	25,222
<b>TOTAL CASH OUTFLOW</b>	<b>40,497</b>	<b>48,092</b>	<b>48,929</b>	<b>55,839</b>	<b>53,324</b>	<b>52,885</b>	<b>56,487</b>	<b>56,147</b>	<b>55,806</b>	<b>55,466</b>	<b>50,267</b>	<b>0</b>
Increase in fixed assets	40,497	0	0	0	0	0	0	0	0	0	0	0
Increase in current assets	0	10,209	1,353	2,029	0	4	0	0	0	0	0	0
Operating costs	0	33,599	38,079	44,798	44,798	44,841	44,841	44,841	44,841	44,841	44,841	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	4,092	4,238	4,384	4,530	4,675	0
Financial costs	0	3,534	3,888	3,402	2,916	2,430	1,944	1,458	972	486	0	0
Loan repayment	0	0	4,859	4,859	4,859	4,859	4,859	4,859	4,859	4,859	0	0
<b>SURPLUS (DEFICIT)</b>	<b>0</b>	<b>11,983</b>	<b>3,610</b>	<b>5,981</b>	<b>8,452</b>	<b>8,891</b>	<b>5,289</b>	<b>5,629</b>	<b>5,970</b>	<b>6,310</b>	<b>11,509</b>	<b>25,222</b>
<b>CUMULATIVE CASH BALANCE</b>	<b>0</b>	<b>11,983</b>	<b>15,594</b>	<b>21,574</b>	<b>30,027</b>	<b>38,918</b>	<b>44,207</b>	<b>49,837</b>	<b>55,806</b>	<b>62,116</b>	<b>73,625</b>	<b>98,847</b>

**Appendix 7.A.5**

**DISCOUNTED CASH FLOW ( in 000 Birr)**

<b>Item</b>	<b>Year 1</b>	<b>Year 2</b>	<b>Year 3</b>	<b>Year 4</b>	<b>Year 5</b>	<b>Year 6</b>	<b>Year 7</b>	<b>Year 8</b>	<b>Year 9</b>	<b>Year 10</b>	<b>Year 11</b>	<b>Scrap</b>
<b>TOTAL CASH INFLOW</b>	<b>0</b>	<b>46,332</b>	<b>52,510</b>	<b>61,776</b>	<b>61,776</b>	<b>61,776</b>	<b>61,776</b>	<b>61,776</b>	<b>61,776</b>	<b>61,776</b>	<b>61,776</b>	<b>25,222</b>
Inflow operation	0	46,332	52,510	61,776	61,776	61,776	61,776	61,776	61,776	61,776	61,776	0
Other income	0	0	0	0	0	0	0	0	0	0	0	25,222
<b>TOTAL CASH OUTFLOW</b>	<b>50,488</b>	<b>35,673</b>	<b>40,814</b>	<b>45,548</b>	<b>45,553</b>	<b>45,591</b>	<b>49,684</b>	<b>49,829</b>	<b>49,975</b>	<b>50,121</b>	<b>50,267</b>	<b>0</b>
Increase in fixed assets	40,497	0	0	0	0	0	0	0	0	0	0	0
Increase in net working capital	9,991	1,324	1,986	0	4	0	0	0	0	0	0	0
Operating costs	0	33,599	38,079	44,798	44,798	44,841	44,841	44,841	44,841	44,841	44,841	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	4,092	4,238	4,384	4,530	4,675	0
<b>NET CASH FLOW</b>	<b>-50,488</b>	<b>10,659</b>	<b>11,696</b>	<b>16,228</b>	<b>16,223</b>	<b>16,185</b>	<b>12,092</b>	<b>11,947</b>	<b>11,801</b>	<b>11,655</b>	<b>11,509</b>	<b>25,222</b>
<b>CUMULATIVE NET CASH FLOW</b>	<b>-50,488</b>	<b>39,829</b>	<b>-28,133</b>	<b>11,906</b>	<b>4,318</b>	<b>20,503</b>	<b>32,595</b>	<b>44,542</b>	<b>56,343</b>	<b>67,998</b>	<b>79,507</b>	<b>104,729</b>
Net present value	-50,488	9,690	9,666	12,192	11,081	10,049	6,826	6,131	5,505	4,943	4,437	9,724
Cumulative net present value	-50,488	40,798	-31,132	18,940	-7,859	2,190	9,016	15,147	20,652	25,595	30,032	39,756

NET PRESENT VALUE                    39,756  
INTERNAL RATE OF RETURN            24.05%  
NORMAL PAYBACK                        4 years