

**PROFILE ON THE PRODUCTION OF KNITTED
FABRICS**

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I. SUMMARY

This profile envisages the establishment of a plant for the production of knitted fabrics with a capacity of 2.5 million square meters (500 tons) per annum. Knitted fabrics consist entirely of parallel courses of yarn and are used to knit cut and sew general out wear (suit, one piece, coat, slacks, skirts, sweater, etc.)

The demand for knitted fabrics is met through imports and domestic production. The present (2012) unsatisfied demand for knitted fabrics is estimated at 447.9 tons (2,239.4 thousand square meter). The unsatisfied demand for knitted fabrics is projected to reach 721.35 tones or 3.60 million square meter and 1161.74 tones or 5.80 million square meters by the year 2017 and 2022, respectively.

The principal raw materials required is cotton yarn which is available locally.

The total investment cost of the project including working capital is estimated at Birr 16.21 million. From the total investment cost the highest share (Birr 8.85 million or 54.61%) is accounted by fixed investment cost followed by initial working capital (Birr 5.71 million or 35.25%) and pre operation cost (Birr 1.64 million or 10.14%). From the total investment cost Birr 3.04 million or 18.76% is required in foreign currency.

The project is financially viable with an internal rate of return (IRR) of 21.67% and a net present value (NPV) of Birr 10.91 million discounted at 10%.

The project can create employment for 52 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 cotton yarn manufacturing and packaging sub sectors and also generates income for the Government in terms of tax revenue and payroll tax.

II. PRODUCT DESCRIPTION AND APPLICATION

Knitting is one of several ways to turn thread or yarn into cloth (cf weaving, crochet). Unlike woven fabric, knitted fabric consists entirely of parallel courses of yarn. The courses are joined to each other by interlocking loops in which a short loop of one course of yarn is wrapped over the bight of another course. In practice, knitting is usually begun (or "cast on") by forming a base series of twisted loops of yarn on a knitting needle. A second knitting needle is then used to reach through each loop (or stitch) in succession in order to snag a bight of yarn and pull a length back through the loop. This forms a new stitch at the top of the current wale of stitches (or loops). Work can proceed in the round (circular knitting) or by going back and forth in rows. Knitting can also be done by machines.

The two basic stitches are *knit* (or "plain") and *purl* (or "wrong"). These two nominal stitches are actually identical, however, being the obverse and reverse of the same stitch. A knit stitch is formed by inserting the needle in the back of the loop and pulling a loop of yarn through to form a new loop, while a purl stitch is formed by inserting the needle in the front of the loop and pushing a loop of yarn through to form a new loop.

The knitting industry is in competition with the weaving industry. There are two desirable functions facing the knitted and woven fabric industry. One is to produce fabric with the desired efficiency as fast as possible at the lowest cost. The other is to aim at fashion with beautiful elements. In these two respects, knitted wear is favorable in many ways. Because of in the progress in the realization of fine gauge knitting machine, it is now possible to produce beautiful light-weight fabrics dimensional stability. Knitted fabric is casual and sports like and is appropriate for present day fashion. The objective of the knitted fabrics for the envisaged plant is to knit cut and sew general out wear (suit, one piece, coat, slacks, skirts, sweater, etc.)

III. MARKET STUDY AND PLANT CAPACITY

A. MARKET STUDY

1. Past Supply and Present Demand

The demand for knitted fabrics is met through imports and domestic production. Domestic manufacturers of the product include government-owned and private integrated textile mills,

such as Awassa, Kombolcha, Akaki, Dire Dawa, Almeda and Ayka. The total domestic supply of knitted fabrics (i.e. imported and domestically produced net of exports), during 2000 - 2011 is depicted in Table 3.1. Knitted fabrics are mainly supplied from domestic production. Imports of knitted fabrics, on the average, covered only about 6% of the total supply during this period. Exports of knitted fabrics constituted about 4% of domestic production.

As shown in Table 3.1, total supply of knitted fabrics varied from 232 tons (1,160 thousand square meter) in 2011 to 9,737 tons (48,683 thousand square meter) in 2002. Imports, domestic production, exports and total domestic supply of the product averaged at 407 tons (2,036 thousand square meter), 7,411 tons (37,053 thousand square meter), 295 tons (1,207 thousand square meter), and 6,979 tons (34,894 thousand square meter), respectively, during the period under reference.

Table 3.1
TOTAL DOMESTIC SUPPLY OF KNITTED FABRICS

Year	Import		Domestic production		Export		Total Domestic Supply	
	tons	('000 sq.m)	tons	('000 sq.m)	tons	('000 sq.m)	tons	('000 sq.m)
2000	347	1,735	7,700	38,499			8,047	40,234
2001	1,165	5,825	8,985	44,925	1,301	6,505	8,849	44,245
2002	932	4,660	8,993	44,963	188	940	9,737	48,683
2003	1,139	5,695	8,262	41,310	533	2,665	8,868	44,340
2004	98	490	8,719	43,594	427	2,135	8,390	41,949
2005	133	665	7,124	35,619	95	475	7,162	35,809
2006	38	190	8,321	41,603	6	30	8,353	41,763
2007	73	365	9,363	46,817		0	9,436	47,182
2008	221	1,105	5,858	29,288	17	85	6,062	30,308
2009	245	1,225	3,611	18,053	3	15	3,853	19,263
2010	177	885	4,581	22,907		0	4,758	23,792
2011	318	1,590			86	430	232	1,160
Average	407	2,036	7,411	37,053	295	1,207	6,979	34,894

Source: Customs Authority for Imports and Exports, CSA for Domestic Production.

As could be seen from Table 3.1, the import and domestic production of knitted fabrics has been fluctuating highly from year to year without a trend. For instance, the total supply during the year 2000 was 40,234 square meter and increased to 44,245 square meters and 48,683 square meter

by the years 2001 and 2002, respectively. Then, supply again decreased to 44,340 sq.mt 41,949 square meter and 35,809 square meter by the year 2003, year 2004 and year 2005, respectively. The trend of up and downs has also continued in the remaining years. After an increase to 41,763 square meter and 47,182 square meter in the year 2006 and year 2007, respectively it fell sharply to an annual average of 14,738 square meter during the last three recent years i.e. 2009 to 2011. The general trend specific to import, domestic production as well as export is almost similar to the above described.

To determine the present unsatisfied demand for the product average import of the period under consideration (in the absence of a trend in the data set) is first assumed to reflect the demand for the year 2011. Then, a modest estimate of average annual growth rate of 10% is applied to arrive at the current (year 2012) unsatisfied demand for the product. Thus, the current unsatisfied domestic demand for the product is estimated at 447.9 tons (2,239.4 thousand square meter).

2. Projected Demand

Demand for knitted fabrics is mainly influenced by population growth, economic growth (rise in income of the population). Given the rapid population and economic growth in the country a modest estimate of 10% average annual growth rate is considered in projecting the demand for knitted fabrics. The projected future demand for the product is shown in Table 3.2.

Table 3.2
PROJECTED UNSATISFIED DEMAND FOR KNITTED FABRICS

Year	Projected Demand	
	ton	'000 sq.m
2013	492.69	2463.34
2014	541.96	2709.67
2015	596.15	2980.64
2016	655.77	3278.71
2017	721.35	3606.58
2018	793.48	3967.23
2019	872.83	4363.96

2020	960.11	4800.35
2021	1056.12	5280.39
2022	1161.74	5808.43

In addition to the unsatisfied domestic demand, there is a wide export market if the products are competitive in quality and price.

3. Pricing and Distribution

On the basis of the customs data for 2011 (the latest data available), the CIF price of knitted fabrics was Birr 52,578.62 per ton (Birr 10.52 per square meter). Allowing 20% for import duty and other clearing expensed, the factory gate price for the envisaged plant is estimated at Birr 63,094.34 per ton (Birr 12.62 per square meter).

The envisaged plant can use the existing textile wholesale and retail channels to distribute its product.

B. PLANT CAPACITY AND PRODUCTION PROGRAM

1. Plant Capacity

The envisaged plant would have a capacity of 2.5 million square meters (500tons) knitted fabrics per year. The plant operates single shift of 8 hours per day and 300 working days per annum.

2. Production Program

Considering the time required for penetrating the market, the envisaged plant will start operation at 75% of capacity during the first year. Then production will grow to 85% and 100% of capacity during the second and third year, respectively. Table 3.3 below shows production build-up program. The program is scheduled based on the consideration that the envisaged plant will work 300 days in a year in 1 shift, where the remaining days will be holidays and for maintenance. This consideration is developed based on the assumption that market and logistics barriers would take place for the first two years of operation.

Table 3.3
PRODUCTION PROGRAM

Year	1	2	3 and above
Capacity utilization (%)	75	85	100
Production (million m ²)	1.875	2.124	2.5
Production (tons)	375	425	500

IV. MATERIALS AND INPUTS

A. RAW AND AUXILIARY MATERIALS

The required raw material for the manufacturing of knitted fabrics is cotton yarn, which is locally available. The annual requirements of raw and auxiliary materials along with corresponding costs at full capacity operation are shown in Table 4.1.

Table 4.1
ANNUAL REQUIREMENT OF RAW AND AUXILIARY MATERIALS

Sr. No.	Description	Qty	Cost ('000 Birr)		
			FC	LC	TC

1	Cotton yarn(ton)	525.00		22,181.25	22,181.25
2	Packing and labeling material(LS)	26.25		393.75	393.75
	Total			22,575.00	22,575.00

B. UTILITIES

Utilities required are electricity as a source of energy and water mainly needed for human consumption and general purpose. Annual cost of utilities is Birr 11,144. For details see Table 4.2

Table 4.2

ANNUAL UTILITY REQUIREMENT

No	Description	Qty	Cost, 000 Birr		
			F.C	L.C	Total
1	Electric Power (kWh)	75,000	-	43.50	43.50
2	Water (m ³)	2,500	-	25.00	25.00
	Total			68.50	68.50

V. TECHNOLOGY AND ENGINEERING

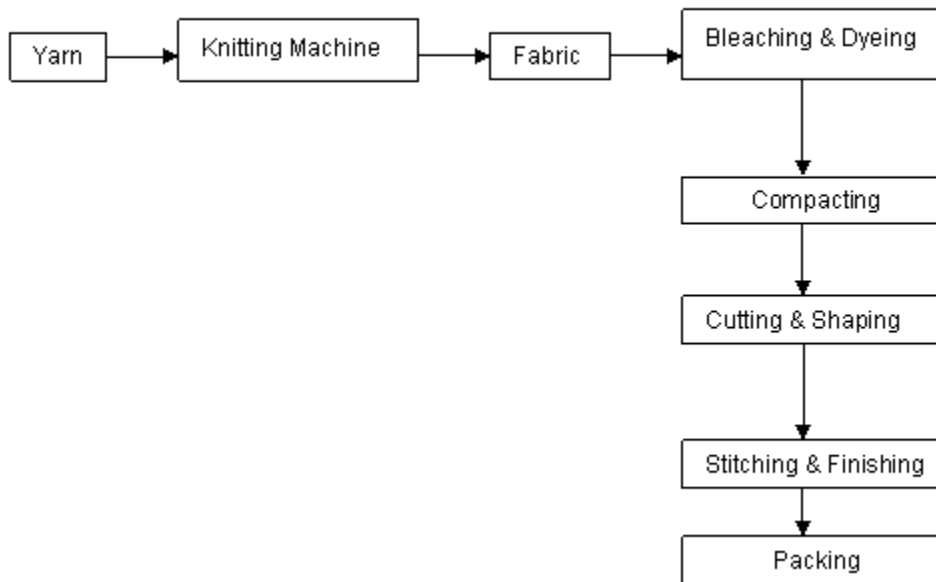
A. TECHNOLOGY

1. Production Process

When the raw material yarn arrives, it can be divided by colors and kept neatly in the raw material store. The raw material yarn is oiled when being wound on to the cone. Oiling of the raw material yarn will make the yarn slide well, and will prevent knitting damage. It will also improve knitting efficiency.

The raw material yarn wound on cone is set on the specified knitting machine and is knitted in to circular fabric. Generally, in circular knitting machine, the latch needle is moved up and down or horizontally by circular rotation of a cam and loop is knitted automatically.

The knitted fabric and clothes then inspected for knitting damage and other flaws, and mending is done when possible.



2. Environmental Impact Assessment

The fluid wastes that are disposed to the environment after the bleaching process has to be treated well so that there won't be any adverse impact on the environment. The cost of waste water treatment system is included in the cost of machinery and equipment.

B. ENGINEERING

1. Machinery and Equipment

The total cost of machinery and equipment is estimated at Birr 3.65 million. The required plant machinery and equipment with their corresponding costs are given in Table 5.1.

Table 5.1

LIST OF MACHINERY AND EQUIPMENT REQUIREMENT AND COST

Sr. No.	Description	Qty.	Cost (Birr)		
			LC	FC	Total
1	Single Knitting Machine				
	None Jacquard	2	-	581,400.0	581,400.0
	Pile	1	-	368,220.0	368,220.0
	Jacquard	1	-	348,000.0	348,000.0
2	Double Knitting Machine				
	None Jacquard	1	-	329,460.0	329,460.0
	Jacquard	1	-	571,710.0	571,710.0
3	Winding Machine				
	Spindle cone cheese wider	1	-	174,420.0	174,420.0
	Drum cone winder	1	-	208,338.0	208,338.0
4	Fabric inspection machine	1		175,500.0	175,500.0
5	Waste water treatment system	set		285,000.0	285,000.0
Total			-	3,042,048	3,042,048
Insurance, customs duty, inland transport, bank charge, etc.			608,410		608,410
Grand Total			608,410	3,042,048	3,650,458

2. Land, Building and Civil Works

The total land area required is 2,000 m². The production building will be one-storied steel frame building. The built-up area required 800 m². The walls will be plastered, reinforced concrete floor and RHS truss and EGGA sheet roof. The total building and construction cost at a unit cost of Birr 5,000 is estimated at about Birr 4 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 m², the land lease request is evaluated and decided upon by the Industrial Zone Development and Coordination Committee of the City's Investment Authority. However, if the land request is above 5,000 m², the request is evaluated by the City's Investment Authority and passed with recommendation to the Land Development and Administration Authority for decision, while the lease price is the same for both cases.

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

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

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

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

Table 5.2

NEW LAND LEASE FLOOR PRICE FOR PLOTS IN ADDIS ABABA

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

Zone	Level	Floor Price/m²
	5 th	555
Expansion zone	1 st	355
	2 nd	299
	3 rd	217
	4 th	191

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

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

Table 5.3

INCENTIVES FOR LEASE PAYMENT OF INDUSTRIAL PROJECTS

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

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

Accordingly, the total land lease cost at a rate of Birr 266 per m² is estimated at Birr 532,000 of which 10% or Birr 53,200 will be paid in advance. The remaining Birr 478,800 will be paid in equal installments with in 28 years i.e. Birr 17,100 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. HUMANRESOURCE AND TRAINING REQUIREMENT

A. HUMANRESOURCE REQUIREMENT

The total number of employees required is 52 persons. Annual cost of labor is Birr 1,112,740. The human resource requirement by type of job and corresponding labor cost is shown in Table 6.1.

Table 6.1
HUMANRESOURCE REQUIREMENT AND LABOUR COST

No	Job Title	No. of Persons	Salary (Birr)	
			Monthly	Annual
1	General Manager	1	5,000	60,000
2	Secretary	1	1,500	18,000
3	Production & Technical Head	1	4,000	48,000
4	Commercial Head	1	4,000	48,000
5	Finance & Administration Head	1	4,000	48,000
6	Personnel	1	3,200	38,400
7	Accountant	1	2,500	30,000
8	Accounts Clerk	1	1,800	21,600
9	Cashier	1	1,400	16,800
10	Sales person	1	2,000	24,000
11	Purchaser	1	2,000	24,000
12	Store Keeper	1	1,400	16,800
13	Quality Controller	1	3,000	36,000
14	Shift Leader	1	2,400	28,800
15	Operator(winding department)	8	9,600	115,200
16	Operator(knitting department)	15	18,000	216,000
17	Laborer	10	8,000	96,400
18	Mechanic	1	2,000	24,000
19	Electrician	1	2,000	24,000
20	Driver	1	1,200	14,400
21	Guard	2	1,600	19,200
	Sub – Total	52		967,600
	Employee's Benefit 15% basic salary			145,140
	Grand Total			1,112,740

B. TRAINING REQUIREMENT

Training of key personnel, supervisors, skilled workers, and quality control workers, shall be conducted. The training should primarily focus on the production technology and trouble shooting. The training will be sufficient during commissioning and start up period by the machinery suppliers and experts. Total training cost is estimated at about 180,000 Birr.

VII. FINANCIAL ANALYSIS

The financial analysis of the knitted fabrics 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	5 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 16.21 million (see Table 7.1). From the total investment cost the highest share (Birr 8.85 million or 54.61%) is accounted by fixed investment cost followed by initial working capital (Birr 5.71 million or 35.25%) and pre operation cost (Birr 1.64 million or 10.14%). From the total investment cost Birr 3.04 million or 18.76% 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	53.20		53.20	0.33
1.2	Building and civil work	4,000.00		4,000.00	24.67
1.3	Machinery and equipment	608.40	3,042.05	3,650.45	22.52
1.4	Vehicles	900.00		900.00	5.55
1.5	Office furniture and equipment	250.00		250.00	1.54
	Sub total	5,811.60	3,042.05	8,853.65	54.61
2	Pre operating cost *				
2.1	Pre operating cost	582.52		582.52	3.59
2.2	Interest during construction	1,060.54		1,060.54	6.54
	Sub total	1,643.06		1,643.06	10.14
3	Working capital **	5,714.34		5,714.34	35.25
	Grand Total	13,169.00	3,042.05	16,211.05	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 7.70 million. However, only the initial working capital of Birr 5.71 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 26.72 million (see Table 7.2). The cost of raw material account for 84.48% of the production cost. The other major components of the production cost are depreciation, financial cost and direct labor, which account for 4.53%, 3.82% and 3.62% respectively. The remaining 3.55% is the share of utility, repair and maintenance, labor overhead, cost of marketing and distribution 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	22,575	84.48
Utilities	69	0.26
Maintenance and repair	183	0.68
Labour direct	968	3.62
Labour overheads	145	0.54
Administration Costs	200	0.75
Land lease cost	0	0.00
Cost of marketing and distribution	350	1.31
Total Operating Costs	24,489	91.65
Depreciation	1,212	4.53
Cost of Finance	1,021	3.82
Total Production Cost	26,721	100.00

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 2.64 million to Birr 3.05 million during the life of the project. Moreover, at the end of the project life the accumulated net cash flow amounts to Birr 29.76 million. For profit and loss statement and cash flow projection see Appendix 7.A.3 and 7.A.4, respectively.

2. Ratios

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

3. Break-even Analysis

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

$$\text{Break Even Sales Value} = \frac{\text{Fixed Cost} + \text{Financial Cost}}{\text{Variable Margin ratio (\%)}} = \text{Birr } 12,201,000$$

$$\text{Break Even Capacity utilization} = \frac{\text{Break even Sales Value}}{\text{Sales revenue}} \times 100 = 31.80\%$$

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 21.67% 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 10.91 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 52 persons. The project will generate Birr 6.10 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 cotton yarn manufacturing and packaging 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	4,232.81	4,797.19	5,643.75	5,643.75	5,643.75	5,643.75	5,643.75	5,643.75	5,643.75	5,643.75
Accounts receivable	1,537.84	1,739.00	2,040.73	2,040.73	2,042.16	2,042.16	2,042.16	2,042.16	2,042.16	2,042.16
Cash-in-hand	15.58	17.65	20.77	20.77	21.01	21.01	21.01	21.01	21.01	21.01
CURRENT ASSETS	5,786.23	6,553.84	7,705.25	7,705.25	7,706.91	7,706.91	7,706.91	7,706.91	7,706.91	7,706.91
Accounts payable	71.88	81.47	95.84	95.84	95.84	95.84	95.84	95.84	95.84	95.84
CURRENT LIABILITIES	71.88	81.47	95.84	95.84	95.84	95.84	95.84	95.84	95.84	95.84
TOTAL WORKING CAPITAL	5,714.34	6,472.37	7,609.40	7,609.40	7,611.07	7,611.07	7,611.07	7,611.07	7,611.07	7,611.07

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	16,931	19,189	22,575	22,575	22,575	22,575	22,575	22,575	22,575	22,575
Utilities	51	58	69	69	69	69	69	69	69	69
Maintenance and repair	137	155	183	183	183	183	183	183	183	183
Labour direct	726	822	968	968	968	968	968	968	968	968
Labour overheads	109	123	145	145	145	145	145	145	145	145
Administration Costs	150	170	200	200	200	200	200	200	200	200
Land lease cost	0	0	0	0	17	17	17	17	17	17
Cost of marketing and distribution	350	350	350	350	350	350	350	350	350	350
Total Operating Costs	18,454	20,868	24,489	24,489	24,506	24,506	24,506	24,506	24,506	24,506
Depreciation	1,212	1,212	1,212	1,212	1,212	185	185	185	185	185
Cost of Finance	0	1,167	1,021	875	729	583	437	292	146	0
Total Production Cost	19,666	23,246	26,721	26,575	26,447	25,274	25,128	24,983	24,837	24,691

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	21,788	24,693	29,050	29,050	29,050	29,050	29,050	29,050	29,050	29,050
Less variable costs	18,104	20,518	24,139	24,139	24,139	24,139	24,139	24,139	24,139	24,139
VARIABLE MARGIN	3,684	4,175	4,911	4,911	4,911	4,911	4,911	4,911	4,911	4,911
in % of sales revenue	16.91	16.91	16.91	16.91	16.91	16.91	16.91	16.91	16.91	16.91
Less fixed costs	1,562	1,562	1,562	1,562	1,579	552	552	552	552	552
OPERATIONAL MARGIN	2,122	2,613	3,350	3,350	3,333	4,359	4,359	4,359	4,359	4,359
in % of sales revenue	9.74	10.58	11.53	11.53	11.47	15.01	15.01	15.01	15.01	15.01
Financial costs		1,167	1,021	875	729	583	437	292	146	0
GROSS PROFIT	2,122	1,447	2,329	2,475	2,603	3,776	3,922	4,067	4,213	4,359
in % of sales revenue	9.74	5.86	8.02	8.52	8.96	13.00	13.50	14.00	14.50	15.01
Income (corporate) tax	0	0	0	0	0	1,133	1,177	1,220	1,264	1,308
NET PROFIT	2,122	1,447	2,329	2,475	2,603	2,643	2,745	2,847	2,949	3,051
in % of sales revenue	9.74	5.86	8.02	8.52	8.96	9.10	9.45	9.80	10.15	10.50

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	9,436	28,635	24,703	29,064	29,050	29,050	29,050	29,050	29,050	29,050	29,050	11,125
Inflow funds	9,436	6,847	10	14	0	0	0	0	0	0	0	0
Inflow operation	0	21,788	24,693	29,050	29,050	29,050	29,050	29,050	29,050	29,050	29,050	0
Other income	0	0	0	0	0	0	0	0	0	0	0	11,125
TOTAL CASH OUTFLOW	9,436	25,301	24,260	28,119	26,822	26,695	27,680	27,578	27,476	27,374	25,814	0
Increase in fixed assets	9,436	0	0	0	0	0	0	0	0	0	0	0
Increase in current assets	0	5,786	768	1,151	0	2	0	0	0	0	0	0
Operating costs	0	18,104	20,518	24,139	24,139	24,156	24,156	24,156	24,156	24,156	24,156	0
Marketing and Distribution cost	0	350	350	350	350	350	350	350	350	350	350	0
Income tax	0	0	0	0	0	0	1,133	1,177	1,220	1,264	1,308	0
Financial costs	0	1,061	1,167	1,021	875	729	583	437	292	146	0	0
Loan repayment	0	0	1,458	1,458	1,458	1,458	1,458	1,458	1,458	1,458	0	0
SURPLUS (DEFICIT)	0	3,334	442	945	2,228	2,355	1,370	1,472	1,574	1,676	3,236	11,125
CUMULATIVE CASH BALANCE	0	3,334	3,776	4,721	6,949	9,305	10,674	12,146	13,720	15,396	18,633	29,758

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	21,788	24,693	29,050	29,050	29,050	29,050	29,050	29,050	29,050	29,050	11,125
Inflow operation	0	21,788	24,693	29,050	29,050	29,050	29,050	29,050	29,050	29,050	29,050	0
Other income	0	0	0	0	0	0	0	0	0	0	0	11,125
TOTAL CASH OUTFLOW	15,151	19,212	22,005	24,489	24,490	24,506	25,639	25,682	25,726	25,770	25,814	0
Increase in fixed assets	9,436	0	0	0	0	0	0	0	0	0	0	0
Increase in net working capital	5,714	758	1,137	0	2	0	0	0	0	0	0	0
Operating costs	0	18,104	20,518	24,139	24,139	24,156	24,156	24,156	24,156	24,156	24,156	0
Marketing and Distribution cost	0	350	350	350	350	350	350	350	350	350	350	0
Income (corporate) tax		0	0	0	0	0	1,133	1,177	1,220	1,264	1,308	0
NET CASH FLOW	-15,151	2,576	2,688	4,561	4,560	4,544	3,411	3,368	3,324	3,280	3,236	11,125
CUMULATIVE NET CASH FLOW	-15,151	12,575	-9,887	-5,325	-766	3,778	7,190	10,557	13,881	17,161	20,398	31,523
Net present value	-15,151	2,342	2,222	3,427	3,114	2,822	1,926	1,728	1,551	1,391	1,248	4,289
Cumulative net present value	-15,151	12,809	-10,587	-7,160	-4,046	-1,225	701	2,429	3,980	5,371	6,619	10,908

NET PRESENT VALUE 10,908
INTERNAL RATE OF RETURN 21.67%
NORMAL PAYBACK 5 years