

## **12. PROFILE ON PRODUCTION OF CANVAS SHOE**

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## **I. SUMMARY**

This profile envisages the establishment of a plant for the production of canvas shoes with a capacity of 300,000 pairs per annum.

The present demand for the proposed product is estimated at 4.62 million pairs per annum. The demand is expected to reach at 8.72 million pairs by the year 2020.

The plant will create employment opportunities for 26 persons.

The total investment requirement is estimated at Birr 6.34 million, out of which Birr 2.69 million is required for plant and machinery.

The project is financially viable with an internal rate of return (IRR) of 37 % and a net present value (NPV) of Birr 9.44 million, discounted at 8.5%.

## **II. PRODUCTION DESCRIPTION AND APPLICATION**

A canvas shoe is a stiff-soled, protective foot wear that encloses the whole foot. The upper part is made up to a closely woven, plain woven fabric made of natural or synthetic fibers and the sole part is a plastic material. With the growing interest in exercise for physical fitness, canvas shoes will become standard footwear for men, women and children alike for the lower and middle income group of the society.

Canvas shoe production involves designing of the upper and inner parts, cutting of the canvas to fit, and assembling of the various parts. The insole fixing and trimming upper edge binding, bottom gluing are carried out in the finishing section. The environmental impact of canvas shoe production is negligible.

The project will have a backward linkage effect with the plastic and natural fabrics producing plants.

### III. MARKET STUDY AND PALNT CAPACITY

#### A. MARKET STUDY

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

Although there is domestic production of canvas shoes the bulk of the county's requirement is met from import. The country imports various types of canvas shoe which include training shoes with rubber or plastic soles, sports foot wear with rubber or plastic soles and footwear with leather or composition leather soles. Import of canvas shoe (with different soles and different uses) during the period 1997-2006 is given in Table 3.1.

**Table 3.1**  
**IMPORT OF CANVAS SHOE**

Year	Quantity ((Pair )
1997	1,125,568
1998	1,621,072
1999	1,273,067
2000	1,480,346
2001	2,104,551
2002	3,691,601
2003	4,034,026
2004	4,892,871
2005	3,545,380
2006	2,112,864

*Source:- Ethiopian Customs Authority.*

Table 3.1 reveals that the imported quantity of the various types of canvas shoes in the period 1997 – 2006 has been rising almost consistently except for the years 2005 and 2006. The average yearly import 1997-2001 was about 1.5 million pairs. This figure has increased to

about 3.7 million pairs during the period 2002 -2006. During the period of analyses import of the product has registered an average annual growth rate of 13%.

With regard to domestic production, data obtained from Statistical Abstract reveals that in the past three years (2003-2005) the average production was around 247,331 pairs. This means compared to average import of the product during the same period domestic production share in the total supply is only 5.62%.

In order to arrive at the present effective demand, the following assumptions have been taken.

- The average quantity domestically produced and imported canvas shoes during the period 2003 -2005 has been taken as an effective demand for the year 2006. This is estimated to be 4,404,757 pairs, i.e., 4,157,426 pairs from import and 247,331 pairs from domestic production.
- Demand in the past two years is assumed to grow by 5% per annum which is almost equal to the growth of urban population.

Based on the above assumption, the present effective demand for canvas shoes is estimated at 4,624,995 pairs.

## **2. Projected Demand**

The demand for canvas shoe is mainly related with population growth, income, urbanization as well as with sports and increase interest in exercise for physical fitness and health. Hence, it is assumed conservatively to grow annually by 5%. The total projected demand and the unsatisfied demand is shown in Table 3.2.

**Table 3.2****PROJECTED UNSATISFIED DEMAND FOR CANVAS SHOES (PAIR)**

<b>Year</b>	<b>Projected Demand</b>	<b>Domestic Production</b>	<b>Unsatisfied Demand</b>
2008	4,856,244	247,331	4,608,913
2009	5,099,056	247,331	4,851,725
2010	5,354,009	247,331	5,106,678
2011	5,621,710	247,331	5,374,379
2012	5,902,795	247,331	5,655,464
2013	6,197,935	247,331	5,950,604
2014	6,507,832	247,331	6,260,501
2015	6,833,223	247,331	6,585,892
2016	7,174,884	247,331	6,927,553
2017	7,533,629	247,331	7,286,298
2018	7,910,310	247,331	7,662,979
2019	8,305,826	247,331	8,058,495
2020	8,721,117	247,331	8,473,786

**3. Pricing and Distribution**

The price of canvas shoe varies depending on the size, quality of the material used as well as the model. Assuming this project will produce canvas shoes that are mostly demanded by the upper lower and middle income groups, an average price of Birr 30 per pair is adopted. The product will find its market outlet through the existing plastic and canvas shoe distributing enterprises.

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

### **1. Plant Capacity**

The projected demand for the product shown in Table 3.2 indicates that the demand for pair of canvas shoes in the year 2008 is 4,856,244 and this figure would grow to 8,721,117 by the year 2020.

Based on the demand projection indicated, the proposed plant will have a production capacity of 300,000 pair of canvas shoes per annum. The plant will operate single shift, 8 hours a day, and for 300 days a year. Production can be doubled or tripled if the plant operates double or triple shift of 16 or 24 hours a day, respectively.

### **2. Production Programme**

The production programme is prepared based on the selected plant capacity and expected market share to be captured by the project. At the initial stage of production, the plant may require some years to penetrate into the market. Therefore, the plant will initially be operated at 75% of its full capacity, and gradually increase its annual production to 85%, and finally to 100% in the third year and then after. Table 3.3 shows the proposed production programme.

**Table 3.3**  
**PRODUCTION PROGRAMME**

<b>Production Programme</b>	<b>Unit</b>	<b>PRODUCTION YEAR</b>		
		<b>2008</b>	<b>2009</b>	<b>2009-2020</b>
Production (pair of shoes)	Pairs	225,000	255,000	300,000
Capacity utilization	%	75	85	100

#### IV. MATERIALS AND INPUTS

##### A. RAW MATERIALS

The major raw materials used in the production of canvas shoes are canvas fabrics (upper), lining and rubber sole. The annual requirement for raw materials at 100% capacity utilization and costs of these materials are indicated in Table 4.1 below.

**Table 4.1**  
**ANNUAL REQUIREMENTS OF RAW MATERIALS AND COSTS**

Sr. No.	Raw Materials Description	Annual Consumption	Annual Cost (Birr)		
			FC	LC	TC
1.	Canvas fabrics (upper)	36,000 m <sup>2</sup>	-	295,405	295,405
2.	Lining	45,000 m <sup>2</sup>	-	221,554	221,554
3.	Rubber sole	300,000 pairs	3,900,000	-	3,900,000
	<b>Grand Total</b>		<b>3,900,000</b>	<b>516,959</b>	<b>4,416,959</b>

##### B. AUXILIARY MATERIALS

Auxiliary materials required for the production of canvas shoes include laces, insole (texone), eyelets, and miscellaneous (including sewing thread, glue, packing materials). Table 4.2 below depicts the annual requirements of auxiliary materials at full production capacity of canvas shoes, plant.

**Table 4.2****ANNUAL REQUIREMENTS OF AUXILIARY MATERIALS AND COST**

Sr. No.	Description	Unit	Annual Consumption	Annual Cost (Birr)		
				FC	LC	TC
1	Laces	Pair	300,000	-	396,000	396,000
2	Insole (texone)	m <sup>2</sup>	15,000	195,000	-	195,000
3	Eyelet	set	300,000	-	99,000	99,000
4	Miscellaneous	Lump sum	Lump sum	165,000	495,000	660,000
<b>Grand Total</b>				<b>360,000</b>	<b>990,000</b>	<b>1,350,000</b>

Thus, the total annual cost of raw and auxiliary materials at full capacity production will be Birr 5,644,289, of which Birr 4,260,000 is required in foreign currency, and the remaining is in local currency.

**C. UTILITIES**

Electricity and water are the major utilities required by the plant. The total annual requirement at 100% capacity utilization rate and the estimated costs are given in Table 4.3 below. The annual expenditure on utilities will, therefore, be Birr 53,715.6.

**Table 4.3****UTILITIES REQUIREMENT AND ESTIMATED COST**

No.	Description	Units	Quantity	Cost (Birr)
1	Electricity	Kwh	96,000	45,465.60
2	Water	M <sup>3</sup>	1,500	8250
<b>Total</b>				<b>53,715.60</b>

## **VI. TECHNOLOGY AND ENGINEERING**

### **A. TECHNOLOGY**

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

The production process of canvas shoes starts by preparing three dimensional model and hard board patterns of the full range of sizes.

Then the first samples are produced and checked. Once the hand made models are approved, the final design is carried out according to which the upper and liner parts are cut and the parts to be assembled together are numbered. This is followed by assembling of the upper lining, upper stitching and lining trimming, upper edge binding, fixing to the insole, bottom giving, sole applying and giving are carried out in finishing section.

The production of canvas shoes does not have adverse effect on environment. By - products of the process are the cuttings and trimmings of canvas linings, rubber sole, etc. These can easily be collected, stored in containers and disposed of together with solid waste of the plant. The disposal activity can be carried out by NGO engaged in solid waste disposal.

#### **2. Source of Technology**

Italy, France, Spain and Germany are well known suppliers of foot wear machinery and equipment. The following company can provide the require equipment.

BIMA Maschinen Fabrik Gebr  
Biedermann GmbH & Co.,  
Zolle Stra. 6. D - 72379 Hechingenstetten  
Tel. (07471) 1803-0  
Fax: (07471) 1803-96

## B. ENGINEERING

### 1. Machinery and Equipment

The list of machinery and equipment required for the envisaged plant is given in Table 5.1. The total cost of machinery is estimated at Birr 2,695,000, of which Birr 2,440,000 is required in foreign currency.

**Table 5.1**  
**MACHINERY AND EQUIPMENT REQUIREMENT**

Sr. No.	Description	Qty. (No.)
1.	Single arm hydraulic cutting machine	2
2.	Zig Zag machine	1
3.	Single needle flat bed machine	4
4.	Post bed double needle machine	3
5.	Post bed single needle machine	10
6.	Skiving machine	3
7.	Numbering machine	1
8.	Stabing machine	1
9.	Toe shaping machine	1
10.	Bottom forming	1
11.	Molding machine -24 stations	3

### 2. Land, Building and Civil Works

The envisaged plant requires a total land area of 2,000 m<sup>2</sup>, out of which 900 m<sup>2</sup> is required for setting up buildings. At a lease rate of Birr 0.15 per square meter, the total land lease value for 80 years will be Birr 24,000. Considering building construction cost of Birr 1,800 per square meter, the estimated cost of buildings and associated civil works will be Birr 1,620,000. Thus, the total investment on land, buildings and civil works will be Birr 1,644,000.

### **3. Proposed Location**

Meskan, Kebena or Alaba special woreda which are found in Guraghe zone and Alaba special woreda respectively are considered as the potential woredas for the envisaged project due to their access to infrastructure and utilities like electricity & water. They are also nearer to the resource of the major raw materials and to the market.

From the above woredas, Wolkite town, the capital of Kebena woreda is selected to be the location of the envisaged plant.

## **VI. MANPOWER AND TRAINING REQUIREMENT**

### **A. MANPOWER REQUIREMENT**

The total manpower required by the plant is 26 persons. This is composed of administration and production manpower. Detailed manpower requirement and estimated annual salary expense is given in Table 6.1. The total annual cost of labour is estimated at Birr 196,350.

### **B. TRAINING REQUIREMENT**

Training will be required for supervisor and production workers. It is recommended that machinery supplier will provide on-job training for about two weeks. The cost of training is estimated at Birr 20,000.

**Table 6.1****MANPOWER REQUIREMENTS AND ANNUAL SALARY EXPENDITURE**

Sr. No.	Description	No. of Persons	Salary (Birr)	
			Monthly Salary	Annual Payment
	<b>A. Administration</b>			
1.	Plant manager	1	2,000	24,000
2.	Secretary	1	600	7,200
3.	Supervisor	1	1,250	15,000
4.	Personnel	1	800	9,600
5.	Clerk	1	400	4,800
6.	Cashier	1	600	7,200
7.	General services	1	250	3,000
	<b>Sub-Total</b>	<b>7</b>		<b>70,800</b>
	<b>B. Production</b>			
1.	Production Manager	1	1,500	18,000
2.	Operators	8	500	48,000
3.	Laborers	10	180	21,600
	<b>Sub-Total</b>	<b>19</b>		<b>87,600</b>
	Workers' Benefit (25% of basic salary)			<b>37,950</b>
	<b>Total</b>	<b>26</b>		<b>196,350</b>

## VII. FINANCIAL ANALYSIS

The financial analysis of the canvas shoes 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	8%
Discount cash flow	8.5%
Accounts receivable	30 days
Raw material local	30days
Raw material, import	90days
Work in progress	5 days
Finished products	30 days
Cash in hand	5 days
Accounts payable	30 days

### A. TOTAL INITIAL INVESTMENT COST

The total investment cost of the project including working capital is estimated at Birr 6.34 million, of which 21 per cent will be required in foreign currency.

The major breakdown of the total initial investment cost is shown in Table 7.1.

**Table 7.1****INITIAL INVESTMENT COST**

<b>Sr. No.</b>	<b>Cost Items</b>	<b>Total Cost ('000 Birr)</b>
1	Land lease value	24.0
2	Building and Civil Work	1,620.0
3	Plant Machinery and Equipment	,695.0
4	Office Furniture and Equipment	75.0
5	Vehicle	450.0
6	Pre-production Expenditure*	446.2
7	Working Capital	1,030.6
	<b>Total Investment cost</b>	<b>6,340.7</b>
	Foreign Share	21

\* N.B Pre-production expenditure includes interest during construction ( Birr 286.16 thousand ) training (Birr 20 thousand ) and Birr 140 thousand costs of registration, licensing and formation of the company including legal fees, commissioning expenses, etc.

**B. PRODUCTION COST**

The annual production cost at full operation capacity is estimated at Birr 6.77 million (see Table 7.2). The material and utility cost accounts for 85.98 per cent, while repair and maintenance take 1.99 per cent of the production cost.

**Table 7.2****ANNUAL PRODUCTION COST AT FULL CAPACITY ('000 BIRR)**

<b>Items</b>	<b>Cost</b>	<b>%</b>
Raw Material and Inputs	5,766.96	85.19
Utilities	53.72	0.79
Maintenance and repair	134.75	1.99
Labour direct	117.81	1.74
Factory overheads	0	0.00
Administration Costs	15.78	0.23
Total Operating Costs	6,089.02	89.94
Depreciation	481.2	7.11
Cost of Finance	199.66	2.95
<b>Total Production Cost</b>	<b>6,769.88</b>	<b>100</b>

**C. FINANCIAL EVALUATION****1. Profitability**

According to the projected income statement, the project will start generating profit in the first year of operation. Important ratios such as profit to total sales, net profit to equity (Return on equity) and net profit plus interest on total investment (return on total investment) show an increasing trend during the life-time of the project.

The income statement and the other indicators of profitability show that the project is viable.

**2. Break-even Analysis**

The break-even point of the project including cost of finance when it starts to operate at full capacity ( year 3) is estimated by using income statement projection.

$$\text{BE} = \frac{\text{Fixed Cost}}{\text{Sales} - \text{Variable Cost}} = 18 \%$$

**3. Pay Back Period**

The investment cost and income statement projection are used to project the pay-back period. The project's initial investment will be fully recovered within 3 years.

**4. Internal Rate of Return and Net Present Value**

Based on the cash flow statement, the calculated IRR of the project is 37 % and the net present value at 8.5% discount rate is Birr 9.44 million.

**D. ECONOMIC BENEFITS**

The project can create employment for 26 persons. In addition to supply of the domestic needs, the project will generate Birr 5.74 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.