# 23. PROFILE ON PRODUCTION OF BED COVER, BED SHEETS AND TABLE LINEN

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## I. SUMMARY

This profile envisages the establishment of a plant for the production of bed sheets, bed covers and table linen with a capacity of 200,000 pairs, 100,000 pieces and 200,000 pieces, respectively per annum.

The major raw materials required are dyed cotton fabrics, dyed nylon fabrics and sewing thread which are available locally.

The present demand for the proposed product is estimated at 1.7 million kg per annum. The demand is expected to reach at 3.5 million kg by the year 2018.

The total investment requirement is estimated at Birr 7.32 million, out of which Birr 1.62 million is required for plant and machinery. The plant will create employment opportunities for 41 persons.

The project is financially viable with an internal rate of return (IRR) of 27.10% and a net present value (NPV) of Birr 5.47 million ,discounted at 8.5 %.

The project has a backward linkage with the with the textile sector. The establishment of such factory will have a foreign exchange saving effect to the country by substituting the current imports.

## II. PRODUCT DESCRIPTION AND APPLICATION

Bed cover is a fabric worn on the bed over the blanket and sheet is used on the bed inside a blanket. Table linen on the other hand is used to cover a table.

They have higher demand especially by the urban population. Current demand is met through local production and import.

The product can be made from cotton, blends of cotton and man - made fiber and all nylon.

## III. MARKET STUDY AND PLANT CAPCITY

### A. MARKET STUDY

#### 1. Past Supply and Present Demand

Bedding linens are essential for the visual faced and comfort of bedrooms. There are different types of bed linens made from natural, manmade and blend fabrics. Bed linens may be plain dye, printed, patterned or embroidered.

Table linens enhance the style and substance to the entire table settings and the décor of dinning rooms. For special dinners or casual family dinner, table linens which are available in various colors, styles, design and range add a fashionable touch to any meal. Traditionally many people make their own table linens as a table cloth or mat. However more varieties, styles and designs are available in the market. Table linens are made from printed or dyed fabrics, mostly from cotton fabric. Types of table linens include napkins, table cloths and table mats.

Kitchen linens comprising wide variety of products like aprons, tray cloth, dish cloth, toilet linen, pot holders are basic necessities in the modern kitchen. Best quality Kitchen linens are washable, heat resistant, durable and perfect for drying utensils and wet hands.

Supply of bed linens, table linens and kitchen and toilet linens is met through domestic production as well as import. While the domestic production is limited in variety and style, imported products are available in diversified designs and quality levels. The total imported supply of bed linens table linens and kitchen and toilet linens is presented in Table 3.1. As can be seen from the Table 3.1 the supply of the products for the last ten years shows a steady growth. The least square estimate fitted for the data set reveals:

**Y = 177,389 X - 410,365** **$R^2$ = 87.1%**

Accordingly, the total supply of bed linens, table linens and kitchen and toilet linens is growing annually by 177,389 kg. Thus current effective demand is estimated at 1,718,303 kg.

**Table 3.1**

**IMPORTED BED LINEN, TABLE LINEN, KITCHEN AND TOILET LINEN IN KILOGRAM**

| Year | Bed linen | Table linen | Kitchen & Toilet linen | Total |
|---|---|---|---|---|
| 1997 | 41,311 | 742 | 7,900 | 49,953 |
| 1998 | 31,588 | 2,160 | 3,976 | 37,724 |
| 1999 | 75,122 | 3,178 | 21,181 | 99,481 |
| 2000 | 112,952 | 4,144 | 31,860 | 148,956 |
| 2001 | 170,791 | 9,692 | 102,684 | 283,167 |
| 2002 | 270,087 | 10,727 | 182,711 | 463,585 |
| 2003 | 480,279 | 8,854 | 271,293 | 761,426 |
| 2004 | 613,036 | 8,882 | 258,986 | 880,904 |
| 2005 | 566,908 | 9,695 | 568,482 | 1,145,085 |
| 2006 | 1,167,231 | 9,314 | 605,940 | 1,782,465 |

***Source**: Customs Authority.*

## 2. Projected Demand

The demand for bed linens, table linens, kitchen and toilet linens is directly related to growth in standard of living and income. The supply of these products for the last ten years exhibits a strong positive trend, with an explanatory power of 87%. The demand is therefore projected based on the linear model built for the last ten years supply.

Accordingly, the demand for bed linens, table linens, kitchen and toilet linens in 2018 is estimated to be 3,492,193 kg. Projected demand is presented in Table 3.2.

**Table 3.2**

**PROJECTED DEMAND FOR IMPORTED BED LINEN, TABLE LINEN, KITCHEN AND TOILET LINEN (KG)**

| Year | Projected Demand |
|---|---|
| 2009 | 1,895,692 |
| 2010 | 2,073,081 |
| 2011 | 2,250,470 |
| 2012 | 2,427,859 |
| 2013 | 2,605,248 |
| 2014 | 2,782,637 |
| 2015 | 2,960,026 |
| 2016 | 3,137,415 |
| 2017 | 3,314,804 |
| 2018 | 3,492,193 |

## 3. Pricing and Distribution

The current retail price for bed linens, table linens and kitchen linens is Birr 70, 30 and 22, respectively. The respective recommended factory gate price for the project under study is Birr 60, 25 and 18.

Distribution of all products of the project will get into the market through the existing wholesale channel specializing in those products.

## B. PLANT CAPACITY AND PRODUCTION PROGRAMME

### 1. Plant Capacity

The envisaged plant is intended to produce bed sheet, bed cover, table cover, and kitchen cover; all are made of cotton fabrics or from blind of cotton and man –made fiber. The bed sheet, bed cover, table cover, and kitchen lines are all intended to be produced from different colored fabrics with stitched decorative designs.

Consequently the envisaged plant will produce bed sheet of about 3 $m^2$ areas, bed cover 4.4 $m^2$ area, table linen of 1.8 $m^2$ and kitchen 1.8 $m^2$, all finished with decorative designs.

Table 3.2 of the market study indicates that demand projection of the assorted products for the year 2009 will be about 1.9 million kg and this figure will grow to about 2.8 million kg in 2014 and then to about 3.5 million kg in the year 2018. In view of the above demands, it is proposed that the envisaged plant will have an annual production capacity of 200,000 pairs of bed sheets, 100,000 pieces of bed covers and 200,000 pieces of table and kitchen covers.

The plant will start operation operate single shift 8 hours a day and for 300 days a year the production can be increased if the plant operates double shift for 16 hours a day and for 300 days a year.

### 2. Production Programme

That plant will start operation at 75 % of its capacity during the first year of production. It will then raise its production to 85 % in the second year, and then to 100 % in the third year and then after.

**Table 3.3**

**PRODUCTION PROGRAMME**

| Year | Capacity Utilization (%) | Production | | |
|---|---|---|---|---|
| | | Bed Sheet (Pairs) | Bed Cover (Pcs) | Table And Kitchen Linens (Pcs) |
| 1 | 75 | 150,000 | 75,000 | 150,000 |
| 2 | 85 | 170,00 | 85,000 | 170,000 |
| 3 - 15 | 100 | 200,000 | 100,000 | 200,000 |

## IV. MATERIALS AND INPUTS

### A. RAW & AUXILIARY MATERIALS

The major raw material required for the production of the items indicated above are dyed cotton fabrics, nylon fabrics and sewing thread of various colors.

Auxiliary material includes dyestuffs and coloring material, packing materials and other inputs. Annual requirement of these materials at full capacity production are given in Table 4.1.

The textile industries operational in different parts of Ethiopia can be used as sources of raw materials. These include Akaki Textile Factory, Kombolcha Textile Factory, Bahir Dar Textile Factory, Dire Dawa Textile Factory etc. Packing materials can be procured from Wonji Pulp and Paper Factory. Ethio—Japan Nylon Factory is a source of nylon fabrics.

**Table 4.1**

**ANNUAL REQUIREMENT OF RAW AND AUXILIARY MATERIALS**

| Sr. No. | Description | Qty. | Cost '000 Birr | | |
|---|---|---|---|---|---|
| | | | FC | LC | TC |
| | **A. Raw Material** | | | | |
| **1** | Dyed cotton fabrics ($m^2$) | 1,640,000 | -- | 11,480 | 11,480 |
| **2** | Dyed Nylon fabrics ($m^2$) | 360,000 | -- | 2,952 | 2,952 |
| **3** | Sewing thread | Lumpsum | -- | 0,120 | 120 |
| | **Sub Total** | | | 14,552 | 14,552 |
| | **B. Auxiliary Materials** | | | | |
| 1 | Dyestuffs & coloring Materials | Lumsum | 125 | 10 | 135 |
| 2 | Packing Material | " | - | 65 | 65 |
| 3 | Other Inputs | " | - | 10 | 10 |
| | **Sub Total** | | 125 | 85 | 210 |
| | **Total Cost** | | **125** | **14,637** | **14,762** |

## B. UTILITIES

Electricity and water are utilities required for the plant. Annual electricity requirement is estimated to be 15,000 kWh, and water requirement is 2000 $m^3$. The amount and value of annual requirement of utilities for the envisaged plant is given in Table 4.2 below.

**Table 4.2**

**UTILITIES REQUIREMENT AND COST**

| Description | Qty | Cost ( in Birr) |
|---|---|---|
| Electricity ( kWh) | 15,000 | 7,104 |
| Water ($m^3$) | 2000 | 6,500 |
| **Total** | | **13,604** |

# V. TECHNOLOGY AND ENGINEERING

## A. TECHNOLOGY

### 1. Production Process

The production of bed sheets, bed covers and table linen involves such activities like cutting, sewing, pattern making, designing, dyeing and packing. These activities are simple and can be mastered in very short time. The production of bed covers, bed sheets and table linen does not have any negative impact on environment.

### 2. Source of Technology

The technology of sewing and production of item indicated above can be carried out by simple sewing machines. Machinery supplier address is given below.

Burma Machine Tools
Guru Ram, Dass Road
Dhandari Kalar
G.T. Road,wdhiana - 14010
INDIA

## B. ENGINEERING

### 1. Machinery and equipment

Table 5.1 shows the list of machinery and equipment required for the envisaged plant.

**Table 5.1**

**MACHINERY AND EQUIPMENT REQUIREMENT AND COST**

| Sr. No. | Description | Qty. | Cost '000 Birr | | |
|---|---|---|---|---|---|
| | | | FC | LC | TC |
| 1 | sewing machine (industrial type) | 30 | 300 | - | 300 |
| 2 | Flat bed, bottom top and bottom covering stitch machine | 10 | 150 | - | 150 |
| 3 | High speed 1- needle cylinder, bed lock stitch | 5 | 175 | - | 175 |
| 4 | Portable steam Iron | 20 | 7.5 | - | 7.5 |
| 5 | Scissors | 20 | - | | |
| 6 | Tables | 10 | - | | |
| 7 | Others equipment ---small steam generator( Birr 350000) ; Dyeing and drying unit ( Birr 285000 ) ; and cleaning and pumping unit ( Birr175000 ) . | Reqd | 835 | - | 835 |
| **Sub-Total** | | | **1,467.5** | | **1,467.5** |
| | Bank, customers, Insurance & Freight costs | | - | 150 | 150 |
| **Total Cost** | | | **1,467.5** | **150** | **1,617.5** |

## 2. Land, Building And Civil Works

The total land requirement for the envisaged plant is estimated to be 1000 $m^2$. Built-up area is estimated at 600 $m^2$. This consists of 400 square meters for production hall, 80 square meters for offices, and 120 square meters for stores. At the rate of Birr 2,200 per $m^2$ , the investment in building will be Birr 1.32 million.

According to the Federal Legislation on the Lease Holding of Urban Land (Proclamation No 272/2002) 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 blow 5000 $m^2$ 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.

The land lease price in the industrial zones varies from one place to the other. For example, a land was allocated with a lease price of Birr 284 /$m^2$ in Akakai-Kalti and Birr 341/ $m^2$ in Lebu and recently the city's Investment Agency has proposed a lease price of Birr 346 per $m^2$ for all industrial zones.

Accordingly, in order to estimate the land lease cost of the project profiles it is assumed that all manufacturing projects will be located in the industrial zones. Therefore, for this profile, which is a manufacturing project a land lease rate of Birr 346 per $m^2$ 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 5.2 shows incentives for lease payment.

**Table 5.2**

**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 period of lease for industry is 60 years .

Accordingly, the total lease cost, for a period of 60 years with cost of Birr 346 per $m^2$, is estimated at Birr 20.76 million of which 10% or Birr 2,076,000 will be paid in advance. The remaining Birr 18.68 million will be paid in equal installments with in 28 years i.e. Birr 667,286 annually.

## VII. MANPOWER AND TRAINING REQUREMENT

### A. MANPOWER REQUREMENT

Man power is required both for administration and production. The lists of man power, including the monthly and annual salary are given in Table 6.1 below

### B. TRAINING REQUREMENT

Skill up – grading training is required for equipment operations for the period of two weeks. A total of Birr 5,000 is earmarked for carrying out the training programme.

**Table 7.1**

**MAN POWER REQUIREMENT AND ANNUAL LABOUR COST**

| Sr. No | Description | Req. No. | Monthly salary (Birr) | Annual Salary (Birr) |
|---|---|---|---|---|
| | **A. Administration** | | | |
| 1 | Plant manager | 1 | 3000 | 36,000 |
| 2 | Secretary | 1 | 800 | 9600 |
| 3 | Sales Person | 1 | 1200 | 14,400 |
| 4 | Driver | 1 | 500 | 6000 |
| 5 | Guard | 3 | 1050 | 12,600 |
| | **Sub-Total** | **4** | | **78,600** |
| | **B. Production** | | | |
| 1 | Operators | 20 | 600 | 144,000 |
| 2 | Helpers | 5 | 2250 | 27,000 |
| 3 | Designer | 2 | 1800 | 21,600 |
| | **Sub-Total** | **37** | | **192,600** |
| | Workers' Benefit (25% of basic salary) | | | 67,800 |
| | **Total Cost** | **41** | | **339,000** |

## VII. FINANCIAL ANALYSIS

The financial analysis of the bed sheets, bed covers and table linen project is based on the data presented in the previous chapters and the following assumptions:-

## VII. FINANCIAL ANALYSIS

The financial analysis of the chicken meat processing 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 | 8.5% |
| Discount cash flow | 8.5% |
| Accounts receivable | 30 days |
| Raw material local | 30 days |
| Raw material import | 90 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 7.32 million, of which 20 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 ( '000 Birr)**

| Sr. No. | Cost Items | Local Cost | Foreign Cost | Total Cost |
|---|---|---|---|---|
| 1 | Land lease value | 2,076.00 | - | 2,076.00 |
| 2 | Building and Civil Work | 1,320.00 | - | 1,320.00 |
| 3 | Plant Machinery and Equipment | 150.00 | 1,467.50 | 1,617.50 |
| 4 | Office Furniture and Equipment | 100.00 | - | 100.00 |
| 5 | Vehicle | 250.00 | - | 250.00 |
| 6 | Pre-production Expenditure* | 484.61 | - | 484.61 |
| 7 | Working Capital | 1,474.23 | - | 1,474.23 |
| | **Total Investment cost** | **5,854.84** | **1,467.50** | **7,322.34** |

** N.B Pre-production expenditure includes interest during construction ( Birr 334.61 thousand , training (Birr 5 thousand ) and Birr 145 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 15.71 million (see Table 7.2). The raw material cost accounts for 93.93 per cent of the production cost. The other major components of the production cost are depreciation ,

direct labour and cost of finance which account for 1.70 %, 1.62% and 1.42% respectively. The remaining 1.33% is the share of utility, repair and maintenance, labour overhead and other administration cost.

**Table 7.2**

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

| Items | Cost | % |
|---|---|---|
| Raw Material and Inputs | 14,762.00 | 93.93 |
| Utilities | 13.60 | 0.09 |
| Maintenance and repair | 80.88 | 0.51 |
| Labour direct | 254.55 | 1.62 |
| Labour overheads | 67.80 | 0.43 |
| Administration Costs | 46.33 | 0.29 |
| Land lease cost | - | - |
| **Total Operating Costs** | **15,225.16** | 96.88 |
| Depreciation | 267.75 | 1.70 |
| Cost of Finance | 222.46 | 1.42 |
| **Total Production Cost** | **15,715.37** | **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 1.39 million to Birr 1.76 million during the life of the project. Moreover, at the end of the project life the accumulated cash flow amounts to Birr 15.71 million.

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

$$BE = \frac{\text{Fixed Cost}}{\text{Sales} - \text{Variable Cost}} = 21\ \%$$

## 4. Payback Period

The pay back period, also called pay – off period is defined as the period required to recover 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 porject is computed to be 27.10 % indicating the vaiability of the project.

**6. Net Present Value**

Net present value (NPV) is defined as the total present ( discounted) value of a time series of cash flows. NPV aggregates cash flows that occur during different periods of time during the life of a project in to a common measuring unit i.e. present value. It is a standard method for using the time value of money to appraise long-term projects. NPV is an indicator of how much value an investment or project adds to the capital invested. In principal a project is accepted if the NPV is non-negative.

Accordingly, the net present value of the project at 8.5% discount rate is found to be Birr 5.47 million which is acceptable.

## D. ECONOMIC BENEFITS

The project can create employment for 41 persons. In addition to supply of the domestic needs, the project will generate Birr 1.87 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. Moreover, the product has export potential.