54. CHILDREN'S CLOTH

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I. SUMMARY

This profile envisages the establishment of a plant for the production of Children's Cloth with a capacity of 90,000 pieces per annum.

The present demand for the proposed product is estimated at 156,709 pieces per annum. The demand is expected to reach at 302,891 pieces by the year 2010.

The plant will create employment opportunities for 29 persons.

The total investment requirement is estimated at Birr 2.5 million, out of which Birr 2.9 million is required for plant and machinery.

The project is financially viable with an internal rate of return (IRR) of 14.6% and a net present value (NPV) of Birr 1.8 million, discounted at 8.5 %.

II. PRODUCT DESCRIPTION AND APPLICATION

Children's cloth as the name implies, comprise of garment intended for use by children within the age group of 1 to 14 years. The type of manufacturing process employed is tailoring - making of clothes from finished woven and knitted fabrics, including jeans.

The articles envisaged in this project profile include jackets (with trousers), coats and pair of trousers, shirts, and girls dress.

III. MARKET STUDY AND PLANT CAPACITY

A. MARKET STUDY

1. Past Supply and Present Demand

The demand for children's cloth in Ethiopia is met both from local production and imports. However, local production of children's cloth is undertaken mainly by individual tailors throughout the country. The existing garment factories that are concentrated in Addis Ababa and its surroundings produce garment predominantly for civil adults, police and defense forces and workers uniforms.

Current production of children's cloth, which is undertaken by individual tailors, is on piece by piece basis in accordance with the desire of the clients. This method of production combined with inefficient operation of individual tailors makes children's cloth more expensive than the process based on industrial mass production.

Due to the shortage of children's cloth from domestic sources, the country has been importing a substantial amount of children cloth in the past five years. The historical supply data of children's cloth originating from imports is shown in Table 3.1.

Table 3.1
IMPORT OF BABIES GARMENT (QUANTITY IN KG, VALUE IN BIRR)

Year	Knitted or Crocheted		Not knitted		Total	
	Quantity	Value	Quantity	Value	Quantity	Value
1999	24485	868845	161287	6,902442	185772	7,771287
2000	45558	2652026	99792	2,777759	145350	5,429785
2001	130203	2546167	552760	10,110,860	686963	12,657027
2002	280851	6937859	743213	18,452893	1,024,064	25,390752
2003	154249	4604401	941164	27758434	1,094413	32362835

Source:- *External Trade Statistics*

In BGRS, there is no enterprise that produces children's cloth on industrial basis. Hence, the demand is met by the informal sector /individual tailors or through importing from other countries or other regions of the country. In the absence of data on the above sources, an end-use approach has been utilized in order to determine the present demand for children's cloth in BGRS. Accordingly, the following assumptions have been taken into consideration

- Children are classified with in the age group of 0 year to 14 years.
- Of the total children in the above age group 60% are assumed to be the potential buyers.
- Children's cloth is assumed to be replaced once every year.

According to projections made by the Central Statistical Authority, the number of children aged between 0-14 years in BGRS in the year 2000 was 236,618. By applying the average population growth of the region which is 2.5%, the current (2004) population aged between 0-14 is 261,182.

Taking the above assumption, i.e, 60% as potential buyers, the present effective demand for children's cloth in BGRS is 156,709 Pcs of children's cloth.

2. Projected Demand

Demand for children cloth is mainly influenced by the number of children as well as income of the household. Thus, taking a 4% average growth rate for demand of ready-made cloth for children aged 0-14 years, a replacement rate of 1 piece per year and assuming 60% of the total children to the main customers of industrially produced garments, the projected demand is shown in Table 3.2.

Table 3.2

PROJECTED DEMAND FOR CHILDREN's CLOTH IN BGRS

Year	Total Projected Children in BGRS	Projected Demand for Children Cloth
2005	267712	162 977
2006	274404	169496
2007	281264	176276
2008	288296	183327
2009	295503	190660
2010	302891	198287
2011	310463	206218
2012	318225	214467
2013	326180	223046
2014	334335	231967
2015	342693	241246

As could be observed from Table 3.2, the demand for children cloth in BGRS will grow from 162,977 pieces in year 2005 to 198,287 pieces by the year 2010.

3. Pricing and Distribution

The price of children's cloth depends on the type of the material used. Cotton fabrics and synthetic fabrics are assumed to be the main materials to be used by the envisaged project. Accordingly, the prices adopted for projecting sales revenue are given below.

- Children's trouser & shirt = Birr 35
- Girl's dress = Birr 30

The products will find their market outlet through existing ready-made garment retail shops and by opening a factory shop at strategic locations.

B. PLANT CAPACITY AND PRODUCTION PROGRAMME

1. Plant Capacity

According to market study, the demand for children's cloth grows to 198,287 pieces and 241,246 pieces by the year 2010 and 2015, respectively. It is, therefore, envisaged that a plant with an annual capacity of 90,000 pieces of assorted children's cloth shall be established. The type of children's cloth and proposed composition is presented in Table 3.3. A total of 300 working days per annum and a single shift of eight hours per day is the basis of capacity determination.

Table 3.3
PRODUCTION CAPACITY

Sr. No.	Type of Cloth	Quantity (Pcs)
1	Trousers & shirts	50,000
2	Girl's dress	40,000
	Total	**90,000**

2. Production Programme

The envisaged plant will start operation in a single shift, 8 hours a day, and 330 days a year. Production can be scheduled to grow to full capacity in three consecutive years, starting at 75% of installed capacity in the first year, and raising the production to 85% in the second year. Full capacity production will then be attained in the third year and thenafter. Production output can be doubled or tripled by introducing a second or third shift in the daily production programme depending upon the market demand. Table 3.4 below depicts the proposed production programme.

Table 3.4
PRODUCTION PROGRAMME

Year	1	2	3
Capacity utilization [%]	75	85	100
Production (pcs)	67,500	76,500	90,000

IV. RAW MATERIALS AND INPUTS

A. RAW MATERIALS

The raw materials required to produce children's cloth in the envisaged plant include fabrics, buttons, zippers, elastic braid and sewing threads. As there is no any textile factory operational in the region, the fabrics required can be acquired from either Kombolcha or Bahir Dar Textile factories.

Other relevant raw materials can also be purchased from Addis Ababa. Table 4.1 below presents annual requirements and corresponding costs of raw materials at full production capacity.

Table 4.1
RAW MATERIALS REQUIREMENT AND COST AT FULL CAPACITY

Sr. No	Description	Unit of Measure	Qty	Unit Price	Total cost, ['000 Birr]		
					LC	FC	TC
1	Polyester /cotton fabric	meters	90,000	15	1350	-	1350
2	Buttons	Gross	2000	8.50	17	-	17
3	Zipper	Gross	625	25	15.6	-	15.6
4	Elastic braid	Roll	125	22	2.75	-	2.75
5	Sewing thread	Dozen	1250	7.00	8.75	-	8.75
6	Sewing thread [cones]	Pcs	3300	1.50	5.0	-	5.0
7	Packing material	As req.	-	-	20.00	-	20.00
	Grand Total				**1420**		**1420**

B. UTILITIES

Utilities required by the plant is comprised of electricity, fuel oil and water. Steam is required for pressing. Table 4.2 presents annual requirement of utilities and corresponding cost at full production capacity.

Table 4.2
ANNUAL REQUIREMENT OF UTILITIES AND COST AT FULL PRODUCTION CAPACITY

Sr. No.	Description	Unit of Measure	Qty.	Unit Price	Total Cost ('000Birr)
1	Electricity	kWh	20,000	0.474	9.50
2	Fuel oil	Litre	15,000	2.75	41.25
3	Water	m^3	1,200	1.50	1.80
	Grand Total		**-**	**-**	**52.55**

V. TECHNOLOGY AND ENGINEERING

A. TECHNOLOGY

1. Process Description

The major unit of operations involved in children garment making consist of the following:-

- Pattern design and pattern making;
- Cloth cutting, grading process by mechanical cutting system and piece bundling;
- Sewing by searing machine;
- Trimming and inspection;
- Ironing and pressing for finishing process; and
- Button-hole making, bottoming, fixing of zippers and elastic braids are done at all required points.

Production of children's cloth does not have any direct negative impact on environment.

2. Source of Technology

The machinery and equipment required to manufacture children's clothe are conventional and available in different technological levels. The best appropriate technology is the labour intensive one. Suppliers of labour intensive technologies are available in Europe, Asia and Far East. For the purpose of this project, a German Company whose address stated below can be cosidered, if industrial cloth sewing machinery will be appropriate.

G.M PFAFF A.G
P.O.BOX 3020
D- 67653 Kaiserslauter
Germany
Fax (0631) 17202

B. ENGINEERING

1. Machinery and Equipment

Machinery and equipment required for the envisaged plant are conventional tailoring/sewing machinery. The list of equipment, quantity and associated costs are given in Table 5.1.

As shown in the table, the total cost of machinery and equipment is estimated at Birr 7.8 million, of which Birr 6 million is required in foreign currency and the remaining Birr 1.8 million is in local currency.

Table 5.1

MACHINERY AND EQUIPMENT REQUIREMENT AND COST

Sr. No.	Description	Qty	Cost ['000 Birr]		
			LC	FC	TC
1	Single needle stitching machine	10			
2	Double needle stitching machine	8			
3	Industrial sewing machine	15			
4	Over lock machine	2	350	3500	3850
5	Button hole machine	2			
6	Electrical cloth cutter	set			
7	Steam iron (set)	set			
8	Scissors & various tools (set)	Reqd			
9	Work benches	Reqd			
10	Shelves, tables, office furniture	"			
	Grand Total		**350**	**3500**	**3850**

2. Land, Building and Civil Works

The total area required for plant site is estimated to be 1,500 m^2, of this the built-up area of the factory will be 500 m^2. Building cost is estimated to be Birr 1,000 per m^2, and the total building cost will, then, be Birr 500,000. The cost of land leasing at a rate of Birr 2 per m^2, per annum and for a total of 70 year land holding, will be Birr 210,000. Thus, the total investment cost on land, building and civil works, assuming that the total land lease cost will be paid in advance is estimated at Birr 710,000.

3. Proposed Location

Urban children of 1-14 years age in the region is estimated to be well over 22,000 in year 2004. It is on the basis of this figure that plant capacity is determined to be 20,000 units of children is cloth.

Assosa town, the capital of the regional state, has the largest urban population of 17,616 (source: Resource Potential Assessment: PART I. Vol II. IPS; March 2004). Bambasi town, located in Assosa zone, has urban population of 6,242 (Ibid: IPS; March 2004). These two towns will provide adequate access to children's cloth market. Moreover, infrastructure and utilities are available in Assosa town. It is, therefore, recommended that Assosa town is the best location for the envisaged plant.

VI. MANPOWER AND TRAINING REQUIREMENT

A. MANPOWER REQUIREMENT

The plant will be able to employ 29 persons. Annual salary requirement, including employee's benefit, will be Birr 250,000. The mix of production and administrative manpower required for the envisaged plant is shown in Table 6.1.

B. TRAINING REQUIREMENT

It is proposed that production workers (tailors), designers and maintenance crew shall be given appropriate on-site training in the design, manufacture, quality control and operation of children's cloth, and on maintenance and operation of machinery. Such training programme should be incorporated in the contract agreement of the supply of knowhow and machinery. Estimated cost of on-site training of this nature is about Birr 15,000.

Table 6.1
MANPOWER REQUIREMENT AND LABOUR COST

Sr. No.	Descriptin	Req. No.	Monthly Salary (Birr)	Annual Salary (Birr)
1	General manager	1	1800	21600
2	Production supervisor	1	1200	14400
3	Designer	1	1000	12000
4	Tailor	10	600	72000
5	Assistant Tailor	5	350	21,000
6	Mechanic	1	450	5400
7	Electrician	1	450	5400
8	Secretary	1	600	7200
9	Clerk	1	300	3600
10	Store keeper	1	300	3600
11	Cashier	1	400	4800
12	General service	2	200	4800
13	Guard	3	150	5400
	Sub-total	**29**	**-**	**181200**
	Employee Benefit (25% of basic salary)	-	-	-
	Total	**29**	**-**	**45300**

VII. FINANCIAL ANALYSIS

The financial analysis of the Children's Cloth project is based on the data presented in the previous chapters and the following assumptions:-

Construction period	1 years
Source of finance	30 % equity
	70 % loan
Tax holidays	3 years
Bank interest	7.5 %
Discounted cashflow	8.5 %
Repair and maintenance	3 % of the total plant and machinery
Accounts receivable	30 days
Raw material, local	30 days
Raw materials, import	90 days
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 initial investment cost of the project including working capital is estimated at 5.9 million, of which 72 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

Sr. No.	Cost Items	Total ('000 BIRR)
1	Land lease value	210
2.	Building and Civil Work	500
3.	Plant Machinery and Equipment	3,915
4.	Office Furniture and Equipment	65
5.	Vehicle	375
6.	Pre-production Expenditure*	331.25
7	Working Capital	473
	Total Investment cost	**5,869.2**
	Foreign share	**72%**

* *N.B Pre-production expenditure includes interest during construction (Birr 311.25 thousand), training (Birr 15 thousand), and (Birr 5 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 of the plant is estimated at Birr 2.5 million (see Table 7.2). The material and utility cost accounts for 56.6 per cent while repair and maintenance take 1.6 percent of the production cost.

Table 7.2

ANNUAL PRODUCTION COST AT FULL CAPACITY ('000 BIRR)

Item	COST	%
Raw Material and Inputs	1,420	56.6
Utilities	52.6	2.1
Maintenance and repair	40	1.6
Labour direct	115.8	4.6
Factory overheads *	6.0	0.2
Administration Cost **	69.4	2.8
Total Operating Costs	**1,703.8**	**67.9**
Depreciation	512.5	20.4
Cost of Finance	294.1	11.7
Total Production Cost	**2,510.4**	**100**

C. FINANCIAL EVALUATION

1. Profitability

According to the projected income statement, the project will start generating profit in the 2nd 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 lifetime of the project.

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

* *Factory overhead cost includes salaries and wages of supervisors, insurance of factory workers, social costs on salaries of direct labour, etc.*

** *Administrative cost includes salaries and wages, insurance, social costs, materials and services used by administrative staff etc.*

2. Break-even Analysis

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

$$BE = \frac{\text{Fixed Cost}}{\text{Sales} - \text{Variable cost}} = 67.43\ \%$$

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 6 years.

4. Internal Rate of Return and Net Present Value

Based on the cash flow statement, the calculated IRR of the project is 14.6 % and the net present value at 8.5% discount rate is Birr 1.8 million.

D. ECONOMIC BENEFITS

The project can create employment for 29 persons. In addition to supply of the domestic needs, the project will generate Birr 0.14 million per annum in terms of tax revenue when it starts to operate at full capacity. Moreover, the Regional Government can collect employment, income tax and sales tax revenue. The establishment of such factory will have a foreign exchange saving effect to the country by substituting the current imports.