

**123. PROFILE ON THE PRODUCTION OF WRITING
PADS, NOTEBOOKS AND RING BOOKS**

TABLE OF CONTENTS

	<u>PAGE</u>
I. SUMMARY	123-2
II. PRODUCT DESCRIPTION & APPLICATION	123-3
III. MARKET STUDY AND PLANT CAPACITY	123-4
A. MARKET STUDY	123-4
B. PLANT CAPACITY & PRODUCTION PROGRAMME	123-6
IV. MATERIALS AND INPUTS	123-7
A. RAW & AUXILIARY MATERIALS	123-7
B. UTILITIES	123-8
V. TECHNOLOGY & ENGINEERING	123-9
A. TECHNOLOGY	123-9
B. ENGINEERING	123-10
VI. HUMAN RESOURCE & TRAINING REQUIREMENT	123-14
A. HUMAN RESOURCE REQUIREMENT	123-14
B. TRAINING REQUIREMENT	123-15
VII. FINANCIAL ANALYSIS	123-16
A. TOTAL INITIAL INVESTMENT COST	123-16
B. PRODUCTION COST	123-17
C. FINANCIAL EVALUATION	123-18
D. ECONOMIC & SOCIAL BENEFITS	123-20

I. SUMMARY

This profile envisages the establishment of a plant for the production of writing pads, notebooks and ring books with a capacity of 10 million pieces per annum. Writing pads, notebooks and ring books are made from paper sheet layers which are commonly ruled, stitched or glued and used for writing.

The demand for writing pads, notebooks and ring books is met through both local production and imports. The present (2012) demand for writing pads, notebooks and ring books is 1,604 tons. The demand for Writing pads, notebooks and ring books is projected to reach 2,250 tons and 3,155 tons by the year 2017 and 2022, respectively.

The principal raw material required is wood-free a writing paper with a weight basis of 55g/m² which has to be imported.

The total investment cost of the project including working capital is estimated at Birr 28.93 million. From the total investment cost the highest share (Birr 21.18 million or 73.20%) is accounted by fixed investment cost followed by initial working capital (Birr 4.53 million or 15.68%) and pre operation cost (Birr 3.22 million or 11.12%). From the total investment cost Birr 14 million or 48.39% is required in foreign currency.

The project is financially viable with an internal rate of return (IRR) of 24.64% and a net present value (NPV) of Birr 20.57 million discounted at 10%.

The project can create employment for 33 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 generate income for the Government in terms of tax revenue and payroll tax.

II. PRODUCT DESCRIPTION AND APPLICATION

Writing pads, notebooks and ring books are made from paper sheet layers which are commonly ruled, stitched or glued and used for writing. They are composed of pages, often ruled, made out of paper, used for purposes including recording notes or memoranda, writing, drawing and similar activities. Principal types of binding include padding, coil binding, comb binding, sewn, and etc. Binding methods can affect whether a notebook can lie flat when open and whether the pages are likely to remain attached. The cover material is usually distinct from the writing surface material, more durable, more decorative, and more firmly attached. It also is stiffer than the pages, even taken together.

It is frequently cheaper to purchase notebooks that are spiral-bound, meaning that a spiral of wire is looped through large perforations at the top or side of the page. Other bound notebooks are available that use glue to hold the pages together. Today, it is common for pages in such notebooks to include a thin line of perforations that make it easier to tear out the page. Spiral-bound pages can be torn out, but frequently leave thin scraggly strips from the small amount of paper that is within the spiral, as well as an uneven rip along the top of the torn-out page. Hard-bound notebooks include a sewn spine, and the pages are not easily removed.

Variations of notebooks that allow pages to be added, removed, and replaced are bound by either rings, rods, or discs. In each of these systems, the pages are modified with perforations that facilitate the specific binding mechanism's ability to secure them. Ring-bound and rod-bound notebooks secure their contents by threading perforated pages around straight or curved prongs. In the open position, the pages can be removed and re-arranged. In the closed position, the pages are kept in order. Disc-bound notebooks remove the open or closed operation by modifying the pages themselves.

III. MARKET STUDY AND PLANT CAPACITY

A. MARKET STUDY

1. Past Supply and Present Demand

The local demand for writing pads, notebooks and ring books is met through import and local production. The available data on locally manufactured products from Central Statistics Agency (CSA) does not show the production of writing pads, notebooks and ring books separately.

The import data on writing pads, notebooks and ring books indicates that the annual average quantity of import during the years (2002-2011) was 840 tones with an average annual growth rate of about 9%. However, the volume of import during the recent four years (2008-2011) has grown to an average amount of 1,111 tons with an average growth rate of about 7% (see Table 3.1)

Table 3.1
IMPORTED QUANTITY OF WRITING PADS, NOTEBOOKS AND RING BOOKS
(TONES)

Year	Import
2002	660
2003	651
2004	419
2005	539
2006	724
2007	964
2008	1,109
2009	960
2010	1,177
2011	1,199

Source: Ethiopian Revenues & Customs Authority

For estimating the present unsatisfied demand i.e. the demand met through import, the growth rate registered by the product's import during the recent four years (2008-2011) is assumed to continue at least in the near future. Accordingly, taking the year 2011 level of import as a base and applying a growth rate of 7% the present unsatisfied demand is estimated at 1,283 tones.

According to knowledgeable persons from the total local demand for writing pads, notebooks and ring books about 80% is met through import and the remaining 20% through local production. Hence, considering the local production the total present (2012) effective demand for the products is estimated at 1,604 tones.

2. Projected Demand

The demand for writing pads, notebooks and ring-books is influenced by the performance of the general economy. The GDP of the country is growing at an average rate of about 11% during the past consecutive years (2004-2010) and this rate is expected to be more in the future. The growth in the sectors of education, commerce and etc is anticipated to continue to influence the future demand for writing pads, notebooks and ring books.

However, in order to be conservative a growth rate of 7% which is equivalent to the average growth rate registered by import of products under consideration during the past four years (2008-2011) is used to project demand for the products. Accordingly assuming that local production will maintain 20% market share, the projected demand for writing pads, notebooks and ring-books, estimated local production and the supply demand gap is presented in Table 3.2.

Table 3.2**PROJECTED DEMAND FOR WRITING PADS, NOTEBOOKS AND RINGBOOKS (TONES)**

Year	Projected Demand	Local Production	Supply Demand Gap
2013	1,716	343	1,373
2014	1,836	367	1,469
2015	1,965	393	1,572
2016	2,103	421	1,682
2017	2,250	450	1,800
2018	2,407	481	1,926
2019	2,576	515	2,061
2020	2,756	551	2,205
2021	2,949	590	2,359
2022	3,155	631	2,524

3. Pricing and Distribution

The current retail price of writing pads, notebooks and ring-books varies based on size, number of leaves, quality of paper etc. Accordingly, considering the average price of the available writing pads, notebooks and ring-books in the market and allowing margin for distributors and retailers a factory gate price of Birr 4.5 per piece is adopted.

The suitable sales and distribution mechanism is through wholesale distribution to stationery shops at different regions.

B. PLANT CAPACITY AND PRODUCTION PROGRAMME**1. Plant Capacity**

On the basis of projected demand, it is proposed that a plant with a capacity of 10 million pieces of writing pads, notebooks and ring books per annum be installed. Production capacity is based

on a schedule of 300 working days per annum and 2 shifts of eight hours per day. The one shift can be considered reserved capacity which can be realized whenever market penetration is properly done and ensured.

2. Production Programme

The envisaged production programme is given in Table 3.3. The schedule is worked out in consideration of the time required for gradual build-up in labor productivity and fine-tuning of machinery. Production starts at 75% of plant capacity in the first year of operation and reaches full-gear in the 3rd year of operation and then after.

Table 3.3
PRODUCTION PROGRAMME

Year	1	2	3
Capacity Utilization [%]	75	85	100
Production [million Nos.]	7.5	8.5	10

IV. MATERIALS AND INPUTS

A. MATERIALS

The major raw material required for the envisaged manufacturing plant is wood-free a writing paper with a weight basis of 55g/m², which is normally produced by using bleached kraft pulp of hard wood and soft wood fibers. Another raw material pressing paper used for covers, which has a weight basis of about 120g/m².

Other materials required for the production are wire clips (stitching and spine), and water based flexographic printing ink, which have to be imported.

Auxiliary material requirement comprise mainly of corrugated boxes (cartons). The raw materials required for the production of 10 million Pcs. of writing pads, notebooks and ring books and the corresponding cost is indicated in Table 4.1 below.

Table 4.1**ANNUAL MATERIALS REQUIREMENTS AND COST**

Sr. No.	Description	UoM	Qty	Unit Price (Birr)	Cost ('000 Birr)		
					L.C	F.C	Total
1	Wood-free writing paper	tons	1002.00	15,650		15,681.30	15,681.30
2	Pressing/Cover paper	tons	102.88	20,033		2,060.94	2,060.94
3	Wires(clipping & stitching)	tons	2.12	19,255		40.82	40.82
4	Printing ink	tons	2.21	127,248		281.22	281.22
5	Cartons	No.	100,000.00	7.5	750		750.00
Total					750	18,064.28	18,814.28

B. UTILITIES

Electricity and water are the two major utilities required by the plant. Table 4.2 below shows annual requirements and associated costs at full production capacity of the plant.

Table 4.2**ANNUAL UTILITIES REQUIREMENT AND COST**

Sr. No.	Description	Unit of Measure	Qty.	Cost ('000 Birr)
1	Electricity	kWh	185,000	107.606
2	Water	m ³	1,500	15.000
Total				122.606

V. TECHNOLOGY AND ENGINEERING

A. TECHNOLOGY

1. Production Process

Writing pads, notebooks and ring books manufacturing belongs to the paper converting industry. The most appropriate technology used for the production of these items is called the flexographic printing.

The production plant described in the following is laid out as a fully automatic unit for the production exercise books and notebooks. Suitable raw materials are all current paper weights from 40 g/sq.m to 250 g/sq.m. An endless ribbon is conveyed via an unwinding unit into a printing and ruling machine. There the paper, if necessary, is lined. Number and arrangement of lines can be determined according to the later use - for instance as a writing or as an arithmetic book. According to the width of the envisaged book the endless ribbon is cut into sheet layers by means of a rotary cross cutter. These sheet layers are counted and stacked.

In parallel to that procedure the covers are automatically conveyed to the production flow. Sheet layers and covers are stapled, folded and pressed. The prefabricated exercise books still have a longitudinal size equal to the width of the paper ribbon minimum, 350 mm, and maximum 720 mm.

Now a cutting unit cuts them down to their regular size. The last step is the stacking and packaging of the finished exercise books or notebooks in certain numbers. This done, they are ready for dispatch.

The flexographic manufacturing process involves the following operations.

- Unwinding of paper reel;
- Flexographic printing (printing/ruling with two or more colours);
- Cross-cutting with overlapping;
- Sheet collecting and counting;
- Cover feeding either for pre-printed-or for flexographic printing;
- Wire stitching and folding;

- Cutting of long edges & trimming;
- Packing; and

2. Environmental Impact

Writing pads, notebooks and ring books manufacturing does not pose any adverse impacts on the environment.

B. ENGINEERING

1. Machinery and Equipment

Total cost of machinery and equipment is estimated at Birr 17.5 million of which Birr 14 million is required in foreign currency. The list of machinery and equipment required for the manufacture of exercise books is given in Table 5.1 below

Table 5.1
LIST OF MACHINERY AND EQUIPMENT

Sr. No.	Description	No. (Set)
1.	Unwinding unit	1
2.	Printing/ruling machine	1
3.	Rotary cross cutter with overlapping system	1
4.	Sheet counting & collecting unit	1
5.	Sheet feeder for pr-printed & pre-cut covers	1
6.	Transferring unit	1
7.	Deep pile delivery device	1
8.	Wire stitching unit	1
9.	Back pressing machine	1
10.	Cutting & trimming machine	1
11.	Transport and material handling facilities	-
12.	Compressor	1
13.	Baling machine for trimmings	1
14.	Workshop equipment	-

2. Land, Building and Civil Works

Total land requirement of the project is estimated at 1,000 m², out of which 500 m² is built-up area. Cost of building construction at the rate of Birr 5000 per m² is estimated at Birr 1.2 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
	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 266,000 of which 10% or Birr 26,600 will be paid in advance. The remaining Birr 239,400 will be paid in equal installments with in 28 years i.e. Birr 8,550 annually.

VI. HUMAN RESOURCE AND TRAINING REQUIREMENTS

A. HUMAN RESOURCE REQUIREMENT

Total human resource requirement, including skilled and unskilled labor is 33 persons. Correspondingly, total annual labor cost, including fringe benefits, is estimated and indicated in Table 6.1.

Table 6.1**HUMAN RESOURCE REQUIREMENT AND LABOUR COST**

Sr. No.	Position Description	Req. No.	Monthly Salary [Birr]	Annual Salary [Birr]
1.	Administrative	3	12,000	144,000
2.	Production & Technical Head	1	3,500	42,000
3.	Accountant	1	1,600	19,200
4.	Sales Person	1	1,800	21,600
5.	Purchaser	1	1,600	19,200
6.	Secretary	1	1,400	16,800
7.	Quality Control Head	1	2,800	33,600
8.	Skilled labor	8	12,000	144,000
9.	Unskilled labor	10	8,000	96,000
10.	Technician/Mechanic or electric	1	2,400	28,800
11.	Guard	3	2,100	25,200
12.	Diver	2	2,000	24,000
	Sub-Total	33	51,200	614,400
	Worker's Benefit = 15% of Basic Salary			92,160
	Grand Total			706,560

B. TRAINING REQUIREMENT

An on-site training programme can be arranged for key production, maintenance and quality control/design personnel in consultation with the machinery and technology supplier. The training can best be carried out during commissioning and performance testing of the factory. Cost of an on-site training of this nature is estimated at Birr 100,000.

VII. FINANCIAL ANALYSIS

The financial analysis of the Writing pads, notebooks and ring books 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 imported	120 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 28.93 million (See Table 7.1). From the total investment cost the highest share (Birr 21.18 million or 73.20%) is accounted by fixed investment cost followed by initial working capital (Birr 4.53 million or 15.68%) and pre operation cost (Birr 3.22 million or 11.12%). From the total investment cost Birr 14 million or 48.39% 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	26.60		26.60	0.09
1.2	Building and civil work	2,500.00		2,500.00	8.64
1.3	Machinery and equipment	3,500.00	14,000.00	17,500.00	60.49
1.4	Vehicles	900.00		900.00	3.11
1.5	Office furniture and equipment	250.00		250.00	0.86
	Sub total	7,176.60	14,000.00	21,176.60	73.20
2	Pre operating cost *				
2.1	Pre operating cost	1,325.00		1,325.00	4.58
2.2	Interest during construction	1,892.57		1,892.57	6.54
	Sub total	3,217.57		3,217.57	11.12
3	Working capital **	4,535.14		4,535.14	15.68
	Grand Total	14,929.31	14,000.00	28,929.31	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 6.49 million. However, only the initial working capital of Birr 4.53 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 27.65 million (see Table 7.2). The cost of raw material account for 68.05% of the production cost. The other major components of the production cost are depreciation, financial cost, marketing and distribution, repair and maintenance, which account for 14.72%, 5.65%, 3.62% and 3.16% respectively. The remaining 4.80 % is the share of direct labor, labor overhead and administration cost, and utility. For detail production cost see Appendix 7.A.2.

Table 7.2**ANNUAL PRODUCTION COST AT FULL CAPACITY (year three)**

Items	Cost (000 Birr)	%
Raw Material and Inputs	18,814	68.05
Utilities	123	0.44
Maintenance and repair	875	3.16
Labour direct	614	2.22
Labour overheads	91	0.33
Administration Costs	500	1.81
Land lease cost	0	0.00
Cost of marketing and distribution	1,000	3.62
Total Operating Costs	22,017	79.63
Depreciation	4,070	14.72
Cost of Finance	1,561	5.65
Total Production Cost	27,648	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 2.00 million to Birr 5.84 million during the life of the project. Moreover, at the end of the project life the accumulated net cash flow amounts to Birr 49.41 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.

$$\text{Break Even Sales Value} = \frac{\text{Fixed Cost} + \text{Financial Cost}}{\text{Variable Margin ratio (\%)}} = \text{Birr } 12,810,000$$

$$\text{Break Even Capacity utilization} = \frac{\text{Break even Sales Value}}{\text{Sales revenue}} \times 100 = 43.76 \%$$

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 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 24.64% 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 principal 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 20.57 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 33 persons. The project will generate Birr 13.53 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 generate other income for the Government.

Appendix 7.A

FINANCIAL ANALYSES SUPPORTING TABLES

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	13,170	15,051	16,933	18,814	18,814	18,814	18,814	18,814	18,814	18,814
Utilities	86	98	111	123	123	123	123	123	123	123
Maintenance and repair	613	700	788	875	875	875	875	875	875	875
Labour direct	430	491	553	614	614	614	614	614	614	614
Labour overheads	64	73	82	91	91	91	91	91	91	91
Administration Costs	350	400	450	500	500	500	500	500	500	500
Land lease cost	0	0	0	0	9	9	9	9	9	9
Cost of marketing and distribution	1,000	1,000	1,000	1,000	1,000	1,000	1,000	1,000	1,000	1,000
Total Operating Costs	15,712	17,814	19,915	22,017	22,026	22,026	22,026	22,026	22,026	22,026
Depreciation	4,070	4,070	4,070	4,070	4,070	125	125	125	125	125
Cost of Finance	0	2,082	1,822	1,561	1,301	1,041	781	520	260	0
Total Production Cost	19,782	23,965	25,807	27,648	27,397	23,191	22,931	22,671	22,411	22,151

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	21,350	27,450	30,500	30,500	30,500	30,500	30,500	30,500	30,500	30,500
Less variable costs	14,712	16,814	18,915	21,017	21,017	21,017	21,017	21,017	21,017	21,017
VARIABLE MARGIN	6,638	10,636	11,585	9,483	9,483	9,483	9,483	9,483	9,483	9,483
in % of sales revenue	31.09	38.75	37.98	31.09	31.09	31.09	31.09	31.09	31.09	31.09
Less fixed costs	5,070	5,070	5,070	5,070	5,079	1,134	1,134	1,134	1,134	1,134
OPERATIONAL MARGIN	1,568	5,566	6,515	4,413	4,404	8,349	8,349	8,349	8,349	8,349
in % of sales revenue	7.34	20.28	21.36	14.47	14.44	27.38	27.38	27.38	27.38	27.38
Financial costs		2,082	1,822	1,561	1,301	1,041	781	520	260	0
GROSS PROFIT	1,568	3,485	4,693	2,852	3,103	7,309	7,569	7,829	8,089	8,349
in % of sales revenue	7.34	12.69	15.39	9.35	10.17	23.96	24.82	25.67	26.52	27.38
Income (corporate) tax	0	0	0	855	931	2,193	2,271	2,349	2,427	2,505
NET PROFIT	1,568	3,485	4,693	1,996	2,172	5,116	5,298	5,480	5,662	5,845
in % of sales revenue	7.34	12.69	15.39	6.54	7.12	16.77	17.37	17.97	18.57	19.16

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	22,502	27,865	27,462	30,512	30,500	30,500	30,500	30,500	30,500	30,500	30,500	9,863
Inflow funds	22,502	6,515	12	12	0	0	0	0	0	0	0	0
Inflow operation	0	21,350	27,450	30,500	30,500	30,500	30,500	30,500	30,500	30,500	30,500	0
Other income	0	0	0	0	0	0	0	0	0	0	0	9,863
TOTAL CASH OUTFLOW	22,502	22,226	23,146	24,988	27,685	26,861	27,861	27,679	27,497	27,315	24,530	0
Increase in fixed assets	22,502	0	0	0	0	0	0	0	0	0	0	0
Increase in current assets	0	4,622	648	648	648	1	0	0	0	0	0	0
Operating costs	0	14,712	16,814	18,915	21,017	21,026	21,026	21,026	21,026	21,026	21,026	0
Marketing and Distribution cost	0	1,000	1,000	1,000	1,000	1,000	1,000	1,000	1,000	1,000	1,000	0
Income tax	0	0	0	0	855	931	2,193	2,271	2,349	2,427	2,505	0
Financial costs	0	1,893	2,082	1,822	1,561	1,301	1,041	781	520	260	0	0
Loan repayment	0	0	2,602	2,602	2,602	2,602	2,602	2,602	2,602	2,602	0	0
SURPLUS (DEFICIT)	0	5,638	4,316	5,525	2,815	3,639	2,639	2,821	3,003	3,185	5,970	9,863
CUMULATIVE CASH BALANCE	0	5,638	9,954	15,479	18,295	21,934	24,573	27,393	30,396	33,582	39,551	49,414

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	21,350	27,450	30,500	30,500	30,500	30,500	30,500	30,500	30,500	30,500	9,863
Inflow operation	0	21,350	27,450	30,500	30,500	30,500	30,500	30,500	30,500	30,500	30,500	0
Other income	0	0	0	0	0	0	0	0	0	0	0	9,863
TOTAL CASH OUTFLOW	27,037	16,348	18,450	20,551	22,873	22,957	24,218	24,296	24,374	24,452	24,530	0
Increase in fixed assets	22,502	0	0	0	0	0	0	0	0	0	0	0
Increase in net working capital	4,535	636	636	636	1	0	0	0	0	0	0	0
Operating costs	0	14,712	16,814	18,915	21,017	21,026	21,026	21,026	21,026	21,026	21,026	0
Marketing and Distribution cost	0	1,000	1,000	1,000	1,000	1,000	1,000	1,000	1,000	1,000	1,000	0
Income (corporate) tax		0	0	0	855	931	2,193	2,271	2,349	2,427	2,505	0
NET CASH FLOW	-27,037	5,002	9,000	9,949	7,627	7,543	6,282	6,204	6,126	6,048	5,970	9,863
CUMULATIVE NET CASH FLOW	-27,037	22,035	-13,034	-3,085	4,541	12,085	18,367	24,570	30,696	36,744	42,713	52,577
Net present value	-27,037	4,547	7,438	7,475	5,209	4,684	3,546	3,184	2,858	2,565	2,302	3,803
Cumulative net present value	-27,037	22,489	-15,051	-7,576	-2,367	2,317	5,863	9,046	11,904	14,469	16,770	20,573

NET PRESENT VALUE 20,573
INTERNAL RATE OF RETURN 24.64%
NORMAL PAYBACK 4 years