PROJECT PROFILE ON REAL ESTATE DEVELOPMENT

NOVEMBER 25, 2022

ADDIS ABEBA CITY ADMINISTRATION INVESTMENT COMMISSION
A.A

CONSULTANT:- SHIBAG MANAGEMENT AND
DEVELOPMENT & EIA CONSULTING FIRM

TABLE OF CONTENT

LIST OF TABLES

I. Executive summary

This project profile is prepared to assess the viability of running Real estate development project, in Addis Abeba city administration. Hence Market, Technical, Organizational and Financial study was made to investigate the viability of the envisaged project.

This project profile on Real estate development project has been developed to support the decision –making process based on a cost benefit analysis of the actual project viability. This profile includes marketing study, production and financial analysis, which are utilized to assist the decision-makers when determining if the business concept is viable. Ethiopia has a private sector driven Real estate development industry. The building will have 18,000 M^2 area for rental purpose from ground floor to the third floor and from fourth floor to eighth floor will have 36,000 M^2 for sales.

The total investment capital including establishing the factory is Birr 1.77 billion. Out of the total investment capital, the owners will cover Birr 532 million (30 %) while the remaining balances amounting to Birr 1.24 billion (70 %) will be secured from bank in the form of term loan.

As indicated in the financial study, the cash flow projection of the project shows surplus from the first year on. The net cash flows of the project range from Birr (43.38) Million in the first year to Birr (45 million) at the end of the 10^{th} year of operation. At the end of the 10^{th} year of operation period the cumulative cash balance reaches Birr 433 million.

Therefore, from the aforementioned overall market technical and financial analysis we can conclude that the Real estate development business is a viable and worthwhile.

1. BACKGROUND INFORMATION

1.1 Introduction

This document was undertaken to show Real estate development profile in Addis Ababa. In compiling the report, information has been complied by visiting the existing Real estate development with in Addis Ababa and discussion with various professionals in similar fields and review of technical documents about the Real estate development.

Presently, in spite of high demand and its crucial importance, number of Real estate development in the country is low compared to number of traders existing in the city. This constrained the achievement of multipurpose building development goals.

Development of Real estate development are fundamental importance to Ethiopia's present and future demand. In Ethiopia, the demand for Real estate development- are expected to increase considerably in the next few decades as a result of increasing traders, increased population growth, urbanization, and increasing income levels. Therefore, in a country like Ethiopia, it is important to identify gaps and potential in the development of Real estate development.

1.2 Service Description and Application

The project will have a total area of 3,000m2, designed to reader a multipurpose giving business, which will in turn plays significant role towards solving shortage of business center in Addis Abeba city administration.

The project to render banking and insurance, shopping facility, bank and cafeteria services to create high quality class to satisfy the interest of customers in the city. Based on environmental and other considerations, the entrepreneur has determined the type and size of the building.

In order to attract its clients to the service, the project will develop high standard shop & banking rooms and office of best choices and will also save best quality restaurant and café and children playground.

1.3 Project Location and Justification

1.3.1 Location of Addis Ababa

Addis Ababa is the seat of the Ethiopian federal government. It is located on the central highlands of Ethiopia in the middle of Oromia Region. The absolute location is around the intersection point of 901'48''N latitude and 38°44′24″E longitudes. This is very near to the geographical center of the country. It is, therefore, equidistant to the peripheral areas or is equally accessible to almost all parts of Ethiopia. Addis Ababa is located on a well-watered plateau surrounded by hills and mountains. The city is in the highlands on the edge of the Ethiopian rift valley or the eastern slopes of the Entoto Mountain ranges bordering the Great Rift Valley. The total area of Addis Ababa is about 540 km^2 of which 18.2 km^2 are rural. Addis Ababa's built-up urban area spans 474 km^2. It is also the largest city in the world located in a landlocked country.

1.3.2 Demography of Addis Ababa

According to the CSA (2013) population projection, Ethiopia's total population reaches about 105 million people in 2022. Of the total population 22.9% (24 million people) live in urban areas. Ethiopia's urban population is expected to triple by 2037 (World Bank, 2015). Addis Ababa hosts an estimated 3,859,638 people. Currently, Addis Ababa is experiencing an annual growth rate of 3.8% and is estimated to reach 4,696,629 inhabitants by 2032 (CSA, 2015).

1.3.3 Economic activity of Addis Ababa

The transformation of Addis Ababa has especially been rapid since 1991. According to the data from the city's Bureau of Finance and Economic Development (2006), per capital income of Addis Ababa has grown from USD 788.48 in 2010 to USD 1,359 in 2015. The city also achieved a decline in the poverty index from a high of 29.6 in 2012 to 22.0 in 2014. Moreover, the current poverty headcount index for Addis Ababa is estimated at 18.9 while the poverty severity account for 5 and 1.8 index points respectively. Even though, the poverty status of Addis Ababa has an improvement over previous years, there is still much work to be done to curb both the incidence and severity of poverty.

The major contributor to the economic growth of the city is the implementation of publicly financed mega urban projects like condominium housing, the Light Rail Transit, the international airport and industrial zone development (The state of Addis Ababa, 2017). The existence of international large and medium-size enterprises in and around Addis Ababa have also significant role in creating huge opportunity for employment and technology transfer. Furthermore, there are strong demand for goods and services following the existence of many embassies and inter-governmental organizations like the African Union, the United Nations Economic Commission for Africa.

The manufacturing sector's contribution to Addis Ababa's GDP is high. Despite the fact that 86% of the industries in the city are micro and small scale (cottage and handicrafts, and small-scale), the majority of the country's large and medium scale industries are found in the city. Noticeable increases are also registered currently in other aspects of industrial growth.

The service sector is both the largest contributor to the city's economy and the largest employer. It contributes to 76.4% of the city's GDP while industry's share makes up (almost all) the rest. This sector is dominated by three major sub-sectors: Transport and communication; Real estate, Renting

and Business services; and Trade, Hotel and Restaurants. According to the state of Ethiopian Cities 2015 report, the service sector has also been responsible for more than 50% of the growth in the estimated annual growth of the city's GDP. Although 75% of employment in the city is also generated in the service sector, a large proportion of the employed work in low skill and low paying jobs as shop salespersons, petty and 'gullit' traders, sales workers in small shops, domestic helpers or doorkeepers and restaurant service workers.

Analysis of the economic structure of Addis Ababa reveals that the services sectors (63%) dominates with industry (36%) in second place indicating that these sectors account for almost all of the Addis Ababa's GDP (The State of Addis Ababa, 2017).

Addis Ababa has a great share in the economy of the country due to its attractiveness to businesses, companies, individuals and foreign direct investment. Overall primacy index of the city is 24.8 based on urban employment and unemployment survey (CSA 2015). According to the State of Addis Ababa 2017 report, the simultaneous high rates of economic growth and urbanization in Addis Ababa indicates a likely further rising dominance of the city in Ethiopia's economy as well as growing agglomeration of economic activities in and around the city.

1.4. Why is it beneficial to invest in Addis Ababa?

Addis Ababa is the largest and most economically significant city in the country. Ethiopia's urban population share is only 17 percent (as of 2012, World Bank 2015). The city is the only urban area in Ethiopia capable of delivering scale economies in terms of concentrated demand, specialization, diversity and depth of skills, innovation, and technology transfers. Thus, investors will be benefited in getting capable human power from the market.

The capital is the country's main industrial hub. The city dominates industrial capacity in almost all the braches of light manufacturing that Ethiopia prioritizes. As a result Addis Ababa completely dominates production in various subsectors. This can be taken as the political and social stability of the city.

Overall, the city has a beautiful environment, favorable location, and strong industrial base. Its advantage as an economic powerhouse of the country and human resource center are the most attractive features for local and overseas investors.

Moreover, investors will be getting a comprehensive set of incentives for priority sectors. These include:

- Customs duty free privilege on capital goods and construction materials, and on spare parts whose value is not greater than 15% of the imported capital goods' total value.
- Investors have the right to redeem a refund of customs duty paid on inputs (raw materials and components) when buying capital goods or construction materials from local manufacturing industries.
- Income tax exemption of up to 6 years for manufacturing and agro-processing, and up to 9 years for agricultural investment.
- Additional 2-4 years income tax exemption for exporting investors located within industrial parks and 10-15 years exemption for industrial park developers.
- Loss Cary forward for half of the tax holiday period. Several export incentives, including Duty Draw-Back, Voucher, Bonded Factory, and Manufacturing Warehouse, and Export Credit Guarantee schemes.

1.4.1. The city benefit from the investment

The city will be benefited from investment. These are discussed below.

- Employment opportunity

  Investment is expected to provide direct and indirect employment. These range from unskilled causal workers, semi-skilled and skilled employees.

- Improving growth of the economy

  Through the use of locally available materials and exporting products, the investment contributes towards growth of the economy by contributing to the growth of domestic product. These eventually attract taxes including VAT which will be payable to the government hence increasing government revenue while the cost of local materials will be payable directly to the producers. In addition, domestic products save foreign exchange and exports also bring money to the country.

2. Marketing study

There are a number of factors which affects the demand of standardized real estate development. Of these factors, the most important to have influence is population growth and the level of income. Currently the number of both government and non-government offices has been increasing in city. Above all the increase in the number of population of the city increases for the provision of different services. Nowadays, most of the private business organizations need their own small-medium offices in order to give their services and provide their products, and they prefer the place that found in the center of the city or close to the road.

2.1. The Demand-Supply Gap

Addis Abeba is situated in very center of Ethiopian and also the most important groups of potential customers that include both the local and foreign tourists and the modern business community who choose services that range from economic to high class standards. These groups would also choose a healthy comfortable climate that combines a more traditional type with that of modern shops, offices, bedrooms restaurants and cafeterias.

Over the last decade, there has been a significant growth in the number of local and international trades across the country. This increase is mainly associated with the stimulation of economic activist and partly due to an increase in the flow of international and local traders in to the city. Since the city is an important commercial center in addition there is a significant increase in business activates and hence increasing the number of traders to the city. Even though there is a lack of quantitative estimates that depict the actual demand and also the annual growth rate of Real estate development facilities and urban commercial facilities are scarce in the city.

3. Production Technology and engineering

3.1 Technology

3.1.1 Service program

3.1.1.1. The project facilities and Services plan

In order to provide real estate development business of a high standard, it has been planned to construct and develop the infrastructure and facilities that would viable to meet the requirements of an international standard business center. Accordingly, various buildings and facilities will be constructed phase by phase starting with the most needed ones that are essential to commence the operation of its business activities. With the completion of construction, the building will provide a combined service such as shops, bedroom, restaurant and café service as well as modern business center that primarily serve its guests and major clients.

The plan is that the ground will be partitioned in to different rooms:

Since the project will be engaged in real estate development the main sources of its annual revenue would be from the rental of building spaces such as shops, offices, and banking, café & restaurant bedrooms. Therefore, the sources of revenue have been classified in to one category namely the rental of banking & supermarket, offices, shops, bedrooms restaurant and café based on these classifications. Based on the market price of similar real estate development in the area, the envisioned buildings set the following fair price (Before VAT) for its service, hence when the building construction fully get operational it is assumed to generate a yearly income of ETB 237 million.

3.1.2. Service provision program

At the initial stage of the provision period, the project would require some years to penetrate into the market and capture a significant market share. Therefore, in the first year of service the capacity utilization rate will be 70% and progressively increase by 10%. Full service provision shall be attained in the fourth year and then after. The proposed service provision program is shown in Table 1.

Table 1: Service provision program

SN	Description	Built up area in M^2				Remarks
		Ground	1st floor	2nd floor	3rd to 8th Floor	
1	Building 1 (G+8)	1,200	1,200	1,200	7,200	Required area for Building 1 is 2,000 M^2 = 10,000 M^2
2	Building 2(G+8)	1,200	1,200	1,200	7,200	
3	Building 3 (G+8)	1,200	1,200	1,200	7,200	
4	Building 4 (G+8)	1,200	1,200	1,200	7,200	
5	Building 5 (G+8)	1,200	1,200	1,200	7,200	
	Total	6,000	6,000	6,000	36,000	

- Ground, 1st floor, 2nd floors are for rent
- 3rd to 8th Floor are apartment and for sale

3.1.3. Environmental and Social Impact Assessment

Typically, any developmental projects also trigger a set of environmental and social impacts. These environmental and social due to development projects occur in different forms. An Environmental and Social Impact Assessment (ESIA) has to be carried out to study the potential environmental and social impacts of the envisaged Real estate development. Potential environmental and social on attributes like air quality, noise, water quality, soil, flora, socio-economic, etc. have to be assessed

as part of the ESIA study. Appropriate mitigation measures to help minimize/avoid impacts from the development have to be recommended in the study. The measures include avoidance measures, mitigation measures and environmental enhancement measures. Social responsibility cost estimated to be 1% of fixed investment costs.

3.2. Engineering

3.2.1. Land, buildings and civil works

The required area (m^2) and construction cost for the production facilities essential for the successful operation of the processing plant is shown in Table 2. A total area ready for the processing plant is 15,200 m^2 out of which 10,000 m^2 is to be covered by building while uncovered area of 5,200m^2 is left parking. In order to estimate the land lease cost of the project profiles it is assumed that all the project will be located in different land level from level 1/1 to level 4/3, their current market lease price is from 39,073.31 birr per M ^{2} to 2,800.71 birr per M ^{2}respectively. Therefore, for the profile a land lease rate of birr 3,885 per M ^{2} have been taken, which is between the ranges.

The cost of construction of building should be appropriate to the size and expected profitability of business, costs of building generally differs by the type of construction materials used, the type of foundation, wall height and location. The current building cost for simple storage and other building is from 10,000.00 Birr per m^2 to 25,000.00 Birr per m^2. The total construction cost of main buildings and civil works, at a rate of Birr 23,333 per m^2 is estimated at Birr 1.62 billion birr. Therefore, the total cost of land lease and construction of buildings and civil works is estimated at Birr 1.68 billion.

The proposed plant layout comprises the following buildings and structures.

Table 2 Building costs

S/No	Descriptions	Total area in M^2	Estimated cost per square meter (in Birr)	Total estimated cost (in Birr)
1	Building 1 to building 5	7,500*9	23,333.33	1,574,999,775.00
2	Store	400	20,000.00	8,000,000.00
3	Generator room	100	20,000.00	2,000,000.00
4	Power station room	100	20,000.00	2,000,000.00
5	Administration office	100	20,000.00	2,000,000.00
6	parking	5,000	5,000.00	25,000,000.00
7	Green area	2,000	Lump sum	10,000,000.00
	TOTAL	15,200M^2		1,623,999,775.00

Table 3 Land lease period in Addis Abeba

Sector of development activity	Period of lease	Down payment
Education, health, culture and sports	90	10%
Industry (manufacturing)	70	10%
commerce	60	10%
For urban agriculture	15	10%
For others	60	10%

Sources: - city government of Addis Abeba land development and management bureau

Table 4 Land lease floor price in Addis Abeba

S/No	Land level	Current land lease floor price per M^2	Current lease price per M^2 (Market price)
1	1/1	2,213.25	39,073.31
2	1/2	2,165.47	36,825.73
3	1/3	1,900.19	34,578.15
4	¼	1,552.93	31,119.21
5	1/5	1,531.91	29,096.45
6	2/1	1327.39	27,073.71
7	2/2	1,221.18	25,050.96
8	2/3	1,191.17	23,028.21
9	2/4	1,074.39	21,005.46
10	2/5	1,027.84	18,982.71
11	3/1	994.71	16,959.96
12	3/2	960.21	14,937.21
13	3/3	927.84	12,914.46
14	¾	904.77	10,891.71
15	3/5	873.74	8,868.96
16	4/1	814.06	6,846.21
17	4/2	786.45	4,823.46
18	4/3	748.80	2,800.71

Sources: - city government of Addis Abeba land development and management bureau

3.2.2. Machinery and equipment

The total cost of machineries, equipment, articles and accessories required by the envisaged Real estate development project is estimated at Birr **65,000,000**. The complete list of machinery and equipment together with estimated cost are shown inTable 5.

Table 5: Machinery and equipment required and cost

Sr. No.	Description	Qty	Total Price (Birr)
1	Air conditioning	Lump sum	25,000,000.00
2	Security camera	Lump sum	15,000,000.00
3	Others facility	Lump sum	25,000,000.00
	Total		65,000,000.00

4. Organizational structure

The selection of structure of the envisaged project is made based on the existing structure of manufacturing plants operating in the country, the capacity, complexity and technology mix of the plant. Organizational structure principles such as specialization, coordination, and departmentalization are also considered for design of structure that best suits the envisaged project

4.1. Manpower requirement and annual manpower costs

Table 6: Man power requirement and labour cost

S.no	description	Number	Monthly salary	Annual salary, Birr
1	General Manager	1	50,000.00	600,000.00
2	Coordinator/supervisor	1	20,000.00	240,000.00
3	Assistance Supervisor	1	15,000.00	180,000.00
4	Receptionist	1	10,000.00	120,000.00
18	Casher	3	10,000.00	360,000.00
19	Cleaner vice	4	4,000.00	192,000.00
20	Plumber	2	10,000.00	240,000.00
21	Electrician	2	10,000.00	240,000.00
22	Gardener	3	4,000.00	144,000.00
23	Guards	6	4,000.00	288,000.00
	Total			2,604,000.00

5. Financial Analysis

5.1. General

The financial analysis evaluation of Real estate development project is mainly consisted of capital investment as well as operating and maintenance costs. The capital investment costs include fixed investment costs (initial fixed investment and replacement costs) and working capital, while operating and maintenance costs comprise current expenses related to material inputs, manpower cost, utility, repair and maintenance costs, spare parts, Overheads, Sales and distribution, interest and depreciation expenses.

The financial analysis and evaluation has been conducted taking assumptions:

1. It is assumed that about 70% of the total capital investment costs including the working capital requirement could be covered through development bank loans of short and long-term credits. The remaining balance 30% will be covered by equity capital contribution of the project owner.
2. Even though the project might secure loans under different term and conditions as well as from different financial sources, for the purpose of calculation of debt service scheduling, the current development bank of Ethiopia credit terms and conditions have been used. Consequently. It is assumed that the project will secure loan facility on the basis of 11.5 % annual interest rate.
3. Even though the estimated project production life is more 10 years, the financial analysis has been undertaken for a period interval covering the first 10 years only, during which time

most of the capital assets are assumed to be deprecated, debts recovered and pay-back period accomplished.

4. It is assumed that the project will be start up production activity at 70 % capacity. During years 2 & year 3 the projects is anticipated to gradually increase capacity utilization to reach 100% in year 4. Therefore, starting from year 4 the project will be operational at full capacity.
5. For the project under reference promotional, sales and distribution expenses have been estimated at 3% of the sales revenue.
6. Maintenance and spare parts costs are 1.5% of the fixed investment costs.
7. Furniture and fixture costs assumed to be 500,000.00

5.2. Initial Fixed investment costs

Table 6 Initial Fixed investment costs

S/No	Fixed investment type	Unit of measurement	Quantity	Unit price	Total Amount	Remarks
1	Land	Square meter	15,200	3,885 birr/M^2	59,052,000.00	The period of land lease will be 70 years and 10% of the total lease amount will be paid in the first year
2	Buildings and civil works	Square meter	15,200	lump sum	1,623,999,775.00	
	Sub total				**1,683,051,775.00**	
3	Machineries	set	2	Lump sum	65,000,000.00	
4	Transformer	set	1	Lump sum	10,000,000.00	
6	Truck and vehicles	Pcs	2	Lump sum	3,000,000.00	
7	Furniture and fixture	Pcs			500,000.00	
	SUB TOTAL				78,500,000.00	
	Fixed capital investment costs				1,761,551,775.00	
8	pre-operational expenses				2,000,000.00	
	Working capital				10,387,000.00	
	TOTAL INVESTMENT COSTS				1,773,929,775.00	

5.3. Working capital

Working capital is the financial means required for smooth operation and maintenance of a project mathematically, it is a difference between current assets and current liabilities. In the particular case of the project under consideration, the current assets comprise receivables, inventories (local and imported material inputs, spare parts, work in progress, and products ready for delivery) and cash in hand, while current liabilities comprise accounts payable to creditors.

5.4. Project Financing

Fixed capital investment costs and working capital requirements are assumed to be financed by equity capital of the owner and through loans of short and long-term credits.

The company obtains loans under different terms and condition as well as from different sources, for the purpose of calculation of debt service scheduling the current development bank of Ethiopia credit terms and conditions have been used. Accordingly, it is assumed that the company will be able to obtain loan 70% of the total investment costs for construction of different buildings for purchase of machineries. The remaining balance that of the total investment costs will be expected to be covered by equity contribution of the project promoter.

5.5. Production costs

As it is depicted in Annex Table 10 major categories of the total production costs are assembled into the following cost elements.

5.5.1. Utilities

In estimating costs of utility expenses for operation and maintenance of the project, Costs of fuel, oil and lubricant, electricity and water consumptions have been taken in to consideration, the rates of which have been estimated on the basis of the proposed capacity utilization program of the project and at the current official charging rates. At full capacity operation the project will have the following utility expense per annum which amounts to Birr 3.88 million.

Table 7 Utilities of the factory'000"Birr

Utility"000"Birr		Start-up			Full Capacity
Capacity utilization		70 %	80 %	90 %	100 %
Project year		1	2	3	4
Item description	Unit of measurement				
Fuel					
Gasoline for service vehicle	50km*365days*47Birr/LIT*8km/Li	107	107	107	107
Change of oil and lubricant	10% of the fuel consumption	10.70	10.70	10.70	10.70
Sub-Total		117.70	117.70	117.70	117.70
Electricity	365days*24 hrs.*325kwh* 1.00Birr/kwh	2,847	2,847	2,847	2,847
Water	365days*100m^3/day*15 Birr/m^3	384	438	493	548
Sub total		3,231	3,285	3,340	3,395
Telecommunication					
Telephone	5 lines* 1,500Birr/month/line+18Birr/line/month	31.08	31.08	31.08	31.08
Mobile	5 lines*1,500 Birr/month/line	30.00	30.00	30.00	30.00
Fax	2line*1,000Birr/month + 17 Birr/line/month	12.40	12.40	12.40	12.40
Internet	25,000Birr/month	300.00	300.00	300.00	300.00
Sub-Total		374	374	374	374
TOTAL		3,723	3,777	3,832	3,887

5.5.2. Over heads

In the expenses under this title have been included land and building taxes, buildings, vehicles as well as machinery and equipment insurance, vehicles annual inspection; postage, telephone and e. mail, stationery and office supplies; printing and copying; audit fee; cash indemnity etc. The overhead costs and divided in to direct overheads and administration overheads.

Table 8 Overhead costs

Direct Overhead"000"Birr		Year 1	Year 2	Year 3	Year 4
Annual land lease Payment		8,436	8,436	8,436	8,436
Insurance					
Building and Civil works	0.10%	1,624	1,624	1,624	1,624
Machinery and Equipment	0.20%	130	130	130	130
Motor vehicle and Truck	1%	30	30	30	30
Vehicles annual inspection and registration	25,000 Birr per annum per vehicle	25	25	25	25
Work cloth	Two times per annum per workers at 1,000 Birr				
Cleaning and sanitation	An estimate of 300 Birr/day	78.00	78.00	78.00	78.00
Sub Total		10,353	10,353	10,353	10,353
Administration Overhead "000' Birr					
Audit fee	40,000 Birr per annum	40.00	40.00	40.00	40.00
Office cleaning and sanitation	2,000 Birr per month	24.00	24.00	24.00	24.00
Stationery and office supplies	2,000 Birr per month	20.00	20.00	20.00	20.00
Printing and Copy	2,000 Birr per month	24.00	24.00	24.00	24.00
Sub Total		**108.00**	**108.00**	**108.00**	**108.00**
GRAND TOTAL		**10,461**	**10,461**	**10,461**	**10,461**

5.5.3. Financial costs

As it has been outlined earlier under" project Financing" the current Development Bank of Ethiopia credit terms and conditions for newly establishing projects have been used to compute the financial costs, estimated to be incurred in connection with that of the total investment costs assumed to be covered through loan financing. The amount of the loan capital to be obtained and the financial costs to be incurred thereof have been determined depending on the amount of fixed investment cost and pre-production expenses.

5.5.4. Depreciation

Table 9 Depreciation in Birr"000"

Period			Start-up			
Capacity utilization			70 %	80 %	90 %	100 %
Project year			1	2	3	4
Item description	Original Value					
Structure and civil works	1,623,999,775.00	5% of original value	81,200	81,200	81,200	81,200
Machinery and equipment	65,000,000.00	15 % of original value	9,750	9,750	9,750	9,750
Transformer	10,000,000.00	15 % of original value	1,500	1,500	1,500	1,500
Motor vehicles and trucks	3,000,000.00	15% of original value	450	450	450	450
Office equipment and furniture	500,000.00	20 % of original value	100	100	100	100
Pre-production expenses	2,000,000.00	25% of original value	500	500	500	500
Total			93,500	93,500	93,500	93,500

5.6. Break Even point and ROI

5.6.1. Break Even point (BEP)

Three kinds of break-even point

A. BEP Sales Revenue(BR)

B. BEP production (Volume)

C. BEP Percentage (%)

A. Break-even point(BEP) Sales

To determine BEP Annual Sales, multiply annual sales found in income statement by the annual fixed cost, and divided by Annual sales less Annual variable cost.

$$\text{BEP (sales)} = \frac{\text{Annual sales x Annual fixed costs}}{\text{Annual sales} - \text{Annual variables costs}}$$

Annual sales = 237,600,000 Birr

$$\text{BEP (sales)} = = \frac{\text{Annual sales x Annual fixed costs}}{\text{Annual sales} - \text{Annual variables costs}} = = \frac{237{,}600{,}000 \text{ x } 249{,}366{,}000}{237{,}600{,}000 - 16{,}021{,}000}$$

BEP (Sales) = 267,396,105

B. $$\text{BEP percentage} = \frac{\text{Annual fixed costs x } 100\%}{\text{Annual sales} - \text{Annual variables costs}}$$

$$= \frac{249{,}366{,}000 \text{ x } 100\%}{237{,}600{,}000 - 16{,}021{,}000}$$

= 112%

5.6.2. Return on investment

Return on investment = Net profit /Total capital requirement

= 702,277,000/1,773,929,775

= 40%

The return on owners' investment (ROOI)

= Annual net profit /owners' investment

= 702,277,000/532,178,932

= 132%

5.7. Project benefits

For financial analysis and evaluation of the given project, the current commercial building floor price per $M^{2,}$ at the project gate has been taken as a basis.

As it has been stated earlier the project is envisaged to reach full capacity operation nine years after commencement of service activities which are assumed to begin with 70% of the estimated total capacity.

Thus, according to the computation in Annex Table 13 and Annex Table 15, the net income and cash flow statements analysis revealed that at full capacity operation the project will generate a total income (gross revenue) amounting to 237 million Birr per annum. The Net Income Statement shows a steady growth of gross profit starting from (99.06 million) Birr in year 1 reaching the peak of 102 million Birr in year 10. In its 10 years of manufacturing activities, the project is expected to generate a total net profit of 782 million Birr and contribute 421 million Birr to the government treasury in form of 35% income tax.

According to the current investment Law, machinery and equipment are anticipated to be imported duty- free. The liquidity position of the project is very strong. The corresponding Annex Table 15 of "Cash Flow Statement" shows the positive cumulative cash balance of Birr 432 million and the project will not face any cash shortage throughout its production life.

The computation of the pay-back period as depicted in Annex table 20 indicates that the project will be able to reimburse itself from its net cash-income within eleven years after commencement of production activities, the period which is considered to be very good for the project of this nature.

In Annex Table 21 of the Benefit-cost ratio and Net present value (NPV) have been calculated at 17% discount factor (D.F) for 10 years of the project activity. Accordingly, the project has NPV of (86 million) Birr at 17%D.F. and the benefit-cost ratio of 0.94 at 17% D.F. These results are not appreciable, especially, when related to the external capital borrowing interest rate which ranges from 8.50% to 18.5 % for newly establishing projects.

Break-even point (BEP) have been undertaken the project under study when implemented will have BEP at about 112% operation of the estimated full capacity

In addition to this, finally, summary of financial efficiency tests have been conducted in Annex table 19, Accordingly, some of efficiency ratios indicated negative trends and consequently, it can be inferred that the project can operate in the frame work of free market mechanism on commercially and financially not viable business.

ANNEXES

NNEX II

CALCULATION OF ANNUAL PRODUCTION COSTS

Table 10 Annual total production costs"000"

Period	Start-up			Full capacity						
Capacity utilization	70 %	80 %	90 %	100 %	100 %					
Project Year	1	2	3	4	5	6	7	8	9	10
Cost category										
I. Material inputs including packing materials	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
II. Labor	2,604	2,604	2,604	2,604	2,604	2,604	2,604	2,604	2,604	2,604
III. Utility	3,723	3,777	3,832	3,887	3,887	3,887	3,887	3,887	3,887	3,887
IV. Repair and Maintenance and spare parts (1.5 % of fixed cost)	7,308	7,308	7,308	7,308	7,308	7,308	7,308	7,308	7,308	7,308
VI Direct overheads	10,353	10,353	10,353	10,353	10,353	10,353	10,353	10,353	10,353	10,353
A. Direct Production costs	23,988	24,042	24,097	24,152	24,152	24,152	24,152	24,152	24,152	24,152
VII. Administration over head	108	108	108	108	108	108	108	108	108	108
VIII. Marketing and Promotional expense 3 % of sales revenue	4,990	5,702	6,415	40,608	7,128	7,128	7,128	7,128	7,128	7,128
B. Operating costs	29,086	29,852	30,620	64,868	31,388	31,388	31,388	31,388	31,388	31,388
Interest	142,801	134,465	125,169	114,806	103,250	90,365	75,999	59,980	42,120	22,204
Depreciation	93,500	93,500	93,500	93,500	93,000	92,900	89,004	81,200	81,200	81,200
C. Total production costs	265,387	257,817	249,289	273,174	227,638	214,653	196,391	172,568	154,708	134,792

ANNEX IV
CALCULATION OF WORKING CAPITAL REQUIREMENTS

I. Minimum requirement of current assets and liabilities
   A. Accounts receivable: 26 days at total production costs minus depreciation and interest
   B. Inventory
      1. Material inputs: 26 days
      2. Spare parts : 90 days
      3. Work under process: two days at direct costs
      4. Product ready for delivery: 8 days at direct costs plus administration overheads
   C. Cash on hand : 360 days
   D. Accounts payable 26 days for material inputs and utilities

ii. Working capital requirement

Table 11 Calculation of working capital

Cost category	Minimum Days of coverage	Coeff-icient of turnover	Project year									
			Start up			Full capacity						
			1	2	3	4	5	6	7	8	9	10
I. Current asset												
A. A/R	26	10	2,909	2,985	3,062	6,487	3,139	3,139	3,139	3,139	3,139	3,139
B. Inventory												
1. Material inputs	26	10	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
2. Spare parts	90	4	1,827	1,827	1,827	1,827	1,827	1,827	1,827	1,827	1,827	1,827
3. Work under process			0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
4. Product ready for delivery			0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
C. Cash on hand	90	4	6,024	6,038	6,051	6,065	6,065	6,065	6,065	6,065	6,065	6,065
D. Current assets			10,760	10,850	10,940	14,379	11,031	11,031	11,031	11,031	11,031	11,031
II. Current liabilities			372	378	383	389	389	389	389	389	389	389
A. A/p	26	10										
III. Working capital												
A. Net working capital			10,387	10,472	10,557	13,990	10,642	10,642	10,642	10,642	10,642	10,642
B. Increasing in working capital			10,387	85	85	3,433	0	0	0	0	0	0

ANNEX V

PROJECTED SALES REVENUE

Table 12 projected sales revenue

Period	Start-up			Full capacity						
Capacity utilization	70%	80%	90%	100%						
Project year	1	2	3	4	5	6	7	8	9	10
Item descriptions										
REVENUE FROMRENT										
Ground	75,600	86,400	97,200	108,000	108,000	108,000	108,000	108,000	108,000	108,000
First floor	50,400	57,600	64,800	72,000	72,000	72,000	72,000	72,000	72,000	72,000
Second floor	40,320	46,080	51,840	57,600	57,600	57,600	57,600	57,600	57,600	57,600
REVENUE FROM APPARTMENT SALES										
Third floor	0.0	0.0	0.0	252,000	0.0	0.0	0.0	0.0	0.0	0.0
Fourth floor to eighth floor	0.0	0.0	0.0	864,000	0.0	0.0	0.0	0.0	0.0	0.0
Grand total	166,320	190,080	213,840	1,353,600	237,600	237,600	237,600	237,600	237,600	237,600

ANNEX VI

PROJECTED NET INCOME STATMENT

Table 13 Projected Net income statement "000"

Period	Start up			Full capacity						
Capacity utilization	70 %	80 %	90 %	100 %						
Project year	1	2	3	4	5	6	7	8	9	10
Item description										
Product sales revenue	166,320	190,080	213,840	1,353,600	237,600	237,600	237,600	237,600	237,600	237,600
Less total production costs	265,387	257,817	249,289	273,174	227,638	214,653	196,391	172,568	154,708	134,792
Gross profit	-99,067	-67,737	-35,449	1,080,426	9,962	22,947	41,209	65,032	82,892	102,808
Tax	(34,673)	(23,708)	(12,407)	378,149	3,487	8,031	14,423	22,761	29,012	35,983
Net profit	-64,394	-44,029	-23,042	702,277	6,475	14,916	26,786	42,271	53,880	66,825
Accumulated undistributed profit	-64,394	-108,423	-131,464	570,812	577,288	592,203	618,989	661,260	715,140	781,965

ANNEX VII
DEBT SERVICE SCHEDULE AND COMPUTATION
PAYMENT OF EQUAL ANNUAL INSTALLMENTS

Table 14 Debt services schedule and computation

Item description	Project year									
	1	2	3	4	5	6	7	8	9	10
A. Investment and working capital										
1. Investment										
2. Increment working capital										
Total										
B. Loan receipts and balances										
1. Loan receipts										
2. Outstanding balance at end of year	1,241,751									
a. First year loan	1,241,751	1,169,261	1,088,434	998,313	897,826	785,787	660,861	521,568	366,258	193,086
Total										
A. Debt service										
1. First year Loan										
a. Interest	142,801	134,465	125,169	114,806	103,250	90,365	75,999	59,980	42,120	22,204
b. Repayment of principal	72,490	80,826	90,121	100,485	112,041	124,926	139,292	155,310	173,172	193,086

ANNEX VIII
CASH-FLOW STATEMENT
FOR
FINANCIAL PLANING

Table 15 Projected Cash flow statement

Period	Start up			Full capacity						
Capacity utilization	70%	80%	90%	100%						
Project year	1	2	3	4	5	6	7	8	9	10
Item description										
A. Cash - inflow	1,940,632	190,170	213,930	1,357,039	237,600	237,600	237,600	237,600	237,600	237,600
1. Financial resource (total)	1,774,312	90	90	3,439						
2. Sales revenue	166,320	190,080	213,840	1,353,600	237,600	237,600	237,600	237,600	237,600	237,600
B. Cash – outflow	1,984,016	221,525	233,593	661,747	250,166	254,710	261,102	269,439	275,692	282,661
1. Total assets schedule including replacement	1,774,312	90	90	3,439						
2. Operating costs	29,086	29,852	30,620	64,868	31,388	31,388	31,388	31,388	31,388	31,388
3. Debt service (total)										
a. Interest	142,801	134,465	125,169	114,806	103,250	90,365	75,999	59,980	42,120	22,204
b. Repayment	72,490	80,826	90,121	100,485	112,041	124,926	139,292	155,310	173,172	193,086
4. Tax	(34,673)	(23,708)	(12,407)	378,149	3,487	8,031	14,423	22,761	29,012	35,983
C. Surplus (Deficit)	-43,384	-31,355	-19,663	695,292	-12,566	-17,110	-23,502	-31,839	-38,092	-45,061
D. Cumulative cash balance	-43,384	-74,739	-94,402	600,890	588,324	571,214	547,712	515,873	477,781	432,720

ANNEX XII
TOTAL INVESTMENT COSTS

Table 16 Total investment costs"000"

Period	Start up			Full capacity								
Project year	1	2	3	4	5	6	7	8	9	10	11	
Investment Category												
1. Fixed investment costs												
a. Initial fixed investment costs	1,761,552											
b. Replacement												
2. Pre-operational capital expenditure	2,000											
3. Working capital increase	10,387	85	85	3,433								
Total investment costs	1,773,939	85	85	3,433								

ANNEX XIII
TOTAL ASSETS

Table 17 Total Assets

Period	Start up			Full capacity								
Project year	1	2	3	4	5	6	7	8	9	10	11	12
Investment Category												
1. Fixed investment costs												
c. Initial fixed investment costs	1,761,552											
❖ Cost of land												
d. Replacement												
2. Pre-operational capital expenditure	2,000											
3. Current assets increase	10,760	90	90	3,439								
Total assets	1,774,312	90	90	3,439								

ANNEX XIV
SOURCES OF FINANCE

Table 18 Sources of finance

Period	Start up			Full capacity							
Project year	1	2	3	4	5	6	7	8	9	10	Total
Sources of finance											
1. Equity capital	532,179	86	88	88							
2. Loan capital	1,241,751										
3. Current liabilities	372	6	5	6							
Total finance	1,774,302	92	93	94							

ANNEX XI
SUMMARY OF FINANCIAL EFFECIENCY TESTS

Table 19 Summary of financial efficiency tests

	Project year									
Project year	1	2	3	4	5	6	7	8	9	10
Capacity utilization	70%	80%	90%	100%						
Financial ratio in %										
1. Gross profit : Revenue	-60%	-36%	-17%	80%	4%	10%	17%	27%	35%	43%
2. Net profit : Revenue	-39%	-23%	-11%	52%	3%	6%	11%	18%	23%	28%
3. Net profit : initial investment	-5%	-4%	-2%	56%	1%	1%	2%	3%	4%	5%
4. Net profit : Equity	-12%	-8%	-4%	131%	1%	3%	5%	8%	10%	12%
5. Gross profit : Initial investment	-8%	-5%	-3%	87%	1%	2%	3%	5%	7%	8%
6. Operating costs : Revenue	17%	16%	14%	5%	13%	13%	13%	13%	13%	13%

ANNEX XV

CALCULATIONS OF PAYBACK PERIOD

Table 20 Calculation of payback period"000"

Year	Amount Paid Back			Total investment	End of year
	Net Profit	Depreciation	Total		
1	-64,394	93,500	29,106	1,773,930	-1,744,824
2	-44,029	93,500	49,471	85	-1,695,438
3	-23,042	93,500	70,458	85	-1,625,065
4	702,277	93,500	795,777	3,433	-832,721
5	6,475	93,000	99,475		-733,246
6	14,916	92,900	107,816		-625,430
7	26,786	89,004	115,790		-509,640
8	42,271	81,200	123,471		-386,169
9	53,880	81,200	135,080		-251,089
10	66,825	81,200	148,025		-103,064
11	66,825	81,200	148,025		+44,961

ANNEX XVI
CALCULATIONS OF NET PRESENT VALUE AT 17% D.F.

Table 21 Calculation of NPV at 17% D.F.

Project year	Gross Revenue	$1/(1+i)^n$ At 17%	Present value at 17%	Project costs			
				Total investment	Operating costs	Total	Present value at 17%
1	166,320	0.854701	142,154	1,773,930	29,086	1,803,016	1,541,040
2	190,080	0.730514	138,856	85	29,852	29,937	21,869
3	213,840	0.624371	133,515	85	30,620	30,705	19,171
4	1,353,600	0.53365	722,349	3,433	64,868	68,301	36,449
5	237,600	0.456111	108,372		31,388	31,388	14,316
6	237,600	0.389839	92,626		31,388	31,388	12,236
7	237,600	0.333195	79,167		31,388	31,388	10,458
8	237,600	0.284782	67,664		31,388	31,388	8,939
9	237,600	0.243404	57,833		31,388	31,388	7,640
10	237,600	0.208037	49,430		31,388	31,388	6,530
Total			1,591,966				1,678,649

A. Benefit- cost ratio at 17% D.F. = 0.94

B. NPV at 17% D.F. = -86,683,000 Birr