

166. PROFILE ON BOARDING SCHOOL

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I. SUMMARY

This profile envisages the establishment of a boarding school with a capacity of enrolling 240 students per annum. Boarding school is a school that provides some or all pupils with accommodation and daily meals. A commercial boarding school charges the pupil for the accommodations and the other services they provide.

The present demand for the proposed service is estimated at 4,688 students per annum. The demand is expected to reach 6,807 students by the year 2018.

The total investment requirement is estimated at Birr 18.12 million, out of which Birr 2.05 million is required for school equipment. The service will create employment opportunities for 88 persons.

The project is financially viable with an internal rate of return (IRR) of 12.64 % and a net present value (NPV) of Birr 3.95 million, discounted at 8.5 %.

II. SERVICE DESCRIPTION AND APPLICATION

Boarding school is a school that provides some or all pupils with accommodation and daily meals. A commercial boarding school charges the pupil for the accommodations and the other services they provide.

Education is one of the most important aspects of human development. It plays a pivotal role in the socio economic development of a nation and a society.

III. MARKET STUDY AND SERVICE CAPACITY

A. MARKET STUDY

1. Service Supply and Present Demand

Boarding schools are facilities where lodging and meals are provided to students alongside formal education. Historically, there used to exist boarding schools in Addis Ababa and some towns in Ethiopia. Some of these were owned and run by missionary communities; such as the Lazarist Mission and the Akaki Mission schools in Addis, the Bible Academy in Nazareth, the Adventist Mission School in Kuyera, the Maltese school in Harrar and the Abuna Indrias in Dire Dawa.

The Etegei Mennen Girls School, and long before that, the then Teferi Makonnen, and presently the Entoto comprehensive schools were boarding schools run by the Government. The General Wingate was also a boarding school run by the British legation. All these schools ceased to exist as boarding schools during the time of the Derg. No data is available on the number of the students who attended these boarding schools.

Provision of basic, quality education being one of the major millennium development goals (MDG) of the Federal Government, access to education and provision of it in circumstances that befits the financial, social and family situations of school age children from different segments of the society is the order of the day.

As depicted in the “Socio-Economic Survey” conducted by IPS in 2007, there are in Addis Ababa alone, 761 schools from KG upwards owned by the government, the public (community based,) the private sector, missionaries, NGOs, churches, mosques and foreign missions. There is however, no single boarding school from among these. Supply of boarding school facilities is, therefore, nil.

In the absence of any reports from a sample survey or census regarding degree of positive responsiveness of students or parents alike on the issue of any future provision of boarding school facilities, the volume of demand can not be established with certainty.

Unlike the demand for education *per se*, a combination of both objective and subjective parameters determines the need and there by, the demand for boarding schools in Addis Ababa.

A combination of these subjective parameters and conjectures, in lieu of valid concrete assumptions enable us to estimate the volume of demand for boarding schools.

Unlike demand for education, demand for boarding schools entails the issue of affordability: effective demand. Any future supply of a boarding school facility therefore targets children from family of upper-middle and upper class income groups. The major target groups and potential markets for boarding school are described below.

- a) Parents with substantial income in different regions are largely of the opinion that due to high concentration of the educated elite here, better education is given in Addis. Though the figure is not known, many of these families are sending their children here to attend school either by staying with close relatives or by renting small houses, usually the service quarters of residential houses.

The opening of a boarding school will absorb some of these students, since parents will be convinced that their children shall have better security and safety than in the case where their children are on their own.

Furthermore, cooking and cleaning chores partake of much of the students' "out of school time". Sparing students such routine chores will provide students with incentives to enroll in boarding schools with the prospect of having ample study time.

- b) Another target group would be children of members of the Ethiopian diplomatic corps, and Ethiopian Air Lines employees assigned abroad. With the availability of high standard boarding schools in a secure environment, such parents will have the option of leaving their children behind rather than take them along to enroll in schools found in their respective countries of assignment, where they may face the challenges of estrangement of living in an alien environment.
- c) The third target group, although small in number, would be children of frequently traveling business persons who can ill afford to spare the time to do follow up and supervise their children's education.
- d) Yet another potential target group would be children of single parents or broken marriages. Children living with step parents of either sex are also categorized in this group.

In projecting demand for boarding school enrollment, the age factor must be taken in account.

Unless conditions strictly dictate their circumstances, parents do not adapt the tendency to send teen-age children to boarding schools. Hence, kindergarten and 1st primary: (grades 1-4) school age children are discounted here in establishing current demand for boarding schools.

Data to be used for the manipulation of the volume of demand for boarding schools (at all levels) is obtained from the "Socio Economic Survey Report" compiled by IPS in 2007. In addition, the following assumptions are adapted to determine demand.

- a) The first assumption is that, given the fact that demand is the function of income, only those students attending community, private and mission schools are considered as the basis for the demand estimation.

- b) Second assumption is that only students from grades 5-12 are the target group for boarding school enrolment.
- c) Providing that only 5% of the population of Addis Ababa is in the upper middle and upper income group of over Birr 30,000.00 per annum, it is assumed that at least 15% of members of these income groups will likely send their children to boarding schools.
- d) Number of students per section in private, community, and mission schools is assumed to be equal.

Enrolment rate at primary and secondary schools and number of students enrolled by grade is shown in Tables 3.1 and 3.2, respectively.

Table 3.1
ENROLMENT RATE AT PRIMARY & SECONDARY SCHOOLS IN ADDIS
ABABA

1998:(2004/05)		1997(2003/04)		%age	
Public	Non Public	Public	Non-public	Public	Non-public
276,312	212,498	266,195	204,717	65.28	34.72
Total	488,810		470,915		

Source: IPS; "Socio Economic Survey Report" 2007.

Table 3.2
NUMBER OF STUDENTS ENROLLED BY GRADE (2004/05)

KG	46,329
1-4	175,015
5-8	139,443
9-12	128,023
Total	488,810

Source: IPS; "Socio Economic Survey Report" 2007.

Table 3.3 below lists the number of school found in Addis Ababa, by type of ownership.

Table 3.3
NO. OF SCHOOLS BY TYPE OF OWNERSHIP

Ownership	No. of Schools									Total	%age
	KG	1-4	5-8	1-8	9-10	11-12	9-12	1-10/12			
Government	6	7	1	76	11	1	9	-	111	14.6	
Community	55	1	-	112	-	-	-	3	171	22.5	
Private	260	23	4	65	3	-	-	23	378	49.7	
Missionary	27	2	-	10	1	-	-	12	52	6.8	
NGOs	3	1	-	7	1	-	-	3	15	2.0	
Church	17	3	-	1	-	-	-	3	24	3.2	
Mosque	-	1	-	1	-	-	-	2	4	0.5	
Foreign Communities	-	-	-	-	-	-	-	6	6	0.8	
Total	368	38	5	272	16	1	9	52	761	100	
No. of community, private, missionary, foreign ownership	342	26	4	187	4	-	-	44	607		
%age of non Public Schools	90.93	68.4	80.0	68.75	25.0	0	0	84.6	79.76		

Source: IPS; "Socio Economic Survey Report" 2007.

Analyses of the above three tables show that

- Students in grades 5+, according to table 3.2, are 267,581
- From Table 3.3, 80% of grades 5-8 schools are privately owned.
- Again, 68.75% of grades 1-8 schools are under private, community, mission & foreign legations' ownerships.

25% of grades 9-10/12 schools are also under these 4 types of ownerships.

The ratio of public and non public schools enrollment being 65.3% and 34.7% respectively (Table 3.1,) we can apply this ratio to the figures in Table 3.2 to derive grades 5-8 and grades 9-10/12 enrollment figures in the private, community, missionary and foreign mission schools.

The ratio of students in these 4 types of schools to students in all non government schools stands at

97.7% for grades 5-8 and

25.0% for grades 9-12

Accordingly, number students in these 4 types of schools is calculated at

Grades 5-8: $(34.72) \times 97.7\%$ (139,343)

$= (34.72\%) \times 136,138$

= 47,268

Grade 9-12: $(34.72\%) \times 25\%$ (128,023)

$= (34.72\%) \times 32,006$

= 11,112

Total number of students eligible to attend boarding schools, therefore, equals 58,380 students.

However, as stated earlier, the issue of affordability or in other words, effective demand sets limits on the targets.

Therefore, out of the estimated 416,617 households in Addis Ababa,[£] only 20,834 or 5% of all households can afford to send their children to boarding schools; whereas only 15% of those who can afford to send their children to boarding schools, or **3,125** households have the need or the demand to do so.

If affording families need to send one child or at most two children to boarding schools, the present demand for enrolment stands at 4,688 students.

2. Projected Demand

The student population in Addis Ababa, according to recent studies by the Ministry of Education, is growing at 3.8% annually. With economic development in general, and income growth of households in particular, the demand for boarding school enrolment is expected to increase at the same 3.8% annually. Based on the 3.8% growth rate, future demand for boarding school enrolment is presented in Table 3.4.

Table 3.4
PROJECTED DEMAND FOR BOARDING SCHOOLS IN NUMBER OF
STUDENTS

Year	Projected Demand
2009	4,866
2010	5,051
2011	5,243
2012	5,442
2013	5,649
2014	5,864
2015	6,086
2016	6,318
2017	6,556
2018	6,807

[£] estimated population size of 2.5 million with average HH size of 6 persons

3. Fees and Service Provision

In the absence of any boarding schools in Addis Ababa at present, to assist in the estimation of tuition fees and food and boarding charges, the practice at a boarding school located in Awassa town is taken as a point of reference. That school charges Birr 800.00 per month for tuition, food, and lodging.

With cost of living being more expensive here than in most provincial towns, a monthly collection of Birr 1,500 per month for tuition, food and lodging per student is recommended.

All academic and lodging services are to be provided within the school compound, where school ground, and dormitories and mess halls should be separated from each other or walled off with openings for entrance and exit gates.

B. BOARDING SCHOOL CAPACITY AND OPERATIONAL PROGRAMME

1. Boarding School

The amount of time pupils spend in boarding schools varies considerably from one year to twelve or more years. Boarding school pupils may spend the majority of their childhood and adolescent life away from their parent, although pupils return home during the holidays and term break time. For the purpose of this study, the envisaged boarding school will comprise of grades seven through twelve, with most covering the high school years.

It is intended that the school will be a fee – charging school, where pupils not only study but also live during term time with their fellow students and possibly teachers. The boarding school will, therefore provide accommodation and daily meals.

It is intended that the boarding school will have two sections for each grade, a well equipped library, adequate class rooms, laboratories, sport field accommodation for Co-curricular activities, lounges for students and teaching staff residential houses, etc

Each section is intended to hold 20 students, thus accommodating a total of 240 students in grades seven through twelve. Each year the school will have new entrants of forty students in grade seven equivalent to the number of outgoing students of grade twelve.

The boarding school will be boys/girls boarding school as a principle of adopting co-education system.

Classrooms, dormitories, the library and laboratories shall be established so that the space requirement will meet the international standard set for boarding schools. This will be treated in detail in “Land, Building and civil works” chapter of this study.

2 Operational Programme

It is proposed that the school will start operation at 75 % of its capacity during the first year, and then will attain 85% and 100% of its capacity during the second and third year and then after respectively. The detail of the service programme is indicated in Table 3.5 below.

Table 3.5

SERVICE PROGRAMME

Year	1	2	3-10
Capacity utilization (%)	75	85	100
Pupils (number)	180	204	240

IV. MATERIAL AND INPUTS

A. MATERIALS

It is assumed that dormitory beds, classroom desks and furniture, laboratory equipment and chemicals, dining room tables and chairs, kitchen equipment and utensils, library books and materials, etc., are material requirements initially supplied as part of initial investment together with buildings. However, material requirements considered here are those required for the operation of the boarding schools. These include daily food stuff for meal preparation (including snack, tea, coffee, and soft drink), office stationery, sport materials, laboratory chemicals and inputs to technical maintenance and repair. The annual requirements of these materials are estimated at Birr 1.5 million. Of these, the lion's share is taken by food staff.

B. UTILITIES

Utilities required as inputs for boarding school include electricity and water. Electricity is used to produce sufficient illumination for the class rooms, libraries, laboratories, dormitories, compound lighting, to set into operation computers, kitchen appliances, etc. Water is highly required for drinking, washing, food preparation, and other general purposes. This is expressed as 15000 cubic meters of water and 34500 kWh of electricity. Annual cost of utilities are estimated to be Birr 65,090.

Table 4.2
ANNUAL UTILITIES REQUIREMENT AND COST

Sr. No.	Description	Qty	Cost, in '000 Birr
1	Electric Power	34,500 (kWh)	16.34
2	Water	15000 (m ³)	48.75
	Total		65.09

V. TECHNOLOGY & ENGINEERING

A. TECHNOLOGY

No machinery is required for boarding school as it is required for manufacturing process. However in this case, the students will have to be introduced to the use and application of modern communication equipment like computers, and other facilities. All the items in Table 5.1 below can be procured from local market.

Table 5.1
OFFICE FURNITURE & EQUIPMENT REQUIREMENT & COST

Sr.No.	Description	Qty	Unit Price	Cost
1	Computer and its accessories	20	11,000	220,000
2	Laser Jet printer	8	4,500	36,000
3	Photo copy machine (Heavy duty)	2	150,000	300,000
4	Duplicating machine	1	7,000	7,000
5	Fax m/c	1	4,000	4,000
6	Electrical type writer	2	5,000	10,000
7	Manual type writer	2	3,000	6,000
8	Telephone set & accessories	5	1,600	80,000
9	Office swivel chair	10	990	9,900
10	Writing desk (standard)	10	1,220	12,200
11	Computer stand	20	1,010	20,200
12	Office shelves (wooden, size: L x H=1.2x1.5m)	5	350	1,750
13	Filing cabinet	10	900	9,000
14	Guest chairs	20	300	6,000
15	Executive chair	10	1,320	13,200
16	Office curtains	Reqd	-	7,500
17	Office carpet	Reqd.	-	5,000
18	Miscellaneous	-	-	20,000
	Total Cost			547,970

1. List of Items for Cafeteria and Lounge

These include items like stove (electrical/gas) kitchen cabinets, tables and chairs made of (wooden and plastic), cutlery, plates, washing basins, bowls, refrigerator (280 or 300 lts), coffee machine, glasses and spoons, VCR & CD& cassette player with radio, color TV (29 inches), and other miscellaneous items. It is estimated that total cost of items for cafeteria and lounge will be Birr 350,000. The details are depicted in Table 5.2 below.

Table 5.2

CAFETERIA AND LOUNGE OFFICE FURNITURE & EQUIPMENT
REQUIREMENT & COST

Sr. No.	Description	Cost, Birr
1	Stove (electric /gas) (two sets)	10,000
2	Kitchen cabinets	5,000
3	Tables & Chair	185,000
4	Cutlery & Plates	1,400
5	Wash basins, bowls, etc	1,200
6	Deep freeze , refrigerator	45,000
7	Coffee machine	10,000
8	Glass & spoon	5,000
9	VCR,CD & cassette player with radio	3,000
10	Color TV (29 Inch) with satellite dish	7,500
11	Sofa (two sets)	60,000
12	Miscellaneous Item (kitchen ware)	17,900
Total		349,600

2. Dormitory Facilities

The number of students that can be handled at full capacity operation is the basis for determining dormitory facilities. Accordingly for 240 students, handled at a time, the list of required facilities is given below.

- a) Metallic stair bed (100 x 190cm)
- b) Cubicles, wooden but with metallic frame; four in one bed room to handle 4 students.
- c) Chairs for students in bed rooms.
- d) Wooden cupboards – required four in one bed room.
- e) Foam mattresses – for 240 students.

It is estimated that Birr 597,000 will cover the expenditure on dormitory facilities.

Table 5.3
DORMITORY FACILITY REQUIREMENT & COST

Sr. No.	Description	Cost, Birr
1	Metallic stair bed	192,000
2	Cubicles	144,000
3	Chair	50,000
4	Wooden cupboard	183,000
5	Foam with pillows mattress	78,000
Total		647,000

3. Library, Teaching and Class Room Facility

These consist of black boards (90 x 200cm), flip chart holders, overhead projector, screens, digital satellite receiver and antenna, VCR (4 head, multi-system), Video cassettes, books (assorted for library for grades 7 through 12), wooden chairs, table with open box underneath (for two students), padded chair for instructor/ teacher, table for instructor, white board (90x150 cm), table and chairs for conference room, Dixon shelf, and other miscellaneous items. It is estimated that a total cost of Birr 585,000 will be sufficient to purchase the above items.

Table 5.4

**LIBRARY, TEACHING AND CLASS ROOM FACILITY REQUIREMENT &
COST**

Sr. No.	Description	Cost, Birr
1	Black board (90 X200)	10,000
2	Flip chat holders	2,000
3	Over head projector	7,000
4	screen	2,500
5	Digital satellite receiver with Antenna	2,500
6	VCR (4 head, multi system)	2,500
7	Books for the bayberry (various)	220,000
8	Chairs and tables for class rooms	160,000
9	Chair and table padded for instructors	10,800
10	White board (90 X 150)	8,400
11	Tables and chairs for conference room	18,000
12	Dixon shelf for library	70,000
13	Miscellaneous	71,300
	Total	585,000

4. Laboratory Facilities

Laboratories are required for grades 7 through 12. It is proposed that two independent laboratories shall be established, one for grades 7 & 8, and the second for grades 9 through 12. Both laboratories will be fully equipped with items like chemicals, agents and scientific instruments. Both laboratories can be housed in one building having partition to separate the two units. It is estimated that a total of Birr 425,000 will be required to equip the laboratories with all the necessary items.

Table 5.5**LABORATORY FACILITY REQUIREMENT & COST**

Sr. No.	Description	Cost, Birr
1	Tables and chairs	40,000
2	Cabinets (wooden and metallic frames – glass window)	54,000
3	Scientific equipments and Agents	125,000
4	Chemical and Agents	195,000
5	Other items	11,000
Total		425,000

5. Clinic

The boarding school will have one clinic where minor clinical services shall be given to students and school workers. Items required in the clinic may consist of clinical thermometers, autoclaves, examination bed, different drugs, first aid kit, scissors & forceps, hand wash basins, refrigerators, etc. It is estimated that a total of Birr 65,000 will be required to equip the clinic with the above items.

Table 5.6**CLINIC FACILITY REQUIREMENT & COST**

Sr. No.	Description	Cost, Birr
1	Clinical Thermometers	2,000
2	Autoclaves	22,000
3	Examination bed	2,200
4	Drugs	5,000
5	First aid kit	200
6	Scissors and forceps	500
7	Hand wash basins	1,700
8	Refrigerator	5,000
9	Chairs	3,500
10	Other items	5,000
Total		47,100

Table 5.7
SUMMARY OF EQUIPMENT REQUIREMENT & COST FOR
BOARDING SCHOOL

Sr. No.	Description	Cost ('000 Birr)
1	Office furniture and equipment	547.97
2	Items for cafeteria and lounge	349.60
3	Items for library, Teaching and classroom facility	585.0
4	Laboratory facilities	425.0
5	Items for clinic	47.1
6	Dormitory Furnishing	647.0
	Total Cost	2,601.67

B. ENGINEERING

1. Land Building and Civil Works

A minimum floor area for each pupil with regard to dormitories, cubicles and bed rooms is prescribed. A bedroom for a single student should have a floor area of 6m^2 to 7m^2 . Each bedroom can be constructed to accommodate 8 to 10 students, incorporating at least one bath tub or shower a minimum distance of 0.9 m should also be maintained between any two beds in a dormitory, bedroom and cubicles. For the purpose of this study a bedroom area of 6.5m^2 is assigned for each student and each bedroom will accommodate 8 students. This will hold single bed and cubicle, cupboard and free space to allow easy mobility for a student. Moreover, there will be one shower room of 4m^2 . Thus, the total area required for a dormitory that accommodate 240 students will be $1,566\text{m}^2$.

Other buildings include classrooms, administrative office, library, lounges, dining hall, laboratory buildings, and assembly hall. Administrative building will incorporate director's office, finance and administration office, dean's office, and offices for accountant, cashier and other general service workers. The canteen (dining hall) shall be fully equipped with cooking and feeding materials, equipment and utensils.

The library will serve all grades and will have to be fully equipped with all the required materials. All offices will be accommodated with required office equipment and furniture, such as tables, chairs, computers, etc.

The boarding school shall also have established sports facilities to engage students in different sport activities.

The following areas are estimated for the different buildings of the boarding school.

- Classrooms - fully equipped with desks, black board (White board) and table and chairs.
Area = 300 m²
- Administration building
Area = 120 m²
- Library Area = 200 m²
- Laboratory Area = 150 m²
- Dining Hall Area = 600 m²
- Assembly Hall Area = 400 m²
- Other building Area = 60 m²

Total building area will be about 3400 m².

Considering space requirement for sport facilities additional area for future expansion, and spaces for mobility, and other activities, the total land requirement will be 20,000 square meters.

Based on a unit price of Birr 2,300 per m², the total investment required for buildings will then be Birr 7.82 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 governments depending on the level of development.

In Addis Ababa, the city's Land Administration And Development Authority is directly responsible in dealing with matters concerning land. Accordingly, the initial land lease rate in Addis Ababa set by the Authority based on the location of land is as shown in Table 5.8.

Table 5.8
INITIAL LAND LEASE RATE IN ADDIS ABABA

Sr. No	Location of the land	Land Grade	Initial Price in m²
1	Central Business zones	1	1167.3
		2	1062.9
		3	916.2
		4	751.5
		5	619.2
2	Places That are Under Transit	1	716.4
		2	647.1
		3	559.8
		4	472.5
		5	384.3
3	Expansion Zones	1	245.7
		2	207
		3	150.3
		4	132.3

Source; Addis Ababa City Land Administration Authority.

As can be seen from Table 5.8 the initial land lease rate ranges from Birr 1,167.3 to 132.3 per m².

Currently, most of the educational facilities in Addis Ababa are located on the central business zones of the city. Therefore, places under transit and expansion zones are recommended as the best locations for the project. Accordingly, the average of the highest land lease rates in places under transit and expansion zones which is Birr 481.05 m² is adopted.

The Federal Legislation on the Lease Holding of Urban Land legislation has also set the maximum on lease period and the payment of lease prices (see Table 5.9 and Table 5.10).

Table 5.9
LEASE PERIOD

Type of Service	Lease Period (Years)
Residential area	99
Industry	80
Education, cultural research health, sport, NGO and religious	99
Trade	70
Urban Agriculture	15
Other service	70

Table 5.10
LEASE PAYMENT PERIOD

Sr. No.	Service Type	Period of Payment According to the Grade of Towns
1	Private residential are obtained through tender or negotiation	50 - 60 years
2	Trade	40 - 50 years
3	Industry	40 - 50 years
4	Real estate	40 years
5	Urban Agriculture	8 - 10 years
6	Trade and social service	40 - 50 years
7	Others	40 years

Moreover, advance payment of lease based on the type of investment ranges from 5% to 10%. 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. The lease price is payable after the grace period annually.

Regarding, the terms and conditions of land lease the Addis Ababa City Government have adopted Article 6 of the Federal Legislation with very minimal changes. Therefore, for the purpose of this project profile since the project is engaged in social service , 99 years lease period, 50 years lease payment completion period, 5% down payment and seven years grace period is used.

Accordingly, the land lease cost of the project, at rate of Birr 481.05 per m² for 99 years of holding is estimated at Birr 114.48 million. Assuming 5% of the total cost (Birr 5.72) will be paid in advance as down payment and the remaining Birr 108.77 million will be paid in equal installments with in 50 years, the annual lease payment is estimated at Birr 1,090,640.

VI. MANPOWER AND TRAINING REQUIREMENT

A. MANPOWER REQUIREMENT

The manpower requirement of the boarding school & associated labor cost is shown in Table 6.1.

Table 6.1
MONTHLY AND ANNUAL PAYMENT FOR MANPOWER
REQUIRED BY BOARDING SCHOOL

Sr. No.	Description	Req. No.	Monthly Salary (Birr)	Annual Salary (Birr)
1	School Director	1	3,500	42,000
2	School Dean	1	2,500	30,000
3	Finance & administration Head	1	2,500	30,000
4	Executive Secretary	1	1,000	12,000
5	Accountant	1	1,200	14,400
6	Cashier	1	700	8,400
7	Secretary	1	600	7,200
8	Canteen workers	10	4,500	54,000
9	Guards	6	2,100	25,200
10	Drivers	2	900	10,800
11	messengers	2	700	8,400
12	Teaching staff	45	45,000	540,000
13	Matrons	2	1,600	19,200
14	House Tutors	6	5,400	64,800
15	House Master	1	1,000	12,000
16	House Mistresses	1	1,000	12,000
17	Sport master	1	1,000	12,000
18	Laboratory Assistance	3	1,800	21,600
19	Other assistants for teaching staff	2	700	8,400
	Sub-Total	88	-	932,400
	Employees benefit(25% of basic salaries)			233,100
	Total			1,165,500

B. TRAINING REQUIREMENT

As Boarding School requires special attention in handling pupils that stay away from parents and from society, the teaching staff, matrons, house masters and mistresses, and other relevant workers will have to be provided with special training. Well experienced university lecturers can be involved in providing the training. It is estimated that a total of Birr 50,000 will be allotted for conducting the training programme for a period of 15 days.

VII. FINANCIAL ANALYSIS

The financial analysis of the boarding school 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	-
Bank interest	8.5%
Discount cash flow	8.5%
Accounts receivable	30 days
Material local	30 days
Cash in hand	5 days
Accounts payable	30 days
Repair and maintenance	5% of equipment cost

A. TOTAL INITIAL INVESTMENT COST

The total investment cost of the project including working capital is estimated at Birr 18.12 million. 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	5,720.00	-	5,720.00
2	Building and Civil Work	7,820.00	-	7,820.00
3	School Equipment	2,053.7	-	2,053.70
4	Office Furniture and Equipment	547.97	-	547.97
5	Vehicle	600.00	-	600.00
6	Pre- operation Expenditure*	1,095.60	-	1,095.60
7	Working Capital	285.15	-	285.15
	Total Investment cost	18,122.42	-	18,122.42

* *N.B Pre- operation expenditure includes interest during construction (Birr 945.60 thousand, training(Birr 50 thousand) and Birr 100 thousand costs of registration, licensing and formation of the company including legal fees, commissioning expenses, etc.*

B. OPERATION COST

The annual operation cost at full capacity is estimated at Birr 4.35 million (see Table 7.2). The teaching material cost accounts for 34.42 per cent of the operation cost. The other major components of the operation cost are financial cost, depreciation and direct labour which account for 18.68%, 18.04 % and 12.84% respectively. The remaining 16.03 % is the share of utility, labour over head, repair and maintenance and administration cost .

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

Items	Cost	%
Teaching Material	1,500.00	34.42
Utilities	65.09	1.49
Maintenance and repair	27.40	0.63
Labour direct	559.44	12.84
Labour overheads	233.10	5.35
Administration Costs	372.96	8.56
Land lease cost	-	-
Total Operating Costs	2,757.99	63.28
Depreciation	786.17	18.04
Cost of Finance	814.23	18.68
Total Production Cost	4,358.39	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 523.70 thousand to Birr 1.46 million during the life of the project. Moreover, at the end of the project life the accumulated cash flow amounts to Birr 15.87 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.

$$\text{BE} = \frac{\text{Fixed Cost}}{\text{Sales} - \text{Variable Cost}} = 24\%$$

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 7 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 12.64 % 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 into 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 principle 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 3.95 million which is acceptable.

D. ECONOMIC BENEFITS

The project can create employment for 88 persons. The project will generate Birr 3.42 million in terms of tax revenue. As education is one of the most important aspects in human development, the project plays a pivotal role in the socio economic development of the country.