

**188. PROFILE ON PRIMARY AND SECONDARY  
SCHOOL**

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## **I. SUMMARY**

This profile envisages the establishment of a primary and secondary school with 70 sections.

The market study shows that the present supply gap of education facility at primary level is 1,184 sections and at secondary level 1,116 sections. If additional primary and secondary schools are not materialized the supply demand gap will increase to 1,669 sections for primary school and 1,576 sections for secondary schools by the year 2018.

The total investment requirement is estimated at about Birr 32.58 million, out of which Birr 10 million is required for teaching equipment. The school will create employment opportunities for 117 persons.

The project is financially viable with an internal rate of return (IRR) of 15.11 % and a net present value (NPV) of Birr 11.31 million, discounted at 8.5 %.

## **II. SERVICE DESCRIPTION & APPLICATION**

According to the new structure of Ethiopian education system, primary education lasts for eight years (age group 6-14) and is divided into two cycles: basic education (Grades I-IV) and general education (Grades V-VIII). Junior secondary schools no longer exist, as Grades VII and VIII have become the two upper classes of the second cycle of primary education. Secondary education is divided into two cycles: the first (Grades IX and X) or general secondary education, and the second cycle (Grades XI and XII) or preparatory secondary education. Since the education reform, completion of Grade X leads to the Ethiopian School Leaving Certificate Examination (ESLCE). It is used to be at the end of Grade XII. The second cycle prepares students to continue their studies at the higher education level or select their profession. It offers a science option and a social science option. At the end of this cycle, students take the Ethiopian Higher Education Entrance examination to enter higher education institutions.

Technical and vocational education and training is institutionally separate from the regular education system and runs in parallel with it.

In this profile study, therefore, the envisaged primary and secondary school will have primary school of basic education (first cycle) and general education(second cycle) and secondary school of general education(first cycle)and preparatory education (second cycle ).

### **III. MARKET STUDY AND SERVICE CAPACITY**

#### **A. MARKET STUDY**

##### **1. Past Supply and Present Demand**

As of 2004/2005 there were 393 primary and secondary education facilities in Addis Ababa of which;

- 38 are primary(grade 1-4),
- 5 are primary (grade 5 -8),
- 272 are primary( grade 1-8),
- 16 are secondary ( grade 9-10),
- 1 is secondary ( grade 11-12),
- 9 are secondary ( grade 9 - 12), and
- 52 are secondary (grade1-10/12).

School enrolment ratio is one vital indicator that measures performance in education sector. In this regard there has been a remarkable improvement in the education statuses of the city during the past ten years particularly with respect to primary and secondary education.

As can be observed from Table 3.1 gross primary enrollment (grade 1-8) ratio increased from 100% in 2000/2001 to 116.4% in 2004/2005 and net primary enrollment (grade 1-8) ratio increased from 84.1% in 2000/2001 to 95.5% in 2004/2005. Moreover gross secondary enrollment (grade 8-10) ratio increased from 55.6% in 2001/2002 to 73% in 2004/2005 and net secondary enrollment (grade 9-10) ratio increased from 27.4% in 2001/2002 to 39% in 2004/2005. Though remarkable progress is made at primary level, enrollment at secondary level is still very low.

**Table 3.1**  
**SCHOOL ENROLLMENT RATIO AT PRIMARY AND SECONDARY LEVEL**  
**IN ADDIS ABABA (2000/2001-2004/2005)**

Enrollment Ratio	Annual Value in %				
	2000/1	2001/2	2002/3	2003/4	2004/5
Gross enrollment at kindergarten level	NA	NA	NA	NA	31.8
Net enrollment at kindergarten level	NA	NA	NA	NA	26.3
Gross enrolment rate at primary (grade 1-4)	124.4	122.8	118.2	116.2	111.4
Net enrolment rate at primary (grade 1-4)	84.4	82.5	79.7	79.3	77.1
Gross enrolment rate at primary (grade 5-8)	83.7	91.5	100	109	121.3
Net enrolment rate at primary (grade 5-8)	58.9	63.9	69.1	74.4	81.5
Gross enrolment rate at primary (grade 1-8)	100.0	104.7	110.0	112.4	116.4
Net enrolment rate at primary (grade 1-8)	84.1	87.4	91.0	92.7	95.5
Gross enrollment at secondary (grade 9-10)	NA	55.6	63.0	68.1	73.0
Net enrolment rate at secondary (grade 9-10)	NA	27.4	31.7	35.4	39.0

*Source: Education Statistics Annual Abstract 2004/05, Addis Ababa Bureau of Education.*

However, access to education at primary and secondary level is still very limited in the city. It is estimated that in 2004/05 about 139,795 school aged children who are eligible for primary and secondary level education in the city didn't attend school.

Standards by the Ministry of Education indicates that ratios at primary education 1<sup>st</sup> cycle (grade 1-4) level should be one section for 50 students, at primary education 2<sup>nd</sup> cycle (grade 5-8) one section for 50 students and at secondary level (grade 9-10) one section for 40 students. Accordingly, Table 3.2 shows number of students with no access and additional sections required to accommodate them.

**Table 3.2**

**NUMBER OF CHILDREN WITH NO ACCESS TO EDUCATION AND  
NUMBER OF SCHOOL SECTIONS AND TEACHERS REQUIRED (2004/05)**

Level of Education	Number of Children			Additional Number of Sections Required
	Number Eligible	Number Enrolled	Number with No Access	
Primary 1 <sup>st</sup> cycle ( grade 1-4)	166,048	128,023	38,025	761
Primary 2 <sup>nd</sup> cycle (grade 5-8)	171,034	139,393	31,641	633
Secondary level ( grade 9-10)	114,966	44,839	70,129	1,753
<b>Total</b>	<b>452,048</b>	<b>312,255</b>	<b>139,795</b>	<b>3,147</b>

*Source: Education Statistics Annual Abstract 2004/05, Addis Ababa Bureau of Education.*

Accordingly, based on the standard parameters acquired from the Addis Ababa Bureau of Education, it can be concluded that there is a supply gap in education service facilities supply in the city to provide education at acceptable level of standard. The supply gap is given in Table 3.3.

**Table 3.3**

**SUPPLY GAP IN BASIC EDUCATION FACILITIES IN ADDIS ABABA BY  
TYPES AND LEVEL OF EDUCATION AS OF 2004/2005**

Level of education	Number of school sections		Supply Shortfall	
	At Present	Required Based on the Standard	In Number	In %
Primary level (1-8)	6,760	7,847	1,087	13.9
Secondary level ( 9-12)	1, 388	2,412	1,024	42.5
<b>Total</b>	<b>8,620</b>	<b>11,810</b>	<b>2,191</b>	<b>18.6</b>

As can be seen from the above Table as of 2004/2005 the supply gap of education facility at primary level is 1,087 sections, and at secondary level 1,024 sections. In other words, the city needs additional primary schools with 1,087 sections, and secondary schools with 1,024 sections to achieve the required education quality standard.

Accordingly, assuming that there are no additional schools constructed since 2004/2005 and demand for primary and secondary school grows at annual average growth rate 2.9% which is equivalent to the growth rate of population, the present ( 2008) supply gap of education facility at primary level is 1,184 sections, and at secondary level 1,116 sections.

## **2. Projected Demand**

In projecting the demand for primary and secondary school it is assumed that demand for primary and secondary school increases at annual average growth rate 2.9% which is equivalent to the growth rate of population. Accordingly, by taking the present estimated demand as a base and applying an average growth rate of 2.9% the projected demand is shown in Table 3.4.

**Table 3.4****DEMAND PROJECTION FOR PRIMARY AND SECONDARY SCHOOLS ( IN SECTION)**

<b>Year</b>	<b>Primary school</b>	<b>Secondary school</b>
2009	1,218	1,148
2010	1,254	1,182
2011	1,290	1,216
2012	1,327	1,251
2013	1,366	1,287
2014	1,406	1,325
2015	1,446	1,363
2016	1,488	1,403
2017	1,531	1,443
2018	1,576	1,485
2019	1,622	1,528
2020	1,669	1,573

**2. Fees**

Based on current price charged by private primary and secondary schools the recommended price for the envisaged school is Birr 80 - 110 and Birr 90-100 per student/ month.

**C. CAPACITY AND SERVICE PROGRAMME****1. Capacity**

Taking in to account the market study on existing condition of primary and secondary school education related with the number of enrolment and eligibility and economic level of service provision, the envisaged primary and secondary school will have a total 70 sections as shown on Table 3.1 .



**Table 3.1**  
**CAPACITY OF PRIMARY AND SECONDARY SCHOOL**  
**[SECTIONS]**

Sr. No.	Level of Education	Number of Sections
1	Primary basic education (first cycle)	20
2	Primary general education (second cycle)	20
3	Secondary general education (first cycle)	15
4	Secondary preparatory education (second cycle).	15
	<b>Total</b>	<b>70</b>

The service will be given for two shifts (Regular and extension), a total of 8 hours per day.

## 2. Service Programme

The project requires some years to penetrate into the market and capture a significant share. It will start providing services at 75% and 90% of its rated capacity in the first and second year of service provision, respectively. Full service provision shall be attained in the third year and then after. The proposed service provision programme is shown in Table 3.3.

**Table 3.3**  
**SRVICE PROVISION PROGRAMME**

Service	Year of Service Provision		
	1	2	3-10
<b>% Of Service Provision Capacity</b>	75	90	100
<b>Total number sections</b>	53	63	70
<b>Total no. of students in both regular and extension</b>	4800	5760	6,400

<b>program</b>			
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#### IV. MATERIALS AND UTILITIES

##### A. MATERIALS

The main materials and inputs required for the provision of primary and secondary education service are given on Table 4.1. The cost of these and other related materials are estimated to be of Birr 1,000,000.00 in local currency at full capacity operation of the center.

**Table 4.1**  
**RAW MATERIALS AND CONSUMABLES REQUIREMENT AT FULL**  
**CAPACITY AND ESTIMATED COST**

Sr. No.	Materials	Unit of Measure	Req. No.	Cost ('000 Birr)		
				FC	LC	TOTAL
1	CURRICULUM: <ul style="list-style-type: none"> <li>• Responsive to individual and social need</li> <li>• Comprehensive coverage</li> <li>• Adaptable to changing</li> </ul>	Package	-		300.00	300.00
2	EDUCATIONAL MATERIALS: <ul style="list-style-type: none"> <li>• Quantitatively adequate</li> <li>• User friendly, easily exploitable and challenging to both instructors and learners</li> <li>• A judicious mix of print-audio-oral materials</li> <li>• Closely related to the goals of the curriculum</li> </ul>	Lump sum	-	200.00	400.00	400.00
3	Cleaning materials	Lump sum	-		70.00	70.00
4	Stationery materials	Lump sum	-		100.00	100.00
5	Other miscellaneous items					130.00
	<b>Grand Total</b>			-	<b>1,000.00</b>	<b>1,000.00</b>

## B. UTILITIES

The major utilities required by the center are electricity and water. The estimated annual requirement at full capacity and the corresponding cost is given in Table 4.1.

**Table 4.1**  
**ANNUAL UTILITIES REQUIREMENT AND ESTIMATED COST**

<b>Sr. No.</b>	<b>Description</b>	<b>Unit of Meas.</b>	<b>Qty.</b>	<b>Unit price (Birr)</b>	<b>Cost ('000 Birr)</b>
1	Electricity	KWh	40,000	0.4736	18.944
2	Water	m <sup>3</sup>	2000	3.25	6.5
	<b>Total</b>				<b>25.444</b>

## V. TECHNOLOGY AND ENGINEERING

### A. TECHNOLOGY

#### 1. Service Process

The primary and secondary education service is given to students based on the rules and regulations set by the Ministry of Education for accreditation and other related issues.

The education service is given at both regular and extension level. The regular session will be held in morning and afternoon (8:30 AM-12:30 AM and 01:30PM -03:30PM) from Monday to Friday. The extension program is given from 6:00 PM -8:00 PM. The level of education, the number of sections, grades and the corresponding maximum number of students in each section is given on Table 5.1.

**Table 5.1**  
**THE LEVEL OF EDUCATION, THE NUMBER OF SECTIONS, GRADES**  
**AND THE CORRESPONDING MAXIMUM NUMBER OF STUDENTS IN**  
**EACH SECTION**

Sr. No.	Level of Education	Grades	Number of Sections	Number of Students Per Section	Total Number of Students	Shift*	
						R	E
1	Primary basic education (first cycle)	I-IV	20	50	1000	√	√
2	Primary general education(second cycle)	V-VIII	20	50	1000	√	√
3	Secondary general education (first cycle)	IX and X	15	40	600	√	√
4	Secondary preparatory education (second cycle).	XI and XII	15	40	600	√	-
	<b>TOTAL</b>		<b>70</b>		<b>3,200</b>		

\* **R: Regular**

**E: Extension**

The provision of such service doesn't have any adverse impact on environment.

## **B. ENGINEERING**

### **1. Machinery and Equipment**

The list of machinery, equipment and other facilities required for provision of primary and secondary education service is given in Table 5.2. The estimated cost is Birr 10,000,000.00 which is totally required in local currency.

**Table 5.2**  
**MACHINERY, EQUIPMENT & TOOLS REQUIREMENT**

<b>Sr. No.</b>	<b>Description</b>	<b>UOM</b>	<b>Qty</b>	<b>Total cost ('000 Birr)</b>
1	Broadband internet line	Unit	3	30.00
2	Desk top computers	Set	50	500.00
3	Lap top computers	Set	2	30.00
4	Scanner	Pcs	1	7.00
5	Digital camera	Pcs	2	10.00
6	Video camera	Set	1	20.00
7	DVD player	Set	3	3.00
8	Photo copy machine	Pcs	1	100.00
9	Duplicating machine	Pcs	1	70.00
10	PAS and its accessories	Set	1	100,00
11	Work shops machineries, tools and equipment(Electrical ,mechanical, wood Works, automotive, building construction, machine, Electronics )	Lot	7	6,590.00
12	Laboratory equipment and facilities (Physics, biology, chemistry,	Lot	4	1,500.00
13	Printer	Set	6	50.00
14	Fax machine	Set	1	20.00
15	Satellite TV-set	Set	2	20.00
16	Plasma screen with accessories	set	5	250.00
17	Cafeteria facilities	set	1	100.00
18	Other miscellaneous items			700.00
	<b>Total</b>			<b>10,000.00</b>

## **2. Land, Building and Civil Works**

The envisaged primary and secondary school requires a total plot of land of 6,900m<sup>2</sup> area out of which 4000 m<sup>2</sup> area is the indoor built -up area which is the building (class rooms(2100m<sup>2</sup>), library(50m<sup>2</sup>), assembly hall(150m<sup>2</sup>), workshops(1000m<sup>2</sup>),

laboratory(150m<sup>2</sup>), administration offices(150m<sup>2</sup>), reception(60m<sup>2</sup>), toilet(120m<sup>2</sup>), computer lab(120m<sup>2</sup>), lounges(100m<sup>2</sup>) etc). The remaining 2900 m<sup>2</sup> area is the out door built -up area which includes the student cafeteria(150m<sup>2</sup>), parking lot(270m<sup>2</sup>), walk ways(150m<sup>2</sup>), garden(300m<sup>2</sup>), soccer field with track(1500m<sup>2</sup>) ,basket ball and valley ball courts(500m<sup>2</sup>), guard room(30m<sup>2</sup>) etc.

Assuming an indoor construction rate of Birr 2300 per m<sup>2</sup> and Birr 1500 per m<sup>2</sup> for the outdoor building and civil works, the total cost of construction is estimated Birr 9,200,000 and Birr 4,350,000, respectively.

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 5.1.

**Table 5.1**  
**INITIAL LAND LEASE RATE IN ADDIS ABABA**

<b>Sr. No</b>	<b>Location of the land</b>	<b>Land Grade</b>	<b>Initial Price in m<sup>2</sup></b>
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 5.2 the initial land lease rate ranges from Birr 1,167.3 to 132.3 per m<sup>2</sup>.

Currently, most of the educational facilities in Addis Ababa are located on the central business zones of the city. Therefore, expansion zones are recommended as the best locations for the project. Accordingly, the average of the land lease rates in the expansion zones which is Birr 183.8 m<sup>2</sup> 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 5.2 and Table 5.3.)

**Table 5.2**  
**LEASE PERIOD**

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

**Table 5.3**  
**LEASE PAYMENT PERIOD**

<b>Sr. No.</b>	<b>Service Type</b>	<b>Period of Payment According to the Grade of Towns</b>
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
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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 183.8 per m<sup>2</sup> for 99 years of holding is estimated at Birr 125.55 million. Assuming 5% of the total cost ( Birr 6.27 ) will be paid in advance as down payment and the remaining Birr 119.28 million will be paid in equal installments with in 50 years, the annual lease payment is estimated at Birr 2,385,522.

## **VI. MANPOWER AND TRAINING REQUIREMENT**

### **A. MANPOWER REQUIREMENT**

The total manpower requirement, including skilled and unskilled labor is 117 persons. The corresponding total labor cost, including fringe benefits, is estimate at Birr 2,310,000.00.

Table 6.1 shows the list of manpower required and the estimated annual labor costs.



**Table 6.1****MANPOWER REQUIREMENT & LABROUR COST**

Sr. No.	Job Position	Req. No.	Salary (Birr)	
			Monthly	Annual
1	Director	1	4,000	48,000
2	Senior Secretary	1	1,000	12,000
3	Student dean	1	3,500	42,000
4	Planning & Evaluation Officer	1	2,000	24,000
5	Public & External Relations Officer	1	2,000	24,000
6	Instructor	30	75,000	900,000
7	Registrar	1	1,900	22,800
8	Student Record Officer	1	1,600	19,200
9	Head, finance & administration	1	3,000	36,000
10	Computer Administrator	1	2,500	30,000
11	Documentation attendant	3	2,400	28,800
12	House Keeping Supervisor	1	1,400	16,800
13	Financial clerk	2	1,800	21,600
14	Head ,security guard	1	1,350	16,200
15	Lab Assistant	5	4,000	48,000
16	Workshop attendant	10	9,000	108,000
17	Tool Keeper	4	2,800	33,600
18	Librarian	3	2,400	28,800
19	Carpenter	2	1,400	16,800
20	Plumber	2	1,400	16,800
21	Electrician	2	1,400	16,800
22	Cleaner	20	12,000	144,000
23	Guard	15	10,300	123,600
24	Gardener	2	1,200	14,400
25	Secretary	3	2,400	28,800
26	Driver	1	750	9,000
27	Casher	2	1,500	18,000
	<b>Sub Total</b>	<b>117</b>		<b>1,848,000</b>
	<b>Workers benefit (25% of BS)</b>	<b>-</b>		<b>462,000</b>
	<b>Grand total</b>	<b>117</b>		<b>2,310,000.00</b>

**B. TRAINING REQUIREMENT**

Instructors, workshop and laboratory assistants and technician need to get local tailor made training and attachment training at similar centers. The cost of training is estimated at Birr 40,000.

## VII. FINANCIAL ANALYSIS

The financial analysis of the primary and secondary 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
Bank interest	8.5%
Discount cash flow	8.5%
Accounts receivable	30 days
Material and input local	30 days
Material and input import	90 days
Cash in hand	5 days
Accounts payable	30 days
Repair and maintenance	5% of teaching equipment

### A. TOTAL INITIAL INVESTMENT COST

The total investment cost of the project including working capital is estimated at Birr 32.58 million. The major breakdown of the total initial investment cost is shown in Table 7.1.

**Table 7.1****INITIAL INVESTMENT COST**

<b>Sr. No.</b>	<b>Cost Items</b>	<b>Local Cost</b>	<b>Foreign Cost</b>	<b>Total Cost</b>
1	Land lease value	6,270.00	-	6,270.00
2	Building and Civil Work	13,550.00	-	13,550.00
3	Educational Equipment	10,000.0	-	10,000.00
4	Office Furniture and Equipment	100.00	-	100.00
5	Vehicle	450.00	-	450.00
6	Pre-production Expenditure*	2,009.31	-	2,009.31
7	Working Capital	202.60	-	202.60
	<b>Total Investment cost</b>	<b>32,581.91</b>	<b>-</b>	<b>32,581.91</b>

\* *N.B Pre-production expenditure includes interest during construction ( Birr 1.86 million) , training ( Birr 40 thousand) and Birr 100 thousand costs of registration, licensing and formation of the company including legal fees, commissioning expenses, etc.*

**B. OPERATING COST**

The annual operating cost at full capacity operation is estimated at Birr 7.12 million (see Table 7.2). The major components of the operation cost are depreciation, financial cost and direct labour which account for 25.36%, 20.82% and 15.56% respectively. The remaining 38.26% is the share of material and input, utility, labour overhead, repair and maintenance and administration cost.

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

<b>Items</b>	<b>Cost</b>	<b>%</b>
Material and Inputs	1,000.00	14.03
Utilities	25.44	0.36
Maintenance and repair	500.00	7.02
Labour direct	1,108.80	15.56
Labour overheads	462.00	6.48
Administration Costs	739.20	10.37
Land Lease Cost	0.00	0.00
<b>Total Operating Costs</b>	<b>3,835.44</b>	<b>53.82</b>
Depreciation	1,807.50	25.36
Cost of Finance	1,483.35	20.82
<b>Total Production Cost</b>	<b>7,126.29</b>	<b>100</b>

**C. FINANCIAL EVALUATION****1. Profitability**

Based on the projected profit and loss statement, the project will generate a profit through out its operation life. Annual net profit after tax will grow from Birr 1.02 million to Birr 2.86 million during the life of the project. Moreover, at the end of the project life the accumulated cash flow amounts to Birr 34.28 million.

**2. Ratios**

In financial analysis financial ratios and efficiency ratios are used as an index or yard stick 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.

$$\text{BE} = \frac{\text{Fixed Cost}}{\text{Sales} - \text{Variable Cost}} = 28\%$$

### **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 6 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 15.11 % 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 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 11.31 million which is acceptable.

#### **D. ECONOMIC BENEFITS**

The project can create employment for 117 persons. The project will generate Birr 8.27 million in terms of tax revenue. The project will contribute to the expansion of education which is vital for development of the country.