

## **181. PROFILE ON KINDERGARTEN**

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## **I. SUMMARY**

This profile envisages the establishment of a kindergarten with a capacity of 1,800 children per annum.

The present demand for the proposed service is estimated at 1,551 school sections per annum. The demand is expected to reach at 2,186 school sections by the year 2017.

The total investment requirement is estimated at Birr 9.49 million, out of which Birr 513.7 thousand is required for equipment. The service will create employment opportunities for 79 persons.

The project is financially viable with an internal rate of return (IRR) of 17.32 % and a net present value (NPV) of Birr 4.46 million, discounted at 8.5 %.

## **II. SERVICE DESCRIPTION AND APPLICATION**

Kindergarten is a form of pre-school education in which children aged three to seven are taught through creative play, social interaction, and natural expression. Play is a significant aspect of a kindergarten employing games, songs, specially chosen work materials, and stories to address the needs of small children. It is aimed at growing children in a free atmosphere away from home. Accordingly it is some times called “children’s garden”. It serves as a transitional stage from home to the more formal schooling that followed.

In class, they are introduced to the alphabet, numbers, and colors; they study their bodies, their families, and their communities; they listen to stories read aloud; they make art projects; they participate in skits and dramatic productions; and they learn about holidays, plants, animals, and other topics in science and social studies. Some kindergartens also teach introductory reading and mathematical skills.

### III. MARKET STUDY AND SERVICE CAPACITY

#### A. MARKET STUDY

##### 1. Current Number of Schools and Types of Operators

Current education service providers in the city are many and varied including government, private sector, local communities, foreign communities, Non Governmental Organizations (NOGs), churches, mosques, and missionaries. There were 368 Kindergarten school facilities in the city operated by these providers in 2004/2005.

As can be seen from the Table 3.1 the private sector is the dominant sector in the ownership of kindergarten schools in the City owning and operating 70.7% of the number of education facilities in the city at kindergarten level. Next to the private sector is communities owning and operating 14.9% and missionaries 7.3%. The role of the government is extremely limited owning only 1.6% of the school facilities in the City. It should be noted also that there are no kindergarten schools operated by foreign communities and mosques.

**Table 3.1**

**NUMBER OF KINDERGARTEN EDUCATION FACILITIES IN ADDIS ABABA  
CITY BY TYPES OF OWNERSHIP (2004/2005)**

Ownership Type	Number of Schools	
	KG	% Share
Government	6	1.6
Public(Communities)	55	14.9
Private	260	70.7
Missionary	27	7.3
NGO	3	0.8
Church	17	4.6
Mosque	0	0
Foreign community	0	0
<b>Total</b>	<b>368</b>	<b>100.0</b>

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

The basic reasons the private sector is dominating in KG are that:

- The governments policy that focuses on providing basic education to all and accordingly the government is not investing in KG ,
- Traditionally in the City and in the country as a whole KG is the domain of the private sector, and
- Compared with primary and secondary schools, investment required in KG is small, which attracts the private investors with weak financial capacity.

## 2. Current Enrollment Level

School enrolment ratio is one vital indicator that measures performance in education sector. Enrollment at kindergarten level in the city is still very low (see Table 3.2).

**Table 3.2**

**SCHOOL ENROLLMENT RATIO AT KINDERGARTEN LEVEL IN ADDIS  
ABABA (2000/2001-2004/2005)**

Enrollment Ratio	Annual Value in %				
	2000/1	2001/2	2002/3	2004/5	2005/6
Gross enrollment at kindergarten level	NA	NA	NA	31.8	40.3
Net enrollment at kindergarten level	NA	NA	NA	26.3	

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

As can be referred from Table 3.2, gross enrollment in 2004/5 is 31.8% and net enrollment 26.3%.

Access to education at kindergarten level is still very limited in the city. From the total eligible children for kindergarten, about 73.7% (130,415 children) didn't go to school (Table 3.3). This is the demand gap.

**Table 3.3**

**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 <sup>1</sup>	Additional Number of Teachers Required
	Number Eligible	Number Enrolled	Number with No Access		
Kindergarten	176,954	46,539	130,415	4,347	4,347

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

Based on the standards of the Ministry of Education with respect to section to student and teacher student ratio it is estimated that 3, 147 additional school sections and 3,347 additional teachers at kindergarten are required to accommodate the needs of those children who currently have no access for education.

This does not mean however that the needs of these children would be addressed through commercial service provision since most of the children are from poor families who would not be able to afford to pay school fees and cover other educational expenses for their children. On the other hand it is believed that commercial service providers can also accommodate the partial needs of these children through innovative service provision.

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<sup>1</sup> It is estimated based on teacher to student ratio and section to student ratio standards acquired from the Addis Ababa Bureau of Education. According to the Bureau the standard ratios at kindergarten level is 1 section for 30 students and one teacher for 30 students; at primary (grade 1-4) level one section for 50 students and one teacher for 50 students; at primary level (grade 5-8) one teacher for 50 students and one section for 50 students; and at secondary level (grade 9-10) one section for 40 students and one teacher for 40 students. Moreover at primary level (grade 1-4) one additional assistant teacher is required for every three sections.

### 3. Current Demand and Supply Gap

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/shortfall is calculated and given under Table 3.4. The analyses indicate that the supply of education facility at kindergarten level is short of the demand by 5.2%. In other words, the city needs additional KG schools that may have 80 sections to achieve the required education quality standard.

**Table 3.4**  
**SUPPLY GAP IN KINDERGARTEN EDUCATION FACILITIES IN ADDIS**  
**ABABA AS OF 2004/2005**

Level of education	Number of School Sections		Supply Shortfall	
	At Present	Required Based on the Standard	In Number	In %
KG	1,471	1,551	80	5.2

*Source: Calculated Based on Data Acquired from Ministry of Education and Addis Ababa Bureau of Education.*

### 4. Projected Demand

The demand level for schools from KG to primary level for the coming ten years is estimated based the standard established by the Ministry of Education and the City population growth rate. The result is summarized under Table 3.5.

**Table 3.5**

**PROJECTED DEMAND FOR KINDERGARTEN EDUCATION FACILITIES IN  
ADDIS ABABA FOR THE COMING TEN YEARS**

<b>Year</b>	<b>Demand for School Section in Number</b>
2005/06	1,596
2006/07	1,642
2007/08	1,690
2008/09	1,739
2009/10	1,789
2010/11	1,841
2011/12	1,894
2012/13	1,949
2013/14	2,006
2014/15	2,064
2015/16	2,124
2016/17	2,186

*Source: Calculated Based on Data Acquired from Ministry of Education and Addis Ababa Bureau of Education.*

As can be referred from Table 3.5, the demand for kindergarten school section will reach 2,186 after ten years. This is a very conservative estimate given the number of children with no access to school as well as the planned annual economic growth rate of 10%. With economic growth and improved in standard of living of the city dwellers the proportion of families who can afford to send their children to a kindergarten will increase which will likely cause an increase in demand for kindergarten school.



#### **4. Fee**

Service fee depends on the quality and the types of services offered at a kindergarten. Currently the monthly service charges per children vary from Birr 120 per month to Birr 300 per month. The following is the fee structure of three kindergartens that are chosen to represent high standard, medium standard and low standard kindergartens in the City.

- Hill Side charges Birr 720 per quarter per child and considered as high standard.
- Ethiopian Institute charges Birr 140-200 per month per child depending on level and considered as middle standard.
- Falcon charges Birr 120 per month per child and considered as low standard.

### **B. SERVICE CAPACITY AND PROGRAMME**

#### **1. Service Capacity**

As per the above data of demand projection, the annual demand for kindergarten school is 1,789 in the year 2009/2010 and this demand grows to 2186 in the year 2016/17. According to Addis Ababa Bureau of Education, the standard ratio at kindergarten level is one section for 30 students. Thus, considering the number of sections is 20 in each level, i.e., Nursery, LKG & UKG; the capacity of the envisaged kindergarten is 1,800 children.

#### **2. Service Programme**

The project is envisaged to operate 10 hours per day for 300 days in a year on a single shift basis. The plant will operate at 60%, 75% and 85% of its full capacity in the first, second and third years, respectively and reaching 100% of its full capacity in the fourth year of operation.

**Table 3.4****BUILD-UP PROGRAMME OF THE TRAINING OPERATION**

<b>Year</b>	<b>1</b>	<b>2</b>	<b>3</b>	<b>4-10</b>
Capacity Utilization (%)	60	75	85	100
No. of Students	1,040	1,350	1,530	1,800

**IV. MATERIALS AND INPUT****A. RAW MATERIALS**

The major raw materials required for the envisaged service are sanitary materials (corrosive agent, pesticides, bleaches, detergent, cleansers, polishes, sheet tight –fitting mattress made of water proof, etc). Most of the raw materials and inputs required for running of the kindergarten are locally available. The estimated annual raw and auxiliary materials cost at full capacity is about Birr 36,000. The list of raw materials requirement is presented in Table 4.1.

**Table 4.1****RAW MATERIALS REQUIREMENT AND COST**

<b>Sr. No.</b>	<b>Material</b>	<b>Qty. (MT)</b>	<b>Total Cost ('000 Birr)</b>
1	Sanitary materials	10	20
2	Sheet & others	L.S	13
3	Teaching materials	L.S	3
	<b>Total</b>		<b>36</b>

## B. UTILITIES

The utilities required for the envisaged project are electricity and water. The annual required amount of utilities along with cost is shown in Table 4.2.

**Table 4.2**

**ANNUAL UTILITY REQUIREMENT AND COST**

<b>Sr. No.</b>	<b>Material</b>	<b>Qty.</b>	<b>Cost (‘000 Birr)</b>
1	Electricity	8,500 (kWh)	4.026
2	Water	6,500 (m <sup>3</sup> )	21.125
	<b>Total</b>		<b>25.151</b>

## V. TECHNOLOGY AND ENGINEERING

### A. TECHNOLOGY

#### 1. Process Description

In Ethiopia children that will usually attend kindergartens are of age between three and six. The three- year program, known as Nursery, Kindergarten 1(lower kindergarten-LKG) and Kindergarten 2 (upper kindergarten-UKG) prepares children for their first year in primary school education. Kindergarten is considered the first year of formal education, although the child may have gone to preschool.

“High/Scope Learning” is a style of learning that is used in many kindergartens in abroad. This learning style is very interactive and requires a great deal of the children and the teacher.

A kindergarten schools shall comprise of the following:

- . Shall be a full-day program with an option for a four-day or five-day format.
- . Shall be integrated program that develops spiritual, physical, emotional and social growth.
- . The classrooms shall have a wide variety of materials that invite the students to engage in learning through play and enhance the subjects that are taught throughout the day.
- . Systematic instruction shall be provided and progress is monitored through on going assessments with the goal of mastering letter identification; beginning, middle and ending sounds; rhymes and syllables.
- . Letters shall be taught that can be manipulated to form words.
- . Students are to be exposed to frequently used words and are given the opportunity to read them through guided reading.
- . Students shall be taught the formation of letters and numbers as they learn the names and sounds of the letters each week. A wide variety of materials are used to practice the letters after students have traced them on the chalkboard.
- . Hands on activities, utilizing a wide variety of materials, are used to enhance the math lessons in kindergarten. Math is a program that uses various materials to teach the basic skills of counting, number concepts, patterning, graphing, measuring, weighing, addition and subtraction. The goal is for students to understand and articulate the concepts taught in math.
- . The scientific method shall be introduced in conjunction with various books about creation.
- . Students have to be encouraged to hypothesize about clouds, water, rocks, plants, apples. Pumpkins, fish, etc.
- . Machines and the five senses are two of the favorite themes presented later in the school year and serve to enhance the fun of science experiments.
- . Students shall be exposed to books, songs, food and activities that teach about friendship, holidays and famous people. These themes are emphasized

throughout the calendar years.

- . Kindergarten students shall attend art, computer, library, music and physical education each week.
- . Field trips are designed to enhance lessons.

Play forms the key note for kindergarten while aiming at optimal development of children. Interesting teacher guided activities like singing, dancing, dramatic play, oral expression, story telling, informal physical education, the morning assembly and the creative sessions expose the child to an entire new world where learning is fun, exciting and something to look forward to.

To inculcate in them a sprit of confidence, participation and sportsmanship, the school shall offer a range of indoor and outdoor games.

## **2. Sources of Technology**

The machinery and equipment required can be obtained from the following company.

BABY STYLE UK LIMITED  
36 Charles Street,  
Sileby, Leicestershire  
LE 12 7RJ  
ENGLAND  
Ph: +44 (0) 1509 816 444  
Fax: + 44 (0) 1509 816 555  
E-mail:info@babystyle.co.uk

## **B. ENGINEERING**

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

The list of machinery and equipment is given in Table 5.1. The total machinery and equipment cost is estimated at Birr 513,700, which is totally required in local currency.

**Table 5.1****MACHINERY AND EQUIPMENT REQUIRMENT AND COST**

<b>Sr. No.</b>	<b>Description</b>	<b>Qty</b>	<b>Total cost</b>
1	Out door playing equipment (slides, swings, climbing frames, sand box, play houses, trampolines etc.)	7 Set	45,000
2	Indoor playing equipment (various child educational toys)	L.S	3,500
3	Children beds and kids bedroom accessories	L.S	10,000-
4	Computers	35	175,000-
5	TV & Video set	5	22,500-
6	Refrigeration	2	9,000-
7	Chairs and tables	1,850	231,250-
8	Teaching materials (Black boards, slides etc.)	L.S	17,450-
<b>Total</b>			<b>513,700-</b>

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

The envisaged project will require a total land area of 3,500m<sup>2</sup> of which 1,950m<sup>2</sup> is built up area. 150m<sup>2</sup> will be covered by office buildings, 100m<sup>2</sup> by stores, 300m<sup>2</sup> by playing rooms, 600m<sup>2</sup> bed rooms, 800m<sup>2</sup> by class rooms etc. The total cost of building and civil works at a rate of about Birr 2,300 per m<sup>2</sup> will be Birr 4,485,000. .

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 5.2.

**Table 5.2****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 5.3 and Table 5.4).

**Table 5.3**  
**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 5.4**  
**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

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 63.69 million. Assuming 5% of the total cost ( Birr 3.18 ) will be paid in advance as down payment and the remaining Birr 60.50 million will be paid in equal installments with in 50 years, the annual lease payment is estimated at Birr 1,210,047.

## **VI. MANPOWER & TRAINING REQUIREMENT**

### **A. MANPOWER REQUIREMENT**

The plant will require 79 workers. The annual labour cost is estimated at Birr 729,750. The detail breakdown of manpower requirement and annual salary expense is shown in Table 6.1.

**Table 6.1****MANPOWER REQUIREMENT AND COST**

Sr. No.	Position	Required No.	Salary (Birr)	
			Monthly	Annual
1	Director	1	3,500	42,000
2	Assistance Director	1	2,800	33,600
3	Unit leader	1	2,400	28,800
4	Accountant	1	1,500	18,000
5	Cashier	1	600	7,200
6	General Service	8	2,800	33,600
7	Guards	3	1,050	12,600
8	Nurse	1	1,500	18,000
9	Teachers	30	18,000	216,000
10	Assistance teachers	30	13,500	162,000
11	Driver	2	1,000	12,000
	<b>Sub-Total</b>	<b>79</b>		<b>583,800</b>
	Employee's Benefits ( 25% of Basic salary)			145,950
	<b>Total</b>	<b>79</b>		<b>729,750</b>

**B. TRAINING REQUIREMENT**

It is suggested to train teachers and assistant teachers for a period of three month. The training will be given by one of the institutions available locally. The cost of such training is estimated at Birr 50,000.

**VII. FINANCIAL ANALYSIS**

The financial analysis of the kindergarten 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
Raw material local	30 days
Cash in hand	5 days
Accounts payable	30 days
Repair and maintenance	5% of machinery cost

#### A. TOTAL INITIAL INVESTMENT COST

The total investment cost of the project including working capital is estimated at Birr 9.49 million.. The major breakdown of the total initial investment cost is shown in Table 7.1.

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

Sr. No.	Cost Items	Local Cost	Foreign Cost	Total Cost
1	Land lease value	3,180.00	-	3,180.00
2	Building and Civil Work	4,485.00	-	4,485.00
3	Machinery and Equipment	513.7	-	513.70
4	Office Furniture and Equipment	125.00	-	125.00
5	Vehicle	450.00	-	450.00
6	Pre-production Expenditure*	731.31	-	731.31
7	Working Capital	11.94	-	11.94
	<b>Total Investment cost</b>	<b>9,496.95</b>	<b>-</b>	<b>9,496.95</b>

\* *N.B Pre-production expenditure includes interest during construction ( Birr 581.31 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. OPERATING COST

The annual operating cost at full capacity operation is estimated at Birr 1.65 million (see Table 7.2). The major components of the operation cost are financial cost, depreciation and direct labour which account for 28.05%, 24.68% and 21.18% respectively. The remaining 26.08 % is the share of material and inputs, 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	36.00	2.18
Utilities	25.15	1.52
Maintenance and repair	25.69	1.55
Labour direct	350.28	21.18
Labour overheads	145.95	8.83
Administration Costs	198.49	12.00
Land Lease Cost	-	-
<b>Total Operating Costs</b>	<b>781.56</b>	<b>47.27</b>
Depreciation	408.12	24.68
Cost of Finance	463.76	28.05
<b>Total Production Cost</b>	<b>1,653.44</b>	<b>100</b>

## C. FINANCIAL EVALUATION

### 1. Profitability

Based on the projected profit and loss statement, the project will generate a profit throughout its operation life. Annual net profit after tax will grow from Birr 373.72 thousand to Birr 1.33 million during the life of the project. Moreover, at the end of the project life the accumulated cash flow amounts to Birr 11.10 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.

## 4. 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 5 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 17.32 % 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 4.46 million which is acceptable.

## **D. ECONOMIC BENEFITS**

The project can create employment for 79 persons. In addition to supply of the domestic needs, the project will generate Birr 2.84 million in terms of tax revenue.