

Ex-Post Evaluation Report on the Project of the Construction and Extension for 18 Primary Schools in Nairobi, Nakuru, and Thika (Kenya)

2012.12



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This evaluation study was entrusted to GDC Consulting by KOICA for the purpose of independent evaluation research. The views expressed in this report do not necessarily reflect KOICA's position.

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Executive Summary



Executive Summary

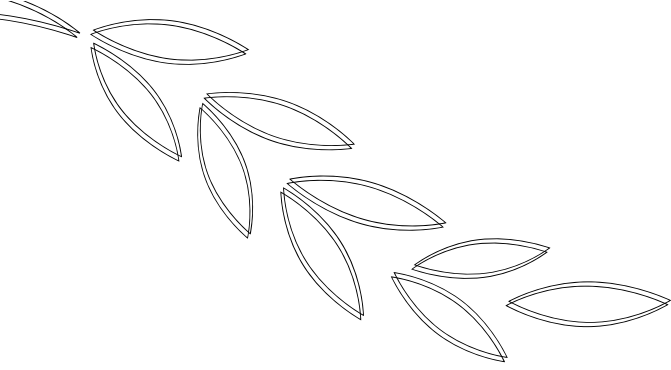
The project was the ex-post evaluation on the project of construction and extension for 10 primary schools in Nairobi, Najuru, and Thika(Kenya) funded and managed by the Korean International Cooperation Agency (KOICA) from 2008 to 2010 at a price of USD 2.5 million. The evaluated project was a part of the Primary School Infrastructure Investment Program, which was one of 23 investment programs of the Kenya Education Sector Support Programme (KESSP). To date, KOICA has expanded and/or renovated ten primary schools in Nairobi, Nakuru, and Thika in order to improve the general population's access to primary education. The scope of the project included building and furnishing additional classrooms for nine expansion sites. For Rurii of Thika, a new school building was constructed including toilets, a water supply facility, school cafeteria, and library.

The purpose of the evaluation was to determine whether the evaluated project achieved intended objectives in terms of the Development Assistance Committee's (DAC) evaluation criteria. The DAC's five criteria for ex-post evaluation include: relevance, efficiency, effectiveness, impact, and sustainability. The evaluation matrix and corresponding data collection instruments were developed accordingly. The evaluation began with a preliminary study of the project, followed by an evaluation of the design and plan, data collection, data analysis, and reporting. Given the constraints of time and budgets, this evaluation project mainly employed three types of data collection methods in order to ensure the objectivity of the evaluation results: focus group interviews, in-depth interviews, and surveys with various stakeholders in Kenya.

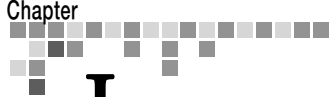
The increased enrollment rate of all ten schools suggested that the evaluated project was planned and implemented effectively and efficiently in terms of achieving the project objectives (effectiveness). Also, given the limited budget,

the project succeeded in completing expansion and construction of all ten schools and adequately equipping with furniture and other supplies (efficiency). In terms of relevance, the project sites were selected based on the urgent needs of the regions and the priorities set by the umbrella project (KESSP), DEMA, and other educational policies. The increased enrollment rate and reduced drop-out rate were also indicators of the project's relevance as well as effectiveness. Longer-term goals such as the reduction of the illiteracy rate were considered as indicators of impacts and did not show significant changes. Sustainability was also deemed adequate. Although some of the facilities were not in use at the time of field survey, the school was an essential part of each community and Kenya's local and central government's commitment, active engagement, and responsible operation of schools indicated that the project schools will continue to serve the people of Kenya. Therefore, Kenyan counterpart and all beneficiary groups expressed their satisfaction with the project in general. Particular satisfaction and appreciation were about the improved condition of the classroom environment (interior, chairs, and desks).

However, the exclusion of toilets and an appropriate water supply system from the project was a miscalculation in terms of achieving the goals of the project as well as its umbrella project, because these components were crucial parts of making an accessible and user-friendly school environment. This ex-post evaluation, therefore, has provided lessons for future education sector projects. First, various approaches should be carefully reviewed and systematically analyzed in terms of opportunities and risks relative to effectiveness and efficiency. Second, comprehensive solutions should be developed based on the systematic design of solutions and changes in order to ensure the effectiveness, sustainability, further long-term changes over time (impacts), and synergistic effects rather than multiple projects, each focusing on one or two specific objectives. For instance, a learning environment project (school renovation, equipment, and school supplies) can be coupled with program and curriculum development projects. Similarly, educational content development, teacher capacity development, and school administration capacity building can be integrated into a comprehensive solution.



Introduction and Evaluation Methods



I

Introduction and Evaluation Methods



1. Introduction of the Evaluation Project

1) Overview

The current project was conducted as the ex-post evaluation of a Kenyan primary education environment renovation project funded and managed by the Korean International Cooperation Agency (KOICA) from 2008-2010. The purpose of the project was to determine whether the education project of interest achieved the objectives in terms of Development Assistance Committee's (DAC) evaluation criteria; the DAC's five criteria for ex-post evaluation include: relevance, efficiency, effectiveness, impact, and sustainability.

In addition, the evaluation team analyzed the evaluation results in order to make recommendations for key processes of educational development projects pertaining to educational policy setting, project planning, implementation, and evaluation. Thus, this evaluation report also focuses on providing recommendations and lessons for future educational development projects.

2) Description of the Project: Kenyan primary education environment renovation project

The project was a part of the Primary School Infrastructure Investment Program, which was one of 23 investment programs of the Kenya Education Sector Support Programme (KESSP). To date, KOICA has expanded and/or renovated ten primary

schools in Nairobi, Nakuru, and Thika in order to improve the general population's access to primary education.

The project took three years to complete (from 2008 to 2010), at a price of USD 2.5 million, The scope of the project included building and furnishing additional classrooms for the expansion sites. For Rurii, a new school building was constructed, including toilets, a water supply facility, school cafeteria, and library.

Basic information about the project is summarized in the following table.

<Table 1-1> Evaluation Projects

Project Title	Construction and Extension for 10 Primary Schools in Nairobi, Nakuru, and Thika
Duration	2008-2010
Goal	Improve Access to Primary Education and Educational Environment
Project Outputs	<ul style="list-style-type: none"> • Build a primary school building and expand 9 primary school buildings in three regions in Kenya • Furnish schools and classrooms • Provide school supplies and equipment
Budget	USD 2.5 million
Region	Nairobi, Nakuru, and Thika
Beneficiary Schools	<ul style="list-style-type: none"> • Rurii Primary School, Thika (New) • Jehova Jire Primary School, Nairobi • Athi Primary School, Nairobi • Barut Primary School, Nakuru • Thika Primary School, Thika • Eileen Primary School, Nakuru • Parkview Primary School, Nakuru • Umoja Primary School, Nakuru • Nakuru West Primary School, Nakuru • Nairobi Road Primary School, Nakuru
Beneficiary Groups	Students, Parents, Teachers, and Local Residents

<Figure 1-1> Project Sites



3) Procedure for the Evaluation Project

The evaluation began with a preliminary study of the project, followed by an evaluation of the design and plan, data collection, data analysis, and reporting. Details of the procedure are summarized as follows; further details are provided in Section 2: Evaluation Methods.

<Table 1-2> Evaluation Procedure

Preliminary Research	Evaluation Design and Planning	Data Collection and Analysis	Reporting
<ul style="list-style-type: none"> ■ Review of literature relevant to the project ■ Interview with stakeholders 	<ul style="list-style-type: none"> ■ Develop evaluation matrix and data collection tools (e.g., questionnaire based on DAC criteria and MDGs) ■ Develop plans for field survey 	<ul style="list-style-type: none"> ■ Conduct field surveys ■ Analyze the data 	<ul style="list-style-type: none"> ■ Presentation and discussion of evaluation results ■ Field survey report ■ Final evaluation report



2. Evaluation Methods

Preliminary research including the literature review and in-depth interviews with stakeholders residing in Kenya reported to the evaluation team indicated that little or no quantitative data needed for a substantial analysis, such as educational statistics, were available in Kenya unless an extensive field survey was to be conducted to collect the desired quantitative data. Thus, given the constraints of time and budgets, this evaluation project mainly employed three types of data collection methods in order to ensure the objectivity of the evaluation results: focus group interviews, in-depth interviews, and surveys of various stakeholders in Kenya.

In light of the stated goals of the umbrella project, to improve educational infrastructure, the evaluation could be relatively straightforward since simple statistics such as the number of classrooms and school buildings could be good indicators of meeting goals related to infrastructure building. However, whether the constructed school and added classrooms functioned as they were intended should be the focus of this ex-post evaluation, especially considering the intent of building educational infrastructure. Thus, in addition to other methods, this evaluation employed in-depth interviews as the main data collection method, focusing on how various beneficiary groups (e. g. teachers, students, parents, and school administrators) perceived the outcomes of the project. Data from other sources and methods were also utilized for triangulation in order to ensure the reliability and validity of the evaluation results.

1) In-depth Interviews

Based on earlier preliminary research results, the evaluation team identified key stakeholders in Korea to interview to verify findings from the literature review and to collect first-hand information about the context and interrelationships among stakeholders in Kenya.

The interviewees included the program manager of KOICA who oversaw the evaluation project, the director of the KOICA office in Kenya (during 2008-2010), the current program manager in East Africa Team of KOICA, an education specialist at KOICA, and the project manager of the consulting firm that managed the project at the time. The structured interviews generally focused on processes of the project including, but not limited to, developing, planning, and implementing the project. Additional discussions followed about efficiency and various constraints in terms of project management, in addition to issues and outcomes of staff training that took place both in Korea and in Kenya.

After identifying Kenyan stakeholders, the survey and questionnaires were developed and used for data collection during the field survey. The interviewees

in Kenya included the current director of KOICA Kenya office, four officers from the Kenyan Ministry of Education (Kenyan counterpart agency), and ten principals from the relevant schools. In addition, selected teachers, parents, and students were also interviewed.

2) Survey

The beneficiary group survey was the main quantitative data source. The questionnaire was carefully designed to capture most aspects of the projects addressed in the evaluation matrix, and random sampling was planned to ensure representation of all residential areas around the ten schools. However, due to practical constraints such as the short duration of the field survey and, more importantly, the administrative limitations imposed on the evaluation team, only five schools were ultimately selected to participate in the evaluation processes. The selected schools were larger than the others and could bring together a greater number of local residents (teachers, students, and parents) for participation of the survey which was performed during the summer break. The following table shows the number of participants categorized by school and group.

<Table 1-3> Kenyan Survey Participants

School	Student	Parent	Teacher	Total
Jehova Jire	30	10	5	45
Eileen	6	3	5	14
Nakuru West	30	10	5	45
Rurii	25	11	5	41
Barut	30	11	5	46
Total	121	45	25	191

The revised questionnaire included the following question categories.

Kenyan Primary Schools

- Satisfaction with school building and facility
- Safety and sanitary conditions of school facility
- Satisfaction with school infrastructure in general
- Satisfaction with school supplies and equipment
- Satisfaction with interior and exterior of school building
- Enrollment rate
- Class size (students per class)
- Transition rate
- Drop-out rate
- Illiteracy rate
- Unintended effects and outcomes of the project



3. Limitations of the Evaluation Project

1) Absence of data or difficulty in obtaining data

The most difficult part of the evaluation was to collect and obtain quantitative data such as educational statistics and socioeconomic data that may be indicators of educational outcomes. Indeed, the absence of a database or a system of collecting, managing, and disseminating data in Kenya was the most challenging aspect of the evaluation. Thus, the evaluation team had to visit the sites and make requests directly to the school administrators for data such as enrollment and drop-out rates.

2) Absence of Baseline Data and Comparable Data

To gauge the effects of the project, it was necessary to have baseline data in order to compare the changes before and after the project; however, most indicators defined in the evaluation matrix did not have baseline data. It is also useful to have data from non-project areas and compare them with the data

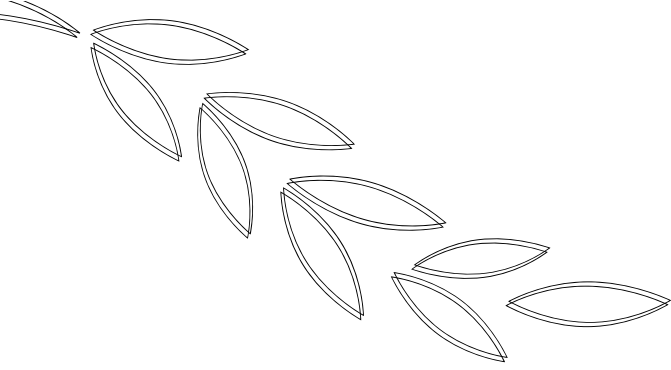
from the project areas. Again, since there were no data for non-project areas that the evaluation team could collect, such comparisons were not possible.

3) Limited Budget and Duration for Evaluation

In addition to the absence of accessible databases, the time and budget allocated for field surveys were inherently insufficient for meaningful data collection efforts. The duration for the field survey specified in the project contract was only one week, although the ten project sites were scattered around a region having about a 100 km radius.

4) Limited Access to Surveys and Interview Participants

The three project areas were considered slum areas and basic city infrastructure such as paved roads were far from being at an adequate level. Thus, the evaluation team had to select a few project sites to visit during the limited field survey period, in consultation with their Kenyan counterpart (Kenyan MOE). Also, due to security concerns, the evaluation team was advised not to visit on foot to any other sections of the town other than those guided by Kenyan officials. This might have prevented the evaluation team from collecting uncontaminated data and making unbiased judgments based on direct observations and direct contacts with the local residents.



Evaluation Frame and Matrix



II

Evaluation Frame and Matrix



1. Rationale for the Evaluation Design

As part of the evaluation design, it was necessary to first review the background of the educational infrastructure project and determine key aspects of the project to examine, which then provided the basis and rationale for the evaluation frame and matrix.

The Kenyan education system provides eight years of primary education and four years of secondary education or vocational training. Under the current administration, the Kenyan government has set a long-term goal in the area of primary education, which aims at providing all citizens with access to primary education.

Since independence in 1963, Kenya's primary school enrollment rate has steadily increased to its highest point of around 100% in 1989, though it dropped to 87.6% in 2002. After offering free tuition for primary education, the enrollment rate has recently returned to 99%. It appears that this change in education policy removed a major obstacle for parents to send their children to schools and consequently contributed to the enrollment rate increase. However, other expenses such for clothing, school supplies, and transportation remain as financial burdens to average and lower-income households.

Recent hikes in enrollment, of course, have required the construction of more schools and subsequently highlighted the problem of school shortages and deteriorated educational infrastructure. In a government investigation, only 32% of all classrooms were categorized as being "appropriate", including the fact that many classrooms

were housed in temporary buildings. Therefore, the Kenyan government and multiple official development agencies initiated an education infrastructure investment program called the Kenya Education Sector Support Programme (KESSP), which during 2005-2010 focused on the expansion and renovation of existing primary schools as one of the first-step projects.

Nevertheless, urban slums and rural areas still had difficulties implementing the national plan and securing a working budget. As to the project discussed in this evaluation report, the project sites were mainly comprised of local residents under or around the national poverty line. The areas also showed very high drop-out rates, especially in the higher-grade levels.

After considering these contextual factors, this evaluation subsequently developed an evaluation frame and matrix that focused on providing educational facilities (e. g., school buildings, classrooms, and school equipment) and their effects.

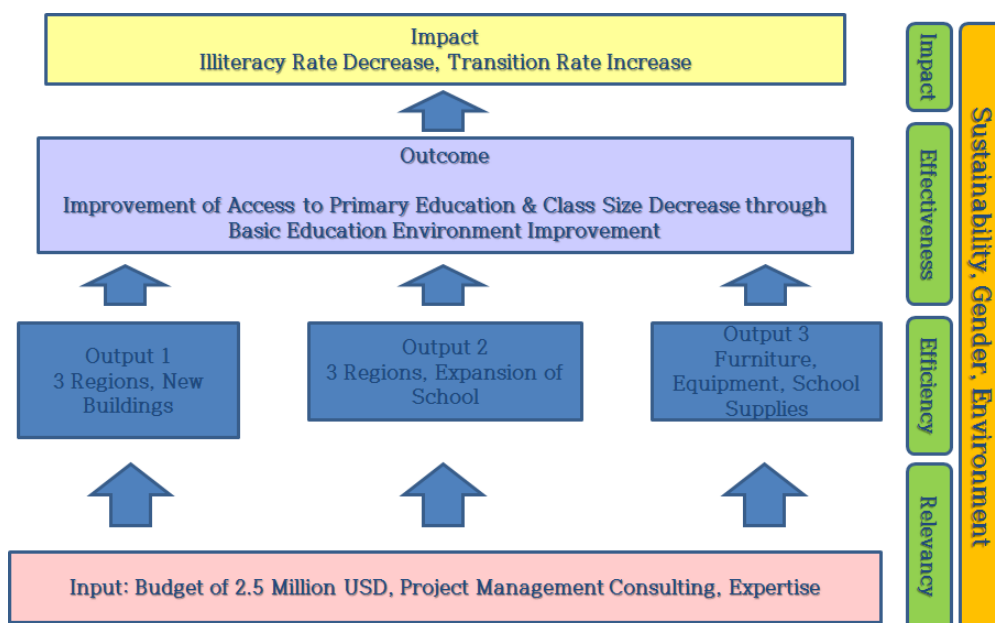


■ 2. Evaluation Frame (Result Chain)

The Kenyan educational policy prioritizes all citizen's completion of primary education and attempts to improve the primary education system in the following five areas: 1) access, 2) retention, 3) equity, 4) quality, and 5) relevance, internal and external efficiencies in the education system.

According to a feasibility study report relative to Kenyan education system improvement projects published in 2012, a vast majority of the regions in Kenya face a diverse range of conditions that incur significant challenges in providing stable education, and the infrastructure is generally well below the feasible level required for building new schools. Thus, it was suggested that future projects should aim at expanding and renovating current schools; the aforementioned KESSP project was initiated in this context and the KOICA's school expansion and renovation project was a part of such an effort.

As an educational infrastructure project, KOICA's project thus had clear objectives: improve access and reduce class size.¹⁾ These specific objectives and other effects of similar school expansion and renovation projects in general helped form an evaluation frame or result chain. In particular, the DAC's evaluation criteria were used to develop specific evaluation categories and indicators for the components summarized in the following results chain.



- The inputs were KOICA's funding, project management consulting (PMC), construction management (CM), and administrative support from KOICA's Kenya office. Also, collaboration and administrative support from Kenyan counterparts (the Ministry of Education and local education officials) were the important part of the inputs.
- Outputs included ten expanded or newly-built schools with furniture, equipment, and school supplies. In some cases, additional facilities such as a library were

1) Ministry of Education Science and Technology. (2005). Kenya Education Sector Support Programme 2005–2010: Delivering Quality Equitable Education and Training to All Kenyans. P. 1–6.

also regarded as the outputs of the project.

- Impacts are generally considered as longer-term effects that are both unintended and/or expected. As mentioned earlier, this particular project had clear objectives, where expected impacts usually included a decrease in the illiteracy rate.
- These components and their interrelations are summarized and visually presented in the result chain above.



■ 3. Evaluation Matrix

First, it is to be noted that the following matrix was based not only on the project backgrounds, goals, scope of the project, and the results chain above, but also the project design matrix (PDM) of the final report prepared by the project management consulting (PMC) team, who oversaw implementation of the project.

The evaluation categories and indicators were developed based on the DAC's five criteria and selected questions were also given as key questions in the matrix in order to further develop interviews and survey questions.

Relevancy pertains to whether the planning and implementation of the project were appropriate considering the given context, budget, constraints, and other aspects important for success of the project. Specifically, the relevancy category in this evaluation was concerned with whether the objectives were set properly according to Kenya's policies, whether the budget was adequate, whether the project sites were selected fairly and properly, and so forth.

Efficiency focuses on the construction processes and outputs based on the nature of the project.

Effectiveness is concerned with the overall outcomes. It focuses on the current states of school facilities and results of the project implementation. In addition, the number of students who enrolled and the class size reduction as a result of

the project are major indicators for determining the project effectiveness.

Impacts for this particular project include the transition and illiteracy rate changes over time, as well as other spill-over effects.

Finally, substantiality pertains to whether the benefited schools can continue to operate and provide educational services to their local communities. Specifically, issues include whether the schools can secure necessary budgets and personnel.

<Table 2-1> Evaluation Matrix

Standard	Main Question	Detailed Question
Relevance	■ Are the project objectives well-established?	▶ Are the objectives established based on a local demand research and needs analysis?
		▶ Are the objectives prioritized according to local conditions?
	■ Are the project plans organized in a way that helps to achieve the purpose of the project?	▶ Is there a close connection between the project objectives and the project plans?
		▶ Is the project duration (2 years) appropriate?
		▶ Is the budget for the project (USD 2.50 million) appropriate?
	■ Is the target area appropriate for the project?	▶ Are the criteria for selecting the target areas (Nairobi, Nakuru, and Thika) reasonable?
		▶ Is the decision-making process for selecting the target areas reasonable ?
	■ Are the beneficiaries well-chosen?	▶ Are criteria for selecting the beneficiaries (students, parents, teachers, local residents / ten schools) reasonable?
▶ Is the decision-making process for selecting the beneficiaries reasonable?		
Efficiency	■ Are the project outputs efficient when the total input is considered?	▶ Are the project outputs efficient when the total input is considered?
		▶ Were any measures for increasing the efficiency of the resources found?
	■ What is the structural reason of the increase/decrease of efficiency?	▶ Are there any conventional/structural factors that would make the project more efficient?
		▶ Are there any conventional/structural factors that would make the project less efficient?

<Table 2-1> continued

Standard	Main Question	Detailed Question	
Effectiveness	<ul style="list-style-type: none"> ■ 【Construction and rehabilitation of primary schools】 Has the construction (or rehabilitation) in the three regions been completed properly? 	Has building construction been well-completed both inside and outside (fence, wall, floor, doors, windows, etc.)?	▶ Was the school fence construction successful?
			▶ Was the building wall construction successful?
			▶ Was the construction of the interior of the building successful?
			▶ Was the roof construction successful?
			▶ Was the floor construction successful?
			▶ Were the doors well-constructed?
			▶ Were the window structures well constructed?
			▶ Is the building safe?
		Is the school building safe and clean?	▶ Are the hygienic conditions of the building satisfactory?
		Are the facilities convenient to use?	▶ Are the classrooms convenient to use?
▶ Is the staff room convenient to use?			
▶ Is the library convenient to use?			
Effectiveness	<ul style="list-style-type: none"> ■ 【Supply of educational equipment】 Have the educational equipment including desks and chairs been well-supplied? 	Is it easy to use the educational equipment?	▶ Is it handy to use the desks and chairs in the classrooms?
	▶ Is it handy to use the desks and chairs in the library?		
	▶ Is it handy for the staff to use the desks and chairs ?		
	▶ Are the educational equipment convenient to use?		
Effectiveness	<ul style="list-style-type: none"> ■ Are the beneficiaries content with the project outcomes? 	Are you content with the improved educational environment and the supply of educational equipment?	▶ Are the improvements in the external environment of school satisfactory?
	▶ Is the improvement in the internal environment of school satisfactory?		
	▶ Has the library been satisfactorily improved?		
	▶ Has the staff room been satisfactorily improved?		
	▶ Are the desks and chairs provided appropriate?		
	▶ Are the educational equipment appropriate?		

<Table 2-1> continued

Standard	Main Question	Detailed Question
Impact	<ul style="list-style-type: none"> ■ 【Improving the basic educational setting】 Has the rate of school enrollment increased in the areas? 	<ul style="list-style-type: none"> ▶ Has the rate of school enrollment increased after the project? ▶ Has the number of students per class decreased after the project? ▶ Has the entrance rate for higher education increased after the project? ▶ Has the drop-out rate for students decreased after the project?
	<ul style="list-style-type: none"> ■ 【Improving the basic educational setting】 Has the illiteracy rate decreased in the areas? 	<ul style="list-style-type: none"> ▶ Has the illiteracy rate decreased after the onset of the project?
	<ul style="list-style-type: none"> ■ 【Ripple effect】 Are there any ripple effects found, aside from the project objectives? 	<ul style="list-style-type: none"> ▶ Were any conventional changes aside from the original objectives found? ▶ Were any ripple effects aside from the original objectives found?
Sustainability	<ul style="list-style-type: none"> ■ How viable is the local condition for continuous implementation of the project? 	<ul style="list-style-type: none"> ▶ Is the financial condition good enough to operate and maintain the primary schools? ▶ Is the labor supply and demand condition sufficient for continuous operation of the primary schools?
	<ul style="list-style-type: none"> ■ What kind of measures have been taken to endure the sustainability of the project? 	<ul style="list-style-type: none"> ▶ Is there any additional budget allotted for the maintaining and managing the project?
		<ul style="list-style-type: none"> ▶ Has a labor supply and demand plan been established for the maintenance and management of the project?
		<ul style="list-style-type: none"> ▶ Do measures undertaken have a close connection with the recipient country budget and labor concerns? ▶ Have available alternatives to make the project sustainable been thoroughly examined?



Evaluation Results



Evaluation Results



1. Field Survey Results

1) Field Survey Schedule

Duration: Seven days (August 18 - 25, 2012)

Date	Place	Main Activities
8/18 (Sat.)	Incheon	Depart from Incheon International Airport (KE959)
8/19 (Sun.)	Nairobi	Arrive in Nairobi
8/20 (Mon.)	Nairobi	Interview Preparation
8/21 (Tue.)	Nairobi	A.M. Attend kick off meeting at Ministry of Education, Kenya. Have an in-depth interview with a representative of the Ministry of Education(person involved in the same project i.e, person in charge of the school infrastructure programs) Have an in-depth interview with the director of education in the city of Naitobi after the kick off meeting on 8/20. Visit and talk with the people in the KOICA office in Nairobi.
		P.M Visit Jehoba Jire Primary School, field study, in-depth interview, focus group interview.
8/22 (Wed.)	Nakuru	A.M. Have an in-depth interview with the director of education at Nakuru City Hall Visit Barut Primary School, field study, in-depth interview.
		P.M Visit Nakuru West Primary School, field study, in-depth interview. Have a business meeting with a representative of the local constructor or other relevant person in charge(representative from the Danaff Kenya Company ChangWu, Deng)
8/23 (Thu.)	Thika	A.M. Have an in-depth interview with the director of education at Thika City Hall Visit Umoja Primary School, field study, in-depth interview.
		P.M Visit Rurii Primary School and have an in-depth interview with a person in charge of primary education, field study, in-depth interview, focus group interview.
8/24 (Fri.)	Nairobi	Depart from Nairobi(KE960)
8/25 (Sat.)	Incheon	Arrive in Incheon

2) In-Depth Interviews

(1) KOICA

- Date: 2012 July 30, August 2
- Venue: KOICA Headquarters, Seongnam, South Korea
- Participants
 - Hangjoo Kim, Fmr. Director of KOICA Kenya Office
 - Jeonghwan Suh, Program Manager, East Africa Team, KOICA,
 - Jinho Lim, Education Specialist, Social Program Team, KOICA

Summary of Notable Comments

- In most cases, little or no data are available from schools. You may need to ask the Ministry of Education for most data needs.
- Schools were built in the outskirts of cities and towns where not much was around. So, we [KOICA] did not need to spend a lot for nice buildings or fancy facilities. Rather, a reliable structure was our priority, in addition to providing basic necessities such as classroom furniture, school supplies, and equipment.
- After the project was completed, class sizes were reduced (which helped solving problem of overcrowded classes).
- Check Points for the Ex-Post Evaluation:
 - Determine if the building was well-constructed and good for use
 - See changes due to the projects (e.g., enrollment rate changes after schools were built)
 - Discuss what future projects should be investigated in addition to school buildings
 - Discuss recommendations for future projects
- Feasibility should be the focus for construction projects
- Subsequent projects will focus more on building capacities rather than additional construction projects. Thus, this evaluation should be more concerned about construction management and the operation of schools.
- Current school conditions seem to depend on the will (or capacity) of the principals. Need to identify factors that affect the operation and maintenance of schools. Also, make recommendations for good maintenance practices.
- When constructed or expanded, schools usually end up being similar to other schools around them because the recipient country's expectations and local preferences were taken more into account than other considerations.
- It is a construction project from KOICA's perspective. Follow-up projects should include capacity building or more software-focused projects such as teaching and administrative capacity development.
- Two points that must be checked:
 - Determine if the objectives of the projects were met: feasibility, limitations, outputs, and actual outcomes should be clearly and objectively identified and explained.
 - Discuss implications for improvement (in terms of project effectiveness and efficiency).
- Additional considerations for evaluation
 - Toilets without proper sewer system.
 - Water tanks that are not in use for unknown reasons.
 - Computers that are not in use due to disconnection from the grid.

- In terms of sustainability, there were issues that might have prevented some facilities from being used in the first place. Issues potentially include the absence of an adequate needs assessment and/or operational oversight of the school administration.
- Management and quality of operation depends on capacity of personnel. Human resource development (e.g., teacher training) may be the most important aspect.
- School projects should not just pertain to the construction of school buildings. Education should contain meaningful contents that accommodate the country's circumstances and also reflect their culture (social and educational).

(2) Kenyan Ministry of Education (MOE)

- Date: 2012 August 20 (Tue.)
- Venue: Kenyan Ministry of Education
- Participants
 - Mrs. Leah Rotich, Director Basic Education
 - Mr. Philip Yator, Deputy Director of Education
 - Mrs. Sarah Kinyanjui, Senior Assistant Deputy Director of Education
 - Mr. Musa Wambua, Assitant Deputy Director of Education
 - Ms. Moonjeong Choi, Director of Kenya KOICA Office

<Figure 3-1> Interview Scene



Summary

- The evaluation team and purpose of the evaluation project were introduced and briefed to the participants.
- The Kenyan MOE agreed to provide necessary administrative support for the evaluation and ensure liaison with local MOE offices. The Deputy Director, Mr. Yator accompanied the evaluation team.
- MOE officials sincerely appreciated the project, which provided improved educational services with new or expanded schools in the areas of Nairobi, Thika, and Nakuru.
- In particular the students, parents, and teachers alike are very satisfied with the improved schools. Also, they emphasized the fact that there had been positive changes in the regions (e.g., the enrollment rate and transition rate increased, and drop-out rate decreased).

(3) City Education Department, Nakuru

- Date: 2012 August 21 (Wed.)
- Venue: City Education Department, Nakuru
- Participants
 - Mrs. Millicent A. Yugi, Municipal Education Officer
 - Mr. Philip Yator, Deputy Director of Education
 - Mr. Denis. B. Wasike, Executive Manager of Danaff Kenya (construction company)

<Figure 3-2> Interview Scene



Summary

- Nakuru's enrollment rate has grown rapidly and, as a result, required the construction of more primary schools. The urgent need for more classrooms was adequately addressed by the expansion of three schools in the area, which was also widely appreciated by the local residents.
- The project sites were among those of the greatest need in Nakuru, where there were more school-aged children than the rest of Nakuru and where the school facilities were more deteriorated than most of the other schools in Nakuru. It was claimed that the enrollment rate, student achievement, and local residents' pride in the schools and their region were improved after the project was completed.

(4) City Education Department, Thika

- Date: 2012 August 22 (Thur.)
- Venue: City Education Department, Thika
- Participants
 - Mr. F.L. Songole, Municipal Education Officer
 - Mr. Philip Yator, Deputy Director of Education
 - Mrs. Sarah Kinyanjui, Senior Assistant Deputy Director of Education
 - Mr. Denis. B. Wasike, Executive Manager of Danaff Kenya (construction company)

<Figure 3-3> Interview Scene



Summary

- Since the construction of a nearby highway, Thika has experienced a rapid growth in population. Like Nakuru, the expansion of the three primary schools was considered an appropriate response to the educational needs. Notably, the newly-built Rurii Primary School, which only used to have 20 students, now educates 500 students, making the local residents very satisfied.
- The main selection criteria for the project site were: 1) the population, especially the school-aged population, and 2) the absence of a primary school within a certain radius.

3) Surveys

Surveys (student, parent, and teacher survey) used the following five-point Likert scale to measure the respondents' satisfaction of the project.

0	1	2	3	4	5
Not Applicable	Very Unsatisfied	Unsatisfied	Neutral	Satisfied	Very Satisfied

(1) Student Surveys

First, the results of the student survey are as follows.

<Table 3-1> Kenya Student Survey Results

Item		J	N	B	E	R	Avg.
■ Has the building construction been well-completed both inside and outside?	▶ Was the school fence construction successful?	4.2	4.8	2.6	0.0	1.9	2.7
	▶ Was the building wall construction successful?	3.8	4.5	4.4	4.0	2.2	3.7
	▶ Was construction of the interior of the building successful?	4.2	4.0	4.4	4.0	3.4	4.0
	▶ Was the roof construction successful?	4.6	3.8	4.6	4.0	3.9	4.1
	▶ Was the floor construction successful?	4.5	2.6	4.1	3.8	3.4	3.6
	▶ Were the doors well-constructed?	4.1	4.4	4.0	4.0	2.7	3.8
	▶ Were the window structures well-constructed?	4.2	3.2	3.6	4.0	2.2	3.4

<Table 3-1> continued

	Item	J	N	B	E	R	Avg.
■ Is the school building safe and clean?	▶ Is the building safe?	4.4	3.8	4.8	4.0	3.3	4.0
	▶ Are the hygienic conditions of the building satisfactory?	4.1	3.4	4.2	4.0	3.0	3.7
■ Are the facilities convenient to use?	▶ Are the classrooms convenient to use?	4.4	4.2	4.7	4.1	4.0	4.2
	▶ Is the library convenient to use?	3.1	0.8	3.0	3.0	1.5	2.2
■ Is the infrastructure well-built?	▶ Is the water system working?	4.5	2.0	1.8	2.3	3.7	2.8
	▶ Is the sewage system working?	3.1	1.3	2.1	0.0	2.4	1.7
	▶ Do the schools have a stable supply of electricity?	4.1	3.0	4.4	4.0	2.5	3.6
	▶ Is the interior light satisfactory?	3.2	2.7	4.2	4.0	2.7	3.3
	▶ Do the schools have decent toilet facilities?	2.9	1.5	2.5	1.0	2.5	2.0
■ Is it easy to use the educational equipment?	▶ Is it handy to use the desks and chairs in the classrooms?	3.8	3.1	3.8	4.8	3.2	3.7
	▶ Is it handy to use the desks and chairs in the library?	3.3	0.9	3.1	4.1	1.7	2.6
	▶ Are the educational equipment convenient to use?	4.2	4.0	4.2	3.5	3.2	3.8
■ Are you content with the improved educational environment and the supply of educational equipment?	▶ Are the improvements in the external environment of school satisfactory?	4.3	4.6	3.5	3.5	3.0	3.7
	▶ Are the improvements in the internal environment of school satisfactory?	4.2	4.6	4.2	3.5	3.0	3.9



Summary of Student Survey Result

- The average of 3.6 indicates that the students are generally satisfied with the school building.
- Among the school facilities, the students seemed to be quite satisfied with the classroom, as the average of 4.2 is the highest among all survey items.
- Among the school facility items, the water supply and sewer system earned a very low average point, at 2.32 for the five schools surveyed.
- Satisfaction with the classroom furniture was 3.7, which indicates that the students are quite satisfied with the new desks and chairs in their classrooms.
- The items pertaining to toilets in their schools had the lowest average, at 2.0.

(2) Parent Surveys

The results of the survey for the parents with children in the project schools are as follows.

<Table 3-2> Kenya Parent Survey Results

	Item	J	N	B	E	R	Avg.
■ Is the school building safe and clean?	▶ Is the building safe?	4.3	4.8	5	4.3	3.9	4.4
	▶ Are the hygienic conditions of the building satisfactory?	3.5	4.4	4.8	4.0	4.1	4.1
■ Are you content with the improved educational environment and supply of educational equipment?	▶ Is improvement in the external environment of the school satisfactory?	4.0	4.6	2	4.0	3.6	3.6
	▶ Is improvement in the internal environment of the school satisfactory?	4.1	4.7	4.9	4.6	3.0	4.2
	▶ Has the library been satisfactorily improved?	2.7	0.0	4.2	4.0	2.1	2.6

<Table 3-2> continued

	Item	J	N	B	E	R	Avg.
■ 【Improving local hygiene】 Has the sanitary conditions of the local residents improved in the areas?	▶ Do the improvements help students have better hygienic conditions?	1.7	4.2	4.6	4.0	2.9	3.4
	▶ Do the improvements contribute to an improved local hygiene?	1.3	3.9	4.7	4.0	3.4	3.4
■ 【Ripple effect】 Are there any ripple effects obtained aside from the project objectives?	▶ Have any conventional changes been obtained aside from the original objectives?	1.9	2.1	4.9	3.3	3.1	3.0
	▶ Have any ripple effects been obtained aside from the original objectives?	2.0	2.1	3.0	3.6	3.0	2.7



Summary

- The parents are satisfied with school building exterior (average of 3.6)
- The parents are satisfied with the school interior (average of 4.2)
- The parents are generally satisfied with the school building (average of 3.95), which indicates a high level of satisfaction with the improvements made in terms of school environment as a result of the project.

(3) Teacher Surveys

The results of the teacher survey are as follows.

<Table 3-3> Kenya Teacher Survey Results

Item		J	N	B	E	R	Avg.
■ Has the building construction been well-completed both inside and outside?	▶ Was the school fence construction successful?	4.4	4.2	1.6	0.8	2.6	2.7
	▶ Was the building wall construction successful?	4.4	3.6	3.0	3.8	2.8	3.5
	▶ Was construction of the interior of the building successful?	4.2	3.6	4.2	3.2	4.4	3.9
	▶ Was the roof construction successful?	4.4	3.4	4.0	4.0	4.4	4.0
	▶ Was the floor construction successful?	4.8	3	4.2	2.8	4.0	3.7
	▶ Were the doors well-constructed?	4.4	3.4	3.7	3.6	3.8	3.7
	▶ Were the window structures well-constructed?	3.8	2.4	3.4	3.8	3.6	3.4
■ Is the school building safe and clean?	▶ Is the building safe?	4.4	3.6	5.0	4.0	3.4	4.0
	▶ Are the hygienic conditions of the building satisfactory?	3.6	3.0	3.6	4.0	3.6	3.5
■ Are the facilities convenient to use?	▶ Are the classrooms convenient to use?	4.0	3.4	4.8	4.2	4.2	4.1
	▶ Is the staff room convenient to use?	3.4	4.0	4.6	4.0	4.2	4.0
	▶ Is the library convenient to use?	2.2	0.0	2.0	2.8	2.4	1.8
■ Is the infrastructure well-built?	▶ Does the water system work?	4.6	0.6	1.0	0.8	4.2	2.2
	▶ Does the sewage system work?	3.0	0.6	0.8	0.5	3.6	1.7
	▶ Do the schools have a stable supply of electricity?	1.4	1.8	4.8	4.2	3.8	3.2
	▶ Is the interior lighting satisfactory?	2.0	1.0	4.6	4.4	4.0	3.2
	▶ Do the schools have decent toilet facilities?	2.4	0.4	1.2	1.0	3.7	1.7
■ Are the facilities convenient to use?	▶ Are the classrooms convenient to use?	3.0	0.0	1.0	3.0	0.6	1.5
	▶ Is the staff room convenient to use?	3.8	1.6	3.2	4.2	3.2	3.2
	▶ Is the library convenient to use?	4.2	3.4	3.2	2.4	3.0	3.2

<Table 3-3> continued

Item		J	N	B	E	R	Avg.
■ Are you content with the improved educational environment and the supply of educational equipment?	▶ Are the improvements in the external environment of the school satisfactory?	3.8	3.6	3.4	2.8	3.4	3.4
	▶ Are the improvements in the internal environment of the school satisfactory?	4.0	3.4	4.4	3.0	3.4	3.6
	▶ Was the library satisfactorily improved?	1.8	0.0	1.8	3.0	0.6	1.4
	▶ Was the staff room satisfactorily improved?	4.0	3.6	3.6	3.6	3.4	3.6
	▶ Are the provided desks and chairs satisfactory?	3.6	0.8	2.6	3.6	3.6	2.8
	▶ Are the educational equipment satisfactory?	4.8	2.6	2.0	2.6	3.6	3.1
■ Has the school enrollment increased in the areas?	▶ Has the school enrollment increased after the project?	4.6	4.2	4.8	4.6	4.6	4.5
	▶ Has the number of students per class decreased after the project?	0.6	1.6	2.2	2.7	1.6	1.7
	▶ Has the entrance rate for higher education increased after the project?	2.8	4.0	4.8	4.0	2.4	3.6
	▶ Has the student drop-out rate decreased after the project?	2.8	2.2	4.0	4.2	1.2	2.8
■ Has the illiteracy rate decreased in the areas?	▶ Has the illiteracy rate decreased after the onset of the project?	3.2	2.2	4.4	4.2	4.6	3.7
■ Have the sanitary conditions of the local residents improved in the areas?	▶ Do the students have better hygienic conditions?	3.6	3.6	3.7	3.6	4.4	3.7
	▶ Have these changes contributed to improvements in the local hygiene?	3.2	3.6	4.0	3.6	4.2	3.7
■ Are there any ripple effects aside from the project objectives?	▶ Have any conventional changes been obtained, aside from the original objectives?	4.2	1.2	3.4	3.8	3.8	3.2
	▶ Have any ripple effects been obtained, aside from the original objectives?	3.2	0.4	2.8	4.0	3.0	2.6

Summary

- The school fence, side wall, interior, and exterior of the school building earned a five-school average of 3.6, which indicates an overall satisfaction.
- The classrooms, teachers' office, and other administrative facilities earned about 4.1 points, which can be considered high.
- The reported increased enrollment rate and corresponding satisfaction level was also high, as the average for the enrollment rate increase was 4.5.
- The water supply earned quite low points, as the average of 1.9 indicates dissatisfaction.
- The toilets in the school earned the lowest points (average of 1.7), which can be a strong signal for the need to further improve toilets and other sanitary facilities.



2. Evaluation Results by the Five DAC Criteria

1) Relevance of Project Objectives and Selection of Project Sites

(1) Project Objectives and Selection of Project Sites

As a part of Kenya's ambitious education infrastructure investment program, this USD 2.5 million project was the first education sector project funded and implemented by KOICA.

The project aimed to provide necessary facilities and improve the school environment for primary education in cities and towns where access to education is limited. In brief, the project objectives were set appropriately and clearly stated based on consideration of the both risks and opportunities associated with the project.

The project site selection was based on the educational needs of the selected areas, in which the selection process included collaboration with the Kenyan MOE. The selection criteria considered at the time included the school-aged population, poverty level, current state of education infrastructure, and absence of public schools in the area. In addition, there was also a consideration of the urgency of educational needs and expected ratio of output versus input.

Interviews with MOE officials indicated that the students, parents, and teachers were generally satisfied with the project (satisfaction among all affected groups was also confirmed by in-depth interviews and surveys).

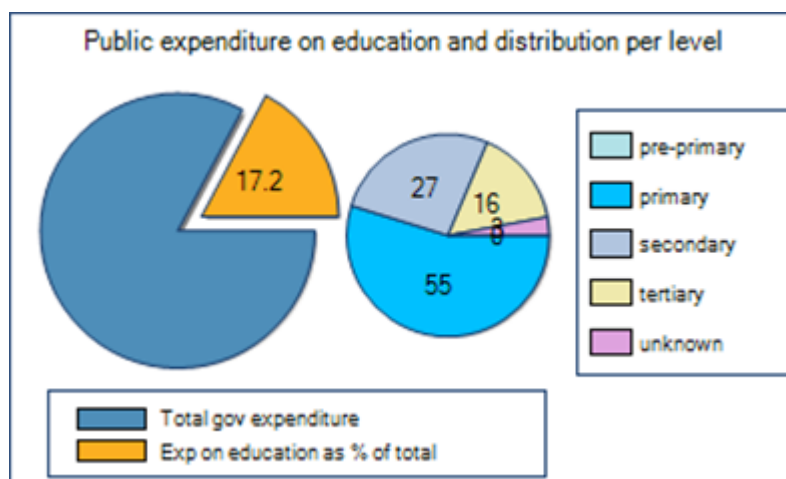
For instance, Thika's population had grown rapidly as the highway passing the city was recently completed and as such they needed a lot more classrooms. This urgent need was effectively addressed by KOICA's project, which expanded Thika's three existing schools (rather than building new schools) in order to accommodate a larger number of children.

(2) Relevance to Kenya's Educational Policy

The government of Kenya introduced a sector-wide approach to the national development strategy and applied this new approach to the education sector in 2004. As part of this effort, the Kenyan government developed the Kenyan Education Sector Support Programme (KESSP, 2005-2010) and began to provide free-of-charge primary education.

Based on this initiative, the education expenditure was 17.2% of the 2006 national budget, with primary education using 55% of the total education expenditure.

<Figure 3-4 Public Expenditure>



Source: UNESCO INSTITUTE for statistics

During 2010-2012, USAID and the Kenyan government initiated Decentralized Education Management Activity (DEMA) in order to support KESSP; DEMA established a network of 4,000 local education offices to provide various specific services to local schools depending on their needs. KOICA's project was a part of KESSP in accordance with DEMA, and the evaluation team concluded that the project was appropriate and relevant to Kenyan education policies.

(3) Relevance to the Millennium Development Goals

The Millennium Development Goals (MDGs) were established by the UN in order to promote international awareness and participation in collaborative efforts to help resolve key issues that most developing countries are facing. The MDGs are widely adopted as overarching goals for international development programs by official development assistance (ODA) agencies. Specifically, the MDGs include eight goals that the international community has agreed to achieve by 2015, and they are:

- Eradicate extreme poverty and hunger,
- Achieve universal primary education,
- Promote gender equality and empower women,
- Reduce child mortality rates,
- Improve maternal health,
- Combat HIV/AIDS, malaria, and other diseases,
- Ensure environmental sustainability, and
- Develop a global partnership for development.

The current KOICA project began with the specific goal of improving access to primary education in Kenya, whose goal for the umbrella program was the second MDG, “achieving universal primary education.” Thus, it was deemed that the KOICA project determined its objectives appropriately.

2) Efficiency: Project’s Input-Output Ratio

The total budget of the project was USD 2.5 million, which was divided into ten sub-projects pertaining to school expansion/construction. The ten selected schools had different project scopes, and the different inputs were allocated accordingly. Expansion included the construction of additional classrooms, expansion of school facilities (e.g., administrative office, teacher’s staff room, library), renovation of existing facilities, and provision of school equipment, supplies, and classroom furniture. The following table summarizes the inputs of the 10 schools.

<Table 3-4> Investment amount by school

School	Number of newly-built classrooms	Number of reconstructed classroom	Total number of classrooms	Investment amount(USD)
Jehova Jire		15	15	228,430
Athi	9	3	12	154,419
Maua	2	5	7	93,308
Ngundu	4	5	9	144,009
Barut	8		8	234,676
Nakuru West	4	3	7	174,620
Eileen	4	8	12	214,805
Rurii	12		12	327,242
Umoja Thika	4	9	13	166,473
Kiboko		8	8	88,721
total	47	56	103	1,826,703

The scope of the project was mainly determined based on the urgency of the needs and the current state of the school environment. The priority of the project was also given, which was to meet at least the bare minimum requirement: daily operation of the school. In other words, the project aimed to provide classrooms and a school environment in which students could take classes and learn without significant obstacles. Given the limited resources, the decision to support nine existing schools for expansion and renovation (with the exception of one newly-constructed school) was deemed appropriate in terms of maximizing output.

However, the following findings seem to suggest that the project efficiency could have been improved. Access to the project site was the first challenge among many. Many sites were far from Nairobi and were located in underdeveloped areas where no or little infrastructure existed. The ten project sites were miles apart from each other and the connecting roads were often unpaved. In addition, the crime rate was high near most project sites, incurring major concerns for the safety of construction workers and staff, construction site security, and issues

pertaining to the storage and transportation of materials, In fact, the local construction company that managed the construction processes reported a financial loss of approximately 5-10% due to these reasons. Since it was the priority of the project to place schools in underdeveloped areas such as slum areas, such losses might be inevitable to a certain point. However, in order to minimize any possible losses and to overcome difficulties associated with the project locations, appropriate measures should have been taken into account from an early stage of the project such as reducing the number of project sites for more efficient project management.

3) Effectiveness of Project Implementation

(1) Construction

Classrooms seemed to be well-constructed. The interior—walls, floors, and ceilings—was functional and seemed to provide a secure learning environment. However, there were several cases of deteriorated conditions that required more effective maintenance, such as floor breaks, ceiling leakages, and cracks in walls.

<Figure 3-5> Leakage on ceilings



Classroom doors and other doors were well-made instandard sizes, and were well-made and seemed to be reliable. However, the window grids were large and made of weak materials, which might be vulnerable to break-ins and other accidents. Indeed, although several schools were located in high-crime areas, security measures such as windowbars and reliable door locks were not properly put in place. In such schools, the library and other facilities did not have any books and equipments. And though it is unclear whether the lack of security was the problem, the loss of school property and some maintenance issues were evident.

Interviews with principals also reaffirmed the security issue, as they expressed their dissatisfaction related to security problems such as the vulnerable windows. Notably, 6% of the responses to an open-ended survey item (total of 494 responses) indicated dissatisfaction with the school security, especially regarding inadequate windows and school fences.

<Figure 3-6> Lattice spacing of the windows



A single contractor managed all ten construction sites to ensure that the quality of work should be the same. However, the maintenance of each of the schools did appear to be different since it became clear that the current conditions of

the ten schools varied noticeably.

Surprisingly, though all schools had electric wires installed, most were not connected to the electrical power grid. Furthermore, most computers and other electric equipment showed no signs of use at the time of the evaluation team's visit. Indeed, this equipment appeared to have been neglected for a long time.

Due to the conditions of Kenya's general infrastructure, such as water, sewer, and power systems, in addition to the abovementioned security problems, some of the intended outcomes for improving the school environment were not observed, such as the unused computers and neglected library.

(2) School Supplies, Equipment, and Furniture

Similar to the interior school conditions, classroom furniture was also observed to be broken, lost, and ill-maintained to different degrees depending on the schools. In some cases, the conditions were much worse than those of the other schools, though there was one school that displayed good maintenance conditions.

As for the student desks and chairs, a single company had manufactured all of them in Kenya. This company did not use a standardized mass production method but rather handmade the desks and chairs using lumber. According to the Deputy Director of the Kenyan MOE, varying maintenance conditions were due to: a) inherent quality variations in the handmade furniture, and b) lack of perceived responsibilities for maintenance among teachers and school administrators.

In response to a related interview question, the principal of Jehova Jire Primary School said that desks and chairs were uncomfortable for the students. During the in-depth interviews, teachers also said the desks and chairs did not fit the sizes of their students.

In short, the following should be considered when planning to provide classroom furniture: there is a need to a) promote user's awareness and responsibility of school property, b) control the quality of the furniture, and c) provide desks and chairs

in different sizes relative to student body sizes (e.g., grade or age can be a factor).

(3) Beneficiary Satisfaction Surveys

In general, all beneficiary groups (students, parents, teachers, and school administrators) reported satisfaction in the surveys. The results suggested that they were satisfied with the increase of capacity due to classroom expansion and with the improvement of the classroom environment (interior, desks, and chairs). As mentioned earlier, however, only five schools participated in the beneficiary survey.

Several notable points include the following: the student survey produced an average of 4.28 pertaining to the use of classrooms, and 3.74 for the desks and chairs. The parents from the five participating schools gave 4.26 to the interior improvement as a clear indication of their satisfaction. The safety of school facilities in general also earned 4.08 from the parents.

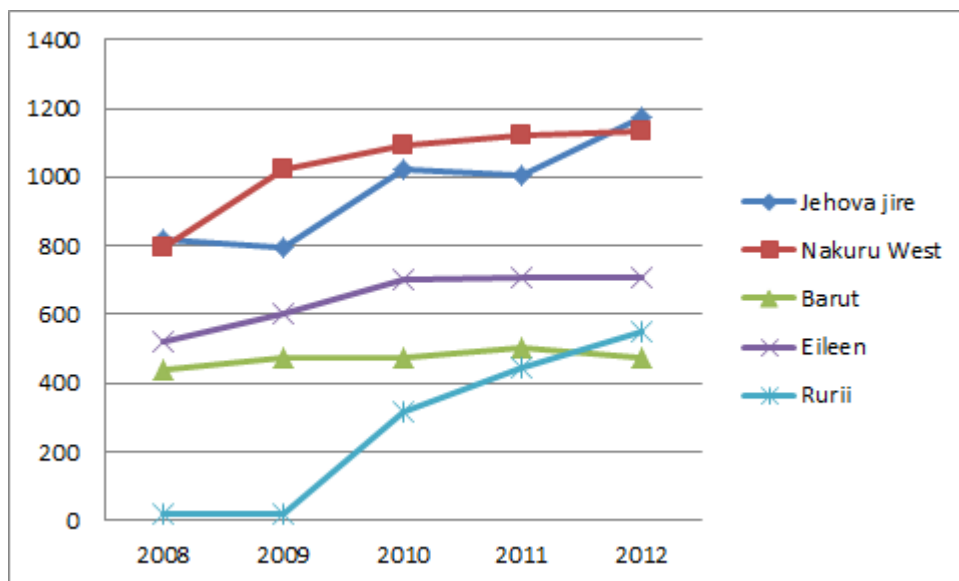
(4) School Environment Improvements

After the project was completed, all five schools where the evaluation team visited showed increased enrollment, based on data the schools provided; the survey results confirmed the enrollment increase. The survey item that asked about the enrollment rate increase earned an average of 4.56 from the five schools that participated in the survey. Thus, the objective of increasing enrollment appeared to be achieved.²⁾

The evaluation team was able to obtain enrollment data from some schools, showing the number of students enrolled from 2008 to 2012, as shown below. Despite some overall differences, the upward trend in enrollment is clear.

2) Official statistics such as enrollment rate for a given time period were not available for the evaluation team at the time. The evaluation team, thus, made an effort to obtain some hard data from local education offices and school administrators and was able to successfully gain the data in some cases.

<Figure 3-7> The number of students in each elementary schools (2008-2012)



Source: Data collected from local education office and school administrators.

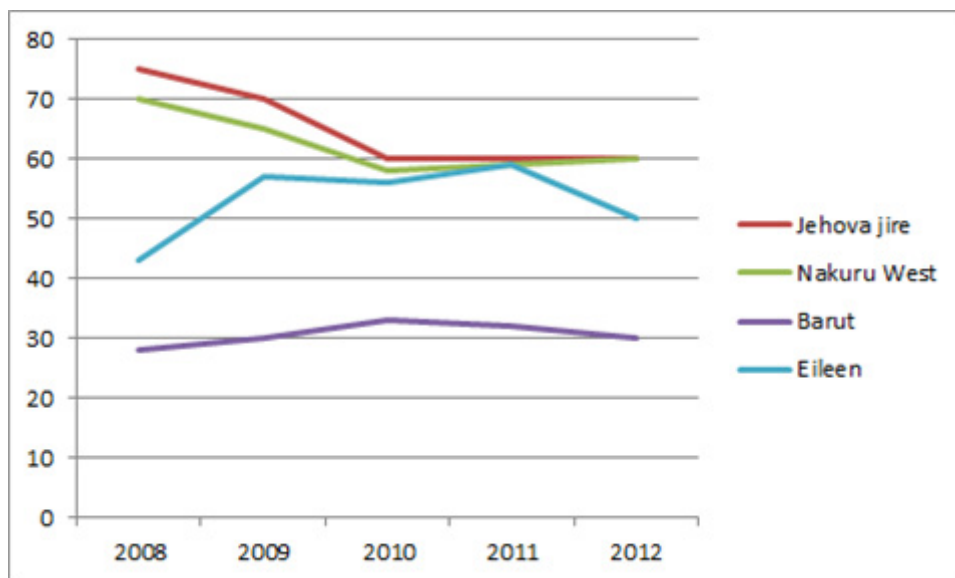
All five schools achieved net gains in enrollment. The average increase in enrollment was approximately 60% with all five schools and 38% without Rurii, which had only 17 students to start with in 2008 and reached 30-fold increase in 2012. The increase in enrollment rate was 43% in Jehova Jire, 43% in Nakuru West, 8% in Barut, and 37% in Eileen.

Expansion of school facilities appeared to help solve the problem of overcrowded classes. For example, in Jehova Jire Primary School, the number of students per class decreased from 70-75 to 60 after the project, according to the principal. Other schools showed similar patterns, and the class sizes changed from 2008 to 2012 as summarized in the chart below.

Class size and the enrollment may be inversely related if there were no change in school capacity. As such, the schools the evaluation team visited added classrooms so that increased enrollment did not adversely affect the class size. In general, the project intended to increase the enrollment by adding capacity,

while concurrently not worsening the problem of overcrowded classes. Thus, the project appeared to achieve both objectives.

<Figure 3-8> The number of students per class(2008-2012)



Source: Data collected from local education office and school administrators.

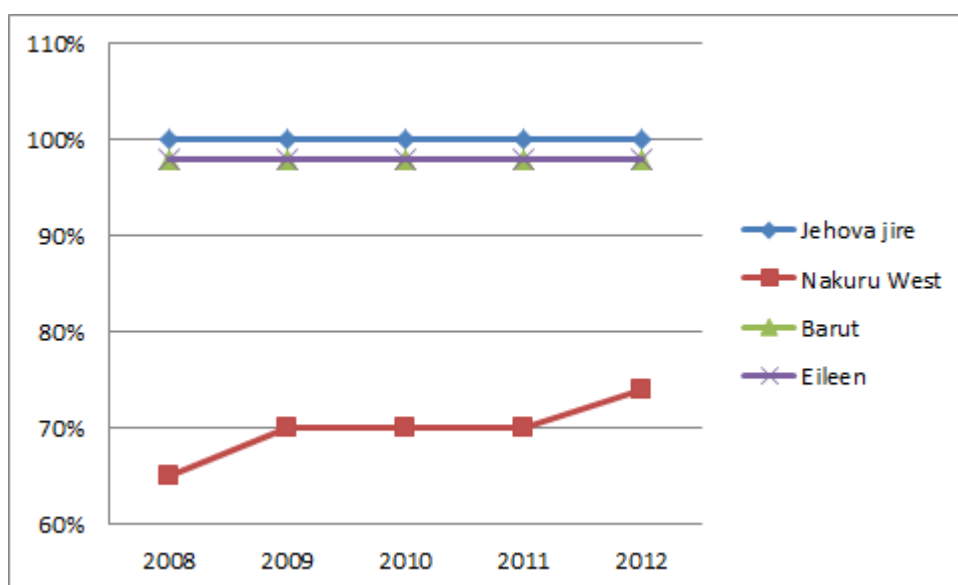
Also, the improved school environment appeared to help reduce the drop-out rate. For instance, drop-out rates collected by five participating schools ranged from 0 to 2%. The rates were lower than the figures reported in the feasibility study, and responses to the survey and interviews also indicated lowered drop-out rates. However, the reliability and accuracy of the drop-out data that schools collected themselves was in question. Thus, it would be premature to make any definite interpretation based on the drop-out data. Nonetheless, to this end, school officials reported that the project may have positively affected students' academic achievement.

4) Impacts

The evaluation team obtained the transition rate data from four schools and found that all schools either increased or maintained their transition rates.³⁾

Those who reported a maintained transition rate in 2012 already had a high transition rate in 2008. For instance, Jihova Jire Primary School maintained a 100% transition rate since 2008, and consequently reported no increase in transition rate in the survey (a corresponding survey item produced an average of 2.8 from all 10 schools). The following chart summarizes the transition rate data from the four schools.

<Figure 3-9> Enrollment rate(2008-2012)



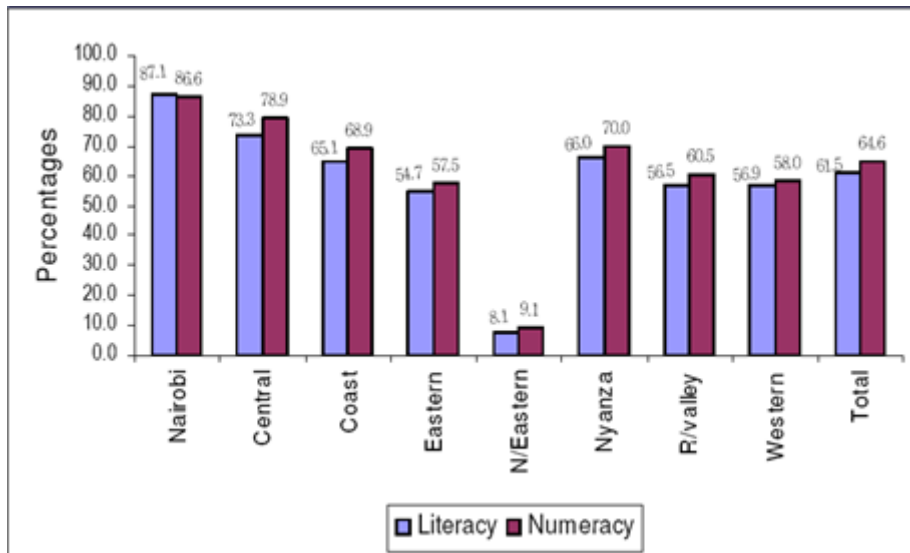
Reducing the illiteracy rate was one of the impacts considered when the project was conceived. Although there was no direct indicator of illiteracy of the project sites and the surrounding areas, the following data may be an indicator of the project's impact on literacy.

³⁾ See the Appendix.

First, the enrollment rate steadily increased across the board, as discussed earlier. Second, the drop-out rate was improved, with most primary schools now reporting 0-2% drop-out rates. Third, the transition rates from primary to secondary education were above 70% in the four project schools that the evaluation team was able to collect data from (Jehova Jire, Nakuru West, and Eileen schools reported rates above 90%). Based on a KOICA report, 70% is the national transition rate goal, one that most schools in Kenya have yet to reach.⁴⁾

Finally, the average response to the survey question, "Has the illiteracy rate decreased?" was 3.7. If Kakuru's survey results are excluded, the average is above 4, which can be considered a strong indicator of decreased illiteracy rate. However, it is important to note that the 2012 official illiteracy rate is still 2.5-5%, which is unchanged from 2008, and thus there is a need to be cautious when interpreting the results presented in this report.

<Figure 3-10> Regional illiteracy rate



Source: Kenyan Dept. of Statistics. 'Adult literacy in Kenya'

According to the report, "Adult literacy in Kenya" by the Kenyan Department

4) Kenya Primary School Environment Improvement Project Feasibility Report. (2012. 3) KOICA. (p. 27)

of Statistics, the literacy rate of Kenyan adults in 2006 was 61.5%; Nairobi had the highest literacy rate with 87.1%, followed by the central area (Thika and Kakuru) with 73.3% (all three areas were included in the project area). Note, however, that there were statistical data collected before the project but no data have been made available since the project was completed.

As to the other possible impacts, the evaluation team did not find evidence for impacts on policy change. The survey question about policy changes did not yield meaningful responses ("Has the project caused any systemic changes or policy changes?").

5) Sustainability

It appeared that there were not enough resources available for the continuous operation of schools at an effective level. The Kenyan government is currently offering free-of-charge primary education to its people and has allocated resources for the maintenance of school facilities. However, in terms of a budget for sustainability, the budget did not seem to meet the operational and maintenance demands. For example, though some schools had personnel responsible for janitorial and maintenance work, the need for more manpower was evident. Furthermore, there was minimal voluntary participation of parents or local residents observed.

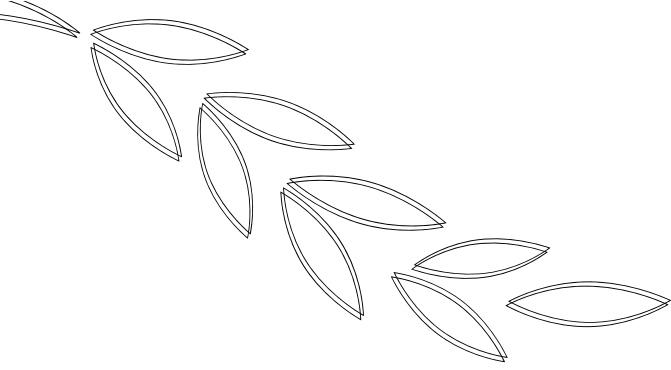
The objectives related to classroom environment, lack of measures for sustainable operation, and possibly continuous improvement seemed to threaten the primary goal of the project-improving access to primary education. For example, major improvements in the school facilities, toilets, and water supply system, not just classrooms, should also be included in a more comprehensive school environment improvement project in order to achieve the long-term goals. As the parent surveys and interviews strongly suggested, such issues are serious problems in terms of sustainability. Many parents said that they were reluctant to leave their children in a school for a long time without access to drinking water or facilities

for their basic physiological needs.

As to the libraries in some schools, there was a program for local residents to utilize the facility and its materials. In the case of Jehova Jire Primary School, however, all books were lost and the library furniture was improperly stored (ultimately becoming broken and left in disarray). Therefore, as mentioned above regarding the security issue, a comprehensive solution including proper security may be what ensures sustainability.

<Figure 3-11> Jehova Jire's library





Conclusion and Recommendations



IV

Conclusion and Recommendations



1. Evaluation Results Overview

In conclusion, the education project of interest was planned and implemented effectively and efficiently in terms of achieving the project objectives. Kenyan counterparts and all beneficiary groups expressed their satisfaction with the project in general. Specifically, they were satisfied with the environment of the school facilities, which included spacious classrooms with new desks and chairs.

However, the exclusion of toilets and an appropriate water supply system from the project was a serious miscalculation in terms of achieving the goal of this project and its umbrella project, because these components are crucial parts of making a user friendly school environment. As such, for the purpose of educational infrastructure improvement, fixing and adding toilets and a water supply may be as important as work on the classrooms.

This ex-post evaluation, therefore, has provided lessons for future education sector projects. First, various approaches should be carefully reviewed and systematically analyzed in terms of opportunities and risks relative to effectiveness and efficiency. Second, comprehensive solutions should be developed based on the systematic design of solutions and changes in order to ensure the effectiveness, sustainability, further long-term changes over time (impacts), and synergetic effects rather than multiple projects, each focusing on one or two specific objectives. For instance, a learning environment project (school renovation, equipment, and school supplies) can be coupled with other curriculum development projects. Similarly, educational content development, teacher capacity development, and school administration capacity building can be integrated into a comprehensive solution.



2. Recommendations

- 1) There is a need to predict a realistic and pragmatic budget for future projects, considering the growing educational needs in Kenya.

An important implication was highlighted regarding the number of project targets (schools or project sites in this case) and expenses per target based on the evaluation of the primary education environment renovation project. The project sites were selected mainly based on the recipient country's request and mutual agreement. During the selection process, one priority was the urgency of the need for classrooms. As such, factors in this project, often unexpected, that could affect the efficiency and total expenses were not properly considered and calculated at an appropriate time. For example, project contexts must be broken down and laid out for a thorough analysis to ensure that all possible factors be included. Neglected project contexts usually incur a significant increase in expenses and administrative havoc; this particular case showed signs of such issues. Specifically, the ten individual school projects do not cost the total spent for the entire project. In other words, a project with multiple project sites costs more than the simple sum of multiple single-school projects.

First, one contractor managed all ten project sites, although they did not have ten on-site management teams and experts dedicated to each site. As such, there were absences of a proper management authority and unwanted delays due to the need to schedule construction managers, who had to travel back and forth between project sites. Also, other possible factors reducing the efficiency and quality control could include different levels of expertise, unnecessary personnel, lack of supervision, and so forth.

Second, the absence of proper storage for construction materials and equipment was another source of increased expense. The contractor confirmed that a substantial amount of the construction materials were burglarized at some project sites. As

mentioned earlier, most project sites were located in slum areas and remote areas where no paved road connected the project sites. In some cases, the project site was not even on a map. Hence, due to the lack of proper security measures, challenging locations, and unforgiving conditions for operation, the project suffered significant losses.

For example, the actual construction cost per classroom in this project was more than USD 20,000. However, the Kenya Education Sector Support Programme (2005–2010) provided a quite different figure: USD 7,000 per classroom⁵⁾. Even though this project estimated USD 15,000 per classroom, the actual expenses well exceeded the estimated budget.

Therefore, for the future projects, every possible factor should be considered and included in the calculation when planning and budgeting. If inevitable, possible losses can be reflected in the project budget. In short, in order to minimize any possible losses and to overcome difficulties associated with the project locations, appropriate measures should have been taken into account from an early stage of the project such as reducing the number of project sites for more efficient project management.

2) There is a need to develop an integrated school space program considering students' various needs and activities in school.

The exclusion of toilets and a water supply system from the project was a serious miscalculation in terms of achieving the goal of this project and its umbrella project because they are crucial components for making a school environment user friendly. For the purpose of educational infrastructure improvement, fixing and adding toilets and a water supply may be as important as constructing new classrooms.

5) The cost for a classroom includes the administrator's office, toilet, and other basic facilities for every three classrooms. In other words, USD 21,000 is the estimated cost to build a school with three classrooms, toilets, water supply system, administrator's office, and spaces such as hallways, entrance, etc.)

This ex-post evaluation, therefore, suggests lessons for future projects in education sector. First, various approaches should be carefully reviewed and systematically analyzed in terms of opportunities and risks in order to ensure effectiveness and efficiency. Second, comprehensive programs should be developed based on the systematic design of solutions and changes in order to ensure the effectiveness, sustainability, long-term changes over time (impacts), and synergetic effects, rather than attempting multiple projects, each focusing on one or two specific objectives. For instance, a learning environment project (school renovation, equipment, and school supplies) can be coupled with program and curriculum development projects. Similarly, educational content development, teacher capacity development, and school administration capacity building can be integrated into a comprehensive solution.

As mentioned above, a more comprehensive and integrated program is recommended. For example, teachers, parents, local residents, and even MOE officials all agreed that toilets are most urgently needed in order to complete the mission of “improving educational infrastructure.”

As to the provision of a water supply system in schools, because local communities often do not have a proper water supply system, students, especially primary school children, may benefit greatly from access to clean water at school.

According to a UNICEF report, providing only toilets and a water supply improved the students’ health and consequently the attendance rate increased significantly by 272 million days annually. Thus, UNICEF has been implementing water and toilet-related school projects in more than 30 countries (UNICEF’s Global WASH Strategy, 2006-2015). Notably, 1 in 10 girls in Africa drops out of school due to the unacceptable sanitary condition of toilets.

In conclusion, constructing fewer schools that have basic requirements for primary education would be better than trying to provide more schools with significant obstacles remaining.

3) There is a need to diversify educational program in Kenya and develop comprehensive programs to achieve educational goals.

For future educational projects in Africa, it would be necessary to pursue a comprehensive model that considers alternatives such as curriculum and content development, textbook publishing, teacher capacity development, and so forth. Although many African countries face urgent needs for the bare minimums and basics, official development agencies such as KOICA should take a bold approach and invest in quality by setting higher educational standards since they cannot make such investments themselves. Future educational projects should aim to tackle imminent problems, while concurrently meeting the challenges of expanding their human resource base for self-sustainable development.

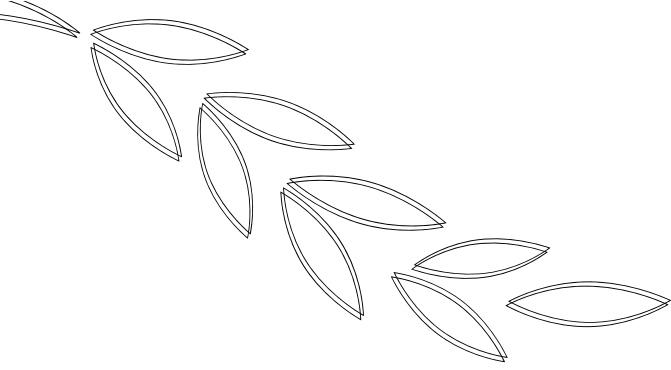
More specifically, developing educational contents such as textbooks and other printed materials can be considered a possible follow-up project that is relatively easy to implement, one that can effectively help improve the educational services in Kenya.

Furthermore, though ICT-based education has been popular in Korea it may not be possible in Kenya due to lack of information-communication infrastructure. As an alternative, big-screen televisions can be installed and securely stored in a special room in each school. The content can then be provided monthly in a digital format using USB drives. Using such an approach, a certain level of content quality can be maintained and delivered to all students, even in cases where there is no trained teacher; corporate sponsorship from big electronics manufacturers may fund such projects.

Teacher education or training programs designed to improve teacher capacity may also be considered as a comprehensive education project. For example, combining a new school with a teacher training unit embedded would create an environment in which future teachers could be trained in more realistic settings and work at various school facilities. This type of hybrid setting is expected to promote a virtuous circle that offers scholarships, employment, and education opportunities

to young people and to raise future teachers, school administrators, researchers, and professors.

Overall, the systematic design of solutions for given problems is what any future project should strive to achieve. A systematic design process ensures the quality, effectiveness, and efficiency of solutions. A thorough needs assessment, analysis of project context, opportunities and risks assessment, ex-ante evaluation, and other strategic and systematic design and project management methods should be utilized to make sure that the project will produce expected outcomes and that the desired changes and impacts will ultimately be realized.



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**Ex-Post Evaluation Report on the Project
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Primary Schools in Nairobi, Nakuru, and Thika (Kenya)**

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