Mongolia

Ex-Post Evaluation of Japanese Grant Aid Project

"The Project for Improvement of Primary Education Facilities (Phase III) in Mongolia"

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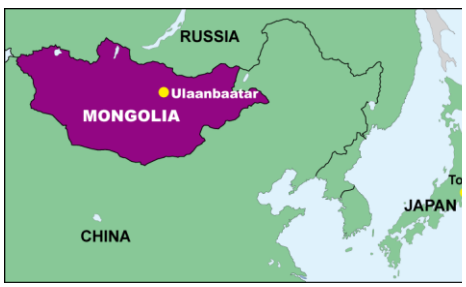
0. Summary

This project was carried out to improve the educational environment and access of 17 targeted primary schools in Ulaanbaatar by enhancing the capacity of existing schools, constructing new schools, and providing basic educational equipment. This project has been highly relevant with Mongolia's development plan, development needs, as well as Japan's ODA policy; therefore, its degree of relevance is high. Through the project implementation, the overload of classrooms has been mitigated and the application of triple-shift schooling has been reduced. The student's motivation for learning, accessibility to school, and hygienic status have also been improved. The project gives a positive impact to neighboring schools too since the target schools are enabled to accept more students within their school district. This project has largely achieved its objectives; therefore, its level of effectiveness is high. On the other hand, the efficiency of the project is judged as fair because the project period was slightly longer than planned. As for the sustainability, the school facilities are basically well-managed and maintained by the Department of Education of Ulaanbaatar, the school personnel, school management committee, and student's parents association. However, the situation of operation and maintenance at each school relies on motivation of the school administrators; and allocated budget for school maintenance seemed insufficient. Therefore, sustainability of the project effect is fair.

In light of the above, this project is evaluated to be satisfactory.

1. Project Description



(Project Locations)

(One of the target primary schools)

1.1 Background

Most schools in Mongolia were built in the 1970's and 1980's. Today, they need to be repaired on a large scale or renovated as a result of its long use and damage by harsh weather condition. In addition, the population of Ulaanbaatar is rapidly growing because of the inflow of people from rural areas and this causes the intense shortage of educational facilities for basic education. Around 27.6% of public schools adopted the triple-shift schooling in 2001 and there were few schools in the newly developed suburbs. Although the number of school-age children increased approximately to 30,000 in Ulaanbaatar from 1998 to 2002, only one public school was built during the period.

Furthermore, the educational system reforms in Mongolia affected the deficiency of educational facilities in Ulaanbaatar. The number of school-age children was expected to increase since the official school entry age dropped from eight- to six-year old as a result of phased transition from 10-year to 12-year general education.

Against this background, the Government of Mongolia requested the Government of Japan to provide grant aid for the construction of school facilities and provision of equipment in the city areas. Responding to the request, the Project for "Improvement of Primary Education Facilities" in Ulaanbaatar, and the second phase in *Darkhan-uul* and *Orkhon* were carried out. This project was on its third phase in improving the basic education in Ulaanbaatar.

1.2 Project Outline

The objective of this project is to improve the educational environment and access of 17 targeted primary and secondary schools in Ulaanbaatar by enhancing the capacity of existing schools, constructing new schools, and providing basic educational equipment.

Grant Limit/ Actual Grant Amount	Stage 1: 832 million yen / 829 million yen Stage 2: 784 million yen / 738 million yen Stage 3: 887 million yen / 799 million yen Stage 4: 526 million yen / 466 million yen 3,029 million yen / 2,832 million yen (total)
Exchange of Notes Day	Stage 1: June 2004 Stage 2: June 2005 Stage 3: July 2006 Stage 4: June 2007
Implementing Agency	Responsible organization: Ministry of Education, Culture and Science (hereinafter called as the Ministry of Education) Implementing Organization: Department of Education of Ulaanbaatar
Project Completion Date	Stage 1: February 2006 Stage 2: March 2007 Stage 3: March 2008 Stage 4: March 2009

Main Contractor(s)	Stage 1: Dai Nippon Construction Co., Ltd. Stage 2: Kanto Construction Co., Ltd. Stage 3: Kanto Construction Co., Ltd. Stage 4: Konoike Construction Co., Ltd.
Main Consultant(s)	Mohri, Architect & Associates, Inc.
Basic Design	"Project for the Improvement of Primary Education Facilities (Phase III) in Mongolia" Mohri, Architect & Associates, Inc., August 2003–March 2004
Related Project (if any)	Technical Cooperation • Dispatch of JICA Expert "Education Administration Advisor" (1999-2005) • JICA Project Formulation Study (2001) • JICA Technical Cooperation Project "In-Service Teacher Training Project"(2003-2006) • JICA "Teaching Methods Improvement Project towards Children's Development" (2006-2009) • Dispatch of Japanese Overseas Cooperation Volunteers "Community participation in rural schools construction and rehabilitation"(2002-2009) • Grassroots Technical Cooperation Project (JICA Partnership Program) "Promoting a violence-free, fair environment in public education for the purpose of realizing the children's rights project" (2008-2011) • Dispatch of Japan Overseas Cooperation Volunteer and Senior Overseas Volunteer Grant Aid • "Project for Improvement of Primary Education Facilities in Mongolia" (Phase I: 1999-2001 and Phase II: 2002-2005) • "Project for Improvement of Primary Education Facilities in Mongolia Phase IV" (2008-present) • Japan's Grant Assistance for Grassroots Human Security Projects (Renovation or extension of school buildings and dormitories) Assistance by Other Organizations • "Second Education Development Project (SEDP)", ADB (2003-2007) • "Third Education Development Project (TEDP)", ADB (2006-2010) • "Rural Education and Development Project", World Bank (2006-2012) • Financial Assistance-EFA-FTI, World Bank, (2007-2009)

2. Outline of the Evaluation Study

2.1 External Evaluators

Tetsuya Ishii, KRI International Corporation

Sayaka Suzuki, KRI International Corporation

2.2 Duration of Evaluation Study

Duration of the Study: November 2011-September 2012

Duration of the Field Study: December 7-9, 2011, February 6-13, 2012, and May 31-June 7, 2012

2.3 Constraints during the Evaluation Study (if any)

The simple comparison between the baseline data and the result was difficult, because the scales used of target schools in the basic design study were different from the current ones. Two target schools were divided into two separate schools after the project implementation. Another school's data contained the information of two primary schools which were not directly benefited by the project. It was because the said school belonged to the complex school consisting of three primary schools, two lower secondary schools, and two upper secondary schools. In the basic design study, the expected output was set up based on the aggregated data of the three primary schools under the complex school.

Accordingly, the evaluators tried to collect the information of the schools including the two schools separated from the one target school and the two untargeted primary schools under the complex school to understand the actual situation.

3. Results of the Evaluation (Overall Rating: B[1])

3.1 Relevance (Rating: ③[2])

3.1.1 Relevance to the Development Plan of Mongolia

The Government of Mongolia formulated an "Action Plan for the 21st Century" in 1999 that stated the importance of education in contributing a sustainable society and economic development. Moreover, the "Action Plan of the Government of Mongolia for 2000-2005" worked out the strategies for equal opportunities and access to education by the construction and expansion of school buildings. In the "Economic Growth Support and Poverty Reduction Strategy" (2003), the improvement of all levels of education and its accessibility were the short-term priorities to reduce the poverty in Mongolia.

With regard to the education sector policy during the planning and implementation of the project, "The Basic Directions of Education Sector Reform in 1997-2005" was formulated in 1996. This policy placed one of the priorities on the alleviation of deficiency of education facilities. The improvement of education facilities and materials were also included in the mid-term objectives of the "Mongolian Education Sector Strategy 2000-2005". The "Master Plan to Develop Education of Mongolia in 2006-2015" (2006) sets the objectives of primary and secondary education, namely, "the reduction of disparities in unequal opportunities to obtain quality education" and "the creation of environment and conditions to provide quality service". However, the monitoring report of the master plan (2009) pointed out that the public school capacity was still in a critical situation.

The "Education National Program" in 2010 indicated the education sector policy at the

[1] A: Highly satisfactory, B: Satisfactory, C: Partially satisfactory, D: Unsatisfactory

[2] ③ : High, ② : Fair, ① : Low

time of the ex-post evaluation. The main focus of the policy was transferred from equal opportunities and access to quality education to the accomplishment of education system at the international level and constant improvement in the quality and efficiency of education. However, the improvement of school capacity, reduction of school's burden in the city, and improvement of educational facilities were mentioned as pre-conditions to achieve the policy's objectives.

3.1.2 Relevance to the Development Needs of Mongolia

As a part of the educational system reforms, the period of compulsory education was changed from ten years to 11 years in 2005, and from 11 years to 12 years in 2008. The population inflow from countryside to Ulaanbaatar has continued. Therefore, the school-age population (at compulsory education level) increased yearly as shown in Table 1.

According to the estimation of the Department of Education of Ulaanbaatar, approximately 25,000 students will be enrolled from 2012 to 2015 and 78 new schools will be required after the completion of the 12-year schooling system. Around 30,000 migrants from rural areas per year accelerated the increase in the number of students in Ulaanbaatar as well.

Table 1 School-age Population in Ulaanbaatar

Year	School-age Population	Note	Difference from 2004
2004	155,532	10-year schooling system 8–15 years old	—
2005	167,278	11-year schooling system 7–15 years old	7.55%
2006	167,832		7.90%
2007	169,082		8.71%
2008	182,690	12-year schooling system 6–15 years old	17.46%
2009	178,318		14.65%
2010	178,595		14.82%

Source: Summarized by the evaluators based on the statistical data obtained from the Ministry of Education

Therefore, this project has been highly relevant from the time of the basic design study to the ex-post evaluation. Since the needs for primary education facilities are still high, the "Project for Improvement of Primary Education Facilities (Phase IV) in Mongolia" is still being implemented.

3.1.3 Relevance to Japan's ODA Policy

This project was highly relevant to Japan's ODA policy at the time of the basic design study. Based on the consultation with the Japan's Economic Cooperation Team in 1997, the main fields of Japan's cooperation with Mongolia were identified as follows:

(1) infrastructure including energy, communication, and transportation, (2) human resource development and institutional building necessary for smooth transition to a market economy, (3) promotion of agriculture and livestock industry, and (4) support to basic human needs for living. The "Japan's Country Assistance Program for Mongolia" in 2004 put emphasis on "the institution building and human resource development necessary for promoting a market economy through basic education and vocational education" in order to achieve a sustainable economic growth. This project contributed to the human resource development in Mongolia through the improvement of primary education facilities.

This project has been highly relevant to the country's development plan, development needs as well as to Japan's ODA policy; therefore, its relevance is high.

3.2 Effectiveness[3] (Rating: ③)

3.2.1 Quantitative Effects (Operation and Effect Indicators)

(1) Expansion of Classroom Numbers and School Capacity

A total of 214 classrooms (124 classrooms in existing schools and 90 classrooms in new schools) were constructed in the 12 existing schools and five new schools through the project. As a result, the target schools were enabled to accommodate an additional 17,120 students. The classroom numbers and school capacity of the target schools are shown in Table 2. Although the project was initially planned to consist of three stages, another stage was required during its implementation. It was mainly because the project scale became too big to be covered by only three stages. In connection with this, the project completion was delayed until 2009. Therefore, the evaluators compared the target (planned to be achieved in 2007) with the data of its completion (2009) in the ex-post evaluation. As Table 2 shows, the classroom numbers and school capacity was expanded by the project as well as by the school's efforts.

Table 2 Classroom Numbers and School Capacity

		Baseline (2003/2004)	Target (2007)	Result	
				Completion (2008/2009)	Ex-post Evaluation (2011/201)
Classroom Numbers	Existing School	371 rooms	495 rooms (124 rooms)	504 rooms (124 rooms)	506 rooms (124 rooms)
	New School	0 room	90 rooms (90 rooms)	90 rooms (90 rooms)	90 rooms (90 rooms)
	Total	371 rooms	585 rooms (214 rooms)	594 rooms (214 rooms)	596 rooms (214 rooms)
School Capacity	Existing School	29,680 students	39,600 students (9,920 students)	40,320 students (9,920 students)	40,480 students (9,920 students)
	New School	0 student	7,200 students (7,200 students)	7,200 students (7,200 students)	7,200 students (7,200 students)

[3] Sub-rating for effectiveness is to be put into consideration of Impact.

	Total	29,680 students	46,800 students (17,120 students)	47,520 students (17,120 students)	47,600 students (17,120 students)

Note: The number in ( ) is the project output.
Source: Summarized by the evaluators based on the data obtained during the ex-post evaluation study

(2) Number of Student per Classroom in Existing Schools

The number of students per classroom decreased from 44.72 to 30.80 at the time of completion and to 29.19 at the time of ex-post evaluation. Since the results fulfilled the targets indicated in the "Master Plan to Develop Education of Mongolia" (35.2 students per classroom), the project contributed to the appropriate learning environment.

Table 3 Number of Students per Classroom in the Existing Schools

	Baseline (2003/2004)	Target (2007)	Completion (2008/2009)	Ex-post Evaluation (2011/2012)
Total Number of Students	33,185 students	N/A	31,049 students	29,545 students
Total Number of Classrooms (Project Outputs)	371 classrooms	495 classrooms (124 classrooms)	504 classrooms (124 classrooms)	506 classrooms (124 classrooms)
Number of Students per Classroom[4]	44.72 students	51.3 students	30.80 students	29.19 students

Source: Summarized by the evaluators based on the data obtained during the ex-post evaluation study

Though the targets were achieved, a big gap between the targets and the results was evident because the number of students in 2007 was overestimated at the time of basic design study. It was estimated based on the analysis of the number of students from 1998 to 2003. However, the areas around the target schools were too crowded to accept new inflow of enrollees in recent years.

With regard to the new schools, the number of students has increased though not so much as estimated in the basic design study. The average number of students per classroom was 34.23 at the time of completion and is 37.18 at the time of ex-post evaluation. The number of students per classroom continually increased in the new schools.

(3) Reduction of Triple-Shift Schooling in Existing Schools

At the time of the basic design study, seven out of 12 existing schools were forced to implement triple-shift schooling. At the time of completion (2008/2009), all schools were able to apply double-shift schooling. In five out of seven schools which implemented the triple-shift previously, the transition from triple-shift to double-shift was undertaken immediately after the extension of the school capacity by the project.

[4] Based on the basic design survey, it was calculated as number of students/(classroom number x double-shift)

Table 4　Number of Shifts in Existing Schools

	Basic Design Study (2003/2004)	Completion (2008/2009)	Ex-post Evaluation (2011/2012)
Double-shift	5 schools	12 schools	9 schools
Triple-shift	7 schools	0 school	3 schools
Note		・In five out of seven schools which applied triple-shift, the transition from triple-shift to double-shift was undertaken immediately after the extension of the school building by the project. ・As regards to the remaining two schools, the transition occurred because the schools ceased accepting students from outside of the school district.	・Three schools started the triple-shift schooling in 2010/2011. ・Among the three schools, two schools implemented the triple-shift schooling at the time of the basic design study as well.

Source: Summarized by the evaluators based on the data obtained during the ex-post evaluation study

While nine schools continue the double-shift schooling at the time of ex-post evaluation, three schools started the triple-shift schooling in 2010/2011 for the following reasons:

- School No. 14 and No. 33: These schools are located in *Bayanzurkh* District which has the largest population in Ulaanbaatar and accept students from two *khoroo*[5] due to school shortage. There were many students who wish to study at these schools since they were selected as laboratory schools of the Cambridge International Program[6]; and
- *Golomt* Complex School: This school is located in *Nalaikh* District, approximately 50 km away from Ulaanbaatar. As a result of the constant increase in the number of students, this school was divided into two schools in April 2008 and adopted triple-shift schooling in 2010/2011.

At the time of the basic design study, three of the abovementioned schools had more than 2.4 times as many students as their capacity and School No.14 and No.33 were forced to implement triple-shift schooling. After the project completion, the ratio of student number and school capacity decreased to approximately 1.9 and the double-shift schooling was implemented. However, the ratio again reached to 2.05-2.21 and the triple-shift was applied at the time of ex-post evaluation.

[5] *Khoroo* is a subdivision of district in Ulaanbaatar. One district has 4–20 *khoroo*. Usually, each *khoroo* has one public school.

[6] The Government of Mongolia introduced the curriculum in accordance with the Cambridge University program in 2011/2012 in order to develop internationally competent human resources. The laboratory schools were selected from each district/*aimag* (*Bayanzurkh* District has two laboratory schools) and are implementing the program.

Although triple-shift schooling was still implemented in three schools, the ratio of the student number and school capacity at the time of ex-post evaluation decreased in comparison with the ratio at the time of the basic design study. Hence, it can be said that the project has a certain effect to reduce triple-shift schooling in the existing schools.

With regard to the new schools, the project had no way to alleviate triple-shift schooling because the maximum number of classrooms by the project was decided at 18 to avoid the concentration of demands for big facilities. Since the new schools were located in the newly developed areas, the number of students was still increasing and four out of five schools implemented the triple-shift.

3.2.2 Qualitative Effects

To identify the qualitative effects of this project, the evaluators conducted a focused group interview with one to five school administrators, six teachers, six students (equal number of boys and girls), and six parents (equal number of male and female) at each school. A total of 54 school administrators, 101 teachers, 105 students benefitted by the project, and 97 parents participated in the interview. The following analysis was based on the interview results:

(1) Improvement of Access to Target Schools and Alleviation of Classroom Shortage of Neighboring Schools

The new schools were built in the areas developed by the inflow of population from rural areas including *ger* district[7]. Since there were few schools in those areas, many students were obliged to go to school by bus or on foot along the *ger* streets without streetlamps for 30 to 40 minutes. The project was implemented in anticipation of the improvement on the access to school and the alleviation of classroom shortage in neighboring schools by transferring students from neighboring schools to the target schools.

According to the focused group interview, with the transfer of students from the neighboring school to the new school, commuting time was shortened from 10 to 20 minutes on the average. One of the new schools previously accepted Grades 1 to 5 students only due to its capacity; however, the project enabled the school to accommodate Grades 1 to 9 students (now Grade 12). As a result, the students were able to pursue secondary school at the same site as the primary school, and the school access significantly improved. In connection with this, the parents pointed out that the risk of traffic accidents was decreased. The school administrators responded in the interview that the deficiency of classrooms in neighboring schools was mitigated as well because the

[7] The area where the *ger* (the nomad's mobile houses) and simple houses stand side by side is generally located in the outskirts of Ulaanbaatar. It is formed by the migrants from the rural areas.

new schools started to accept some students from neighboring schools.

The safety of the students of the existing schools was also reinforced according to the focused group interview. The commuting time was shortened as a result of the reduction of classes in the third shift. It was also reported in the interview that the shortage of classrooms was alleviated in some neighboring schools near the five existing schools extended by the project, since those schools have more capacity than before.

Therefore, this project contributed not only to the new schools but also to the existing schools in the improvement of school access for students[8] and alleviation of classroom shortage of neighboring schools. On the other hand, there was no difference between male students and female students on the recognition of safety issue.

(2) Improvement of Hygienic Status in Existing Schools

The project was expected to eliminate the shortage of latrines, reinforce student's privacy, and provide proper hygienic environment to the students, especially for female students. The project set up the latrines to meet the scale of the building, while necessary number of toilets was calculated based on the number of students as determined in the official requirements for the establishment of an educational facility in Mongolia. The project adopted the squat-style toilet that is durable and easy to be maintained. The faucets were set up both inside and outside the latrines.

According to the focused group interview, for both male and female students, the queues that were made in front of the latrines during break time were eliminated and the student's privacy was improved since the project provided enough number of latrines with locks. They welcomed the squat-style toilet since they recognized that this style is more hygienic than the conventional one and can be maintained easily[9].

Based on the answers to the questionnaires and interviews conducted with school administrators, the schools started to take initiatives in teaching the students the proper use of the latrines and provided soaps near the faucets for hand washing. As a result, hand washing after using the latrine was well practiced in 11 out of 12 schools. Some students from the *ger* districts were not used to hand washing, since the access to water was very limited in the districts. This project made a favorable influence to the students from the *ger* districts and improved their hygienic status.

(3) Improvement of Building's Quality and Function during Winter

The project set up a small space at the entrance to lessen the cold winds blown into the

[8] The project enhanced student's motivation for learning at school. Although the house was moved to afar, some students would still like to go to the same school. It appears that their commuting time became longer.

[9] There was no difference between male and female students on the recognition of the hygienic issue.

building, laid the foundation below the depth of frost penetration to prevent from frost heaving, and adopted the insulation material for roofs, walls, and windows as protection against extreme cold weather conditions in Mongolia. While the existing schools were supplied with hot water for heating by the public corporation in Ulaanbaatar, the new schools were heated by the boiler set up by the project.

The students from the seven of 17 target schools responded that the school became warmer than before. The students of the remaining ten schools also mentioned that the school became more comfortable. The evaluators observed that the measures taken by the project against extreme cold were basically appropriate (The post-ex evaluation conducted in February 2012).

Although some problems were observed, they were not serious enough to have an effect on the project result. The heating systems of the 13 out of 17 schools were not working properly and the problems were not resolved in 11 schools (see "Sustainability"). Six out of 17 school administrators commented that smaller windows were needed for ventilation because if the windows are left wide open, the room condition becomes cold. Furthermore, the glass windows were not thick enough to keep the cold out.[10]

3.3 Impact

3.3.1 Intended Impact

At the time of the basic design study, school facilities were expected to be utilized for non-formal education targeting the school dropouts and street children and also to give positive impact to the local communities. Three out of the 17 target schools were utilized for non-formal education and this service has been continued in one school. Seven schools have been utilized for meetings, trainings, elections, and medical missions. Therefore, it can be said that the project created a positive impact to the local communities.

3.3.2 Other Impacts

There was no reported impact to the natural environment during the construction of the school facilities. There was also no resettlement caused by this project and land acquisition for the newly constructed schools was done smoothly.

There were five indirect effects through the implementation of this project, as follows:

[10] According to the person concerned of JICA projects in Mongolia, the width of the windows was reduced and the small windows for ventilation were set up in Phase IV of the Project for Improvement of Primary Education Facilities in Mongolia.

(1) Increased Student's Motivation for Learning

The results of the questionnaire survey showed that the project increased the student's motivation for learning. The school administrators believed that the student's motivation was enhanced by the provision of a good learning environment. Before the project implementation, there was one school filled with smoke during cold winter mornings due to coal stoves. The school administrator of this school mentioned that many students were constantly late for school and waited for the smoke to disappear. The rate of student's attendance notably improved after the boiler for heating was set up.

The school administrators pointed out that there were other reasons that improved the student's motivation such as good lessons provided by the teachers whose motivation and teaching methods were enhanced (see below)[11] and the increased spare time and space for students to prepare and review lessons.[12]

The students answered in the focused group interview that they were teased by students from other schools because the school was poorly maintained. However, through the project, a better school was built. The students would like to tell the bullies that although they were from the *ger* district, they can still look after themselves and can study very well. This showed the positive impact of the project on the student's motivation for learning.

(2) Improved Teacher's Motivation and Teaching Method

According to the questionnaire survey, the improvement of teacher's motivation and teaching method were observed at 11 out of 17 schools.[13] The stability of teachers in one school was low due to bad working environment before the project implementation. Only one applicant showed up when the school offered two teaching positions. At the completion of the project, this ratio started to improve and the number of applicants and available positions became equal.[14] At the time of ex-post evaluation, the number of applicants became double than the number of available positions.

The school administrators of seven schools recognized that the teaching method was improved because the project created favorable space for the teachers to prepare for lessons and to improve his/her teaching ability in the school. Some administrators and

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[11] The school administrators or teachers from ten out of 12 existing schools recognized that the student's achievement was improved by the project.

[12] The students allowed more spare time for studying because the project improved the student's access to school and alleviated the triple-shift schooling. The students are now taking less time to commute and are able to go home earlier than before. The corridor and the vacant classes are now used as study space in some target schools. Before the project implementation, the students had no space to stay at school except on their own shift.

[13] The administrators of new schools responded to this question comparing their situation in the previous school.

[14] The teachers are directly employed by public schools in Mongolia.

teachers pointed out the effect of blackboards provided by the project as another reason for such improvement. The small blackboards less than 2.5 m wide were found in many classrooms of public primary schools in Ulaanbaatar.[15] The surface of the blackboards often needs to be wet because it is worn out and cannot be used when dry. Teachers tried hard to make the letters readable on the said blackboards. However, after the project provided the appropriate blackboards, the teachers started to focus on how they can make the students understand the lessons well through writing on the boards.

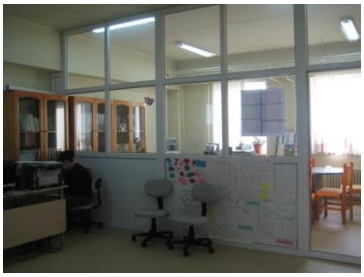
(3) Promoted Parents Cooperation

According to the answers on the questionnaire and interviews conducted, seven out of 17 school administrators recognized the improvement of parent's cooperation with the school after project implementation. Since parents appreciated the good learning environment for their children and provided active participation in school activities, they took the initiative of fixing minor damages in the school facilities.

(4) Encouraged Initiative to Utilize School Facilities

Before the project was implemented, the corridors, cloakrooms, and special purpose rooms were modified to become classrooms since there is no more space available for the schools to create new rooms.

The wide cloakroom[16], teacher's room, and wide passageways were provided by the project which led the school's initiative in utilizing the facilities. For example, all target schools were utilizing the wide space in front of the cloakroom as gymnasium. Some schools set up a special purpose classroom or library in the basement, divided the teacher's room into several small rooms for various users, and set up the study space for students in the wide corridors.



(The teacher's room divided into several rooms)

(The gymnasium in front of the cloakroom)

[15] As the evaluator conducted a survey on the blackboards of three public primary schools (non-target school of the project) in Ulaanbaatar, there were ten out of 54 classrooms which had the blackboard with more than 2.5 m wide.

[16] The cloakroom was designed based on the official requirements for the establishment of an educational facility in Mongolia. To prevent the thick coats from occupying big space in the classrooms and to prevent personal belongings from loss, the wide cloakroom was set up by the project. The wide space is also required when the students arrive and leave the school.

(5) Led to Other Donor's Cooperation to Equip Educational Facilities

According to the result of questionnaire survey, the seven out of 17 school administrators believed that the project led the other donors such as ADB, FTI, and World Vision, to cooperate with the schools. The Department of Education of Ulaanbaatar explained that the opportunities for a small project such as provision of teaching materials and educational equipment were increased because appropriate school buildings and classrooms were set up by the project.

As shown, the project has largely achieved its objectives. Moreover, three target schools donated to the disaster area of 2011 Tohoku Earthquake and it showed that the project generated gratitude and friendship towards Japan.

Therefore, its effectiveness and impact are high.

3.4 Efficiency (Rating: ②)

3.4.1 Project Outputs

(1) Outputs of the Japanese Side

At the time of the basic design study, a total of 17 schools (214 classrooms) composed of 12 existing schools and 5 new schools were targeted. All schools were completed during implementation stage. The outputs of the project are shown in the following table.

Table 5 Outputs of the Project

	Plan				Result				
1. Number of target schools	Stage 1	Stage 2	Stage 3	Total	Stage 1	Stage 2	Stage 3	Stage 4	Total
Existing schools	1	4	7	12	1	4	4	3	12
New schools	3	2	0	5	3	1	1	0	5
2. Facilities									
Number of classrooms	72	72	70	214	72	54	60	28	214
Number of teacher's rooms	4	6	7	17	4	5	5	3	17
Number of cloakrooms	4	6	7	17	4	5	5	3	17
Number of latrines	8	9	14	31	8	7	10	6	31
Number of faucets (Outside of latrines)	8	9	14	31	8	7	10	6	31
3. Equipment									
Set of educational furniture	4	6	7	17	4	5	5	3	17
Set of teaching materials	4	6	7	17	4	5	5	3	17
Set of maintenance tools	4	6	7	17	4	5	5	3	17

Source: Summarized by the evaluators based on the materials related to JICA and the data obtained during the ex-post evaluation study

(2) Outputs of the Mongolian Side (Obligation of Mongolian Side)

The outputs produced by the Mongolian side within the project period were the following: 1) land acquisition for construction; 2) land leveling work to clear, level, and reclaim the site, and to construct the fences around the site; 3) demolition/removal of existing obstacle on and in the site; 4) construction of access road for construction; 5) acquisition of space to store necessary equipment; 6) connection to electricity, water supply, and drainage for the construction; 7) connection to electricity, heating system, drainage, water supply, and telephone system; 8) construction of the border fence and gate, gardening, and planting; and 9) supply and installation of general furniture. The outputs were almost completed without problems except for the construction of the border fence and gate, gardening, and planting.

The construction of the border fence and gate, gardening, and planting were not completed by the implementing organization at six out of 17 target schools due to lack of budget. Therefore, the school needed to prepare school grounds in cooperation with teachers and parents.[17]

3.4.2 Project Inputs

3.4.2.1 Project Cost

As indicated in Table 6, the actual project cost borne by the Japanese side was lower than the planned cost (equal to 93.5% of the plan cost).[18]

Table 6 Planned and Actual Project Cost

	Planned (JPY)	Actual (JPY)
Stage 1	832 million	829 million
Stage 2	784 million	738 million
Stage 3	887 million	799 million
Stage 4	526 million	466 million
Total	3,029 million	2,832 million

Source：The material related to JICA Study

3.4.2.2 Project Period

The project period spent by the Japanese side for the detailed design and construction works was slightly longer than planned. The actual project period was 55.86 months as against the planned period of 55.5 months (100.6 % of the planned period). It was mainly because the total number of stages was changed from three to four during the project implementation. The project cost of Stage 2 was cut down and one of the target schools of this stage was transferred to Stage 3 based on the discussion between JICA and the

[17] Interview with the Department of Education in the district level and school administrators

[18] For this ex-post evaluation, only the costs of the Japanese side were compared since the actual cost borne by the Mongolian side was not available.

Ministry of Finance (Japan). Since the scale of Stage 3 became big, the Ministry of Foreign Affairs in Japan divided Stage 3 into two stages. As a result, this project was composed of four stages instead of three stages.

As the contractor was selected on every stage, the number of tender increased and caused the extension of the project period.

Although the project cost was within the plan, the project period slightly exceeded the plan; therefore, efficiency of the project is fair.

3.5 Sustainability (Rating: ②)

3.5.1 Structural Aspects of the Operation and Maintenance

The structure for operation and maintenance is secured under the Ministry of Education and the Department of Education of Ulaanbaatar.

(1) Structure at the Administrative Bodies

The Ulaanbaatar City manages schools under the instruction of General Education Department, Ministry of Education that is the responsible organization of this project. The Finance and Economy Department implement budgetary measures for the construction, maintenance, and management of the educational facilities.

The implementing organization of this project, the Department of Education of Ulaanbaatar establishes the operation system of new schools, makes the plan for transferring the students, and operates and maintains the school building. The person in charge has strong ownership and commitment to the project, monitors the target schools, and provides the instruction to maintain the facilities.[19]

While the Department of Education in the district level[20] collect the information on the school operation and maintenance and provide instruction to the schools, they have neither huge amount of budget nor broad authority. They sometimes introduce the donor's projects to schools in order to support the maintenance of the facilities.[21]

(2) Structure of the School

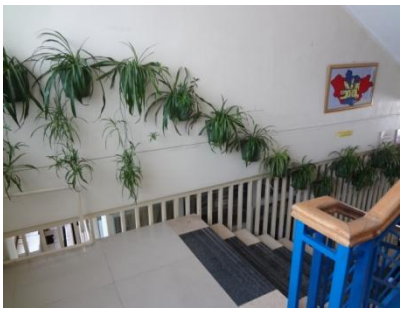
The school administrators are in charge of school operation and maintenance. In some schools, the establishment of canteen and library, the preparation of school ground, and other renovation were carried out under the supervision of the administrators. One of the target schools utilizes the experience of another target school when they operate and

[19] The material concerned to JICA, and interviews conducted with the Department of Education in the district level and with the school administrators

[20] The Department of Education in the district level was re-established in 2008 to lighten the burden imposed on the Department of Education of Ulaanbaatar.

[21] The interviews conducted with the Department of Education in the district level and with the school administrators

maintain the facility because the school administrator of that school previously worked in another target school.[22]



（Exchanged flooring to strong material）

（Well landscaped garden）

On the other hand, how to properly maintain the school facilities was not turned over well to the new school administrators at four out of 17 target schools. One of the school administrators responded in the interview that the former school administrator told them not to repair anything in the school within five years after the completion. During the workshop to get feedback on the result of ex-post evaluation on June 5, 2012[23] a comment was raised that the school administrators basically received enough instructions to maintain the facilities and understood their roles, however, problems may occur in case both the administrators and engineers who took the instructions in this project are replaced.

The School Implementation Committee was organized by representatives of teachers, parents, school personnel, district officers, and community at each target school. The committee approves the school direction, financial condition, and contents of education. The school needs to obtain approval from the committee when they intend to collect contributions from parents for educational facilities. The parent's association also collaborated in improving the student's learning environment.

3.5.2 Technical Aspects of the Operation and Maintenance

There have been slight damages on the facilities and equipment of the target schools such as peeling paints on walls, broken windows and doors, and damaged desks and chairs. The school personnel and parents repaired the slight damages.[24] There was one school where the teacher and students soldered and repaired the desk and chair legs during the

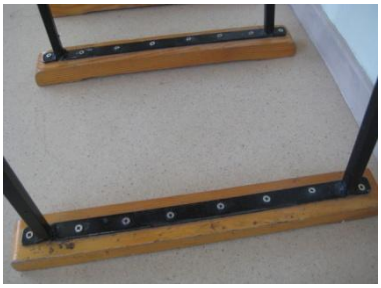
[22] Interviews conducted with school administrators

[23] Representatives from the Department of Education of Ulaanbaatar, Department of Education in the district level, and target schools attended the workshop.

[24] Interview conducted to the school administrators and focused group interview with the teachers and parents

technology lesson[25].

(Repaired door)



(Repaired legs of chair)

(Repaired pipes for heating)

However, some problems are preventable if the schools frequently called the student's attention to use the facilities with care and improve engineer's knowledge on maintenance. For example, some schools reported that there was collecting water in the basement, however, it can be prevented by regular cleaning of the drainage. Others reported that it was hard to obtain some materials for repair, however, equivalent materials were usually available in the market.[26]

3.5.3 Financial Aspects of Operation and Maintenance

(1) Government Budget for School Maintenance

The government budget, expenditure, and cost for school maintenance are shown in Table 7.

Table 7. Government Budget, Expenditure, and Cost for School Maintenance
(MNT million)

Year	Budget	Expenditure	Cost of School Maintenance (Budget= Expenditure)	The Ratio of Cost of Maintenance to Budget	Note
2005	3,900	3,900	100	2.56%	Including pre-school and higher education.
2006	8,800	8,800	400	4.55%	
2007	26,200	26,200	3,800	14.50%	
2008	23,295	21,783	4,100	17.60%	Excluding pre-school and higher education.
2009	36,616	33,847	3,100	8.47%	
2010	63,410	61,237	2,900	4.57%	
2011	105,548	102,624	3,300	3.13%	

Source: Ministry of Education

(2) Operation and Maintenance Cost by Schools

The Department of Education of Ulaanbaatar and the Department of Education in the

[25] The focused group interview with the teachers
[26] From JICA official

district level responded that the budget allocated by the government was not enough to maintain the facilities. Fourteen out of 17 school administrators also responded that it was difficult to manage the school maintenance within the allocated budget.[27] Since the budget for new facility is often reduced, it was difficult to secure the budget for maintenance in case problems arise.[28] Under these circumstances, the target schools made great efforts to maintain the facilities by utilizing the funds accommodated by the city and district, support of the donors, and contributions of parents. However, there were some problems without a good repair plan after temporary measures were taken (see Section 3.5.4).

The Department of Education of Ulaanbaatar and the Department of Education in the district level were able to accommodate the funds for minor repairs. For the major repairs, the project of donors was introduced. The parent's and private companies' concern on the school also supported the maintenance of facilities. Usually the contribution from the parents was used for the maintenance of their children's classroom. The contributions were collected once a year from MNT 1000 to 5000 (approximately JPY 60 to JPY 300 based on the exchange rate of August 2012) per student.[29] The parents who joined in the focused group interview said that the contribution was not a burden for them. However, one of the specialists from the Department of Education in the district level mentioned that approximately 20% of the parents were not cooperative and believed that the maintenance cost should be covered by the school.

3.5.4 Current Status of the Operation and Maintenance

As seen, the school facilities were generally well-maintained by the school personnel, parents, and students. The schools were regularly cleaned and maintained by school personnel. However, the conditions such as measures taken against problems, ways of handling facilities, and renovations to increase the durability of facilities among 17 target schools were not the same.

The following table shows the problems reported during the ex-post evaluation.

Table 8 Problems Reported during Ex-post Evaluation

Place (Main Problems)	Number of School with Problems	Not Solved by the Time of Ex-post Evaluation
Roof (leak)	2	1
Pillar/beam (paint partially removed)	1	0

[27] According to the defect inspection report, one of the target schools was not able to pump out sewage one year after the completion due to lack of budget.

[28] The discussion in the workshop to feedback the result of ex-post evaluation on June 5, 2012

[29] The questionnaire survey

Ceiling (leak)	2	0
Wall (paint partially removed and cracked)	11	5
Floor (worn-out floor and removal of non-slip tiles)	6	3
Window (broken glass)	13	9
Door (breakage of hinge)	13	6
Latrines (cracks in the toilets, removal of tiles, and breakage of door)	10	6
Desk and chair (legs partially removed)	6	4
Blackboard and notice board (partially removed)	1	0
Teaching material (missing)	1	1
Heating system	13	11
Alarm (malfunctioning)	2	2
Ventilation fan	1	1

Source: Summarized by the evaluators based on the data obtained during the ex-post evaluation study

The facilities remain unrepaired if the repair/replacement cost was expensive. However, these problems did not give negative impacts to the project effect as temporary measures were taken. Consequently, there was no serious problem on the current status of the operation and maintenance.

In addition, the students, teachers, and school administrators increased their awareness in using the facilities with care and keeping the schools clean. The schools took the initiative in the following practices[30] to maintain the facilities:

- Using shoe covers in the building;
- Using tablecloth to prevent students from writing graffiti on the desk;
- Putting plants along the wall corridors to prevent students from writing graffiti; and
- Writing the student's number or name on the desk and chairs for clear identification of the user's responsibility. The user took care of simple maintenance, such as tightening of screws.

Some problems have been observed in terms of financial aspects; therefore sustainability of the project effect is fair.

4. Conclusion, Lessons Learned and Recommendations

4.1 Conclusion

This project was carried out to improve the educational environment and access of 17 targeted primary schools in Ulaanbaatar by enhancing the capacity of existing schools, constructing new schools, and providing basic educational equipment. This project has been highly relevant with Mongolia's development plan, development needs, as well as Japan's ODA policy; therefore, its degree of relevance is high. Through the project implementation, the overload of classrooms has been mitigated and the application of

[30] The focused group interview targeting the teachers, students and parents and the observation of the evaluator

triple-shift schooling has been reduced. The student's motivation for learning, accessibility to school, and hygienic status have also been improved. The project gives a positive impact to neighboring schools too since the target schools are enabled to accept more students within their school district. This project has largely achieved its objectives; therefore, its level of effectiveness is high. On the other hand, the efficiency of the project is judged as fair because the project period was slightly longer than planned. As for the sustainability, the school facilities are basically well-managed and maintained by the Department of Education of Ulaanbaatar, the school personnel, school management committee, and student's parents association. However, the situation of operation and maintenance at each school relies on motivation of the school administrators; and allocated budget for school maintenance seemed insufficient. Therefore, sustainability of the project effect is fair.

In light of the above, this project is evaluated to be satisfactory.

4.2 Recommendations

4.2.1 Recommendations to the Executing Agency

(1) Some schools were able to solve the problems that were not solved by the others and took the initiative in various practices to develop their own school. These good management and maintenance practices shall be shared among the target schools. By providing sharing opportunities, some problems will be prevented or will be solved smoothly.

(2) On the other hand, some schools did not have the appropriate understanding and knowledge on how to use the facilities and equipment properly and effectively. For example, some target schools did not know that equivalent materials can be used for repair instead of the original ones. Although the instructions on how to operate and maintain the facilities was given at the time the building was handed over, the information may not be properly turned over by the previous school administrators and engineers to the newly appointed ones. The information transfer on the heating system was particularly essential. Continued explanation and training on the maintenance to these schools will be necessary.

4.2.2 Recommendations to JICA

None.

4.3 Lessons Learned

(1) Although the achievement target was set at the basic design study, no monitoring was made until the ex-post evaluation. Therefore, it is recommended that the consultant

reports the progress of achievement in the completion report and the defect inspection reports. Such continuous monitoring will significantly contribute to the achievement of the targeted outputs and obtain useful information for the next projects.

(2) Some problems were preventable if the schools frequently called the student's attention to use the facility with care and improve the engineer's knowledge on maintenance. The change of administrator at school has a big influence, too. It is recommended that the manual to mitigate the problems related the operation and maintenance of school facilities be developed and handed over to the target schools. The manual is expected to enhance the administrator and engineer's knowledge on maintenance and transfer necessary information from the predecessor to the successor.

(3) Japan's Grant Aid system requires the recipient country to use and maintain the facilities exactly as they were handed over. However, there are cases that the schools took initiative in effectively utilizing the space such as dividing the teacher's room, and creating new small rooms were observed in this project. It is, therefore, recommended to pay attention to these initiatives of the recipient country to maximize the project effect.