

Nicaragua

Ex-Post Evaluation of Japanese Grant Aid Project
“The Project for Improvement of Basic Education Facilities
in the Department of Rivas, Boaco y Chontales”

External Evaluator: Junko Noguchi, FASID

0. Summary

In Nicaragua, deficient and decrepit school and classroom conditions have hindered children’s enrollment, and the Ministry of Education (MOE) has implemented a program for improving school facilities. This Project’s relevancy is high since it aims to improve the learning environment in target areas by constructing facilities for basic education in Rivas, Boaco and Chontales.

Although the Project was completed within the planned costs and timeframe, delays in the preparatory work (such as land registration), lead to slightly fewer classrooms being built than planned. Therefore the efficiency is fair. The learning environment is considered to have been improved based on the high appreciation expressed by school principals, teachers and students for improvements in the size of the classrooms, the use of daylight in the classrooms and the usage of desks and chairs. The effectiveness is high. Operation and management (O&M) of the facility largely depend on the success of a new needs prioritization system and on the financial capacity of the schools and parents. Therefore the sustainability is fair. In light of the above, this Project is evaluated to be satisfactory.

1. Project Description



Project location.
(Rivas, Boaco and Chontales)



Standard structure.
(Virgen Guadalupe School in Boaco Department)

1.1 Background

In 2004, although the national net enrollment rate at the primary education level was 82.6%, universal enrollment was regarded as difficult to reach. Also although the

completion rate of primary education increased from 36.3% in 2001 to 40.8% in 2003, it was still necessary to improve both the quality and the quantity of primary education services. Regarding school facilities, from 2001 to 2004, 2,774 classrooms were improved with donors' support. However, some schools, especially in rural areas, were still holding classes in huts, neighbor's houses, or churches. Despite the great need for improvement of school facilities: the government budget was short. Given such circumstances, this Project was planned for the rural areas of Rivas, Boaco and Chontales which had great demand for human resources and which could contribute to future industrial development¹.

1.2 Project Outline

The objective of this Project is to improve the learning environment of primary and secondary schools in Rivas, Boaco y Chontales by constructing classrooms and other facilities and procuring teaching materials for 74 target schools.

Grant Limit / Actual Grant Amount	704 million yen / 683 million yen (Phase 1 ²) 641 million yen / 622 million yen (Phase 2)
Exchange of Notes Date	June 2005 (Phase 1) June 2006 (Phase 2)
Implementing Agency	Ministry of Education
Project Completion Date	November 2006 (Phase 1) February 2008 (Phase 2)
Main Contractor	Mohri, Architect & Associates, Inc.
Main Consultant	Fujita Corporation
Basic Design	“Basic Design Study for The Project for Improvement of Basic Education Facilities in the Department of Rivas, Boaco y Chontales” Mohri, Architect & Associates, Inc., March 2005
Related Projects (if any)	“Project for Improvement of Primary Education Facilities” (1995-1997) “Project for Improvement of Primary Education Facilities: Phase 2” (1999-2002) “Project for Improvement of Basic Education Facilities in the Department of Rivas, Boaco y Chontales” (2003-2007)

2. Outline of the Evaluation Study

2.1 External Evaluator

Junko Noguchi, Foundation for Advanced Studies on International Development

¹ JICA (2005), “Report on the Basic Design Study for The Project for Improvement of Basic Education Facilities in the Department of Rivas, Boaco y Chontales.”

² The Project activities were conducted in Rivas and Boaco for Phase 1 and in Chontales for Phase 2.

2.2 Duration of the Evaluation Study

Duration of the Study: November, 2010 – October, 2011

Duration of the Field Study: January 23, 2011 – February 6, 2011 (1st)

May 14, 2011 – May 20, 2011 (2nd)

2.3 Constraints during the Evaluation Study

There were three constraints in data collection and analysis. First, due to time constraints during the field visit, direct observation of the facilities and equipment was conducted at only 41 schools (equivalent to 67% of the total), and school teachers and parents were interviewed at only 40 schools (equivalent to 65% of the total), out of the Project's originally targeted 74 schools (actually targeted 61 schools). Therefore this study may not have uncovered all effects and issues of the Project. Secondly, the accuracy level of students' enrollment data is not high. In Nicaragua, schools became autonomous in the mid-1990s, and under the system, school management subsidies were provided to each school by MOE according to the number of enrolled students. Apparently under the autonomous system many schools padded the number of students so that they would receive more subsidies³ (Box 1). It is possible that schools registered more students than actually existed and therefore data cannot necessarily be accurately verified. Thirdly, because there were time constraints and the procured materials were only for primary education, interviews with principal beneficiaries and verification of some evaluation points were conducted mainly for the primary evaluation level.



Interview with parents (Nicarao school in Rivas). Most participants were women, probably because the interview was done during the day.

3. Results of the Evaluation (Overall Rating: B⁴)

3.1 Relevance (Rating: ③⁵)

3.1.1 Relevance to the Development Plan of Nicaragua

At the time of ex-ante evaluation, two of the ten objectives set in “Strengthened Growth Poverty Reduction (SGPRS)” (July 2001) were: “improvement of net enrollment rate of primary education” and “decrease of illiteracy rate.” These are in

³ Interview with MOE staff.

⁴ A: Highly satisfactory, B: Satisfactory, C: Partially satisfactory, D: Unsatisfactory.

⁵ ③: High, ②: Fair, ①: Low.

accordance with this Project's objectives (in other words, direct and indirect effects): "increase of students' enrollment" and "provision of opportunities of social education activities." In 2005, SGPRS was revised to become the "National Development Plan." In this plan, the strategies in the education sector include: quantitative expansion, educational reform and good governance. Regarding the quantitative expansion, improvement of and increase in the number of school facilities are regarded as factors for promoting educational services and student enrollment.

At the time of ex-post evaluation, in "Education Policies 2007-2011" one of the five pillars is "improvement of education" which includes improvement of school facilities. This document describes how school facilities are necessary for accommodating more students and improving the learning environment. To promote the government's education policies, an important guideline is completing six years of primary education. Following this guideline suggests that there is a need to provide enough classrooms and school infrastructure (such as water supply, electricity and latrines).

3.1.2 Relevance to the Development Needs of Nicaragua

At the time of ex-ante evaluation, from 2001 to 2004, 2,774 classrooms were improved (through reconstruction, renovation and extension). However, in rural areas, many schools still held classes in huts, neighbor's houses, or churches. Some schools were also incomplete in that they could not provide instruction for all six grades⁶.

According to MOE estimates (2010), in addition to 500,000 drop-outs, 700,000 students were out of school at the pre-primary, primary and secondary level. Lack of adequate school facilities, like other factors, hinder student enrollment, and therefore another reason for low enrollment is the fact that schools could not provide all six grades in 18.3% of schools in urban areas and 47.0% in rural areas. Furthermore, many rural schools had no water supply and electricity⁷.

At the time of ex-post evaluation, the study conducted by MOE from September to October, 2010 revealed that 13,000 more classrooms are needed to accommodate all the school-age children who are currently out of school.

3.1.3 Relevance to Japan's ODA Policy

The Country Assistance Program for the Republic of Nicaragua was prepared based on the results of policy consultations held after Hurricane Mitch in 1999. In this Program, the priority areas for poverty reduction and economic development were set as (i) agricultural and rural development, (ii) health, (iii) education, (iv) transportation infrastructure, (v) assistance for democratization and (vi) disaster prevention. Related

⁶ JICA (2005)

⁷ Muriel Visser-Valfrey, Elisabet Jane, Dan Wilde and Marina Escobar (2010), "Mid-Term Evaluation of the EFA Fast Track Initiative: Country Case Study: Nicaragua."

to the education sector, “assistance for improvement of enrollment rate and quality at the primary level” was planned. In Japan’s ODA Charter, a high priority is placed on the education sector as assistance for poverty reduction through human development. Especially in the sub-sector of basic education, “assistance for improvement of quality of education” is set as a priority in “Basic Education for Growth Initiative” announced at Kananaskis Summit in 2002.

Thus, this Project has been highly relevant with the country’s development plan, development needs, as well as Japan’s ODA policy; therefore its relevance is high.

3.2 Efficiency (Rating: ②)

3.2.1 Outputs

Planned Outputs in the Basic Design Study (BD) for the Japanese side included the construction of 124 classrooms for 74 schools. However, 13 schools and 22 classrooms were cut from the original plan resulting in the actual construction of 102 classrooms for 61 schools: in other words, 82.2% of the plan was implemented (Table 1). Other outputs were shown in Annex 1.

Table 1 Planned and Actual Outputs

	Planned	Actual
Beneficiary schools	74	61 (82.4%)
Classrooms	124	102 (82.2%)
Support room (also used as preprimary classroom)	61	50 (81.9%)

(Source) Project Completion Report.

One reason for the cuts from the plan in Phase 1 is that land registration for eight school areas were not completed by the deadline. Beneficiary school selection in the BD included the criteria that “there is no problem related to proprietary rights (land registration was done at the time of the BD)” and eight schools could not clear this criteria in time. According to MOE, in rural areas in comparison with urban areas, there are many cases in which proprietary rights are not clear and it can take additional time to specify the owner and for the owner to prepare necessary documents⁸. More care should have been taken when selecting beneficiary schools in regards to land registration.

In addition, a rise in material costs from the time of the BD resulted in an additional four schools being cut from the plan. After the construction started, one more school was cut from the plan because the preparatory work by the Nicaraguan side was delayed. This delay was caused by the fact that many beneficiary schools were

⁸ For reference, in the similar construction project implemented prior to this Project (for Managua Department), all land registration was completed by the deadline.

not accessible during bad weather⁹. As much as possible this Project tried to cover small schools located in rural areas which in the past could not benefit from construction projects¹⁰.

As for construction of toilets, 96 were cut from the plan (45 of the plan in total three departments, but 0% of the plan in Chontales). The reason why the cut was proportionally bigger than that of the classrooms is that the Japanese side prioritized constructing classrooms over toilets and asked MOE to construct toilets¹¹.

As for the Outputs by the Nicaraguan side, the plan included (i) land preparation construction; (ii) removal of existing on site structures; (iii) construction of border fences and gates; (iv) lifeline connections (such as water and electricity). As a result, as mentioned above, land registration at eight schools and the preparatory work at one school were not completed by the deadline. Also, electricity was not connected to 20 schools due to budget constraints. Except for these issues, outputs for the Nicaraguan side were produced as planned.

3.2.2 Inputs

3.2.2.1 Project Cost

In regards to the Project cost funded by the Japanese side, of the total planned cost of 1,345 million yen the actual cost was 1,305 million yen or 97% of the planned amount (Table 2).

Table 2 Planned and Actual Cost by Japanese Side

	Planned	Actual (Grant Amount)
Phase 1	704 million yen	683 million yen
Phase 2	641 million yen	622 million yen
Total	1,345 million yen	1,305 million yen
Total	1,672 million yen	1,585.4 million yen

(Source) Project Completion Report.

The Nicaraguan side, however, had a planned budget of 15 million yen (at the time of the BD), but the actual expenditure amounted to US\$1,068,121 (115 million yen)¹², which drastically surpassed the estimated cost by 763%. Although a strict comparison between the original plan and the extra outputs was not possible, according to MOE, the following outputs caused the excess.

- The materials transportation and manpower costs were difficult to estimate precisely in the BD. In addition, the BD was conducted in the dry season, but the actual construction work was done in the rainy season which lead to an under-estimation

⁹ Interview with Chontales Department Office of MOE. This field survey was conducted in the dry season, but some schools in mountainous areas were not very accessible. In one case a 4WD car could only reach halfway to the school (Rigoberto Mayorga Palma School in Boaco).

¹⁰ It was the intention of the Japanese side. Interview with the personnel engaged in the Project.

¹¹ Interview with the main contractor.

¹² Converted with the rate at the time of the project's completion, US\$1=118 Japanese yen.

of materials transportation and manpower costs.

- The border fences built around the school area were more extensive than planned.
- The Nicaraguan side built the toilets that the Japanese side had originally planned to construct.
- Sidewalks and additional classrooms were constructed, and light bulbs were procured.

The Nicaraguan side's Project costs could not accurately be calculated. The Japanese side's costs, on the other hand, were lower than planned (97% of the planned).

3.2.2.2 Project Period

The work period was estimated at 38 months for Phase 1 and 2, and was completed in 34.5 months including the detailed design, bidding procurement and construction. This was within the plan. The period of bidding and subcontracting of Phase 2 was extended by 2.5 months because the first bid ended in failure and had to be rebid. However, procurement and construction took less time than planned. In total, the work period of the Project was within the plan.

Summarizing the above, although both the project cost and period were within the plan, considering the decrease of the outputs (approximately 80% of those planned) and that beneficiary schools could have been selected more carefully, efficiency of the Project is fair.

3.3 Effectiveness¹³ (Rating: ③)

3.3.1 Quantitative Effects

Indicators for measuring effects of this Project are the "expansion of the capacity of accommodating students" and the actual "increase of students' enrollment." Data for these indicators at the ex-ante evaluation in 2004 and after the completion of the Project in 2007 are shown in Table 3¹⁴.

The proportion of sound classrooms to total classrooms was 90.4%, as some classrooms were cut from the plan as explained in 3.2.1. However, with regard to the actual operation of the facility, eight classrooms at eight schools among the 41 schools visited are not being used for primary and secondary education classes (Table 4). Considering this, the indicator falls to 86.9%.

¹³ Effectiveness is scored also in the light of factors regarding Impact.

¹⁴ Data of 2011 were not available. Staff of the three Department Offices comment that enrollment increased in 2011 at both primary and secondary levels; In Rivas, primary enrollment is stable but secondary enrollment increased. Staff of Chontales had no comment.

Table 3 Number of Constructed Classrooms and Enrolled Students before and after the Project

Indicator	Before	Target	Actual			
	2004	2008	2007	2008	2009	2010
Proportion of sound classrooms to total classrooms in beneficiary schools	106/184 (57.6%)	230/230 (100%)	n.a.	208/230 (90.4%)	208/230 (90.4%)	208/230 (90.4%)
Enrolled students at beneficiary primary schools (3 departments)	7,623	Not set	7,179	7,079	6,655	6,839
Rivas Department (Increase from the previous year)	1,466	n.a.	1,446	1,366 -5.5%	1,330 -2.6%	1,260 -5.2%
Boaco Department (Increase from the previous year)	3,291	n.a.	3,176	3,056 -3.7%	2,743 -10.2%	2,925 6.6%
Chontales Department (Increase from the previous year)	2,866	n.a.	2,557	2,657 3.9%	2,582 -2.8%	2,654 2.7%
Enrolled students at beneficiary secondary schools (3 departments)	1,609	Not set	1,999	2,145	1,680	2,029
(Increase from the previous year)	232	n.a.	364	352 -0.8%	349 -0.8%	357 2.2%
Boaco Department (Increase from the previous year)	0	n.a.	0	43	77	103
Chontales Department (Increase from the previous year)	1,377	n.a.	1,635	--	79%	33.7%
(Increase from the previous year)	1,377	n.a.	1,635	1,750 7.0%	1,254 -28.3%	1,569 25.1%

(Source) Department Offices of Rivas, Boaco and Chontales, MOE.

(Note) 230 = 106 usable classrooms which existed at the time of BD + 124 classrooms planned for construction; 208 = 106 usable classrooms which existed at the time of BD + 102 classrooms actually constructed.

Table 4 Classrooms Used for Different Purposes

Department	School	Actual Status	Reason
Chontales	1 (Fuente del Saber School)	Not in use.	Student enrollment decreased and the school itself was closed.
Chontales	2 (including Flor Esmilda Diez School)	Exclusively used for computer classes	For the computer education program, a room with security and air-conditioning was necessary, but the school had no other choice.
Rivas, Boaco and Chontales	5 including (El Carmen School)	Used for preprimary education, principal's room or garage.	Student enrollment decreased and the multi-grade class was given in one classroom.

(Source) Interview with school principals and teachers from the above mentioned schools.

As for the indicator of student enrollment, in addition to the target not being set at the ex-ante evaluation both for the primary and secondary level, the data obtained was not very accurate as explained in 2.3. Also, the necessary number of classrooms was estimated assuming an increase in the number of enrolled students but the population of school-age children did not increase as estimated. Therefore, it was not possible to verify and judge the Project effects using the indicator of enrolled students.

Box 1 Autonomous School System

In Nicaragua, the education sector was decentralized after the early 1990's with the purpose of efficiency of school management and improvement of education quality. Under this system, each school as an autonomous body received a subsidy and collected a fee and the School Management Committee independently managed school issues including hiring of teachers and janitors and small-scale repairs of the facility. However, some schools padded the number of the enrolled students to get more subsidies, so financial management became opaque. Therefore, the current administration established in January 2007 abolished this system based on the principles of free basic education.

Currently, teachers and janitors are employed by MOE and it is prohibited for schools to collect fees from the parents. The School Management Committee was formally dismissed but each school has a parents' association. In most schools, parent representatives are selected from each class or grade, and these representatives organize a parents' association, which usually has a president, vice-president, treasurer, public relations, etc.

(Source) Interview with the Vice Minister of MOE and other staff.

According to the data in table 3, at the primary level, student enrollment has decreased every year in Rivas Department, but in Chontales there is a repeating pattern of small increases and decreases. Also at the secondary level the tendency depends on each of the three departments. Comparing the national data after 2007 (Table 5), the tendency of the beneficiary schools of the three departments is deferent and the range of increase and decrease is bigger. This may be caused by frequent migration in rural areas where most parents are engaged in small-scale pastoral farming¹⁵.

Table 5 Enrolled Students in Managua Department and the Whole Country

	2007	2008	2009	2010
Enrolled students at primary and secondary levels in Managua Department				
Primary	192,766	191,434	191,423	193,223
Secondary	130,709	125,762	123,646	126,004
Enrolled students at primary and secondary levels in the country				
Primary	952,964	944,341	926,969	923,745
Secondary	451,083	446,868	443,644	458,321

(Source) Managua Department Office of MOE.

The first item worth noting is the increase in the enrollment of secondary students at some beneficiary schools in Boaco Department. This is probably because the students who had not been able to attend school or had to commute to a distant school now can attend a nearby school constructed by this Project. This increase can be considered a big impact of the Project. Also noteworthy is that as a result of additional construction of the classrooms, either all six grades of primary education are now available, or multi-grade classes have been made into single-grade classes at nine of the beneficiary schools.

¹⁵ Interview with Chontales Department office of MOE. Other rural departments have similar situations. MOE has a program named "School Passport" to make the procedure of student transfer smooth

3.3.2 Qualitative Effects

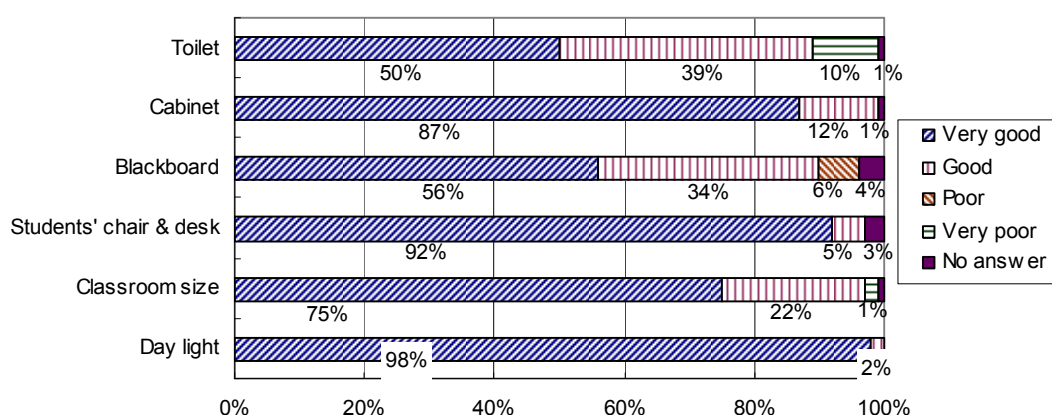
In general, with regard to the usage of the facilities, school principals, teachers and students evaluate it highly (Table 6 and Figure 1).

Table 6 Students' Evaluation of Facility Usage

	Very good	Good	Poor	Very poor	No answer
Usage of the classroom	88%	11%	1%	0%	0%

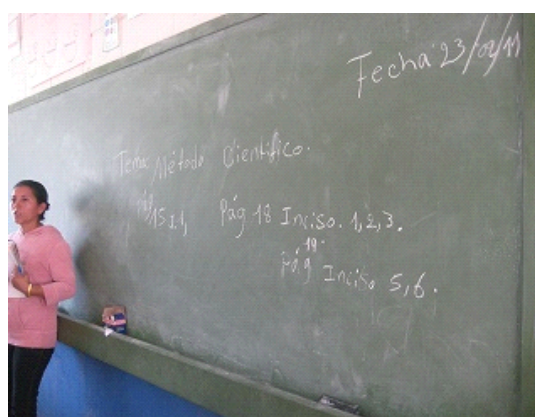
(Source) Interview with 113 students of Grades 5 and 6 at 18 schools of Rivas, Boaco and Chontales.

Figure 1 School Principals and Teachers' Evaluation of the Facility Usage



(Source) 115 school principals and teachers of 40 beneficiary schools of Rivas, Boaco and Chontales. 80 teachers evaluated the usage of the toilets.

As for the blackboards, in 14 of the 40 schools visited, they are not used. Most of the teachers who did not use the blackboard answered that chalk dust was unhealthy, and now they use the acrylic white board instead of the blackboard. Teachers who use the blackboard evaluate them highly, commenting that “they are sufficient in size and easy to use” and “students easily can look at the blackboard without light reflect.” On the other hand, some say that “if they can purchase the acrylic board and pens, they prefer it¹⁶.” With regard to the toilets, at the five schools visited, all or some are not in use. Reasons cited include: the waste level in the tank rose



Blackboards are used at more rural schools than urban schools.(Concepción de María School in Chontales). Some are well maintained.

¹⁶ MOE says that future school construction programs may be flexible in equipment purchasing such that schools can choose either blackboards or acrylic boards, considering teachers' needs and the ongoing financial feasibility of the school to purchase supplies.

and it is dangerous, and the drain does not function properly.

In light of the above, although the accommodation capacity of the facilities is lower than planned (90% of planned or lower) due to the outputs decrease, usage of the facility itself is highly appreciated. This Project has largely achieved its objectives; therefore its effectiveness is high.



Classroom before the Project. Classes were sometimes canceled because of rain and wind (Puertas Rojas School in Chontales).



A new school improved by the Project (Puertas Rojas School in Chontales).

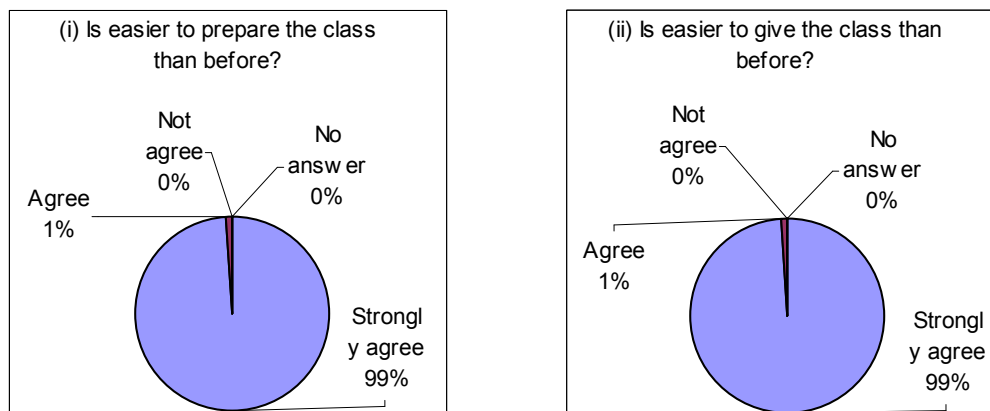
3.4 Impact

3.4.1 Intended Impacts

(1) Conduct and Contents of the Classes with Use of the Procured Equipment

The change from the pre-project period (observed by the school principals and teachers themselves) is as follows (Figure 2).

Figure 2 Change in Preparation and Conduct of Classes with the Teaching Materials Procured by the Project



(Source) Interviews with 85 principals and teachers of 40 schools of Rivas, Boaco and Chontales.

Using the teaching aid materials procured by the Project, most answered that preparation and conduct of the classes was easier than before. In addition, in more than half of the schools, textbooks are lacking and the teachers in these schools commented that the procured materials were also able to be utilized as complementary materials to the textbooks.



Students learning with a globe procured by the Project (El Silencio School in Chontales). The globe is one of the most frequently used materials.

Interviewed teachers listed maps, terrestrial globes, instruction panels for natural science and geometry kits as materials used frequently. 40 teachers

explained the change in the class with uses of the materials as follows:

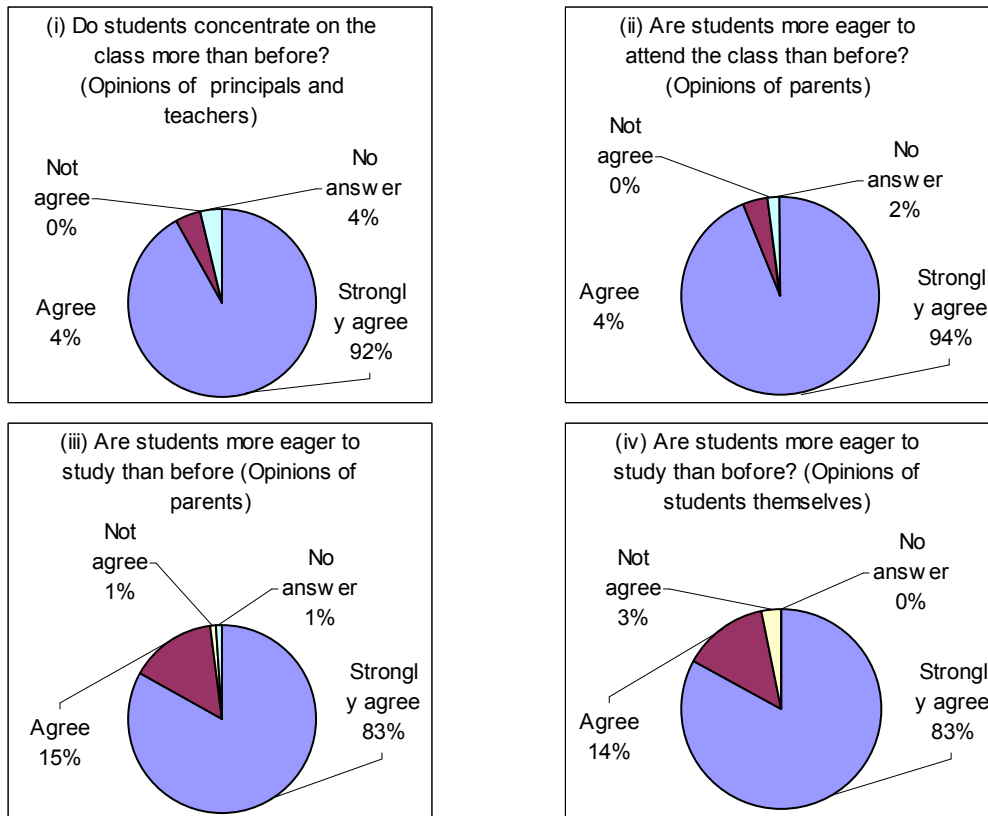
- They can now explain the theme more precisely and concretely (15 schools).
- The classes are more practical (6 schools).

In addition, some teachers commented that factors which helped them in class preparation include, “they can stay at school with security (constructed by the Project) at night during the weekdays, so the burden of commuting was mitigated” or “they can move more easily in the classroom because they now do not have to carry all their teaching materials and their baggage during the class, as they can store them in the cabinet.”

(2) Students’ Eagerness in Attending School and Studying

School principals, teachers, parents and students themselves realize the change in students as shown in Figure 3. Most answered that there were positive changes in the students’ willingness to learn and their attitudes during the class. Although it is difficult to strictly verify the Project effects, it can be assumed that the classroom size and sufficient number of desks and chairs were highly appreciated by most teachers and students (Table 6) and procured materials partially compensate for the lack of textbooks, and made it easier to conduct classes with group exercises, which in turn motivated the students to attend the school and actively participate in the class.

Figure 3 Change in Students' Attendance and Studying



(Source) Interviews with 85 principals and teachers of 40 schools, 249 parents and 113 students of Grades 5 and 6 of Rivas, Boaco and Chontales.

Table 7 Change in the Students after the Project and Students' Evaluation of Facilities.

Change in students observed by teachers	<ul style="list-style-type: none"> - Students participate in the class more actively (14 schools). - Students now work together with other students in wider space (4 schools). - There is less absenteeism (6 schools). - Students became more punctual (3 schools). - Students now pay more attention to cleaning and maintenance of the facility (7 schools). - Student achievement increased (5 schools). - Students like the school more than before (2 schools). - Students are more hygienic (they use the toilet) (1 school).
Students' evaluation on the facility	<ul style="list-style-type: none"> - There is more space for studying and playing (11 schools). - Desks and chairs are cozy and sufficient in number (13 schools). - There is a floor, walls and roof. It's comfortable (5 schools). - The school is clean (3 schools). - The blackboard is big (2 schools). - Students from grade 1 to 6 can attend the school together (2 schools).

(Source) Interviews with 85 principals and teachers of 40 schools and 249 students of Grades 5 and 6 of Rivas, Boaco and Chontales.

(iii) Use of the Classrooms for Community Activities

In 90% of the schools visited, school facilities such as classrooms are used for purposes other than primary or secondary classes. It was assumed in the BD that the

facility would be utilized for adult education, literacy classes, and community activities. In addition, schools are also used for voting, shelter (in time of disaster), health activities (such as vaccination and blood donation), and training (organized by the Ministry of Agriculture or the municipality).

Box 2 Situations of Non-beneficiary Schools

Interviews were conducted at five non-beneficiary schools.

The oldest classrooms were built in 1970 and the newest were constructed in 2005. Two of the three classrooms built in the 1970's were reconstructed and the other is to be renovated as a Grant Assistance for Grass-roots Human Security Project of Japanese ODA. Observation found that classrooms constructed by the Emergency Social Investment Fund (FISE) or by individual donations have almost the same structure as that of this Project: one small difference is that classrooms built for this Project have more space and ventilation.

Problems cited for non-beneficiary schools relating to the maintenance and repair of the facilities are almost the same as those cited for this Project—Loss of window panes, door locks, unstable chairs, water discharge, etc.

(Source) Interview with teachers of Nicaraocalli and Rubén Darío of Rivas, Agustina Miranda Quezada and Primaria Simon Bolívar of Boaco, and Elizena Del Carmen Soto of Chontales.

3.4.2 Other Impacts

There is no positive or negative unexpected impact in particular. Land acquisition was done as planned, and there was no necessity of resettlement.

Summarizing the above, although it is difficult to strictly verify the Project impacts, compared to the pre-project period, teachers prepare and give the class more easily and students' attitude is more positive. The school facility is also utilized actively for purposes other than usual classes. No particular negative impact has been caused.

3.5 Sustainability (Rating: ②)

3.5.1 Structural Aspects of Operation and Maintenance

(1) Roles for the Facility Maintenance

Basically, cleaning and small-scale repair are done at each school, and large-scale repair such as repair or construction of fences and walls is conducted by MOE. Cleaning utensils, including brooms, are distributed by MOE every year. MOE assigns a technician to each of its Department Offices and this person also responds to repair issues that the schools cannot technically work out by themselves.

Each school tries to conduct O&M as far as it is financially and technically possible. For example, small-scale repairs such as repainting should be done by the school. However, as collecting fees from parents is officially prohibited, how the school acquires painting materials depends on each school. Disparities in O&M among schools are a small concern. In most schools, when a problem arises, the school head consults parents, and deciding who to consult next depends on the school head's

connections; some go to the principal of the “core school¹⁷,” Department Office or Municipal Office of MOE, and others reach out to the Municipal Government. Officers of the relevant Municipal Offices answered that they sufficiently understand situations of the education sector (Box 3).

(2) School Management

According to MOE, a committee for school support was established at each level of the school, municipality, department and country¹⁸, with the purpose of supporting students inside and outside the classroom so that they can complete primary education.

The committee at each level is convened twice a month to share issues and discuss solutions. For example, as needs in facility repair are identified at the school level, the municipal committee shares information and assigns priorities to them. In addition, the department committee examines and assigns priority to the needs identified from the several different municipal committees, and then reports to the national committee. Also, the national committee assigns priorities to competing budget items.

Box 3 Assistance towards the School Facility by Municipal Governments

Interviews were conducted at two municipal government offices of each of Rivas, Boaco and Chontales.

(i) Needs Assessment of Schools

All municipalities answer that they “adequately understands the local situations and needs,” such as lack of classrooms and necessity of repair. Needs identification method depends on each municipality. Some receive a report from the Municipal Office of MOE, and others receive direct request from teachers or parents. Also, some municipalities visit schools at the beginning of the fiscal year to make investment plans for the schools.

Table Identification of School Needs by Municipalities

	Understands sufficiently.	Understands more or less.	Does not understand.	No answer.
Does the Municipality understand school needs related to facility maintenance and repair?	6	0	0	0

(ii) Budget Allocation to the Education Sector

It depends on each municipality. At municipalities which are headed by a mayor of

¹⁷ In rural areas, depending on the school size, a group is composed of one “core school” and several “satellite schools” nearby. School principals are allocated only to core schools and then regularly visit the satellite schools to monitor their progress and handle any issues that arise. The frequency of such monitoring visit varies, depending on the number and location of satellite schools. There is a concern as to whether or not the needs identification process for the satellite schools is equitable.

¹⁸ The committee (Comité de la Batalla por el Sexto Grado) is organized at the school (community), municipality, department, national levels, where related stakeholders participate and discuss improvement of learning environment and helping students complete primary education. The committee discusses issues and reports the prioritized needs to the upper level committee. For example, at the school level, participants are the school principal, teachers, parent representatives, a member of the president’s party (Sandinista) in charge of education, members of the students’ council of the secondary school, young members of Sandinista, community leaders, etc.

¹⁹ Approximately 250,000 to 590,000 yen, converted with the rate at the end of 2010, 1 cordoba = 3.67 Japanese yen.

Sandinista (governing party), it is recommended that 10% of the subsidy from the national treasury is allocated to the education sector. One of the six municipalities interviewed answered that it will follow this recommendation. Other municipalities say that “10% of the total budget will be to the education sector,” “Allocation portion is fluid. In 2010, originally 2% was planned but in the end 10% was used for the education sector,” or “the municipality has no budget but uses resources of FISE.” The expenditure for the education sector in 2010 varied from 70,000 cordobas to 162,000 cordobas¹⁹. These were used for small-scale repair, salary for teachers, travel expenses (subsidies) for students living in remote areas.

(Source) Interviews with the Municipal Government of San Jorge and Potoci of Rivas, Camoapa and Santa Lucia of Boaco, Acoyapa and El Coral of Chontales.

(Note) According to Boaco Department Office of the MOE, some municipalities do not support the governing party plan to allocate 10% of the government subsidy to the education sector.

3.5.2 Technical Aspects of Operation and Maintenance

MOE started the Program for Identification of Needs on Infrastructure and Repair of Schools (Programa de Identificación de Necesidades de Infraestructura y Reparaciones de Escuelas: PINRE) and has provided training to teachers and parents. Among the 40 schools visited, parents from one school in Rivas and one school in Chontales have received PINRE training, and said that “the training was useful.” Two schools in Rivas have a PINRE manual. According to MOE, it has not expanded the program due to budget constraints. It is likely that more teachers and parents have received training, but that some of the teachers moved to another school or the parents’ children graduated from the school, and therefore the number of the responses might be lower than the actual number.

According to the Vice President, MOE plans to distribute an O&M kit to each school for small-scale repairs, benefitting 30% to 40% of the schools in 2011,. At the schools visited, nobody was informed of the kit. Even without the kit, parents and teachers do O&M using their own repair tools.

3.5.3 Financial Aspects of Operation and Maintenance

(1) Budget of the Ministry of Education

The budget and expenditure of MOE and its Infrastructure Department are shown in Table 8. In FY 2011, the budget of the Infrastructure Department decreased dramatically from the previous year. Moreover, 135.7 million cordobas earmarked for O&M for school facilities under the “National Plan for Dignified Schools (Plan de Dignificación de Escuelas a Nivel Nacional),” exceed the actual sum for FY 2010. Furthermore, according to the Department, it is planned that 10% of the subsidy from the Central Government to the municipalities (155.7 million cordobas) can be allocated to O&M for school facilities. However, MOE estimates that the budget is insufficient to cover all the identified needs in the country.

Table 8 Budget and Expenditure of MOE (million cordobas)

	2007	2008	2009	2010	2011
Budget in total	3,851	4,683	5,267	5,196	n.a.
Budget of the Infrastructure Department	n.a.	n.a.	n.a.	n.a.	205
Expenditure in total	3,593	4,519	4,283	4,873	n.a.
Expenditure of the Infrastructure Department	534	401	454	315	n.a.

(Source) MOE.

The Department and Municipal Offices of MOE do not have funds for school repair but only report (though the committee system mentioned in 3.5.1 (2)) to MOE about the prioritized needs.

(2) Current O&M at the School Levels

After the system of Autonomous Schools was abolished, the schools do not manage budgets. Each time they need facility repairs, they ask for donations or apply to MOE or the Municipal Government. (MOE does not support the removal of waste from toilets). At some schools, the parents' associations asks parents for donations for repair (30-500 cordobas per year) or collect fees in the name of donation, and at other schools money (including donations) is not collected at the teachers' discretion; as such, O&M depends on each school. Also at some schools, parents provide manpower and materials such as keys and paint instead of paying in cash. In anyway event, there is a concern that small-scale schools may have difficulty collecting financial and material resources.

At the time of the BD, it was supposed that MOE would be responsible for repainting walls, fittings and blackboards and removing waste from the toilet tank. The fact is that, unbeknownst to the schools, MOE pays only for the construction of school buildings and fences and does not pay for repairs.

3.5.4 Current Status of Operation and Maintenance

(1) Current Status of the Facility

At the 41 schools visited, there are no problems which seriously hinder the class. Small problems common in more than 15 schools include: (i) locks (doors and cabinets), (ii) loss of or loose window panes, (iii) rust on window hinges, and (iv) paint removed from the blackboard. A few schools suffer from theft of food stored in the classroom or principal's room (with window bars broken)²⁰.

As for the toilets, part or all was not in use at five schools as described in 3.3.2. Regarding the use of the toilet, only one of the two basins was supposed to be used at one time while the other was covered and not used. When one tank was full of waste, the other could be used. In addition, waste needed to be dry for removal. However, the

²⁰ In urban areas such as Managua Department, thieves often target items that can be resold.

schools did not know the appropriate methods for use and removal.

With regard to the procured teaching materials, with the exception of one school, materials are stored at places where all teachers can freely access them. Small materials except globes or panels are stored in the box procured.

(2) Current Status of Operation and Management

The BD recommendations in regards to the constructed facilities were that the inside walls should be repainted every 10 years, the fittings should be repainted every five years, the blackboards should be repainted every two years, and the waste should be removed from the toilet tanks and cleaned every three years. The actual status is as follows (Table 9).

Table 9 Current Status of Facility Maintenance

	Conducted	Not yet conducted	Planned
Repaint outside walls (No regulation)	7 schools	33 schools	1 schools
Repaint inside walls (Once per 10 years)	8 schools	32 schools	1 schools
Repaint fittings (Once per 5 years)	1 schools	39 schools	0 schools
Repaint blackboards (Every two years)	9 schools	31 schools	2 schools
Remove waste in the toilet (Once per three years)	0 schools	40 schools	0 schools

(Source) Interview with principals and teachers of 40 schools of Rivas, Boaco and Chontales.
 (Note) The sum of “conducted,” “not yet conducted” and “planned” doesn’t equal 40 because some schools already conducted maintenance but have plans to do more maintenance, and others have not conducted maintenance and do not yet have plans to do so.

At the time of the field survey in February 2011, which was three to four years after the Project completion, it was expected that schools had repainted the blackboards and removed waste from the toilet, however, only nine schools have repainted blackboards and no schools have removed waste from the toilets. As blackboards are not used in many schools, this can be one factor for not being repainted. No schools were aware of the maintenance schedule suggested by the BD.

At the school level, cleaning of the facilities and surrounding area are conducted as part of O&M. The frequency of cleaning and the assigning of roles for cleaning are decided at each school and all schools regularly (almost every day) clean the school. Students are now more conscious of O&M after the facilities were constructed (Table 7). Among the 40 visited schools, janitors are employed by MOE at six schools. In small suburban schools janitors are not assigned. Janitors clean the facility but do not repair it.

Summarizing the above, some problems have been observed in regards to structural and financial aspects but there are no problems which seriously hinder the class; therefore sustainability of the Project effect is fair.

4. Conclusion, Lessons Learned and Recommendations

4.1 Conclusion

In Nicaragua, deficient and decrepit school and classroom conditions have hindered children's enrollment, and MOE has implemented a program for improving school facilities. This Project's relevancy is high since it aims to improve the learning environment in target areas by constructing facilities for basic education in Rivas, Boaco and Chontales.

Although the Project was completed within the planned costs and timeframe, delays in the preparatory work (such as land registration), lead to slightly fewer classrooms being built than planned. Therefore the efficiency is fair. The learning environment is considered to have been improved based on the high appreciation expressed by school principals, teachers and students for improvements in the size of the classrooms, the use of daylight in the classrooms and the usage of desks and chairs. The effectiveness is high. O&M of the facility largely depend on the success of a new needs prioritization system and on the financial capacity of the schools and parents. Therefore the sustainability is fair.

In light of the above, this Project is evaluated as satisfactory.

4.2 Recommendations

4.2.1 Recommendations to the Executing Agency'

- Among the current existing problems, those which can be dealt with by small-scale repair should be resolved immediately. It is recommended to give instructions to those schools on appropriate repair methods. In particular, it is necessary to disseminate information explaining the proper use of the vault toilets (latrines). When constructing and repairing the facility, it is necessary to set budget priorities in light of each school's needs in regards to the learning environment, hygienic environment, security, etc.
- It is very important to alleviate information and financial disparities among the schools and communities regarding facility repair and its application method.
- So as to maximize the effects of the Project, it is recommended to improve the learning environment (distribution of textbooks, adequate number of students in one classroom, etc.) in addition to addressing infrastructure factors such as facilities and equipment.

4.3 Lessons Learned

- It is indispensable to accurately estimate the number of the enrolled students and forecast any increases or decreases, in order to set Output targets (number of

necessary classrooms, etc.). It is necessary to request accurate data from the MOE of the partner country, and at the same time make sure that the reported number of enrolled students is accurate by sampling several schools if necessary.

- Regarding construction of vault toilets (latrines), the project does not necessarily construct the same toilets for all schools. Considering and discussing the site size and financial feasibility for O&M with the implementing agency or the partner county, the project should decide whether toilets should be fixed-type as provided in this Project or mobile-type which is the standard in the partner country.
- Regarding O&M of the facility and equipment, Japanese contractors or consultants should prepare manuals which precisely include the frequency, role, method and material procurement for O&M, and share them with the implementing agency and beneficiary schools. The contractors or consultants should make sure that the school teachers, parents and staff in charge in the implementing agency are informed about O&M methods when they hand over the facilities and equipment.

Annex 1

Planned and Actual Outputs

	Plan				Actual			
	Total	Phase 1		Phase 2	Total	Phase 1		Phase 2
		Rivas	Boaco	Chontales		Rivas	Boaco	Chontales
1. Outputs								
(1) Facility construction								
Beneficiary school	74	11	27	36	61	11	23	27
Classroom (large)	49	8	21	20	39	8	17	14
Classroom (small)	12	0	1	11	10	0	1	9
Classroom	63	15	18	30	53	15	16	22
Principal's room	3	1	1	1	3	1	1	1
Teachers' room	8	3	4	1	8	3	4	1
Complementary unit	61	8	23	30	50	8	19	23
Letrines	176	30	58	88	80	30	50	0
(2) Equipment								
Desk and chair for	4,780	920	1,585	2,275	3,930	920	1,345	1,665
Desk and chair for	212	41	76	95	179	41	66	72
Cabinet (without door)	88	18	36	34	77	18	32	27
Cabinet (with door)	124	23	40	61	102	23	34	45
(3) Material procurement								
Teaching materials	76	11	27	38	61	11	23	27
2. Perior								
Work period (month)	38.0	19.0		19.0	34.5	17.0		17.5
3. Costs								
Amount in foreign					278.95	143.13		135.83
Amount in local					1,027.00	539.93		487.08
Total (million yen)	1,345.00	704.00		641.00	1,305.95	683.05		622.90