Republic of Mozambique

FY2017 Ex-Post Evaluation of Japanese Grant Aid Project

"The Project for the Construction of Secondary Schools in Nampula Province in the Republic of Mozambique"

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0. Summary

This project was implemented with the aim of improving the access to and learning environment of secondary education by constructing new secondary schools in three districts and one city in Nampula province where is the lowest Net Enrollment Rate (hereafter referred to as "NER") in lower secondary education (Grade 8th-10th) in Mozambique, thereby contributing to the improvement of education quality.

At the time of planning and ex-post evaluation stage, as the construction of education facilities was prioritized according to the policies of Mozambique, the project for constructing new secondary schools is consistent with policy. In the target province of the project, where the current situation that the number of secondary schools is insufficient and NER is low, there is a high need to support new secondary school construction. Since this project is consistent with Japan's ODA policy with an emphasis on enhancing basic education, the relevance of this project is high.

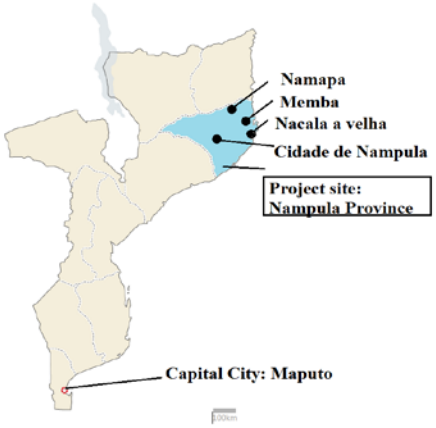
Although the project cost was within the plan, the project period exceeded the plan as the procedure of executing agency delayed, etc. So, the efficiency is considered fair.

Effectiveness indicators such as "the number of enrolled students", "commuting time" and impact indicators such as "students' awareness of sanitation" and "students' motivation to study" are generally achieved. Therefore, the project's effectiveness and impact are considered high.

The executing agencies and school committees of communities for this project have the necessary institutional structure and technique of operation and maintenance to maintain the effectiveness of this project. On the other hand, some problems have been found in the finance of executing agencies. Thus, sustainability is fair.

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

1. Project Description



Project Locations

Namapa school in Nampula Province, the target school for this project

1.1 Background

In Mozambique, human social development including education was positioned as one of the main issues for comprehensive economic growth and poverty reduction in the five-year plan and the *Poverty Reduction Action Plan. National Education Strategic Plan* was also formulated as basic plan of the education sector and it aimed at completion of high-quality primary education for seven years and the expansion of educational opportunities after primary education including secondary education. In 2008, *Secondary Education Strategic Plan* (2009-2015) was formulated and classrooms had been constructed with the aim of achieving 70% of NER in lower secondary education (Ensino Secundario Geral do Primeiro Ciclo, hereinafter referred to as “ESG 1”) by 2015. With the rapid popularization of primary education, the demand for enrollment to the secondary education had risen rapidly and the number of students in ESG1 had increased by 2.6 times from 2004 to 2010. During the same period, the number of public schools at ESG1 level increased by 1.43 times and the number of classrooms increased by 1.56 times. However, as the supply of facilities could not keep up with the rapidly increasing demand for schooling, the average number of students per classroom at ESG1 level was 127.9 students (2010, public schools) and the overcrowding situation had become serious. In addition, many of the newly constructed secondary schools were operating at a minimum capacity, forced to compensate by diverting the primary school facilities to the secondary schools as well as by borrowing some classrooms. These schools did not have facilities such as library rooms and laboratories necessary for proper secondary education.

Given this background, this project was implemented with the objective of increasing the access to and improving the school environment in secondary education by constructing new

secondary schools in three districts and in one city in Nampula province where is the lowest NER at ESG1 level in Mozambique.

1.2 Project Outline

The objective of this project is to improve the access to and learning environment of secondary education by constructing new secondary schools in three districts and in one city in Nampula province, thereby contributing to improvements in the quality of education.

G/A Grant Limit / Actual Grant Amount	1,063 million yen / 1,063 million yen
Exchange of Notes Date	August 2012/ August 2012
Executing Agency	Ministry of Education and Human Development (MINEDH) [1]
Project Completion	May 2015
Main Contractors	Construction company：CETA ENGENHARIA E CONSTRUÇÃO, S.A Procurement of Equipment：L. Duarte Dos Santos Lda
Main Consultant	Matsuda Consultants International Co., Ltd.
Procurement Agency	Japan International Cooperation System (JICS)
Outline Design	March 2011- March 2012
Related Projects	【Technical Cooperation】 - Strengthening of primary education in Gaza province in Mozambique (2006 - 2009) - Teacher training advisor (2010-2012) - Strengthening In-service teacher training system for Secondary Education in Mozambique (2014- 2015) 【Grant Aid】 - Project for the construction of primary and secondary schools in Maputo city (2001-2003) - The project for construction of secondary schools (2009-2012) 【Other international organizations, donor agencies, etc.】

[1] In 2015, it was changed to its current name from the Ministry of Education.

	- Education Sector Support Fund(FASE)(World Bank・EU, other 9 countries, Phase I 2003-2008, Phase II 2008-2012, Phase III 2012-2016) - Education Project IV(AfDB, 2008-2010)

2. Outline of the Evaluation Study

2.1 External Evaluator

Yudai NISHIYAMA, INTEM Consulting Inc.

2.2 Duration of Evaluation Study

This ex-post evaluation study was conducted with the following schedule.
Duration of the Study: October 2017 - October 2018
Duration of the Field Study: January 14 - February 19, 2018, April 22 - May 14, 2018

2.3 Constraints during the evaluation study

Although attempts were made to collect NER of target districts to evaluate the impact, no reliable data could be obtained from MINEDH and Nampula Provincial Director of Education and Culture (hereinafter referred to as "DPEC").

3. Results of the Evaluation (Overall Rating: B[2])

3.1 Relevance（Rating：③[3]）

3.1.1 Consistency with the Development Plan of Mozambique

In Mozambique's national development plan at the time of planning stage of this project, *Poverty Reduction Action Plan* (2011-2014) (*Plano de Accao para a Reducao da Pobreza*, hereinafter referred to as "PARP"), ensuring primary education as well as expansion of education opportunities for post primary education including secondary education were part of prioritized strategies. In addition, in *Education Culture Strategic Plan* (2006-2010/2011) (*Plano Estrategic Da Educacão Cultura*, hereinafter referred to as "PEEC"), 100% of NER of lower primary education in 2008 by implementing a strategic plan focusing on expansion of primary education was targeted. Further, in order to implement the realization of PEEC, *Secondary Education Strategy* (2009-2015) (*Estrategic da Ensino Secundario* (hereinafter referred to as "EESG") was formulated and Mozambique government has been working on expanding access to secondary education, improving the quality of education, and strengthening the organization. As the expansion of access to the education and improvement of education quality continuously

[2] A: Highly satisfactory, B: Satisfactory, C: Partially satisfactory, D: Unsatisfactory
[3] ③: High, ②: Fair, ①: Low

mentioned in PARP (2015-2018), which is the latest plan of PARP (2011-2014), and *Education Sector Strategic Plan* (2015-2019) (*Plano Estrategic do sector da Educacão*, hereinafter referred to as "PEE")[4], which is PEEC's subsequent plan, it is consistent with development policy.

As mentioned above, at the time of planning and ex-post evaluation stage, development policy of Mozambique did not change and this project is consistent with Mozambique's development policy.

3.1.2 Consistency with the Development Needs of Mozambique

At the time of planning stage, the number of students in secondary education had increased rapidly due to the spread of the primary education and the increase of graduates. It became 2.2 times in ESG 1 and 3.5 times in upper secondary education (Ensino Secundário Geral do Segundo Ciclo, hereinafter referred to as "ESG 2")[5] for the six years from 2005 to 2011[6]. NER in 2011 was 46% at ESG 1 and 19% at ESG 2 and the number of students in secondary education was expected to increase more. On the other hand, in 2010, the number of classrooms in secondary education was overwhelmingly scarce, and the number of students per classroom at ESG 1 level was 127.9 students / classroom (three-part system) nationwide and increasing the number of classrooms in secondary education was an urgent issue. Nampula province, which is the target area for the project, had the largest population among the 10 provinces and one city in Mozambique. It located in the northern area where infrastructure development had been delayed and development of secondary education also had been remarkably delayed. In 2011, NER of Nampula province was 32% at ESG 1 and 16% at ESG 2, both of which were the lowest in the nation. Also, the number of students per classroom at ESG 1 level was 155 students / classroom (three-part system) which was more crowded than the national average and urgent improvement was required.

At the time of ex-post evaluation stage, NER in nation in 2017 is 33.1% at ESG 1 and 15%[7] at ESG 2, which are still low. The number of students per classroom at ESG 1 is 99 students / classroom (three-part system) in nation and increasing the number of classrooms in secondary education is an urgent issue. In Nampula province, the NER in 2017 is 23% at ESG 1 and 12%[8] at ESG 2, which are still low as well. And the number of students per classroom at ESG 1 is 101 students / classroom (three-part system) and it is still high. Thus, there is still a need for facility development in Mozambique.

[4] Regarding the *Secondary Education Strategy Plan*, it is mentioned in PEE (2015 - 2019) at this moment because there is a possibility that a new administration may be established in the 2019 election.
[5] Upper secondary education (Grade11th-12th)
[6] Source: *Preliminary Survey Report* (2012), P. ii
[7] Hearing from MINEDH
[8] Hearing from MINEDH

From the above, there is no difference in the consistency with the development needs from planning stage through to ex-post evaluation stage, and the development needs continue to be high.

3.1.3 Consistency with Japan's ODA Policy

Based on PARP adopted by Mozambique in 2011, Japan focused on developing its assistance for improving access to basic education in order for Mozambique to achieve poverty reduction with sustainable economic growth by exerting its high potential[9]. "Improvement of access to basic education" was stated in the priority area of Japan's aid policy at the time of ex-ante evaluation in 2012, and this project was consistent with the policy at the time.

From the above, this project has been highly relevant to the Mozambique's development plan and development needs, as well as Japan's ODA policy. Therefore its relevance is high.

3.2 Efficiency (Rating: ②)

3.2.1 Project Outputs

The outputs from the Japanese side of this project was the development of educational facilities, such as classroom, administration block, multi-purpose block, toilet block, guard hut block and simple gymnasium / dressing room block as well as the procurement of educational equipment. The outputs from Mozambique's side was maintenance and connection of water supply, power lead-in and connection, outer construction, maintenance of scientific experiment equipment and procurement of PC equipment, etc. The output of this project is outlined in Table 1.

Table 1 Planned / Actual number of educational facilities

Site	Classrooms	Administ-Ration blocks	Multi-Purpose block	Toilet block	Guard hut block	Simple gymnasium/ Dressing room block
Natikire	19/19	1/1	1/1	1/1	1/1	1/1
Memba	10/10	1/1	1/1	1/1	1/1	1/1
Namapa	10/10	1/1	1/1	1/1	1/1	1/1
Nacala-a-velha	10/10	1/1	1/1	1/1	1/1	1/0
Total	49/49	4/4	4/4	4/4	4/4	4/3

Source: Created from the result of hearing with target schools

Note: Shaded part is numbers where changes (increases) were made in planned and actual results

[9] Source: Official Development Assistance (2012) "Data by country" P.669

As for the outputs from the Japanese side, according to the hearing with MINEDH, the priorities were changed due to the cost adjustment of fluctuations in the exchange rate, and the construction of the simple gymnasium / dressing room block was canceled at Nacala-a-velha. This is a priority change as a countermeasure of grant aid for community empowerment. Thus, relevance of its change is high.

As for the outputs from the Mozambique side, according to the result of hearing survey with target schools and the visual check by the evaluator, it was confirmed that procurement of the items to be borne by the Mozambique side, such as “PC equipment” and “Scientific experiment equipment “was not implemented as planned. Procurement of PC equipment and scientific experiment equipment was not carried out at all target schools as planned due to the lack of budget[10] of MINEDH[11].

From the above, the equipment outputs from the Japanese side were provided as planned. But the part of outputs from the Mozambique side was not imputed as planned. Thus, differences in the outputs of the equipment are seen.

Proposal to localize standard design utilizing community empowerment

This project is grant aid for community empowerment and the procurement agency (JICS) contracted with the local contractor as an agent on behalf of the client, and the Japanese consultant carried out the construction supervision. In the grant aid for community empowerment, the project can propose necessary improvement ideas to the local standard design. The improvement plan required not to deviate from the technical expertise and experience of the local engineer and priority was given not to raise costs significantly compared with the standard design. All improvement ideas proposed were agreed upon, and construction was carried out. Furthermore, these ideas gained high recognition by the executing agency. For example, a water receiving tank was installed at each site in order to improve water supply in advance of outages and to ensure consistent supply. The receiving tank has a mechanism for an elevated tank according to the local standard design, pumping water from the receiving tank automatically to supply water to each water supply point via gravity. At the time of ex-post evaluation, the evaluation of each school visited seemed to be high owing to water supply stability being achieved at a low cost compared with before the construction. By utilizing grant aid for community empowerment and proposing the improvement ideas based on the local standard of design, it not only improved the effectiveness and sustainability of this project but it also resulted in the project effect being evaluated from the target schools.

[10] As a result of hearing with MINEDH, there was an answer that the originally planned budget for PC and laboratory equipment had been used for school reconstruction support as a flood occurred in 2014.

[11] Please refer to “Sustainability” for evaluation judgment about PC and laboratory equipment. In addition, a well was planned as an initial water supply source though, as a result of comparing the cost of drilling the well and using the city water, water supply source was changed to be city water.

3.2.2 Project Inputs

3.2.2. 1 Project Cost

The project cost was planned to be 1,063 million yen at the time of planning stage, and the actual result was 1,060 million yen (100% compared to the plan), and it was as planned[12]. The project cost from Mozambique side could not be confirmed.

3.2.2.2 Project Period

The project period was expected to be 24 months[13] in the plan, but according to a hearing with the procurement agency, the actual result was 34 months and it exceeded the plan (142% compared to the plan). The reasons for the difference in the project period are 1) About one month delay[14] in the Agent Agreement and contract with the consultant due to the delay of the executing agency procedures[15], banking arrangements, and fund transfers, 2) About 2.5 months delay in the contract on construction works and the contract on furniture procurement due to the delay in securing water supply sources to be borne[16] by the executing agency, 3) About 2.5 months delay in the construction starting and furniture procurement starting due to the delay of above 1) and 2), 4) As a result of 3), construction work rushed into the rainy season and about 4.5 months delay occurred at the time of completion of the construction and furniture installation, 5) In addition, traffic was interrupted due to more rainfall than usual and the construction period (completion time) and the furniture procurement period were delayed about 2.5 months, etc.

From the above, although the project cost was within the plan, the project period exceeded the plan. Therefore, efficiency of the project is fair.

3.3 Effectiveness and Impacts[17] (Rating: ③)

3.3.1 Effectiveness

3.3.1.1 Quantitative Effects (Operation and Effect Indicators)

In order to confirm the improvement situation of access to secondary education and learning

[12] It was 1,060 million yen due to detailed design 1 (change of water supply source) and detailed design 2 (component decreased due to foreign exchange difference), and it was 3,007 thousand yen lower than planned. This change is valid.

[13] This project period at the time of ex-ante evaluation was not defined as the signing date of Agent Agreement (A/A) but was set as from the establishment of the agency's office to the closure.

[14] The A/A and the contract with consultant are not included in the implementation period of 24 months.

[15] Two months was planned as an average period from the Cabinet to A/A in the initial plan. In addition to the fact that the signing of the exchange of note (E/N) was delayed by 1 week due to the absence of counterpart' signatories, the period concerning the procurement agency contract took the last two months of regulation. This is due to the delay in fund transfer of bank procedures. It is not the responsibility of the executing agency.

[16] This is because the budget for well excavation work could not be secured. Finally, it was contributed from Construction Education Equipment Department's budget in MINEDH. Due to the delay of the Cabinet meeting, the whole construction period shifted backward, so it was a budget contribution at the end of the fiscal year.

[17] Sub-rating for Effectiveness is to be put with consideration of impact.

environment, 1) the number of enrolled students at the target schools, was confirmed and evaluation was made as an indicator of the quantitative effect. In addition, 2) the number of classrooms and students in overcrowded classes, 3) the number of classrooms, administration blocks, multi-purpose block, toilet block, and simple gymnasium block that are actually being used, were set as additional indicators and evaluation was made. Table 2 shows the number of enrolled students at the target schools.

Table2 Number of enrolled students at the target schools

Name of site	Target	Actual			
	2018	2015	2016	2017	Achievement level (2017)
	3 years After completion	Completion Year	1 year After completion	2 years After completion	Actual / Target
Natikire	2.090	3,380	3,069	2,815	135%
Memba	1,100	2,235	1,936	1,936	176%
Namapa	1,100	1,189	1,156	1,141	104%
Nacala-a-velha	1,100	1,201	1,151	1,055	96%
Total number of students	5,390	8,005	7,312	6,947	129%

Source: Created from the result of hearing with target schools

The actual number of students in 2017 was 6,947 (achievement level is 129%) for a target number of 5,390 in 2018[18](three years after completion) and the initial target was achieved. As of 2017, the number of classrooms and students in overcrowded classes[19] is shown in table 3 below.

Table3 Number of classrooms and students in overcrowded classes

Item	2015	2016	2017
Number of overcrowded classrooms (Classrooms)	45/146	33/145	35/140
Number of students in overcrowded classroom (persons)	2,967/8,005	2,013/7,312	2,340/6,947

Source: Created from the result of hearing with target schools

Note: The denominator in the upper row is the total number of classrooms, the denominator in lower row is the total number of students

[18] Because the project period was extended, it is 2018 after three years of project completion. In February 2018 in which this ex-post evaluation was conducted, it was the first semester. Usually the number of enrolled students increases or decreases in the first semester. So, the latest data of the number of enrolled students was FY 2017.

[19] The definition of overcrowded classroom is more than 55 students per classroom, which is the medium-term target of the "Secondary Education Strategic Plan".

In 2017 there are 35 classrooms in overcrowded classes, it is 25% for 140 classrooms actually used. The number of students studying in the classroom in overcrowded classes is 2,340 which is 34% of the total number of 6,947 students. The average number of students per a classroom in overcrowded classrooms is 67 students / classroom[20] and it is 50 students[21]/ classroom in all classrooms.

Figure 1 shows the frequency distribution of the number of students per classroom at the target schools.

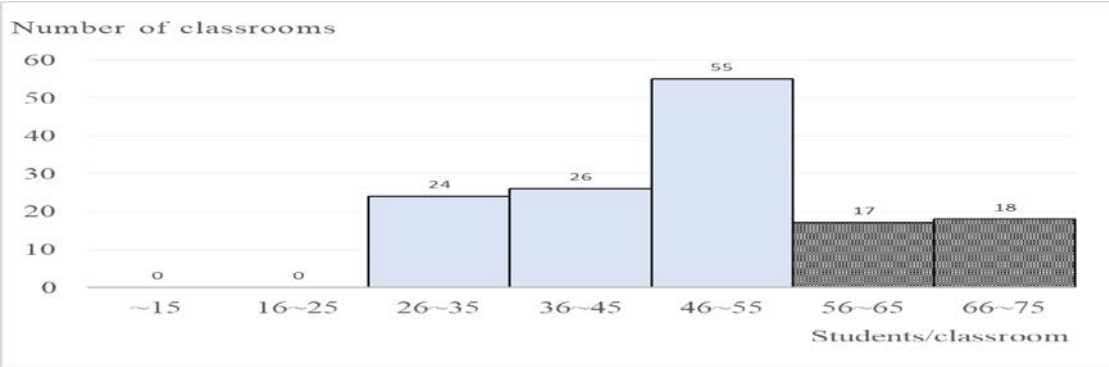


Figure 1 Frequency distribution of the number of students per classroom

Source: Created from the result of hearing with target schools

Table 4 shows the number of classrooms and students in overcrowded classes by the target schools in 2017. It can be said that there are many overcrowded classes at Natikire and Namapa. From the frequency distribution, the degree to which it exceeds the standard of overcrowded classes is low. So, it can be judged that the degree of overcrowding is not serious.

Table 4 Number of classrooms and students in overcrowded classes by the target schools

	2017	
	Number of overcrowded classrooms	Number of students in overcrowded
Natikire	23	1,490
Memba seda	0	0
Namapa seda	12	850
Nacala-a-velha	0	0
Total	35	2,340

Source: Created from the result of hearing with target schools

[20] Total number of students in overcrowded classes are 2,340 students and number of classrooms is 35 classrooms. Therefore, the average number of students per classroom in overcrowded classes is 67 students.

[21] The total number of students in the target schools is 6,947 students, the total number of classrooms is 140, and the average number of students is 50 students per classroom.

Table 5 compares the targets and actual number for the operational indicators of the classrooms, administration block, multi-purpose block, toilet block, and simple gymnasium block.

Table 5 Comparison of target and actual number of operational indicators

	Target	Actual			
	2018	2015	2016	2017	Achievement Level (2017)
	3 Years After Completion	Completion Year	1 Year After Completion	2 Years After Completion	Actual /Target
Number of classrooms(classrooms)	49	49	49	49	100%
Number of administration blocks(blocks)	4	4	4	4	100%
Number of multi-purpose blocks (blocks)	4	4	2	2	50%
Number of toilet blocks (blocks)	4	4	4	3	75%
Number of simple gymnasiums blocks (blocks)	3	3	3	3	100%

Source: Confirmed with provided documents by JICA (Target), by school visit (Actual)

One toilet block is not used because the water in the toilet cannot be used due to a breakdown of the water supply facility. In the science laboratory included in the multi-purpose block at four schools, necessary equipment has not been procured for conducting experiments. Likewise, regarding the computer rooms, PCs are arranged but servers and wiring are not in place and cannot be used at Natikire and Namapa. Only a few PCs and equipment are in place at Memba and Nacala-a-velha[22]. A part of problems can be seen in the multi-purpose blocks and the toilet blocks. But the classrooms, the administrative blocks, and simple gymnasium block were built as planned and are used properly. Therefore, in general, the indicators have been achieved.

3.3.1.2 Qualitative Effects (Other effects)

As for the indicators for the qualitative effects, 1) Implementation of the official curriculum of secondary education through construction of necessary facilities (laboratory, computer room, library, simple gymnasium) for implementing secondary education curriculum, 2) the students'

[22] One PC is shared with 3 students, and it is used during the lessons.

awareness of sanitation has been promoted through construction of toilets, were set at the planning stage. 2) is not a direct result of this project, so it was analyzed and evaluated in the impact. As for the additional indicators, 3) Student's commuting time and distances, 4) Satisfaction level of school facilities for students and teachers, were set as indicators and the evaluation was made. The indicators of 1) and 4) were to evaluate the improvement of learning environment and 3) was to evaluate the improvement of access to education.

(1) Implementation of classes in accordance with the curriculum become possible through construction of necessary facilities for the secondary education curriculum.

Although some equipment are not in place, it is possible to provide the regular curriculum of secondary education by using the classrooms developed by this project. As for ICT subject, PCs are arranged but servers and wiring are not in place and cannot be used in schools at Natikire and Namapa. Only a few PCs and equipment are in place in schools at Memba and Nacala-a-velha. Due to the budget shortage of MINEDH, the equipment necessary for science experiment are not provided in all four schools[23]. Classes in lecture style are being held at schools without equipment. The number of class hours for science (biology, chemistry, physics), ICT and physical education is carried out as the hours recommended in the official curriculum[24]. As for the utilization of the library, the library has the function as lending and storage of textbooks as well as is used as a self-study room. Each library has a librarian who manages the lending and storage of textbooks[25].

In addition, in order to utilize these facilities developed by this project, the allocation of appropriate number of teachers and staff was requested to the executing agency at the planning stage. Table 6 shows the allocated number of teachers responsible for science (physics, biology, chemistry), ICT, physical education and librarian in 2018. Every teacher has a teaching license and teacher allocation is done appropriately.

[23] Evaluation judgment about maintenance situation of PC equipment and laboratory equipment is mentioned in sustainability section.
[24] Concerning the number of lesson hours in the official curriculum, science (physics, biology, chemistry) and physical education are two hours each per week in 8th grade to 10th grade, and ICT is two hours per week in 10th grade. As for ICT subject, one PC is shared with two students as the standard curriculum.
[25] Textbooks are charged in secondary schools. Students who have difficulties to purchase textbooks use textbooks in the library.

Table 6 Number of teachers assigned by subjects (2018)

	Science	ICT	Physical education	Library
Natikire (persons)	42	2	6	3
Memba (persons)	19	0	2	1
Namapa (persons)	17	1	2	1
Nacala-a-velha (persons)	0[26]	1	3	1

Source: Created from the result of hearing with target schools

Based on the above, the improved educational environment has led to the qualitative effects.

(2) Students' commuting time and distances have shortened through construction of new schools.

Effectiveness was evaluated from the viewpoint of access to education through the group interviews[27] with students. Table 7 shows the method of school transportation and commuting time.

Table 7 Students' transportation method and commuting time at target schools

Method of transportation	number of students	Commuting time			
		Less than 30 mins	Less than 1hr.	1hr. or more	2hr. or more
Walk (persons)	14	5	9	0	0
Bus (persons)	5	5	0	0	0
Motorbike (persons)	1	0	1	0	0
Total (persons)	20	10	10	0	0
Percentage	100%	50%	50%	0%	0%
Percentage of walk in total	70%	25%	45%	0%	0%

Source: Created from the result of hearing with target schools

The secondary schools constructed by this project were in the distance within maximum of 6.2 km from the site to the existing secondary school and it was expected that students' commuting time and distances would have shortened. Before the construction, it took more than 2.5 hours for one way. With the construction of new schools, 100%[28] of students are able to commute to schools within one hour. Furthermore, students who commute to the schools by

[26] In Nacala-a-velha, teachers who hold teaching license of mathematics teach sciences as well. According to a hearing with the principal it is usual that one teacher teaches several subjects, in Mozambique.
[27] For group interviews with students, five students were selected by random sampling for each school at four target schools and it was carried out at the site visited by the evaluator. Sample size is 20 people (10 boys and 10 girls).
[28] 100%=50% (Less than 30 mins) +50% (Less than 1hr)

walk not by bus or motorbike in an hour or less is 70%[29] of the total. Following opinions came from parents; “my child comes back home before sunset. We can have dinner together.” (Parents, Natikire), and “my child becomes to attend school in the rainy season.” (Parents, Namapa).

(3) Satisfaction level of school facilities has been improved.

Table 8 shows the group interview results on the students’ satisfaction level on classrooms, multi-purpose blocks, toilet block, and gymnasium block.

Table 8 Students’ satisfaction level with classrooms, multi-purpose blocks, toilet block, and gymnasium block

	Classrooms	Multi-purpose blocks	Toilet block	Gymnasium block
Satisfaction level	3.5 /4.0	2.8 /4.0	2.5 /4.0	3.9 /4.0
Very satisfied · satisfied	95%	75%	50%	100%
Very dissatisfied · dissatisfied	5%	25%	50%	0%

Source: Result of group interview with students

Students’ satisfaction with the multi-purpose blocks was 2.8 out of four scales. There were answers for “very dissatisfied”, or “dissatisfied” that “because there is no laboratory equipment, and the class is conducted in a lecture style.”, and “because there are not enough PCs, we must share them with some students.” as the reasons. Students’ satisfaction with the toilet block was 2.5 out of four scales. There were answers for “very dissatisfied”, or “dissatisfied” that “because there is only a little water running.” and “there are times when the hand washing water does not come out.” as the reasons.

Table 9 shows the results of group interviews[30] on the teachers’ satisfaction levels with classrooms, multi-purpose blocks, toilet block, and administration blocks.

[29] 70%=25% (Less than 30 mins) +45% (Less than 1hr)

[30] For group interviews with teachers, three teachers were selected for each school at four target schools and it was carried out at the site visited by the evaluator. The sample size was 12 people (six male and six female).

Table 9 Teachers' satisfaction levels with classrooms, multi-purpose blocks, toilet blocks, and administration blocks

	Classrooms	Multi-purpose blocks	Toilet blocks	Administration blocks
Satisfaction level	3.6 /4.0	3.1 /4.0	3.3 /4.0	3.4 /4.0
Very satisfied · satisfied	100%	83%	100%	100%
Very dissatisfied · dissatisfied	0%	17%	0%	0%

Source: Group interview with teachers

The teachers' satisfaction level with classrooms, multi-purpose blocks, toilet blocks, and administration blocks was generally high. At the time of ex-ante evaluation, it was expected that more effective school management and administration would be possible by improving the administration blocks[31]. Since this project is not a project that directly aims with effective school management and administration by improving the administration blocks, "the teachers' satisfaction level with administration blocks" was measured and the evaluation was made.

Following answers came from the principals and teachers; "interaction among teachers, information exchange, and/or meetings with teachers on areas of learning have been carries out on a more routine basis than before.", "office procedures for parents and students are dealt with more effectively and quickly now.".

From the above, the quantitative and qualitative indicators of effectiveness have largely been achieved. It can be said that the implementation of this project has been effective in access to the secondary education and improving the learning environment in the target area.

3.3.2 Impacts

3.3.2.1 Intended Impact

(1) Quantitative effect

In order to evaluate the quantitative impact[32] of the project, factors measured were 1) the number of enrolled students in secondary schools in the target four districts, and 2) NER[33] in Nampula province. Table 10 shows the results.

[31] It was confirmed from the consultant who supervised construction that the originally assumed effects were as follows; 1) Measures for theft 2) Preparing for teacher's lessons, conducting conferences and taking breaks 3) School administration 4) Administrative accounting 5) Document storage

[32] There was no setting of the indicator of quantitative effect at the time of ex-ante evaluation stage.

[33] Although attempts were made to collect NER of target districts, no data could be obtained from MINEDH and Nampula DPEC.

Table 10 Change of number of enrolled students in target four districts

	Actual		
	2015	2016	2017
	Completion Year	1 Year After Completion	2 Years After Completion
Nampula city (persons)	46,187	44,859	50,835
Namapa district (persons)	1,986	3,398	3,498
Memba district (persons)	3,755	1,958	1,770
Nacala-a-velha district (persons)	1,201	1,151	1,055
Total of target four districts	53,129	51,366	57,158
Total of Nampula province	118,483	116,290	126,058

Source: Created from the result of hearing with Nampula DPEC

The number of enrolled students at secondary education in Nampula province increased by 7,575 students[34] from 2015 to 2017. The total number of enrolled students in the target four districts increased by 4,029 students[35]. In Nampula city and Namapa district located in the center of Nampula province, the number of enrolled students has increased. On the other hand, in Memba district and Nacala-a-velha district located in the North, it has been decreasing.

Table 11 shows NER of Nampula province. There has been no major change in NER of Nampula province for the last three years[36].

Table 11 NER of Nampula province (2015 - 2017)

Target province	Actual					
	2015		2016		2017	
	Completion Year		1 Year After Completion		2 Years After Completion	
Nampula province	ESG1	ESG2	ESG1	ESG2	ESG1	ESG2
	23.0%	10.6%	21.2%	11.4%	22.6%	12.3%

Source: Created from the result of hearing with MINEDH

(2) Qualitative effect

As the indicators, 1) Students' motivation to study due to the provision of classrooms,

[34] The number of secondary schools in Nampula province has increased by 11 schools from 78 schools (2015) to 89 (2017).

[35] As schools were newly built other than by this project, it shoud be noted that the increase in the number of enrolled students due to the improved access is not necessarily impacted only by this project.

[36] The number of schools in Nampula is 88 (2018), and the four schools for this project are 4.5% of the total. So, the weight of the evaluation judgment is low.

2) Teachers' motivation to teach due to the provision of teacher's room, 3) Students' awareness of sanitation due to the provision of toilet, 4) Female students' motivation to attend school due to the provision of toilet, were set for the ex-post evaluation and the evaluation was made.

1) Students have increased motivation to study due to the provision of classrooms

As a result of group interviews with students, the improvement in students' motivation to study by improving the classrooms was 3.9 out of four scales. There were answers such as "the classroom is large and has enough size.", "I can study in a comfortable environment". Also, as a result of group interviews with teachers and principals, there were answers such as "as the furniture (blackboards, desks, chairs) are well prepared, students can concentrate on their study.", "the rain and wind can be prevented, the students can concentrate on their study in a comfortable environment ".

2) Teachers have increased motivation to teach due to the provision of teachers' room

As a result of group interviews with teachers, the improvement in teachers' motivation to teach by improving the teachers' rooms was 3.7 out of four scales. There were answers from teachers such as "teachers can exchange the information in the teacher's room.", "because there is a shelf for myself and desk for each subject, it is easy to organize documents". Following answers came from principals in group interviews; "opportunities for teachers to talk about lessons have increased. ", "teachers came to prepare the lessons at the teacher's' room".

3) Students' awareness of sanitation has improved due to the provision of toilets,

As a result of the group interviews with teachers, the improvement of awareness of students' sanitation was 3.9 out of four scales. There were answers from teachers such as "the number of students who urinate in the schoolyards or surrounding grasses has decreased, there is no bad smell now.", "the number of students who have diarrhea has decreased".

4) Female students' motivation to attend school has improved due to the provision of toilet

As a result of the group interviews with teachers, the improvement of female students' motivation to attend school was 3.7 out of four scales. There were answers such as "from the viewpoint of privacy, the improvement of the toilet is important for female students.", "there are female students who come to school with their parents and check the presence and cleanliness of toilets before entering the school. Provision of toilets is related to female's motivation to attend school".

From the above, although there have been no major changes in "the number of enrolled students" and "NER" related to the access to secondary education in Nampula province, some

improvements in “the students’ awareness of sanitation” and “students’ motivation to study” related to the quality of education could be seen.

3.3.2.2 Other Positive and Negative Impacts

(1) Impacts on the Natural Environment, Resettlement and Land Acquisition

In this project, as a result of the hearing survey with the executing agency, it was confirmed that no particular impact was observed on the natural environment and the resettlement of residents and upon land acquisition.

From the above, the implementation of this project generally showed the effect as planned. Therefore effectiveness and impacts of the project are high.

3.4 Sustainability (Rating: ②)

3.4.1 Institutional / Organizational Aspect of Operation and Maintenance

(1) Institutional / Organizational Aspect of Operation and Maintenance at MINEDH

In Mozambique, as a result of decentralization has been promoted since 2006, the promotion of school management and school construction as well as budget formulation have been delegated to the district level. DPEC and District Education, Youth and Technology Services (hereinafter referred to as “SDEJT”) are located under the MINEDH. MINEDH is responsible for the planning, operation and monitoring of the national education system. Educational administration at the provincial level is carried out by DPEC and at a district level it is carried out by SDEJT. Under the SDEJT, there are school clusters which conduct educational planning and management at the local level, such as opening schools, assigning teachers, etc. based on the policies of MINEDH.

The organization chart of MINEDH is as shown in Figure 2.

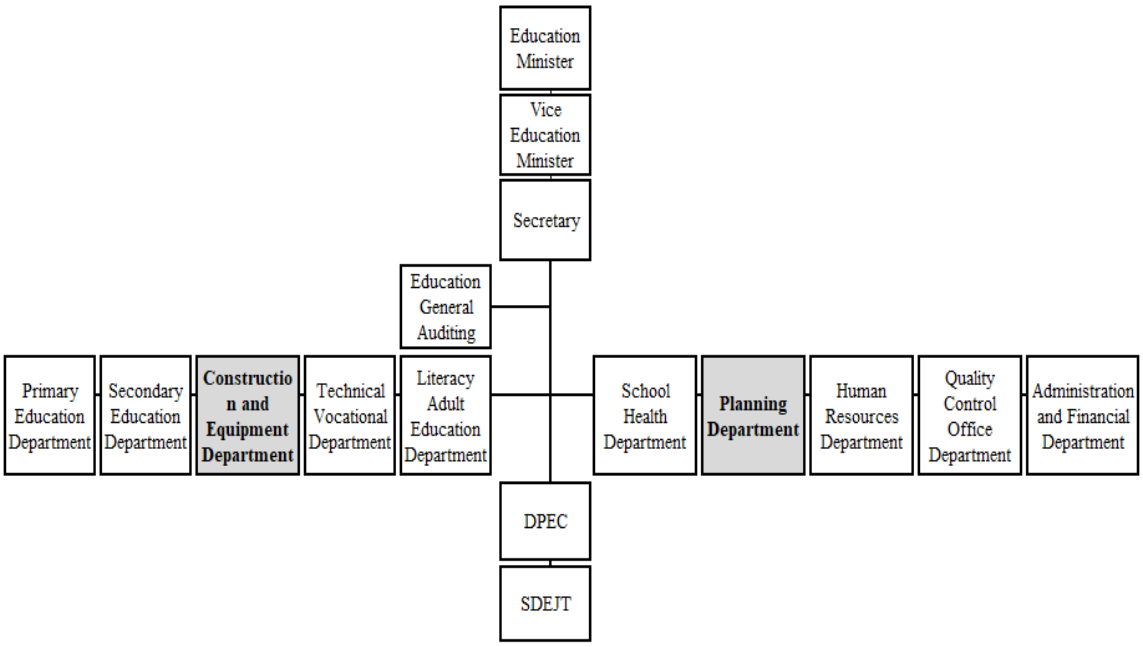


Figure 2 Organization chart of MINEDH

Source: MINEDH

The role of MINEDH is to formulate the educational policies and planning, conduct monitoring and evaluation and donor coordination centering on common basket funds. In addition, its role is to develop and revise the curriculum, formulate the personnel plans centering on teachers, secure the quality of education, planning and coordination. With the revision from Ministry of Education to MINEDH in 2015, four positions in Vice Education Minister until then became to be one position. And school health department, construction and equipment department, etc. were taken into the Ministry. As a result, comprehensive education support became possible more quickly.

The role of DPEC is to formulate the annual plan of province and district, coordinate the budget and conduct monitoring. It also coordinates and monitors teacher trainings and formulate teacher recruitment plans. It also plans, implements and monitors cultural activities. DPEC is responsible for coordination and communication between MINEDH and SDEJT in the school construction and maintenance and management, which have been implemented without any problem.

The role of SDEJT is to ensure the access to education for all school-aged children, to build schools, to promote adult literacy education and other vocational education, and to manage schools and teacher training schools. In addition, planning education activities, formulating budget and managing personnel of schools at district are the roles of district government, and are carried out by SDEJT.

(2) Institutional / Organizational Aspect of Operation and Maintenance at school and community level

There are school clusters under SDEJT. The school cluster is composed of teachers, principal, school counselors, which improves teaching methods, strengthens the capacity of teachers, promotes education, sports and culture activities among schools. The school committee including the principal, teachers, guardians and community representatives on school management exists at all schools and gathers when necessary. The school committee plays a role of connecting the community and the school through participation in decision-making concerning the school administration (selecting school uniforms, supporting poor families), providing guidance to problem students and school cleaning activities.

From the above, there has not been any change in the functions of the operation and maintenance system of MINEDH, school and community level from the time of planning stage to ex-post evaluation stage, and it is functioning.

3.4.2 Technical Aspect of Operation and Maintenance

(1) Technical Aspect of Operation and Maintenance at MINEDH

MINEDH's construction and equipment department has 30 staff members as of 2018, with construction and civil engineers, facility engineers, quantity surveyor, surveying technicians, and construction supervision staff working under the director. The construction and equipment department is engaged with all school constructions led by MINEDH including donor support projects and it carries out a series of tasks from planning and design to the selecting the contractors and supervising the construction. The construction and equipment department has accumulated sufficient experience and know-how in each process of school construction. Under the financial and technical support of the *Education Sector Support Fund* (*Fund de Apoio ao Sector da Educacao* (hereinafter referred to as "FASE")), the construction and equipment department develops manuals which include the procedures and key points of school maintenance and organizes seminars regularly for school personnel at each school.

Three to five staff members who received technical supports from FASE are assigned at school construction unit in each DPEC as of 2018. They have accumulated sufficient experience and know-how in the technical aspects. In addition, SDEJT is a liaison office that connects schools and provincial governments located in each district, and one to two engineers are assigned as of 2018[37].

Based on the above, MINEDH, DPEC and SDEJT in Nampula province have accumulated certain experiences and know-how and have sufficient technical capabilities to operate and

[37] All the technical information of MINEDH, DPEC and SDEJT are based on the hearing with MINEDH.

maintain the facilities developed in this project.

(2) Technical Aspect of Operation and Maintenance at community level

At the field survey of ex-post evaluation stage, it was confirmed that the community had sufficient technical capabilities on the maintenance and management of facilities. Table 12 shows the items to be confirmed in the field survey.

Table 12 Operation and maintenance status at community level

Number of schools which understand the procedure when repair occurs	4/4	100.0%
Number of schools which have a meeting between school and school committee more than once a month	4/4	100.0%
Number of schools which maintain the school facilities between school and school committee more than once a month	4/4	100.0%

Source: Created from the result of hearing with schools

If small repairs occur to school facilities, the school committee holds a meeting and discusses on the plan of repair policies, whether they can be repaired within the budget or whether supplies from the community or additional funding are necessary, etc. In case that serious repairs occur, the school committee reports it to SDEJT and submits a document stating the improvement plan. Maintenance of checking the doorknobs, and opening and closing of the windows in the classroom, and the condition of toilets are carried out at each school. After this project, there were two schools out of four schools that built toilets, classrooms, and water supply facilities, and so on.

3.4.3 Financial Aspect of Operation and Maintenance

(1) Financial Aspect of Operation and Maintenance at MINEDH

Some problems have been observed in terms of the financial aspect of operation and maintenance at MINEDH. As described in 3.2 Efficiency, science laboratory and ICT equipment to be borne by Mozambique side have not been equipped yet due to the lack of budget at MINEDH[38]. Table 13 shows the annual budget of MINEDH.

[38] Regarding the procurement of equipment, decisions are made at the Construction and Equipment Department based on the annual activity plan after approval of the national budget. Although attempts were made to collect the data of initial planned number of PC's and science laboratory equipment and the reason why this equipment had not been equipped, no reliable data could be obtained.

Table13　MINEDH annual budget

(Unit: Million MZN[39])

	2014	2015	2016	2017	2018
National budget	249,094	226,425	243,358	272,288	302,928
Education budget	40,127	45,768	49,327	57,719	52,630
MINEDH	34,037	36,884	41,813	49,415	42,356
Ordinary budget	27,828	34,236	39,876	44,614	40,578
Capital budget*[1]	6,209	2,648	1,937	4,801	1,777

Source: MINEDH

*1: Capital budget includes the investment in projects, the budget used for classroom construction, etc. UNICEF had been conducting a school construction and environmental improvement project until 2014. Due to its completion the capital budget has decreased since 2015.

The government budget for the last five years has expanded steadily every year. Along with that, MINEDH continues to increase its ordinary budget every year. Currently, 14 to 18% of the government's current budget is allocated to the ordinary budget of MINED every year. The school direct support money (Apoio Directo as Escolas, hereinafter referred to as "ADE") is contributed from FASE and transferred directly to the bank account of SDEJT, and SDEJT distributes the fund to each school cluster. The main purpose of ADE is to improve the quality of education and school administration by directly allocating fund necessary for school teaching materials[40] and services (such as small repairs of toilets) to each school. ADE is being offered at all four target schools[41]. The amount of subsidies from ADE depends on the number of students at each school.

(2) Financial Aspect of Operation and Maintenance at community level

The sustainability of the financial aspect of the operation and maintenance at the community level is high. There are three types of budget that the school receives; the ADE budget, the general budget from the Ministry of Finance through the provincial government, and the tuition fee[42]. Schools receive ADE as financial support for operation and maintenance. But 4 out of 4 schools answered that the amount was not enough. Most of the administrative budget is used for operating expenses for labor and utilities, and the budget that can be used for maintenance and

[39] 1MZN=¥ 1.84(May of 2018 present)

[40] This teaching materials do not include the experimental instruments but include guidelines for teachers and students' textbooks.

[41] According to the hearing with Namapa, they receive 20,000 MZN per month as ADE, but it was not enough according to their answer.

[42] The annual tuition per student at the target schools is 150-160 MZN for daytime shift at ESG 1, 200- 260 MZN for daytime shift at ESG 2. It is 250- 265 MZN for night time shift at ESG 1 and 250-285 MZN for night time shift at ESG 2. At Namapa, tuition for girls entering 8th grade and 11th grade is free. Although there is no accurate data on the collection rate of tuition fees at each school, it was confirmed by an answer from the principals that it is roughly 70-90%.

management is insufficient.

As an example of the financial situation of the operation and maintenance at the community level, Table 14 shows the annual operating budget and expenditure of Memba in the target schools. The general budget and tuition revenue from the Ministry of Finance has been secured to a certain extent for the last 3-4 years and compensates for the shortage of ADE.

Table 14 Annual operating budget and expenditure of Memba

(Unit: Million MZN[43])

		2015	2016	2017
Income	ADE	87	84	107
	General budget	240	209	338
	Tuition fee income	192	207	218
Total revenue		519	500	663
Total expenditure		489	475	662
Carryforward amount		30	25	1

Source: Created from the data provided by Memba

3.4.4 Status of Operation and Maintenance

The classrooms, administration blocks, multi-purpose blocks, toilet blocks, and simple gymnasium constructed by this project are properly operated and maintained. The aging situation of the facility is shown in Table 15 below.

Table 15 Aging situation of the classrooms, administration blocks, multi-purpose blocks, toilet blocks, and simple gymnasium

	Classrooms		Administra-tion bocks		Multi-purpose blocks		Toilet blocks		Simple gymnasiums	
	Construction	Good condition	Construction	Good condition	Construction	Good condition	Construction	Good condition	Construction	Good condition
Natikire	19	19	1	1	1	1	1	1	1	1
Memba	10	10	1	1	1	1	1	0	1	1
Namapa	10	10	1	1	1	1	1	1	1	1
Nacala-a-velha	10	10	1	1	1	1	1	1	0	0
Total	49	49	4	4	4	4	4	3	3	3

Source: Created from the result of hearing with target schools

[43] 1MZN=¥ 1.84(May of 2018 present)

The maintenance and management situation are generally good. Regular cleaning is conducted every day at each school. The toilet block at Memba is not used due to the damage of water supply facility. Since the technical staff employed by the school cannot repair it, the school is currently requesting DPEC in Nampula province to repair it. It will be repaired within the provincial budget during this year as soon as the procedure is over.

The target number of teachers to be hired at the target schools are shown opposite the actual numbers as below.

Table 16 Target and actual number of teachers and staff

	Target	Actual	
	2018	2017	
	3 Years After Completion	2 Years After Completion	
	Teacher / Staff	Teacher / Staff	Student/1Teacher
Natikire	49 / 14	62 / 14	23
Memba	33 / 12	31 / 7	31
Namapa	33 / 12	22 / 10	27
Nacala-a-velha	33 / 12	27 / 5	20
Total	148 / 50	142 / 51	25

Source: Confirmed with provided documents by JICA(Target), by school visit (Actual)

The number of teachers and staff which is necessary to increase for this project was planned to be 148 and 50 respectively. The actual number of assigned teachers and staff was 142 and 51 respectively as of 2017. The staff salary of only 10 of them is covered by the schools. For the salary of these 10 staff members paid by the school, as its 5.2% for the total of 193 teachers and staff, the financial burden to the school is small[44]. The average number of students per teacher is 25 at all the target schools. From the interview survey with four target schools, the actual class hours for one teacher at ESG 1 is 24 hours a week and 20 hours a week at ESG 2. Most teachers are in charge of two shifts, and basically there is no overtime.

From the above, there are some financial problems in the operation and maintenance of this project. Therefore sustainability of the project effects is fair.

[44] According to the hearing with the target schools, many teachers are newly applying for new schools and supply more than demand of teachers continues. From the viewpoint of the supply and demand of teachers, it can be said that this cannot be a risk factor of schools.

4. Conclusion, Lessons Learned and Recommendations

4.1 Conclusion

This project was implemented with the aim of improving the access to and learning environment of secondary education by constructing new secondary schools in three districts and one city in Nampula province where is the lowest Net Enrollment Rate (hereafter referred to as "NER") in lower secondary education (Grade 8th-10th) in Mozambique, thereby contributing to the improvement of education quality.

At the time of planning and ex-post evaluation stage, as the construction of education facilities was prioritized according to the policies of Mazambique, the project for constructing new secondary schools is consistent with policy. In the target province of the project, where the current situation that the number of secondary schools is insufficient and NER is low, there is a high need to support new secondary school construction. Since this project is consistent with Japan's ODA policy with an emphasis on enhancing basic education, the relevance of this project is high.

Although the project cost was within the plan, the project period exceeded the plan as the procedure of executing agency was delaye, etc. So, the efficiency is considered fair.

Effectiveness indicators such as "the number of enrolled students", "commuting time" and impact indicators such as "students' awareness of sanitation" and "students' motivation to study" are generally achieved. Therefore, the project's effectiveness and impact are considered high.

The executing agencies and school committees of communities for this project have the necessary institutional structure and technique of operation and maintenance to maintain the effectiveness of this project. On the other hand, some problems have been found in the finance of executing agencies. Thus, sustainability 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) Procurement of urgent IT and laboratory equipment

At the present three years after school opening, science experimental equipment and ICT equipment to be borne by Mozambique side are not equipped in all four schools. From the viewpoint of ensuring and improving the quality of education, MINEDH should prepare the budget for the equipment and immediately deliver them to the target schools. While the budget is limited, it is advisable that for example the executing agency should discuss again on priority of the teacher assignment and equipment placement by collaborating with relevant departments in MINEDH.

4.2.2 Recommendations to JICA

None

4.3 Lessons Learned

Considering the feasibility of the obligation by the executing agency and the incorporation of the project scope at the project planning stage

Science laboratory equipment and ICT equipment are part of Mozambique's obligation. But due to the financial constraints, the budget priority has been lowered and these equipment cannot be installed. Since only the lecture style classes are conducted and the practical classes are not provided, it is a big problem from the viewpoint of ensuring and improving the quality of education. The fact that the priorities of purchasing and providing educational equipment are low and postponed is one of the reasons for this. Even though it is the obligation of the executing agency, as for the components that are highly likely not to be secured by the executing agency and that are indispensable for effective utilization of facilities, the components should be considered incorporating them into the support package.

Establishment of construction period considering the fiscal year plan of the executing agency and transaction experience of financial institutions

As for the project, the delays in securing water supply source and contracting with the executing agency led to the delays of construction start. As a result, construction work rushed into the rainy season and the project period was extended to 142% compared to the plan. The reason why securing the water supply was delayed is that due to the delay of the Cabinet meeting, the whole construction period shifted backward and the budget at the end of the fiscal year was contributed and then the budget for well excavation work was not secured. Regarding the delay in the A/A, E/N was delayed by one week due to the executing agency signee's situation. In addition, it took two months to regulation for the A/A period to be close. This is because the transfer of funds was delayed due to bank procedures. It is necessary to establish the construction period with a margin, considering the fiscal year plan of the executing agency and the transaction experience of financial institutions.