

Ex-Post Project Evaluation 2020
Package III-3 (Indonesia, Ethiopia)

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Republic of Indonesia

FY2020 Ex-Post Evaluation Report of

Japanese ODA Loan

“Development of Bandung Institute of Technology (III)”

External Evaluator: Kenichi Inazawa, Octavia Japan, Co., Ltd.

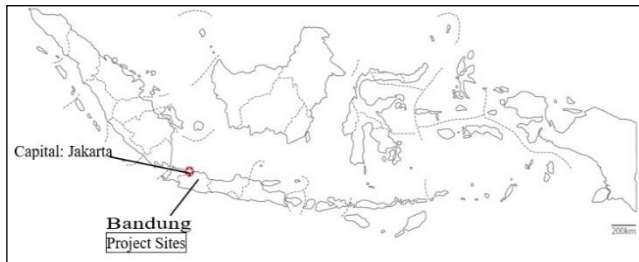
0. Summary

This project developed research facilities, etc., to improve the quality and quantity of education and research at the Institute of Technology in Bandung (hereinafter referred to as “ITB”), located in the province of West Java, thereby contributing to the development of human resources, the promotion of industry and the enhancement of competitiveness in Indonesia’s science technology fields. The *Medium-Term National Development Plan* (RPJM: 2004–2009) and the *National Medium-Term Development Plan* (RPJMN: 2020–2024) of the government of Indonesia aim to strengthen higher education institutions that contribute to improved competitiveness by developing science technology fields. ITB is expected to enhance its human resource development and education and research functions in science technology and engineering fields. The *Country Assistance Program for Indonesia* advocated to “support efforts to reduce poverty by providing support that contributes to the development of human resources who lead the industry in higher education.” Because this project is also consistent with the assistance policy of Japan, the relevance is high. As for efficiency, while the project cost was within the initially planned budget, due to a decrease in the number of fellowship program participants and fluctuations in the exchange rate, the project period was longer than the initial plan because it took time to complete the authorization procedure inside the Indonesian government, to select the consultant, to review the detailed designs and to select the suppliers concerning equipment procurement, and due to unexpected changes in the government policy regarding the procurement of construction work, delays occurred in the actual overall construction work. Therefore, the efficiency of the project is fair. With regard to the quantitative effects of this project, the actual results generally exceeded the initially set targets. The significant role of this project was confirmed through the interviews regarding improvements in ITB’s educational quality through enhanced and expanded educational and research facilities, human resource development, the promotion of industry and the enhancement of competitiveness in Indonesia’s science technology fields. Based on the above, this project’s effectiveness and impact is judged to be high. It is thought that there is no major concern with the institutional, technical or financial aspects of ITB’s maintenance department, which is the body responsible for operation and maintenance, and nor is there a concern with the

status of the operation and maintenance. Therefore, the sustainability of this project is judged to be high.

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

1. Project Description



Project Location



Center for Arts, Design and Languages (CADL) Under the Project

1.1 Background

Before this project began, in the light of economic liberalization and globalization, the need for enhancing industrial competitiveness was advocated in Indonesia. It was increasingly recognized that, to enhance competitiveness, human resource development and improvements to technical capabilities were needed and that higher education institutions played important roles in this. Enrollment rates in higher education institutions in Indonesia were not very high. There was a shortage of facilities and equipment. The number of research publications produced by the faculties was limited. It was thus necessary to expand educational and research activities.

Established in 1920, ITB is the oldest engineering-oriented university in Indonesia, a hub for technology-related education. ITB became an autonomous body in 2000. Since then, ITB has been expected to increase its own revenues and operate efficiently through quality improvement and quantitative expansion of education research and industry-academia-community collaborations. While ITB was expected to increase the number of students/researchers and to expand its educational and research facilities, its budget was limited. Therefore, it was considered an urgent task to assist the development of ITB's research facilities, which would contribute to the development of human resources in science technology fields, industrial development and competitiveness enhancement.

1.2 Project Outline

The objective of this project is to improve the quality and quantity of education and research of ITB, located in the province of West Java, by developing facilities for research and promoting industry-academia-community collaborations, thereby contributing to human resource development, promoting industry and enhancing competitiveness in Indonesia's science technology fields.

Loan Approved Amount / Disbursed Amount	5,659 million yen / 4,812 million yen
Exchange of Notes Date / Loan Agreement Signing Date	March 31, 2009 / March 31, 2009
Terms and Conditions	Interest Rate 1.40% (construction, equipment procurement) 0.55% (fellowship program) 0.01% (consulting service) Repayment Period 30 years (Grace Period 10 years) Conditions for Procurement General Untied
Borrower / Executing Agency(ies)	Ministry of Education, Culture, Research and Technology ¹ of the Republic of Indonesia, Institute of Technology in Bandung (hereinafter referred to as "ITB")
Project Completion	October 2018
Target Area	Bandung, West Java Province
Main Contractor(s) (Over 1 billion yen)	PT. Wijaya Karya (Indonesia) / PT Multi Structure (Indonesia) (JV)
Main Consultant(s) (Over 100 million yen)	PT. Yodya Karya (Indonesia) / PT.Prosys Bangun Persada (Indonesia) / Yachiyo Engineering Co., Ltd. (Japan) (JV)
Related Studies (Feasibility Studies, etc.)	I/P by ITB (2007), SAPROF by JICA (2008)
Related Projects	[ODA Loan] - Development Project of the Institute of Technology in Bandung (I) (1992) - Development Project of the Institute of Technology in Bandung (II) (1994) [Other International Organizations, Aid Agencies] - Managing Higher Education for Relevance and Efficiency Project (World Bank, 2005) - Technical and Professional Skills Development Sector Project (ADB, 2000)

¹ It used to be the Directorate General of Higher Education (DGHE) at the time of the appraisal as well as at the time of this evaluation study. However, the name has been changed since the reorganization of ministries and agencies dated April 28, 2021.

2. Outline of the Evaluation Study

2.1 External Evaluator

Kenichi Inazawa, Octavia Japan, Co., Ltd.

2.2 Duration of Evaluation Study

This ex-post evaluation study was conducted with the following schedule.

Duration of the Study: October 2020–November 2021

Duration of the Field Study: Conducted remotely with local consultant

2.3 Constraints during the Evaluation Study

Due to spread of COVID-19, the external evaluator did not travel internationally. With the local consultant, the external evaluator conducted the site visits, information and data collection and interviews with the individuals concerned remotely. The external evaluator analyzed the collected information to conduct the evaluation and make a judgement.

3. Results of the Evaluation (Overall Rating: A²)

3.1 Relevance (Rating: ③³)

3.1.1 Consistency with the Development Plan of Indonesia

Before this project began, the government of Indonesia formulated the *National Medium-Term Development Plan* (RPJM⁴: 2004–2009), which stated the need for strengthening higher education institutions that would develop human resources to meet the needs of companies and contribute to enhancing the country's competitiveness in science technology fields. The government also formulated the *Higher Education Long-Term Strategy* (HELTS⁵: 2003–2010) and the *National Education Strategic Plan* (RENSTRA⁶: 2005–2009), based on which the government planned to strengthen educational facilities and equipment, train teachers, utilize IT, expand scholarship support and improve curriculums based on pillars such as improved access to and quality of education, more efficient university management and enhanced autonomy.

At the time of the ex-post evaluation, the government of Indonesia has formulated the *National Medium-Term Development Plan* (RPJMN⁷: 2020–2024), which lists the improved

² A: Highly satisfactory, B: Satisfactory, C: Partially satisfactory, D: Unsatisfactory

³ ③: High, ②: Fair, ①: Low

⁴ Rencana Pembangunan Jangka Menengah.

⁵ Higher Education Long Term Strategy.

⁶ Rencana Strategis.

⁷ Rencana Pembangunan Jangka Menengah Nasional.

competitiveness of human resources and higher quality of education as one of the development agendas. The government also aims to enhance the quality of higher education. By promoting industry-government-academia collaborations, the government is advocating the importance of the strategic promotion of research and development, job creation, collaborations between industry and universities or higher education institutions, and the training of researchers. In Indonesia, the presidential election was held in April 2019 and Ir. H. Joko Widodo was re-elected. As a result, human resource development in science technology fields has been identified as one of the priorities of this administration.

Based on the above, improving the quality of higher education and developing human resources in science technology fields are considered important in Indonesia before this project began as well as at the time of the ex-post evaluation. Therefore, this project is consistent with the national and sector plans from a policy point of view.

3.1.2 Consistency with the Development Needs of Indonesia

Established in 1920, ITB is the oldest engineering-oriented university in Indonesia, a hub for technological education. ITB became an autonomous body (before this project began) in 2000 and since then it has been expected to increase its own revenues and operate efficiently through quality improvement and quantitative expansion of education and research and industry-academia-community collaborations. While ITB was expected to increase the number of students/researchers and to expand its educational and research facilities, its budget was limited. Therefore, it could not sufficiently strengthen its educational and research functions.

At the time of the ex-post evaluation, according to the abovementioned *National Medium-Term Development Plan* (RPJMN: 2020–2024) and ITB, research programs being conducted at higher education institutions are not necessarily meeting the expectations of the labor market. In addition, according to the Global Innovation Index 2018⁸, Indonesia is ranked 85th of 126 countries and 14th of 15 Southeast Asia and Oceanian countries, which is not necessarily high. The majority of higher education graduates are in social and human science fields. The number of people who study and complete higher education in science technology and engineering fields is still limited. In order to improve the quality of education and research in the science technology/engineering fields, the expansion of high-level research and development facilities and fellowship/internship

⁸ The ranking is based on innovation capabilities and outcomes of each country. The indicators include investments in research and development, number of international patent applications, quality of science technology related publications. It is led and announced by the World Intellectual Property Organization (WIPO).

programs are needed. For this reason, ITB is expected to strengthen human resource development in science technology and engineering fields such as increasing the number of doctoral degree holders.

Based on the above, expectations are high for ITB to enhance human resource development and educational and research functions in the science technology and engineering fields before this project began as well as at the time of the ex-post evaluation. Therefore, it can be said that this project is highly consistent with the development needs.

3.1.3 Consistency with Japan's ODA Policy

Japan's *Country Assistance Program for Indonesia* (November 2004) proposed to "support efforts to reduce poverty by providing support to higher education that contributes to the development of human resources who will lead the industry" as part of its assistance in the "creation of a democratic and fair society." In addition, it was recognized that "developing human resources for the industry is an issue from the viewpoint of achieving economic growth." Considering that this project was designed to contribute to human resource development for the industry in Indonesia, it was consistent with Japan's assistance policy.

This project has been highly relevant to Indonesia's development plan and development needs, as well as Japan's ODA policy. Therefore, its relevance is high.



Photo 1: Developed Center for Advanced Sciences (CAS) Under the Project



Photo 2: Developed Center for Research and Community Services (CRCS) Under the Project

3.2 Efficiency (Rating: ②)

3.2.1 Project Outputs

The output plan and the actual results at the time of the ex-post evaluation are shown in Table

1. (Underlined sections denote major differences from the plan.)

Table 1: The Output Plan and Actual Results of this Project at Time of Ex-Post Evaluation

Plan (At the time of project appraisal: 2009)	Actual (At the time of ex-post evaluation: 2020–2021)
<p>1) Facility Construction and Basic Infrastructure Construction</p> <p>(a) New Construction of Research Centers Center for Advanced Sciences (herein after referred to as “CAS”): 8,300 m², Center for Research and Community Services (herein after referred to as “CRCS”): 7,000 m², Center for Infrastructure and Built Environment Engineering (herein after referred to as “CIBE”): 11,000 m², Center for Arts, Design and Languages (herein after referred to as “CADL”): 8,000 m² (Gross floor area: <u>34,300 m²</u>)</p> <p>(b) Renovation of Research Centers CIBE: 2,460 m², Center for Information Technologies and Industrial Engineering (herein after referred to as “CITIE”): 5,900 m², CADL: 5,200 m² (Gross floor area: <u>13,560 m²</u>)</p> <p>(c) Construction of basic infrastructure related to each research center (new construction)</p>	<p>1) Facility Construction and Basic Infrastructure Construction</p> <p>(a) New Construction of Research Centers CAS: 11,735.14 m², CRCS: 8,682.44 m², CIBE: 9,274.60 m², CADL: 10,283.42 m² (Gross floor area: <u>39,976 m²</u>)</p> <p>(b) Renovation of Research Centers CIBE: 2,526 m², CITIE: 8,697 m², CADL: 7,524 m² (Gross floor area: <u>23,278 m²</u>)</p> <p>(c) Construction of basic infrastructure related to each research center (new construction): As planned (water supply and drainage, electrification)</p>
<p>2) Equipment Procurement Materials and equipment used for educational and research activities</p>	<p>2) Equipment Procurement Mostly as planned (experimental equipment, analyzers, video equipment, electron microscopes, PCs and PC-related equipment, software, books, furniture, etc. were procured and installed at each center)</p>
<p>3) Fellowship (Plan: 100 people) For the purpose of improving the research capabilities of faculty members, participants will take part in master’s, doctoral, postdoctoral⁹ programs, short-term training, seminars, etc. at universities in Indonesia and overseas. All overseas programs will be at Japanese universities. The following is the expected number of participants: <Overseas> Master’s (4), doctoral (14), postdoctoral (8), short-term training (9), seminar participation (50) <Domestic> Doctoral (5), seminar participation</p>	<p>3) Fellowship (Actual: 49 people) Participants took part in master’s, doctoral, postdoctoral programs, short-term training and seminars. All overseas studies were at Japanese universities. The actual numbers of participants are as follows: <Overseas> Master’s (1), doctoral (16), postdoctoral (6), short-term training (5), seminar participation (16) <Domestic> Doctoral (5), seminar</p>

⁹ It refers to researchers who join several laboratories after obtaining doctoral degrees and continue their research while acquiring various techniques.

<u>(10)</u>	<u>participation (0)</u>
4) Consulting Services (1) Total project management (2) Detailed design, bidding support, construction supervision (3) Support to the overseas studies (4) Development of a mid-to-long term plan related to CAS (a roadmap), research program development such as curriculum, support to the formulation of human resource development programs	4) Consulting Services (1)–(4) were implemented as planned.

Source: JICA document (at the time of the appraisal), Project Completion Report, ITB's answers to the questionnaire (at the time of the ex-post evaluation)

Major differences between the plan and the actual outputs shown in Table 1 are explained below:

1) Differences between the plan and actual outputs related to the construction of facilities and basic infrastructures are as follows:

(a) The gross floor area of research centers (new construction) increased from the plan except for CIBE. The floor area of CAS, CRCS and CADL increased as a result of the reviews conducted during the detailed design. According to ITB, verifying the more realistic needs of the users, expected usage and structural safety led to the judgment that it would be necessary to alter the composition of each room and to add underground parking. With regard to CIBE, the reduction in the number of floors led to a decrease in floor area. It was initially planned to be 10 stories (plus 1 underground floor), which was altered to 6 stories (plus 2 underground floors) at the stage of detailed design. This is because the location of the facility fell into a historic site preservation area on the ITB campus, and landscape protection was taken into consideration.

(b) The gross floor area of research centers (renovation) increased from the initial plan for CIBE, CITIE and CADL. This was because the conditions of the existing facilities turned out to be older than expected when they were reviewed at the time of the detailed design, and additional construction work was required.

2) Fellowship

The actual number of participants was almost half of those planned. The differences between the planned and actual numbers and the reasons are explained below:

<Overseas>

The number of master's participants did not reach the plan (1 actual vs. 4 planned) because this project commenced late, as will be explained under "3.2.2.2 Project Period." Some of the fourth-

year university students who had planned to proceed to ITB's master's course had to forgo the opportunity so their period of study and research in their master's program would not be delayed by the late start of this project. The number of postdoctoral participants (mainly lecturers and researchers) did not reach the plan (6 actual vs. 8 planned) because ITB did not have a well-established sabbatical (long-term leave for a certain period) system. While most of the postdoctoral fellowship programs were planned for 6 to 12 months, fewer candidates took long-term leave (more than 2 months) than expected. It was necessary to improve the system for obtaining leave. The number of short-term training participants did not reach the plan (5 actual vs. 9 planned), nor the number of seminar participants (16 actual vs. 50 planned) due to the process associated with obtaining official passports. According to ITB, short-term training and seminar participation of the fellowship program required official passports in principle as the purpose was not obtaining degrees. On the other hand, some candidates did not have enough days after the issuance of acceptance letters¹⁰ by seminar organizers until the departure and could not attend the program because the timing was not right. ITB explains that they faced different policies from different organizations, and it was difficult to coordinate, which was unexpected.

<Domestic>

The number of domestic seminar participants did not reach the plan (none actual vs. 10 planned). Initially, domestic seminars were planned in Indonesia which were not for the purpose of obtaining degrees. According to ITB, it turned out that domestic seminars were not as attractive as overseas seminars, and there were no applicants.

Based on the above, concerning the overseas seminars and Indonesian domestic seminars where there were relatively large differences between the plan and the actual results, it would have been preferable if ITB and JICA had identified possible obstacles before the start of this project, had estimated demands to some extent and had made an in-depth forecast, thereby having a thorough preparation system in place.

3.2.2 Project Inputs

3.2.2.1 Project Cost

At the time of appraisal, the total project cost was planned to be 7,801 million yen (of which the ODA loan was 5,659 million yen). In reality, the total project cost was 6,182 million yen (of which the ODA loan was 4,812 million yen), which is within the planned amount (approximately

¹⁰ Letters were issued to prove acceptance by the organizers. This was one of the required documents to apply for public passports.

79% of the planned amount). The main reasons for this were: there were fewer fellowship program participants than planned¹¹; most participants were sent to national or public universities where tuition was relatively reasonable; price escalations had been anticipated at the time of the planning¹² but there was no significant increase in purchase prices during the project period; and the influence of the exchange rate fluctuations (yen appreciation/rupee depreciation).

3.2.2.2 Project Period

Table 2 shows the initial plan and the actual project period. At the time of the appraisal, the project was planned to be implemented for 6 years and 7 months (79 months) from March 2009 to September 2015¹³. It was actually delayed and lasted for 9 years and 8 months (116 months) from March 2009 to October 2018, which is approximately 147% of the plan. The main reasons for the delay are as follows: (1) due to delay in the authorization process for the project implementation within the Indonesian government, the effective date of the Project Loan Agreement was changed to July 2009 (3 months delay); (2) the selection of the consultant was delayed by prolonged procedures among the government organizations; (3) more changes were made than expected during the detailed design, and it took time to coordinate and communicate with the consultant; (4) the government's procurement policy changed, and it took time to check how this would affect the bidding and selection of contractors for the new construction of research centers, which delayed the overall construction; (5) the process for selecting suppliers for the equipment procurement was delayed, meaning that it took longer for the suppliers to provide the equipment. As a result of these delays, the consulting service was extended until October 2018.

Table 2: Initial Plan and Actual Project Period

	Initial Plan	Actual
(Overall Project)	March 2009–September 2015 (79 months)	March 2009–October 2018 (116 months)
1) Consulting Service	March 2009–May 2014 (63 months)	April 2011–October 2018 (91 months)
2) Academic Advisor	March 2009–January 2010 (11 months)	January 2012–December 2012 (12 months)
3) Construction	June 2010–May 2013 (36 months)	January 2012–February 2016 (50 months)

¹¹ The scope of the fellowship program was smaller than initially planned. In monetary terms, the reduction is about 196 million yen, which is not large when compared to the total project cost (planned and actual amount). Therefore, it is judged to have little effect.

¹² More specifically, costs related to tariffs, exchange rate fluctuations, transportation, etc., were estimated and included in the costs of construction and equipment purchases at the time of the project planning.

¹³ At the time of the appraisal, the completion of this project was set to be “when the consulting service ends.”

4) Procurement and Installment	September 2011–August 2013 (24 months)	September 2011–May 2018 (93 months)
5) Consulting Service (Study Abroad Support)	March 2009–September 2015 (79 months)	December 2010–December 2015 (61 months)
6) Fellowship	January 2010–September 2015 (69 months)	April 2011–March 2018 (84 months)

Source: Document provided by JICA (initial plan), Project Completion Report and answers to the questionnaire (actual)

3.2.3 Results of Calculations for Internal Rates of Return (Reference only)

The IRR was not calculated at the time of the appraisal because the project was not designed to increase profitability. Therefore, it was not recalculated at the time of ex-post evaluation.

[Summary of Efficiency]

While the scope of the fellowship program was reduced from the plan, the overall project outputs were implemented without significant deviations from the plan set at the time of the appraisal. The project cost was within the initially planned budget because there were fewer fellowship program participants than planned and exchange rates fluctuated. The project period was longer than the initial plan because the consultant selection was delayed, it took longer than expected to review the detailed designs, and it took time to select suppliers for equipment procurement, and due to unexpected changes in the government policy regarding the procurement of construction work, delays occurred in the actual overall construction work. Although the project cost was within the plan, the project period exceeded the plan. Therefore, the efficiency of the project is fair.

3.3 Effectiveness and Impacts¹⁴ (Rating: ③)

3.3.1 Effectiveness

3.3.1.1 Quantitative Effects (Operation and Effect Indicators)

Table 3 shows the quantitative effect indicators (baseline, target, actual) of this project.

Table 3: Operation and Effect Indicator of this Project (Baseline, Target, Actual)

	Baseline	Target	Actual
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¹⁴ Sub-rating for Effectiveness is to be put with consideration of Impacts.

Indicator	2008	2017 2 Years After Completion	2018 Completi on Year	2019 1 Year After Completion	2020 2 Years After Completion
1) Enrolled students (a. Master's / b. Doctorate)	a. 300 b. 42	a. 425 b. 78	a. 616 b. 38	a. 504 b. 55	a. 743 b. 80
2) Percentage of the enrolled students who successfully obtained the expected degree (a. Master's / b. Doctorate)	72.7%	85%	a. 92.4% b. 80.5%	a. 87.7% b. 54.2%	a. 66.7% b. 39.5%
3) Percentage of qualified faculty members (Master's or Doctorate degree holders)	95%	100%	99.7%	100%	100%
4) Student-to-faculty ratio	1:16	1:15	1:14	1:13.6	1:14.4
5) Number of joint research	38	84	251	276	252
of which joint research with overseas universities	11	34	8	83	69
6) Number of joint research funding bodies (institution, organization, company, etc.)	11	23	19	23	27

Source: JICA's documents (baseline and target), answers to the questionnaire (actual)

In this project, based on the research facilities, industry-academia-community collaboration promotion facility and the implementation of fellowship programs, the following 6 quantitative indicators and targets were set at the time of the appraisal: 1) enrolled students, 2) percentage of the enrolled students who successfully obtained the expected degree, 3) percentage of qualified faculty members, 4) student-to-faculty ratio, 5) number of joint research projects, and 6) number of joint research funding bodies. The target year was 2 years from the project completion. This evaluation study obtained actual data for 3 years including 2020, which is 2 years after the completion of the project. Each indicator is explained below:

1) Enrolled Students: The actual number exceeded the target. The number of students enrolled in master's and doctoral programs at ITB is steadily increasing. The development of educational and research facilities and the expansion of research programs by this project is thought to be one of the factors.

2) Percentage of the Enrolled Students Who Successfully Obtained the Expected Degree: ITB's

master's program takes 3 years and the doctoral program five years. If the enrolled students' studying and research had progressed smoothly, the master's degree holders in the table would have been enrolled from 2015 to 2017, and the doctoral degree holders from 2013 to 2015. The percentages of students who obtained a doctorate degree in 2019 and 2020 were lower than the target. According to ITB, (1) there were many cases of research extensions by doctoral students in 2019 for personal reasons and their own intentions¹⁵; (2) As COVID-19 became prevalent in 2020, some students decided to extend their research. This, combined with the abovementioned reason "(1)," led to the even lower percentage in 2020 (54.2% → 39.5%). After the first half of 2020 especially, when the impact of COVID-19 became noticeable, it became difficult for students to commute to school, and restrictions were imposed on experiments and assignment reports in the laboratories on the ITB campus¹⁶. In addition, the percentage of master's degree holders decreased (87.7% in 2019 → 66.7% in 2020), which was also due to the influence of COVID-19.

3) Percentage of Qualified Faculty Members: The actual percentage exceeded the target. At the time of the ex-post evaluation (March 2021), ITB has 1,509 qualified faculty members. All of them have master's degrees¹⁷ and 1,045 (approximately 69% of the total) are doctorate degree holders. According to ITB, their recruitment policy is to seek faculty members who can start research in the doctoral course within 2 years of joining the institution. ITB has expectations for educational quality and high research results and therefore they believe that the educational and research facilities developed in this project can be utilized effectively.

4) Student-to-Faculty Ratio: As stated in 1) above, the number of enrolled students of master's and doctoral programs is increasing, and the actual ratio has achieved the target. According to ITB, realizing that fine-tuned small-group education leads to improvement in the quality of education and research, they have been trying to improve their system by paying attention to the number of students per faculty member in recent years. ITB also stated that utilizing the education and research facilities developed by this project is one of the keys to responding to the increasing number of enrolled students, while improving and strengthening the education and research functions at the same time.

¹⁵ Although the same target was set for the master's and doctoral degree acquisition ratios at the time of the appraisal, the actual results were divided. It was presumably difficult to predict the doctoral degree acquisition rate and to set the target value, but it may have been desirable to set the target for each category separately.

¹⁶ According to ITB, Indonesian national universities are focusing on infectious disease control and risk mitigation, and certain restrictions are imposed on campus visits by students and faculty members. They are also promoting new initiatives such as utilizing online tools.

¹⁷ According to DGHE, faculty members of Indonesian universities are required to have master's degrees at a minimum.

5) Number of Joint Research Projects: The actual number exceeded the target. According to ITB, this is owing to the achievements in education and research, the good research environment, and the research level and scale¹⁸. Pointing out that there are various forms of joint research such as different investment methods and partners, ITB commented, “Joint research is one of our strengths. We believe it will be further developed, given the educational and research facilities, the research materials and equipment and the participation in the fellowship program of this project. Recently, we have been particularly focusing on joint research. There are a wide range of cases from cross-faculty research to joint research with other universities and ministries in Indonesia and overseas.” CAS, which has an acoustic research building, is one specific example of the utilization of the facilities developed in this project for joint research. CAS is equipped with a high-quality anechoic chamber¹⁹, which is efficient at measuring transmission loss and sound absorption, and is currently receiving research activity support from the Ministry of Education, Culture, Research and Technology²⁰ at the time of ex-post evaluation. Joint research with overseas universities is also actively conducted. As a concrete example of the utilization of the developed research facilities for joint research, the Research Center of Nanoscience and Nanotechnology (RCNN), a research division of CAS, has a joint research network with more than 35 partners in 12 countries including Japan²¹. Considering the comment given in the interview described in “3.3.1.2 Qualitative Effects,” it can be inferred that more results have been produced than initially expected.

6) Number of Joint Research Funding Bodies: The actual number exceeds the target. The main investors are government agencies such as the Ministry of Education, Culture, Research and Technology, foreign government research institutes such as UK Research and Innovation, overseas partner universities and industry collaborators (e.g., Toyota Motor Corporation). According to ITB, the increasing investment in joint research is attributed to the features of the university (the achievements in education and research, good research environment, the research

¹⁸ The result from 2020 was less than the previous year, which is thought to be the influence of COVID-19 to some extent.

¹⁹ A shielded space constructed so that it is not affected by electromagnetic waves from the outside, does not leak electromagnetic waves to the outside, and does not reflect electromagnetic waves inside.

²⁰ After the reorganization of ministries and agencies dated April 28, 2021, the previous Ministry of Research and Technology and Ministry of Education and Culture merged and became the Ministry of Education, Culture, Research and Technology.

²¹ (Reference information) The Joint research contact points at ITB are “Office of Partnership”, “Institute for Research and Community Services (LPPM)”, and “Institute for Innovation and Entrepreneurship Development (LPIK).” Joint Research is started by signing Memorandum of Understanding (MoU) and Memorandum of Agreement (MoA) documents that outline the collaboration detail, deliverables, etc. The MoU and/or MoA documents will be signed by Rector or Vice Rector for research. The financial management is carried out by LPIK and/or LPPM, and the procurement for joint research is carried out by Logistics Department.

level and scale) mentioned at the beginning of 5) above. It is presumed that the educational and research facilities developed in this project and the research equipment introduced by this project are helping to attract investment. Specific examples of collaboration and joint research with Japanese companies will be explained in “3.3.2 Impact.”

3.3.1.2 Qualitative Effects (Other Effects)

(ITB’s Educational Quality Improvement through the Improvement and Expansion of Educational and Research Facilities)

In this evaluation study, participants of the fellowship program, implemented to improve the research capabilities of ITB faculty members, were interviewed with regard to how ITB’s educational and research quality is improving and their research scopes are expanding, etc. The following are some of the comments obtained during the interview²².

- “I conducted research on concrete materials, especially the microstructure of internal concrete, at a Japanese university. I conducted research using cutting-edge technology (synchrotron X-ray CT, microfocus X-ray CT, etc.). Currently, I am continuing experiments on concrete materials and my research on structural reinforcement at ITB. The fellowship program helped me gain knowledge and experience of the latest technology.” (long-term program, doctorate at national university)

- “I completed my doctoral course in design science at the Faculty of Engineering. I conducted research on the structural strength of wood, using a case of teakwood in West Java, Indonesia. I feel that the preparations until joining the course in Japan were properly planned. We also received support from Japanese NGO staff. I am happy with the fellowship program, as it allowed me to gain knowledge and experience in the field of engineering in Japan. Currently, I am continuing my research at ITB, working on papers and treatises based on the knowledge and experience I gained from my research in Japan.” (long-term program, doctorate at national university)

- “I conducted research on organic electronic materials including porphyrin and polyaniline blends. Although it was a short period of 2 months, the training was meaningful and I am satisfied. I am continuing to collaborate with the Japanese university for my research at ITB, working toward publishing papers.” (short-term program, national university postdoc)

²² The interview survey items were: a) research content and sufficiency at Japanese educational institutions, b) the relationship between post-training research achievements at ITB and the training results, c) research presentations/papers at ITB and other locations than ITB, d) issues of the fellowship program you noticed during the training that need to be improved, e) to what extent the fellowship program is contributing to ITB, etc. The survey subjects were long-term overseas (Japan) training participants, postdoctoral fellows, short-term overseas (Japan) training participants, and seminar participants (23 in total), of whom 11 answered the questions.

- "I am grateful that my experience of the JICA Fellowship Program has paved the way for research at ITB, and I gained a position as a civil engineer. I participated in the domestic training for 6 months on a theme related to green building and architectural risks. After participating in the program, I had the opportunity to attend an international conference and had a wide range of discussions on the same research theme with participants from other countries. The program motivated me to do research on more areas, which has become a topic for my future research."
(domestic training in Indonesia)

In addition, combining the comments above with ITB's comment above in "5) Number of Joint Research Projects" under "3.3.1.1 Quantitative Effect" (expansion and development of joint research by introducing educational and research facilities and research materials and equipment), it can be said that this project is contributing to the improvement/expansion of ITB's educational and research facilities and quality improvement.

Judging from the above, it is considered that this project is contributing to the improvement of the quality of ITB education and the expansion of their research scopes.

3.3.2 Impacts

3.3.2.1 Intended Impacts

(Contribution to Human Resource Development, Industrial Promotion and Competitiveness Enhancement in Indonesia's Science Technology Fields)

Through the interviews with ITB and the Ministry of Education, Culture, Research and Technology and questionnaire, we looked into the ways in which this project contributes to Indonesia's science technology fields and whether they are related. The following are the comments obtained.

<Contribution to Human Resource Development in Science Technology Fields>

"The Indonesian government has an interest in science technology fields, as they are an important pillar for the national development. ITB is expanding its educational and research facilities and programs in order to respond to the increasing number of students." "Represented by several laboratories including the Nanoscience Center at the CAS, ITB is gaining recognition as a promising partner among international networks, especially in the field of nanotechnology. The number of research papers at the center increased from 41 in 2017 to 84 in 2020, and research activities are brisk. The facilities and research equipment developed by this project are being fully utilized." "At CRCS it is possible to produce high-quality online course contents that can be easily accessed by other universities in Indonesia, with the utilization of video recording and editing

equipment. In addition, nationwide conferences and workshops can be held using the conference rooms of the CAS, CIBE, CITIE and CADL. In other words, networks of researchers and venues for presentations are expanding, which is linked to the development of human resources.” Based on the comments above, it is considered that this project is supporting the human resource development in Indonesia’s science technology fields.

<Contribution to Industrial Promotion>

“ITB has a department that is dedicated to nurturing innovations and entrepreneurs (Lembaga Pengembangan Inovasi & Kewirausahaan: LPIK)²³. According to LPIK’s data, the total number of joint research that are applicable to the industry increased from 86 in the 3 years from 2015 to 2017 to 95 in the 3 years from 2018 to 2020.” “In recent years, intellectual property rights and patents have been increasing in number. In 2014, 60 applications were submitted, of which 7 were granted as intellectual property rights and 11 were granted as patents. In 2019, 237 applications were submitted, of which 57 were granted as intellectual property rights and 43 were granted as patents²⁴.” “The number of innovation related startups²⁵ increased from 60 in 2016 to 112 in 2019.” “From the above achievements, it can be said that ITB’s education and research activities are brisk. They are supporting not only ITB but also Indonesia’s industrial promotion.” Based on the comments made, this project is considered to be contributing to the promotion of industry in Indonesia.

<Contribution to Enhanced Competitiveness>

“ITB is ranked 313th in the 2021 QS World University Rankings²⁶ and 66th in Asia, whereas in 2018 it was 359th in the world and 73rd in Asia. Therefore, the ranking has improved. ITB is enthusiastic about improving research productivity in order to compete with other competitive universities. Expansion of research facilities and human resource development is the key to that.” “The publications of papers on Web of Science²⁷, which measures the competitiveness of academic research fields, increased from 124 in 2011 to 442 in 2018. This gives many research institutes around the world access to ITB’s research results. It is leading to the enhancement of

²³ ITB also promotes industry-academia joint research and collaboration.

²⁴ (Reference information) The institution that manages intellectual property at ITB is the Institute for Innovation and Entrepreneurship Development (LPIK). The Intellectual Property Management Procedure is listed in the Rector's Decree Number 070/PER/II.A/HK/2017 concerning the Intellectual Property Policy of the ITB. According to ITB, obstacles to managing intellectual property rights include dealing with financial management and procurement processes according to government rules. ITB faces constraints of time and procedures.

²⁵ In this document, “startup” means the establishment of a new company with innovations.

²⁶ Quacquarelli Symonds, a UK based institution that evaluates universities, publishes annual rankings of universities around the world.

²⁷ Web of Science is the world’s largest online academic database provided by Clarivate Analytics, an international information company. Academic journals are carefully selected and recorded, and it is used by many research institutes around the world.

the development and competitiveness of not only ITB but also Indonesia's science technology fields." Based on the comments, it is considered that this project is making a great contribution to enhancing Indonesia's competitiveness in academic and research fields.

As for ITB's collaborations with Japanese companies, a total of 78 joint research projects have been realized in the 3 years from 2018 to 2020; collaborative projects are being conducted at each ITB faculty and research center²⁸. Based on the above collaborations and joint research with Japanese companies, it can be inferred that this project is supporting the promotion of industry and the strengthening of competitiveness in Indonesia.

This project is therefore considered to be contributing not only to ITB, but also to the human resource development, promotion of industry, and the enhancement of competitiveness in science technology fields²⁹.

3.3.2.2 Other Positive and Negative Impacts

1) Impacts on the Natural Environment

This project does not fall under the vulnerable sectors/characteristics or vulnerable areas listed in the "JBIC Guidelines for Confirmation of Environmental and Social Considerations³⁰" and the undesired impact on the environment was thought not to be significant. Therefore, it was labeled as Category B. Preparation of an environmental impact assessment (EIA) was not required under Indonesian domestic law.

In this project, consideration was given to preventing noise from the generator by using noise prevention materials during the construction of the research center facilities. According to ITB, the contractor kept the atmospheric substances and odors at the construction site below the environmental standard, and the wastewater inspection did not show a serious degree of pollution.

²⁸ "Establishment of a Space-Based Atmospheric Water Vapor Monitoring System for Hydro-Meteorological Disaster Management," "Development of Trivalent Rare Earth Ion Doped Glasses for Solid State Lighting Application," "Smart Porous Nanostructured Silica for Controlled Drug Delivery," etc. (all the above are Asahi Glass Foundation), "Development of Remaining Life Estimate Method of Gears for the Purpose of Remanufacturing" (Komatsu Limited), "Optimization and Modelling of Pharmaceuticals Adsorption onto Clay Materials as a Green and Low-Cost Water Treatment" (Kurita Water and Environment Foundation), "Modification of Natural and Synthetic Fibers for Sorbent Materials in Oil Spill Disaster Response" (Osaka Gas Foundation), etc. According to ITB, there are many cases of collaboration and conferences besides those mentioned above.

²⁹ In addition, the Faculty of Civil Engineering and Environmental Engineering at CIBE developed in this project is collaborating with the ASEAN University Network / Southeast Asia Engineering Education Development Network (AUN/SEED-Net) and building networks both during the project and after the project's completion. For example, the "Civil Engineering Research Network Conference (ConCERN)" and "7th ASEAN Civil Engineering Conference (ACEC)" in 2014, and the "12th SEED-Net Environmental Engineering Regional Conference 2019 (RC EnvE 2019)" have been held by the Faculty of Civil Engineering and Environmental Engineering. It can be said that the developed facilities are being fully utilized, supporting ITB's research activities and the establishment of international collaborations.

³⁰ Established in April 2002.

It was confirmed by the questionnaire and interviews that there were no major negative environmental impacts on noise/vibration, air pollution, odors, etc., even after completion. Regarding the treatment of waste and wastewater from the laboratory, after being stored temporarily in the facility, a sticker identifying the waste is affixed to an external container and taken out, and the treatment is carried out under a systematic process. At ITB, the “Facility Infrastructure Department” under the Safety, Health, Business Conservation and Environmental Division (K3L) is responsible for environmental management and process supervision. The department handles waste disposal, safety guidance and facility inspections according to the Standard Operating Procedures (SOPs). The department is also responsible for the environmental monitoring of the facilities of this project and the installed research equipment, from planning to monitoring. Occasionally, specialists are hired to check the sites and prepare reports. According to the reports, there have been no negative impacts on the environment and no special measures have been taken so far. In addition, it was confirmed by the questionnaire and interviews with ITB that there were no complaints about noise, vibration, odor, etc., from the local residents.

2) Resettlement and Land Acquisition

No land acquisition occurred in this project. Since the land was owned by ITB before the start of this project, no new land acquisition or physical relocation of residence was involved. However, there was an economic relocation of a shop (one case), which was operating on the street around the north exit of the ITB campus, to a nearby location (one inhabitant affected by the relocation). The local government of Bandung City provided the relocation site and a building for the affected shop, and the procedure was carried out smoothly based on Indonesian domestic law and JBIC Guidelines for Confirmation of Environmental and Social Considerations. It was confirmed that no dispute had arisen at the time of the ex-post evaluation. There was no relocation of residents.

[Summary of Effectiveness and Impact]

Regarding the quantitative effects of this project, the actual values have generally exceeded the initially set targets. Interviews with ITB confirm that the scopes of education and research have been enhanced by developing education and research facilities and introducing research materials and equipment through this project, which is expected to develop further. In addition, interviews with the participants of this project’s fellowship program confirm that the knowledge and experience of the participants have increased and the scopes of research have expanded. Furthermore, it can be inferred from the interviews regarding human resource development, the

promotion of industry, and the enhancement of competitiveness in the science technology fields that ITB's research achievements have increased, on-campus and off-campus collaborations have progressed, and this project is contributing to the strengthening of science technology fields in Indonesia. Based on the above, this project has mostly achieved its objectives. Therefore, the effectiveness and impact of the project is high.



Photo 3: Facilities in the Acoustic Research Building (Anechoic room)



Photo 4: Experiment by ITB Students

3.4 Sustainability (Rating: ③)

3.4.1 Institutional/Organizational Aspect of Operation and Maintenance

The executing agency of this project is ITB. The Ministry of Education, Culture, Research and Technology supervises ITB. The total number of ITB's staff is 2,924 (as of the end of December 2020). ITB is designated as a state university under Law No. 12 of the Republic of Indonesia and Rule No. 44 (both promulgated in 2012). The Ministry of Education, Culture, Research and Technology, or the central government, grants an operating budget including the operation and maintenance budget for facilities and research equipment to ITB as a research grant. ITB is then entrusted with the financial management of the budget for the purpose of promoting educational and research activities.

At ITB, 6 vice presidents and 1 senior director are assigned under the president, and under such an operating system, the Asset Management Department, Information System/Technology Department, E-learning Department and each center/faculty are responsible for the operation and maintenance of facilities and research equipment including the ones provided by this project. Of these, the Asset Management Department is responsible for the maintenance of centers, while each center is responsible for the operation and maintenance of the research equipment introduced there. Table 4 shows the departments in charge of the operation and maintenance of each

facility/research equipment and the number of staff.

Table 4: Departments in Charge of Operation and Maintenance of ITB's Facilities and Research Equipment and Number of Staff

Department	No. of Staff
E-Learning Department	7
Asset Management Department	28 *Note
Information System/Engineering Department	5
Each Research Center	14
Each Faculty	33
Safety, Health, Business Conservation and Environmental Division	16
Total	103

Source: Answers to the questionnaire

Note: Many other engineers and cleaners work at the Asset Management Department. They are engaged in facility management and cleaning work on a daily basis.

The ITB staff is responsible for the daily operation and monitoring of the research center facilities and research equipment, including the ones developed/introduced by this project and of other research support works. On the other hand, external contractors conduct the regular maintenance of corrosion prevention coatings and paints on the exterior and handrails of the center facility, elevators, emergency generators, transformers, air conditioning, water treatment plants, electrical equipment, piping, etc. Through the questionnaire and interviews with ITB, it was confirmed that the number of staff in Table 4 was sufficient. It was also confirmed that there are no major problems with the maintenance system or with the number of staff of the external contractors. ITB manages the organization by paying attention to the number of supporting staff in accordance with the number of students and the research systems. As the research activities and students have been increasing since 2021, ITB points out the need to increase the number of staff engaged in operation and maintenance³¹.

Based on the above, it is judged that there is no particular problem in the institutional aspect of the operation and maintenance system of this project.

3.4.2 Technical Aspect of Operation and Maintenance

Each ITB department has many staff who are familiar with and experienced in operation and maintenance work. It was confirmed through the questionnaire, site visits and interviews that there were no technical shortages in operation and maintenance. It was also confirmed that there

³¹ As of the time of the ex-post evaluation (March 2021), ITB is discussing a budget for that purpose and is also considering hiring an external consultant to secure appropriate staff.

were no problems in the technical aspect of the work carried out by the external contractors.

ITB regularly holds training for operation and maintenance staff. For example, training on themes such as “spectroscopic deflection analysis method,” “electron microscope workshop,” “calculation material design,” and “how to use a coordinate measuring machine” was given recently. Although ITB does not provide training for newly hired staff, they are trying to upgrade their capabilities and knowledge through on-the-job training after joining the institute.

Each research center also has manuals and guidelines for the operation and maintenance of research equipment. As for the advanced research equipment used in CAS, there is a specialized manual for each equipment, which is being utilized by the maintenance staff as needed.

Based on the above, it is judged that there are no major technical problems related to the operation and maintenance of this project.

3.4.3 Financial Aspect of Operation and Maintenance

About one-third of the total ITB annual budget is the operating budget and research grants from the Indonesian government (Ministry of Education, Culture, Research and Technology). The other one-third is generated from tuition, and the remaining one-third is the revenue from research and collaboration projects with Indonesia and overseas partners. In principle, the government’s budget is determined based on the research results. Therefore, ITB is required to submit an annual activity report to the Ministry of Education, Culture, Research and Technology³².

Table 5 shows the operation and maintenance costs of ITB, including the research facilities and research equipment developed in this project. They are generally increasing. ITB commented: “we are allocating necessary budget in a just proportion,” “the amount is expected to increase because research activities are expected to increase after 2021.” The operating cost in 2020 was slightly less than that of the previous year due to the influence of COVID-19.

Table 5: Operation and Maintenance Cost (Actual Spending for Recent 4 Years)

(Unit: million IDR)				
Cost	2017	2018	2019	2020
Operation Cost	32,406	33,268	33,738	29,361
Maintenance Cost	35,598	38,379	43,394	46,818

Source: Answers to the questionnaire

Table 6 shows the income statement (P/L) for the last 3 years for reference. The gross income

³² On the other hand, the Ministry of Education, Culture, Research and Technology regularly monitors the financial and operational status of ITB with the support of the Ministry of Education’s Audit Department.

consists of education-related income such as revenue from running the university, from collaborative projects with other organizations and from donations. Income exceeded the total spending in any year and is in the black after tax. It can be confirmed that the accumulation of net assets has continued recently. It can be said that ITB's finance is well managed as an incorporated administrative institution.

(Reference) Table 6: ITB's Profit and Loss Statement (P/L)

(Unit: million IDR)

	2017	2018	2019
Gross income (A)	1,760,313	1,757,481	1,945,265
Gross expenditure (B)	-1,622,892	-1,607,906	-1,707,448
Profit before tax (C)	137,421	149,575	237,817
Profit after tax (D)	133,268	145,423	233,699
(*Below is for reference)			
Net assets at the beginning of the fiscal year (E)	1,783,209	1,926,314	2,064,285
Other profit or less (F)	9,837	-7,452	6,313
Net assets at the end of the fiscal year (D+E+F) *Note	1,926,314	2,064,285	2,304,297

Source: ITB

Note: This is consistent with net assets in Table 7.

Table 7 shows the balance sheet (B/S) of ITB for reference. While there is no increase in liabilities, one can see that the financial improvement is due to the accumulation of net assets and the increase in cash flow. It can be inferred that ITB's finances are in a healthy state and that there are no major problems with the expenditure of the operation or the maintenance costs.

(Reference) Table 7: Balance Sheet of ITB (B/S)

(Unit: million IDR)

	2017	2018	2019

Asset			
(Current assets)			
Cash on hand and in banks	1,008,990	1,211,071	1,438,654
Short-term investment	155,649	163,091	182,441
Other current assets	143,699	122,058	131,391
Total current assets	1,308,338	1,496,220	1,752,486
(Non-current assets)			
Fix assets	1,014,385	966,575	938,965
Other assets	31,651	24,853	30,893
Total non-current assets	1,046,036	991,428	969,858
Total Assets	2,354,374	2,487,648	2,722,344
Liabilities			
Accounts payable	41,827	42,991	43,406
Accrued expenses	71,268	88,853	73,187
Other liabilities	314,965	291,519	301,454
Total Liabilities	428,060	423,363	418,047
Net Assets	1,926,314	2,064,285	2,304,297
Total Liabilities + Net Assets	2,354,374	2,487,648	2,722,344

Source: ITB

Based on the above, it is judged that there are no major financial problems in the operation and maintenance of this project.

3.4.4 Status of Operation and Maintenance

At the time of the ex-post evaluation, there is no particular concern about the maintenance status of the research facilities and research equipment developed/introduced by this project, and no problems have occurred. ITB staff perform the daily operation and monitoring of the research facilities including research equipment and other research support work, while external specialists manage the corrosion prevention coating/painting of exteriors and handrails of each center facility, elevators, emergency generators, transformers, air conditioning, water treatment plants, electrical equipment, piping, etc.

Spare parts requested by ITB maintenance staff and by the external contractors are procured and stored separately. Specialized and particular parts are handled by specialized companies. Depending on the part's type, it may take time to procure and deliver. However, no major concerns have arisen so far. In either case, necessary budget is allocated every year, and parts are procured in accordance with the regulations of ITB.

No major problems have been observed in the institutional, technical, financial aspects and current status of the operation and maintenance system. Therefore, the sustainability of the project effects is high.



Photo 5: Introduced High Performance Liquid Chromatography (HPLC) Under the Project



Photo 6: Introduced Single-arm Robot Set Under the Project

4. Conclusion, Lessons Learned and Recommendations

4.1 Conclusion

This project developed research facilities, etc., to improve the quality and quantity of education and research at the ITB, located in the province of West Java, thereby contributing to the development of human resources, the promotion of industry and the enhancement of competitiveness in Indonesia's science technology fields. The *Medium-Term National Development Plan* (RPJM: 2004–2009) and the *National Medium-Term Development Plan* (RPJMN: 2020–2024) of the government of Indonesia aim to strengthen higher education institutions that contribute to improved competitiveness by developing science technology fields. ITB is expected to enhance its human resource development and education and research functions in science technology and engineering fields. The *Country Assistance Program for Indonesia* advocated to “support efforts to reduce poverty by providing support that contributes to the development of human resources who lead the industry in higher education.” Because this project is also consistent with the assistance policy of Japan, the relevance is high. As for efficiency, while

the project cost was within the initially planned budget, due to a decrease in the number of fellowship program participants and fluctuations in the exchange rate, the project period was longer than the initial plan because it took time to complete the authorization procedure inside the Indonesian government, to select the consultant, to review the detailed designs and to select the suppliers concerning equipment procurement, and due to unexpected changes in the government policy regarding the procurement of construction work, delays occurred in the actual overall construction work. Therefore, the efficiency of the project is fair. With regard to the quantitative effects of this project, the actual results generally exceeded the initially set targets. The significant role of this project was confirmed through the interviews regarding improvements in ITB's educational quality through enhanced and expanded educational and research facilities, human resource development, the promotion of industry and the enhancement of competitiveness in Indonesia's science technology fields. Based on the above, this project's effectiveness and impact is judged to be high. It is thought that there is no major concern with the institutional, technical or financial aspects of ITB's maintenance department, which is the body responsible for operation and maintenance, and nor is there a concern with the status of the operation and maintenance. Therefore, the sustainability of this project is judged to be high.

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

4.2 Recommendations

4.2.1 Recommendations to JICA

- As an initiative to pursue quality improvement in education and research, ITB has been regularly conducting the feedback survey (Tracer Study), obtaining the answers after graduation as to whether the practical work of the students after graduation and the content of research work at the ITB match or are useful, which will utilize for their future education and research programs. It is worth considering that JICA will incorporate such efforts in other similar projects and strive to improve its educational programs.

4.3 Lessons Learned

Need to Improve Accuracy of the Project Scope Planning before the Project Commencement

- Regarding the overseas seminar participation of this project's fellowship program, the number of participants was less than initially expected and planned. This was because ITB did not have a solid staff leave system in place, making participation difficult. It was also because the procedure for obtaining public passports was unsuccessful, forcing the candidates to forgo the opportunity

due to the delay. As for lower number of participants in the domestic seminar training (seminar training which did not aim at obtaining a degree), this was because the training was not as attractive as the overseas programs. Although these may have been unexpected events, it would have been preferable for the aid provider and recipient country to pre-interview the needs and intentions of the faculty members, researchers and others who were interested in education and training programs in Indonesia and overseas such as this project's fellowship program, to make a forecast of the number of participants and the contents of the program with high needs at the time of project formation, while confirming whether the program design matches the recipient country's system and whether there is a current system being an obstacle to participation. For similar projects in the future, the aid provider and the recipient country should take necessary measures at the time of project formation to have a more accurate perspective to avoid mismatches between the applicants and the offered training programs and strive to improve the accuracy of the project plan.

Comparison of the Original and Actual Scope of the Project

Item	Plan	Actual
1. Project Outputs	<p>1) Facility Construction and Basic Infrastructure Construction</p> <p>(a) New Construction of Research Centers CAS: 8,300 m², CRCS: 7,000 m², CIBE: 11,000 m², CADL: 8,000 m² (Gross floor area: 34,300 m²)</p> <p>(b) Renovation of Research Centers CIBE: 2,460 m², CITIE: 5,900 m², CADL: 5,200 m² (Gross floor area: 13,560 m²)</p> <p>(c) Construction of basic infrastructure related to each research center (new construction)</p> <p>2) Equipment Procurement Materials and equipment used for educational and research activities</p> <p>3) Fellowship (Plan: 100 people) <Overseas> Master's (4), doctoral (14), postdoctoral (8), short-term training (9), seminar participation (50) <Domestic> Doctoral (5), seminar participation (10)</p> <p>4) Consulting Services (1) Total project management (2) Detailed design, bidding support, construction supervision (3) Support to the overseas studies (4) Development of a mid-to-long term plan related to CAS (a roadmap), research program development such as curriculum, support to the formulation of human resource development programs</p>	<p>1) Facility Construction and Basic Infrastructure Construction</p> <p>(a) New Construction of Research Centers CAS: 11,735.14 m², CRCS: 8,682.44 m², CIBE: 9,274.60 m², CADL: 10,283.42 m² (Gross floor area: <u>39,976 m²</u>)</p> <p>(b) Renovation of Research Centers CIBE: 2,526 m², CITIE: 8,697 m², CADL: 7,524 m² (Gross floor area: <u>23,278 m²</u>)</p> <p>(c) Construction of basic infrastructure related to each research center (new construction): As planned (water supply, electrification)</p> <p>2) Equipment Procurement Mostly as planned (experimental equipment, analyzers, video equipment, electron microscopes, PCs and PC-related equipment, software, books, furniture, etc. were procured and installed at each center)</p> <p>3) Fellowship (<u>Actual: 49 people</u>) <Overseas> <u>Master's (1), doctoral (16), postdoctoral (6), short-term training (5), seminar participation (16)</u> <Domestic> <u>Doctoral (5), seminar participation (0)</u></p> <p>4) Consulting Services (1)–(4) were implemented as planned.</p>

2. Project Period	March 2009–September 2015 (79 months)	March 2009–October 2018 (116 months)
3. Project Cost		
Amount Paid in Foreign Currency	5,354 million yen	4,812 million yen
Amount Paid in Local Currency	2,447 million yen	1,370 million yen
Total	7,801 million yen	6,182 million yen
ODA Loan Portion	(5,659 million yen)	(4,812 million yen)
Exchange Rate	1 USD = 107 yen, 1 rupiah = 0.0115 yen (As of August 2008)	1 USD = 100.34 yen, 1 rupiah = 0.0087 yen (Average taken from IMF's IFS data)
4. Final Disbursement	December 2018	

Republic of Indonesia

FY2020 Ex-Post Evaluation Report of Technical Cooperation Project
The Project for Planning and Budgeting Reform for
the Performance-Based Budgeting System Implementation (Phases 1 & 2)

External Evaluator: Mayumi Hamada

Foundation for Advanced Studies on International Development

0. Summary

This project was implemented to align the budget process with the improved methodology under the Performance-Based Budgeting (hereinafter referred to as PBB) and Medium-Term Expenditure Framework (hereinafter referred to as MTEF) systems at the National Development Planning Agency (hereinafter referred to as BAPPENAS) and the selected line ministries by enhancing the understanding of PBB for those concerned and improving the framework of national budget proposals and scrutiny. The project direction, which was aimed at promoting PBB implementation, sufficiently corresponded with the Indonesian policy and development needs, as well as Japan's aid policy, from the project planning stage to project completion. Thus, the relevance of the project is high. Although the understanding of those who were concerned on the PBB methodology up to project completion was mostly high, the intended outputs related to enhanced frameworks for budget proposals and scrutiny were not achieved, and achievement remained fair. Consequently, the achievement of the Project Purpose (i.e., implementation of the budgeting process in accordance with the improved methodology under PBB and MTEF systems at BAPPENAS and the selected line ministries) was fair. At the time of the ex-post evaluation, the achievement of the Overall Goal was also fair, and no negative impact has been observed. Thus, effectiveness and impacts are fair. Both the project cost and duration exceeded the plan. Hence, the project has fair efficiency. No major problems have been observed in the policy background or the institutional/organizational, technical, or financial aspects. Therefore, sustainability of the project effects is high. In light of the above, this project is evaluated to be satisfactory.

1. Project Description



Four selected provinces and two selected regencies



A seminar conducted for the government officers¹

1.1 Background

Indonesia's economy has been managed prudently since the aftermath of the Asian financial and economic crisis in 1997 and has developed steadily since then. On the other hand, it did not reach 7% annual growth, which was regarded as essential for further creation of employment opportunities and poverty reduction. One reason for this was insufficient investment. It may be that low policy feasibility of public institutions affected the predictability of private investment, which led to concerns about investment risk. As a background, it has been pointed out that insufficient management capacity of public institutions in finance and budget, lack of transparency, and inefficient execution of the budget played roles. More specifically, budgeting was implemented where there was no framework to link the *Medium-Term National Development Plan* (hereinafter referred to as *RPJMN*) with the annual budget plan. Additionally, resources were not allocated strategically because budgeting and budget control tended to be process-oriented instead of objective-oriented. These led to the difficulty in achieving the planned results. Furthermore, the enactment of the *Law on State Finances (2003)* and *Law on the National Development Planning System (2004)* required planning and budgeting in accordance with the framework of MTEF-PBB with clear linkage between the legal aspects of planning, budgeting and performance. Thus, the implementation of PBB was an urgent issue.

¹ Development Planning Seminar conducted during implementation period for the Indonesian government officers. The photo was taken at BAPPENAS in December 2014.

1.2 Project Outline

Table 1: Project Outline: Phase 1

Overall Goal		Budget allocation as an indicative ceiling by BAPPENAS is appropriately made under the PBB and the MTEF systems.
Project Purpose		BAPPENAS staff acquire concrete means to allocate funding to line ministries based on the performance evaluation results and national priorities under the MTEF.
Output	Output 1	BAPPENAS staff acquire the know-how on allocation of funding based on the performance evaluation results and national priorities.
Total cost (Japanese Side)		320 million yen
Period of Cooperation		May 2010 – February 2014 (3 years and 9 months) (including extended period: June 2013 – February 2014).
Target Area		Indonesia
Implementing Agency		BAPPENAS
Other Relevant Agencies/ Organizations		Local governments, central ministries, etc.
Consultant		Mitsubishi UFJ Research and Consulting Co., Ltd.
Related Projects		<p>Japanese ODA Loan</p> <ul style="list-style-type: none"> - The 5th Development Policy Loan (Loan Agreement concluded in 2009) <p>Other International Organizations and Donors</p> <ul style="list-style-type: none"> - Public Finance Management Program (World Bank, hereinafter referred to as WB) - Dispatch of experts (Australian Agency for International Development, hereinafter referred to as AusAID)

Table 2: Project Outline: Phase 2

Overall Goal		PBB is further operationalized in Indonesia.
Project Purpose		Framework of planning and budgeting reform is further enhanced.
Output(s)	Output 1	The quality of the result chain and KPI is improved in the selected line ministries.

	Output 2	Guiding framework for improving the quality of budget preparation documentation is enhanced.
	Output 3	Guiding framework for improving the quality of budget scrutiny is enhanced at BAPPENAS and the Ministry of Finance (hereinafter referred to as MOF)
	Output 4	The experiences and lessons learned for improvement of allocation and operational efficiency are shared by stakeholders.
	Output 5	A framework development for further elaborating PBB implementation system is facilitated.
Total cost (Japanese Side)		328 million yen
Period of Cooperation		September 2014 – November 2017 (3 years and 3 months) (including extension period: August 2017 - November 2017)
Target Area		Entire area of Indonesia
Implementing Agency		BAPPENAS (Directorate of Development Funding and Allocation)
Other Relevant Agencies/ Organizations		MOF, Ministry of Home Affairs, selected line ministries ² and selected local governments ³
Consultants		- International Development Center of Japan Incorporated - Mitsubishi UFJ Research and Consulting Co., Ltd.
Related Projects		Technical Cooperation - The Project for Planning and Budgeting Reform for the PBB System Implementation (Phase 1) in Indonesia (2010-2014) Japanese ODA Loan - The Development Policy Loan (2004 – 2013) Other International Organizations and Donors - Government Financial Management and Revenue Administration Project: GFMRAP (2004 – 2015) (WB) - Public Financial Management Multi-Donor Trust Fund (PFM-

² The seven selected line ministries are as follows: Ministry of Education and Culture, Ministry of Health, Ministry of Agriculture, Ministry of Public Works and Housing, Ministry of Environment and Forestry, Ministry of Law and Human Rights, Ministry of Marine Affairs and Fisheries. Ministry of Marine Affairs and Fisheries was included in March 2016 (*Project Completion Report of Phase 2*, hereinafter referred to as *PCR of Phase 2* [p4]).

³ The selected local governments are four provinces and two regencies, as follows: North Sumatra Province, Yogyakarta Special Province (selected in the 1st year), West Nusa Tenggara Province, Central Sulawesi Province, Wakatobi Regency, and Bima Regency (*PCR of Phase 2* [p4]).

	<p>MDTF) (WB, European Union, hereinafter referred to as EU, the government of the Netherlands)</p> <ul style="list-style-type: none"> - Government Partnership Fund (GPF) (the government of Australia) - Australia Indonesia Partnership for Economic Governance: AIPEG (the government of Australia)
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1.3 Outline of the Terminal Evaluation

The overview of the Terminal Evaluation result in Phase 1 was as follows. Terminal Evaluation was not conducted in Phase 2.

1.3.1 Achievement Status of Project Purpose at the Terminal Evaluation

The Project Purpose was evaluated to have been almost achieved. More specifically, the understanding of PBB methodology by staff of the Directorate of Development Funding and Allocation as well as the Directorate of Evaluation of BAPPENAS, the major target of the project, was enhanced. On the other hand, capacity development of staff at sector directorates (i.e., sections in charge for the line ministries) at BAPPENAS is indispensable for implementation of PBB and achievement of the Overall Goal.

1.3.2 Achievement Status of Overall Goal at the Terminal Evaluation (Including other impacts)

Actions have been smoothly carried out to achieve the Overall Goal. BAPPENAS had a plan to enhance implementation and dissemination for the sector directorates, and it was assessed that more effective implementation of PBB could be expected by taking continuous operational actions in the implementation process.

1.3.3 Recommendations from the Terminal Evaluation

The following recommendations were made at the Terminal Evaluation.

- (1) The necessity of Medium- and Long-term roadmaps and the involvement of local governments necessary to fully implement PBB
- (2) Implement trials of the draft guidelines for self-policy assessment for the full-scale implementation of PBB (short-term action)
- (3) The necessity of continuous efforts to further enhance the capacity of the relevant stakeholders (staff at the sector directorates and at the line ministries)
- (4) Improvement in selection process of trainees (the necessity of improving participant selection for the third-country training to make full use of the opportunity, if the project continues)

- (5) Dissemination of performance information to the public (improvement of government accountability by disseminating the evaluation result to the public upon introducing PBB in full scale)

2. Outline of the Evaluation Study

2.1 External Evaluator

Mayumi Hamada, Foundation for Advanced Studies on International Development

2.2 Duration of Evaluation Study

This ex-post evaluation study was conducted with the following schedule.

Duration of the Study: October 2020 – November 2021

Duration of the Field Study: February 8, 2021 – April 23, 2021

July 22, 2021 – August 13, 2021

2.3 Constraints during the Evaluation Study

Due to the prevalence of COVID-19, the planned 1st and the 2nd field surveys had to be cancelled and switched to remote information collection through the local consultant. The local stakeholders increasingly began to work at home, making it difficult to make appointments for offline meetings. It was necessary for the local consultant to be inspected several times, because a negative COVID-19 test result was required for offline meetings occasionally. Under these circumstances, this took more time than it normally would have. In local governments that the regulation did not allow the local consultant to visit, online interviews were conducted instead.

3. Results of the Evaluation (Overall Rating: A/B/C/D⁴)

3.1 Relevance (Rating: ③⁵)

3.1.1 Consistency with the Development Plan of Indonesia

The promotion of MTEF-PBB was consistent with the direction shown by *The Jakarta Commitment* (2009), in which the government of Indonesia (hereinafter referred to as GOI) and 22 donor agencies confirmed ownership of development and commitment among the stakeholders to enhancing aid effectiveness. Also, *Planning and Budgeting System Reform*, which consisted of three phases (2005 – 2009 Introductory Stage, 2010 – 2014 Strengthening Framework, and 2015 – 2019 Improving Framework), aimed to synchronize medium-term development planning and annual development planning with budgeting and control. Thus, the promotion of MTEF-PBB was consistent with the

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

⁵ ③: High, ②: Fair, ①: Low

Indonesian policy at the time of planning.

Upon issuance of Presidential Decree No. 17/2017 in 2017, development planning and budgeting changed from “Money Follows Function” (budget allocation based on function/section) to the “Money Follows Program” (budget allocation based on program/project). However, there was no change in the sense that it was still based on PBB.

As stated above, the project’s direction to promote PBB implementation was consistent with the GOI’s policy from the planning stage until project completion.

3.1.2 Consistency with the Development Needs of Indonesia

Indonesia’s *State Financial Law* (2003) and *State Development Planning System Law* (2004) requires planning and budgeting in line with the framework of MTEF-PBB, with a clear linkage among planning, budgeting, and performance. Thus, budgeting based on PBB was an urgent issue. BAPPENAS reflected the National Priorities in the *RPJMN* and international commitment to the annual plan and budgeting. However, the government did not budget based on performance, which incorporates performance evaluation from past projects and output objectives⁶.

At the time of project completion, there had been no change in the *State Financial Law* or *State Development Planning System Law* mentioned above⁷. Furthermore, at the time of ex-post evaluation, the selected line ministries were asked about their needs during the project period to strengthen the linkage between the government’s planning and budgeting according to a 5-level rating. Out of the seven ministries, three rated the needs as 5 (very high) and four rated as 4 (high).

Thus, the MTEF-PBB framework, with clear links among planning, budgeting, and performance, was required from project planning to completion and matched the development needs.

3.1.3 Consistency with Japan’s ODA Policy

The Country Assistance Program for Indonesia (2004) by the Ministry of Foreign Affairs adopted it as a direction to support “securing financial sustainability” and promote “sustainable growth with initiatives by the private sector,” which was one of the key targets, as well as “enhancement of comprehensive coordination function” for BAPPENAS. Thus, the project’s direction to strengthen BAPPENAS’ comprehensive coordination function to secure financial sustainability was consistent with the Japanese aid policy at the time of planning.

⁶ The ex-ante evaluation sheet of Phase 1 (p1)

⁷ *PCR of Phase 2* (p1)

3.1.4 Appropriateness of the Project Plan and Approach

Phase 2 was designed to focus on strengthening the framework to improve the quality of budget proposals of the new initiatives (Output 2) and scrutinize these budget proposals (Output 3). However, BAPPENAS stopped accepting budget proposals for the new initiatives after 2015 because the GOI could not implement programs for new initiatives due to a revenue shortage, among other factors. From 2016 to 2017, the GOI's trials and errors concerning the system for budget allocation continued⁸. The JICA expert team tried to cope with the counterpart's requests flexibly without limiting the activities to those initially planned, but interpreting them in a broad sense⁹.

In Output 3 of Phase 2, support for the MOF was planned in addition to BAPPENAS. However, some of the activities planned as premises for cooperation from the MOF (such as those for improving the quality of costing, as well as cost-benefit analysis) stopped after October 2015, because it became difficult to have the participation of MOF in the project activities. Consequently, Outputs 2 and 3 were not achieved. As for the achievement of the Project Purpose by project completion, it remained fair¹⁰ because the indicators related to the above (Outputs 2, 3, and 4) became obstructive factors.

However, it is not assessed that there was a serious problem in the plan or approach because of the following reasons. The initial plan included some activities for which the MOF's cooperation (such as sharing internal documents) was indispensable. Some might say that the plan was a little bit ambitious, considering the past relationship between MOF and BAPPENAS. However, the plan cannot be assessed as unrealistic, because the relationship between the two ministries has improved due to Presidential Decree No. 17/2017 in 2017, as explained later in the clause "Institutional/Organizational Aspect for the Sustainability of Project Effects" (3.4.2).

Besides, the activities mentioned above related to the MOF were not clearly indicated in the Output and its activities of the Project Design Matrix (PDM) and *Project Completion Report (PCR)*, but at the output level, a guiding framework for improving the quality of budget scrutiny was expected at the MOF in addition to BAPPENAS. According to a JICA staff member who was involved with the project in the past, it was not actually intended for the project to change the framework at the MOF. It was not appropriate to describe an output including an aspect that was not intended when the PDM was formulated, because it is confusing. However, it was not so serious, as it did not result in significant negative influence

⁸ BAPPENAS introduced the concept of the National Priorities in 2016 and decided to scrutinize the budgets based on the expected level of contribution to the National Priorities, regardless of new or existing projects. Furthermore, the concept of "the National Priority Projects," which links with the National Priorities, was introduced in 2017, thus requiring the line ministries to show the linkage with the National Priorities in their planning and budgeting documents.

⁹ *PCR of Phase 2* (pp12-13, 36)

¹⁰ *PCR of Phase 2* (pp12-15, 33-34, 43-44)

against the emergence of effects.

During the implementation period, the initial plan had to be modified due to the change of Indonesian policy and decreased participation of the MOF. However, JICA experts tried to flexibly cope with the implementation of the organization's needs, and there was no problem in the approach during implementation.

Based on the above, this project was highly relevant to the country's development plan and needs, as well as Japan's ODA policy. Therefore, its relevance is high.

3.2 Effectiveness and Impact¹¹ (Rating: ②)

3.2.1 Effectiveness

To evaluate Phases 1 and 2 in an integrated manner, the Project Purpose of Phase 1 was treated as one of the outputs of Phase 2 in the entire project plan, because it is regarded as one of the means to achieve the Project Purpose of Phase 2.

On the other hand, some problems are observed in the logic of the PDM for Phases 1 and 2 as follows. 1) For Phase 1, the Project Purpose and the Outputs are not in a "means-and-ends (or cause and effects) relationship," and it is possible that the Project Purpose and the Outputs describe the same thing in different ways. 2) For Phase 2, the Project Purpose and the Outputs are not in a "means-and-ends (or cause and effects) relationship," and it is possible that the Project Purpose is a summary of the outputs (i.e., all the outputs are summarized into one sentence). 3) For both Phases' PDM, some indicators are inappropriate to measure the objectives.

Consequently, after realigning some parts of both phases' PDM, a PDM for evaluating both phases in an integrated manner was established as follows (the indicators are as per Table 4 to 6). In aligning the PDM, the existing PDM was respected as much as possible, and the revision was limited to the points crucial for the evaluation, such as problematic logic. Some additions, which can be assumed as the plan's intention, were made while paying attention to the logical relationship. It was agreed upon by the related JICA departments when establishing the evaluation principle.

¹¹ Sub-rating for Effectiveness is to be put with consideration of Impact.

Table 3: PDM for Evaluation for Integrated Manner (Narrative Summary)

Overall Goal	PBB is further operationalized in Indonesia.
Project Purpose	The budgeting process is implemented in accordance with the improved methodology under PBB and MTEF systems at BAPPENAS and selected line ministries.
Output 1	BAPPENAS staff's understanding of concrete methodology to allocate funding to line ministries based on the performance evaluation results and national priorities under MTEF is enhanced.
Output 2	Understanding of the result chain and KPIs is improved in the selected line ministries.
Output 3	Guiding framework for improving the quality of budget preparation documentation is enhanced.
Output 4	Guiding framework for improving the quality of budget scrutiny is enhanced at BAPPENAS and the MOF.
Output 5	The experiences and lessons learned for improvement of allocation and operational efficiency are shared by stakeholders.
Output 6	Solutions to critical topics for further elaborating on the MTEF-PBB implementation system are presented.

3.2.1.1 Project Output

The indicators and the achievement status of the outputs at the time of the project's completion is shown in Table 4.

The achievement of Output 1 (BAPPENAS staff's understanding on the methodology) is fair, and the achievement of Output 2 (understanding of result chain and KPIs by the selected line ministries) was high. Output 5 (sharing experiences and lessons learned among the stakeholders) and Output 6 (presentation of possible solutions to critical topics) were achieved. On the other hand, achievement of Output 3 (enhancement of guiding framework for improving the quality of budget preparation documents) and Output 4 (enhancement of guiding framework for improving the quality of budget scrutiny) was low.

Although an understanding of the methodology (Outputs 1 & 2) was mostly achieved, the framework based on it (Outputs 3 & 4) was not sufficiently improved. The major reasons why the latter was not achieved are as follows. Some of the activities (such as those for improvement of quality of costing as well as appropriate cost-benefit analysis when necessary) could not be implemented because of the policy change (i.e., suspension of accepting budget proposals for the new initiatives due to financial reasons and introduction of the National Priority projects), decreased MOF's participation, and failed coordination

Table 4: Achievement of Outputs (by Project Completion)

Output	Indicator	Achievement	Achievement Level
Output 1: BAPPENAS staff's understanding on concrete methodology to allocate funding to line ministries based on the performance evaluation results and national priorities under MTEF is enhanced. (F)	1-1 BAPPENAS staff's understanding on the concrete methodology of; a) performance indicators/target setting, b) evaluation methods/practices, c) budget allocation based on the performance evaluation results and d) the analysis and evaluation of new initiative proposals	<ul style="list-style-type: none"> When Phase 2 of the project commenced, BAPPENAS requested that the JICA Team enhance the BAPPENAS staff's understanding of the framework of PBB, since some of them still had insufficient understanding (<i>Project Completion Report, Phase 2</i> p7). Thus, it is considered the BAPPENAS staff's understanding to be insufficient at the completion of Phase 1. Although the outputs were planned to be achieved by project completion of Phase 1, the achievement of this output was delayed. The level of understanding by the end of Phase 2 (2017) is assessed to be approximately 70% in terms of (a) performance indicators/target setting, (b) evaluation methods/practices, (c) budget allocation based on performance evaluation results and (d) the analysis and evaluation of new initiative proposals (Questionnaire to the implementing organization). 	F
Output 2: Understanding on the result-chain and KPIs is improved in the selected line ministries. (H)	2-1 Change in understanding on the result-chain and KPIs in the selected line ministries.	<ul style="list-style-type: none"> The staff at the selected line ministries deepened their understanding of the PBB framework by attending MTEF-PBB seminars, providing comments to the draft PBB guideline, joining tasks for analyzing methodologies to improve planning documents, and so on (<i>Project Completion Report, Phase 2</i> p39). 	H
Output 3: Guiding framework for improving the quality of budget preparation documentation is enhanced. (L)	3-1 The guidelines on new initiatives are revised.	<ul style="list-style-type: none"> Although the JICA Team submitted a recommendation paper to revise the new initiative guidelines as planned in April 2015, BAPPENAS did not proceed with the revision of the guidelines afterwards. This was because the government of Indonesia, due to financial shortage, decided not to accept budget proposals since 2015 for new initiatives (<i>Project Completion Report, Phase 2</i> p12). In 2017, BAPPENAS newly requested to develop <i>the Guideline for National Priority Projects</i> concerning planning projects by the ministries and their scrutiny, although it was not included in the initial project plan. Based on this request, the project deadline was extended until October 2017. The draft was developed and submitted to the Directorate of Development Budget Allocation in October 2017. BAPPENAS planned to finalize it after project completion, and distribute it to the ministries with the attached list of standardized outcome indicators (<i>Project Completion Report, Phase 2</i> pp13-14, p48). 	F
	3-2 Budget preparation process is standardized in the selected line ministries in accordance with the relevant rules and regulations.	<ul style="list-style-type: none"> Due to the circumstances mentioned above (3-1), standardization of the budgeting process at the selected ministries through the project activity was not implemented (<i>Project Completion Report, Phase 2</i> pp12-14). 	L
	3-3 Budget preparation format is standardized in the selected line ministries in accordance with the relevant rules and regulations.	<ul style="list-style-type: none"> Due to the circumstances mentioned above (3-1), standardization of formats for budget proposals at the selected ministries through project activity was not implemented (<i>Project Completion Report, Phase 2</i> pp12-14). 	L
	3-4 Type of information and description in the budget proposals is standardized in the selected line ministries in accordance with the relevant rules and regulations.	<ul style="list-style-type: none"> In a nod to the importance of developing a standard list of output and outcome descriptions in the budget proposals, discussions were made with Australian experts at MOF in 2015, and a draft of the standard list of outputs was developed. It was presented at the 3rd MTEF-PBB Seminar. However, the list was not utilized by the completion of the project (<i>Project Completion Report, Phase 2</i> p42). 	L

Output 4: Guiding framework for improving the quality of budget scrutiny is enhanced at BAPPENAS and MOF. (L)	4-1	Budget scrutiny process is standardized in BAPPENAS in accordance with the relevant rules and regulations.	<ul style="list-style-type: none"> The project supported software development for budgeting, which was financed by the AIPEG Project, Australia, so that the classification framework for outcomes will be aligned to the Classification of the Functions of Government (COFOG) designated by the United Nations (<i>Project Completion Report, Phase 2</i> p14). 	F
	4-2	Guidelines of checkpoints of budget scrutiny for BAPPENAS officers (sector directorates and the Directorate of Development Funding Allocation) are developed.	<ul style="list-style-type: none"> Although a discussion paper on budget scrutiny was developed and distributed, a guideline for the essential points of budget scrutiny was not developed (<i>Project Completion Report, Phase 2</i>). 	L
Output 5: The experiences and lessons learnt for improvement of allocation and operational efficiency are shared by stakeholders. (H)	5-1	Opportunities for sharing experiences and lessons learnt are continuously arranged in the areas of allocation and operational efficiency.	<ul style="list-style-type: none"> Four experience-sharing seminars were conducted at the national level in Jakarta for the central government to learn MTEF-PBB from experiences and lessons of the third countries. In addition, a total of six experience-sharing seminars in the selected provinces were held in North Sumatra Province, Yogyakarta Special Province, West Nusa Tenggara Province, Wakatobi Regency in South-east Sulawesi Province, and Bima Regency in West Nusa Tenggara Province. The purpose of these seminars was to increase understanding of the transition to MTEF-PBB at the central government level, and to ensure consistency in the policy priorities of the central government for providing a series of opportunities for experience-sharing (half day to one day each) (<i>Project Completion Report, Phase 2</i> pp15-20). 	H
	5-2	Topics are covered in the opportunities 5-1 above properly (e.g. means for ensuring aggregate fiscal discipline, allocation efficiency and operational efficiency)	<ul style="list-style-type: none"> The selection of topics for the above experience-sharing seminars was deemed appropriate because the topics were aligned with the direction required by the Directorate of Development Funding and Allocation, BAPPENAS (Questionnaire to the implementing organization). 	H
Output 6: Solutions of critical topics for further elaborating PBB implementation system are presented. (H)	6-1	Number of topics for which possible solutions were suggested	<ul style="list-style-type: none"> In accordance with the four topics (i.e., performance evaluation, basic data review, decision on budgeting based on the budget proposals for new initiatives, and budget allocation based on the national priorities), issues on promoting PBB were verified and possible solutions were presented (Questionnaire to the implementing organization). 	H
	6-2	The extent of usefulness of the possible solutions	<ul style="list-style-type: none"> The possible solutions presented were effective, shared by the directorates of sectors at BAPPENAS, and utilized as reference information to compile as an indicative ceiling (Questionnaire to the implementing organization). With regard to the standardization of outcomes, NOICS (the National Outcome Indicator Classification System) was developed and presented at the seventh MTEF-PBB Seminar in December 2016. SISDUR at BAPPENAS planned to take control of NOICS (<i>Project Completion Report, Phase 2</i> p42). The Minister of BAPPENAS requested integration of the processes of planning with monitoring and evaluation, and the JICA Team supported this so far. However, visible results were not seen by the project completion (<i>Project Completion Report, Phase 2</i> p45). 	H

Source: *Project Completion Report, Phase 2*, Questionnaire and Interview to the implementing organization

Remarks: The marks shown in the Achievement Level column indicate the following.

H: High (achieved by 80% and above) F: Fair (50% - 79%) L: Low (Less than 50%)

between BAPPENAS and the MOF on the enhancement of the standardization of budget proposals.

In relation to Output 3, the National Priorities in 2016 and the National Priority Projects in 2017 were newly added to the national framework. Consequently, the ministries were required to appropriately indicate the linkage between the programs and the outcome indicators in the planning and budget documents so as to clearly specify the linkage between the program and national priority projects. To realize this, development of *The National Priority Project Guideline* was requested, and its draft was submitted in October 2017¹². The development of the guideline planned in Output 3, as well as standardization of the process, format, and type of information and description of the budget proposals (Indicator 1 – Indicator 4) was not achieved. However, the development of *The National Priority Project Guideline* mentioned above, which was added to the project plan, was in line with the objective of Output 3. Thus, the achievement of Indicator 1 is fair. The draft of the above guideline was planned to be finalized and disseminated by the Directorate of Development Funding and Allocation of BAPPENAS, and utilized for formulating *the Annual Work Plan (Renja)* by the ministries for Fiscal Year 2019¹³, although it was not finalized by the project's completion¹⁴.

Concerning Output 4, some activities were planned to enhance quality of costing and improvement of cost-benefit analysis when necessary on the premise of cooperation from the MOF for Output 3¹⁵. However, these activities could not be implemented because the MOF's participation could not be gained during the implementation period. As a result, the achievement of Output 3 was low. *The National Priority Project Guideline* was intended to be utilized not only for the project planning by the ministries but also for budget scrutiny. Therefore, it can be understood that the guideline would help improve the quality of the budget scrutiny. Besides, there is no description of the MOF in the indicator, although both BAPPENAS and MOF are indicated in Output 3 of the PDM for Phase 2. As a result of confirmation to concerned JICA staff, it was clarified that the MOF was neither included in the expected users of the guideline to be developed nor in the framework of budget scrutiny to be enhanced by the project. Therefore, the enhancement status of the framework of budget scrutiny at the MOF is not assessed in this analysis. However, it was not appropriate to describe the name of an organization that was not actually intended to be the target in the output of the PDM in the planning stage because it leads to confusion.

Regarding collaboration with other donors, close collaboration took place with the experts of AIPEG, Australia during the implementation period. Specifically, in setting the

¹² PCR of Phase 2 (pp12-13, 43) and Questionnaire to the implementing organization

¹³ PCR of Phase 2 (p48)

¹⁴ Questionnaire to the implementing organization

¹⁵ Output 2 of the PDM for Phase 2

standards for description of outputs and outcomes in the budget document in relation to Output 3, a series of discussions took place with Australian experts at MOF in 2015, and a draft of the standard list of output descriptions was developed, incorporating the results of those discussions. Moreover, in relation to Output 4, this project supported the AIPEG Project in developing budget software to align the outcome-category framework with “Classification of the functions of government” (called COFOG), designated by the United Nations¹⁶. Both AIPEG’s expert team to support the MOF and JICA’s expert team to support BAPPENAS supported the planning and budgeting reform for Indonesia. They even shared the same house provided by the GOI for their project offices. Thus, they enjoyed very favorable relationship, in which they routinely exchanged views and information on the progress of the reform and so on¹⁷. This led to the practical collaboration mentioned above.

Based on the above, achievement of outputs by project completion is fair.

3.2.1.2 Achievement of Project Purpose

The achievement status of the Project Purpose at the time of the project’s completion is shown in Table 5.

The Project Purpose (budgeting process is implemented in accordance with the improved methodology under PBB and MTEF systems at BAPPENAS and the selected line ministries) was that the standardized and improved methodology at the output level would be actually implemented by BAPPENAS and the selected line ministries. Among the three indicators, Indicator 2 (the ratio of budget proposals produced in accordance with the process, formats and description standardized by the project) and Indicator 3 (the ratio of budget scrutiny conducted in accordance with the developed guidelines of checkpoints of budget scrutiny) were not achieved, although the achievement of Indicator 1 (the ratio of the result chains and KPIs that are appropriately established) was high. The achievement of the reference indicator (improvement of the quality of budget proposals produced by the selected line ministries) was also low. The major reason for the low achievement of the above was that Outputs 3 and 4 concerning the enhancement of the framework were not achieved.

Based on the above, achievement of the Project Purpose by project completion is fair.

As stated above, the achievement of the Project Purpose and outputs by project completion was fair. As for the achievement status of the indicators for the Project Purpose,

¹⁶ PCR of Phase 2 (p14, 42)

¹⁷ PCR of Phase 2 (p33)

Table 5: Achievement of Project Purpose (by Project Completion)

Project Purpose	Indicator	Achievement	Achievement Level
Budgeting process is implemented in accordance with the improved methodology under PBB and the Medium-Term Expenditure Framework (MTEF) system at BAPPENAS and the selected line ministries. (F)	1 The ratio of the result chains and KPIs which are appropriately established at BAPPENAS sector directorates and the selected line ministries.	<ul style="list-style-type: none"> By project completion, approximately 80% of both the result chains and KPIs were appropriately established (Questionnaire to the implementing organization). As a result of various activities for the sake of appropriate description of outputs and outcomes, as well as improvement of KPIs, frameworks for performance measurement at the central ministries were significantly improved. Improvement was observed in the above description at the selected line ministries by 2017 (<i>Project Completion Report, Phase 2</i> P44). Among the 7 selected line ministries, analysis of Renja of the Ministry of Agriculture and the Ministry of Justice and Human Rights was implemented by the project to measure the effects of practical consultation at selected directorates. Through this activity, the way of describing output was improved. However, it was pointed out that there was room for improvement in terms of achievement indicators because they do not cover all four factors--that is, quantity, quality, timeliness, and cost (<i>Project Completion Report, Phase 2</i> pp40-41). 	H
	2 The ratio of budget proposals produced in accordance with the process, formats and description which were standardized by the project in the selected line ministries and BAPPENAS.	<ul style="list-style-type: none"> The draft of the budget guideline for new initiatives was not finalized by BAPPENAS before project completion. Consequently, budgeting based on this guideline was not conducted. The lists of outputs and outcomes suggested in the project were not applied to the budget proposals by the selected line ministries and BAPPENAS before project completion (<i>Project Completion Report, Phase 2</i>). <i>The National Priorities Project Guideline</i> was submitted to BAPPENAS in October 2017. However, it was not finalized by BAPPENAS before project completion (<i>Project Completion Report, Phase 2</i> p43). 	L
	3 The ratio of budget scrutiny conducted in accordance with the Guidelines of checkpoints of budget scrutiny for BAPPENAS officers (sector directorates and the Directorate of Development Funding Allocation)	<ul style="list-style-type: none"> The guideline for budget scrutiny was not developed before project completion. Consequently, budget scrutiny based on the planned guideline was not conducted (<i>Project Completion Report, Phase 2</i> pp14-15). 	L
	4 Reference: The quality of budget proposals produced by the selected line ministries is improved in PBB context. The specific details are as follows. (1) The new initiatives are justified properly (e.g. how to justify the necessity of the new initiatives in the relevant result-chains, how to use KPIs to justify the necessity, what the expected achievements by the new initiatives are, what the expected activities to achieve those goals are, etc.) (2) The quality of costing is improved (e.g. the cost standard designated by MOF is used properly. The quantity of input is set more properly, etc.). (3) Cost benefit analysis is conducted properly when necessary.	<p>Reference:</p> <p>(1) It is reported that qualitative improvement of budget proposals by the selected ministries was barely achieved before project completion (<i>Project Completion Report, Phase 2</i> p43).</p> <p>As for (2) and (3), improvements in both quality of costing and cost benefit analysis were expected through activities based on the assumption of cooperation from the MOF. These activities were not implemented because MOF stopped its participation (<i>Project Completion Report, Phase 2</i> p43). Consequently, no improvement was made in the project on these points.</p>	L

Source: *Project Completion Report, Phase 2*, Questionnaire and Interview to the implementing organization

Remarks: The marks shown in the Achievement Level column indicate the following.

H: High (achieved by 80% and above) F: Fair (50% - 79%) L: Low (Less than 50%)

the effects resulting from the outputs for understanding the methodology (Outputs 1 & 2), the achievement of which was high, became contributing factors, while the effects from the outputs for enhancement of the framework (Outputs 3 & 4), the achievement of which was low, became hindering factors. Therefore, effectiveness is fair.

3.2.2 Impact

3.2.2.1 Achievement of Overall Goal

(1) Achievement of Overall Goal

The achievement status of the Overall Goal at the time of the ex-post evaluation is shown in Table 6.

Table 6: Achievement of Overall Goal (at the time of the Ex-post Evaluation)

Overall Goal	Indicator	Achievement	Achievement Level
Performance-based Budgeting (PBB) is further operationalized in Indonesia. (F)	1 MTEF-PBB linkage is enhanced more (i.e., continued progress of creating fiscal space, use of PBB for budget allocation).	<ul style="list-style-type: none"> The MTEF-PBB linkage is further enhanced at the time of the ex-post evaluation. Strengthening PBB is one of the major objectives of the Planning and Budgeting System Redesign of 2021. It is the second phase of the reform of planning and budgeting (Questionnaire to the implementing organization). The responses from the implementing organization to the questionnaire indicate that the fiscal space has been continuously created due to improvement of quality in budget utilization (budget allocation based on priorities), although data was not available. However, improvement in the quality of budget utilization is not always brought by strengthened MTEF-PBB linkage, and it does not necessarily mean the promotion of PBB. Thus, this indicator is not utilized for the assessment of the overall goal. The answer from the implementing organization to the questionnaire indicates that use of PBB for budget allocation has been promoted, but data was not available. <p>Hence, although information was received from the implementing organization that MTEF-PBB linkage has been strengthened and utilization of PBB for budget allocation has been promoted, supporting data was not available. Thus, the extent to which PBB has been utilized for budget allocation could not be confirmed.</p>	F
	2 Reference: - The number and the ratio of all the programs for which increase or decrease of the budget was decided based on the performance evaluation results and the National Priority at the Indonesian government	<ul style="list-style-type: none"> In 2018 (the latest year for which data is available), the budget increase or decrease was decided based on the results of the performance evaluation and the National Priorities for 272 programs--that is, 64% of all the programs in line ministries. The amount was 446,803,286 million rupiah, a 57.2% share of the total expenditures of the line ministries (Response from the implementing organization). 	F

Source: *Project Completion Report, Phase 2*, Questionnaire and Interview to the implementing organization

Remarks: The marks shown in the Achievement Level column indicate the following.

H: High (achieved by 80% and above) F: Fair (50% - 79%) L: Low (Less than 50%)

There is one indicator and two reference indicators for the Overall Goal (PBB is further operationalized in Indonesia). However, Indicator 1 (enhanced MTEF-PBB linkage)

was not specific enough; more specific contents were described as “continued progress of creating fiscal space” and “use of PBB for budget allocation.” At the time of ex-post evaluation, although the reply from the implementation organization indicated that the direction toward linkage of MTEF and PBB has been strengthened and the use of PBB for budget allocation was enhanced, supporting data was not obtained. As a result, it could not be confirmed to what extent the budget allocation based on PBB progressed. Thus, the achievement of the Overall Goal at the time of the ex-post evaluation is fair.

Also, as the result of examining the reference indicator (changes such as budget allocation for new projects are created annually, or the result of performance assessment is reflected in the budget allocation as confirmed in a formal government document), this indicator was not included in the analysis due to the following reasons.

- 1) “Budget allocation for new projects created annually” is not necessarily brought by the strengthened linkage between MTEF and PBB.
- 2) “The result of performance assessment is reflected in budget allocation” is already included in Indicator 1.
- 3) “Confirmed in a formal government document” is not an independent indicator but means of verification for indicator data.

As for Reference Indicator 2 (the number and the ratio of all the programs for which an increased or decreased budget was decided based on the performance evaluation results and National Priority of the GOI), increased or decreased budgets for 272 programs (i.e., 64% of all the programs at the ministries) were decided based on the performance evaluation results and the National Priority in Fiscal Year 2018 (the latest year when the data was available). The amount was 446,803,286 million rupiah, which shared 57.2% of the total expenditure of the line ministries¹⁸. Therefore, the achievement of this reference indicator is fair.

In 2016, the Minister of BAPPENAS instructed integration of the monitoring and planning data bases, and the Data Center of BAPPENAS was going to undertake the task¹⁹. At the time of the ex-post evaluation, the two data bases were not fully integrated—the process was ongoing²⁰. This point is regarded as a possible hindering factor against the achievement of the Overall Goal, but sufficient information was not obtained on the extent of its influence.

Therefore, the achievement of the Overall Goal is fair because the achievement of both indicators is fair.

¹⁸ Interview to the implementing organization

¹⁹ *PCR of Phase 2* (p47)

²⁰ Questionnaire to the implementing organization

(2) Continuation of Outputs and Project Purpose

The continuation status of outputs after the project completion up to the ex-post evaluation is as follows.

The staff's understanding of the methodology at the implementing organization (Output 1) is approximately 80%²¹, and it is regarded as high, just like the level of the understanding by the staff at the selected line ministries on the result chain and KPIs²² (Output 2). As for Output 3 (enhancement of the guiding framework for improving the quality of budget preparation documentation), *the National Priority Project Guideline* — the draft of which was developed during the project — was finalized in 2018, one year after project completion, and was positioned as the formal guideline by the Ministerial Decree of BAPPENAS No. 13/2018 in the Procedure in Managing Prioritized Projects. It is said that the document's format was improved through Presidential Decree No.17/2017 and Ministerial Decree No. 13/2018 mentioned above²³. Specific information was not obtained regarding to what extent the project's effects contributed to it. According to BAPPENAS, however, its relationship with the project is high because some counterpart staff members were involved in drafting No.17/2017, and their understanding of PBB acquired through the project was reflected in the policy²⁴.

On the other hand, PBB has been further strengthened by the *Redesign of the Planning and Budgeting System (RSPP)* starting from 2021, and the Joint Circulation Letter of BAPPENAS and the MOF was dispatched to the related ministries, requesting to promote alignment of program formulation, activity plan, and budget documents. This Circulation Letter indicates the guideline developed in June 2020, and the ministries were required to utilize the guideline from Fiscal Year 2021. Although there is no document showing a direct relationship with this project, the basic way of thinking in the guideline is in line with that of the PBB, which was promoted by the project. Therefore, the continuation of Output 3 after project completion is high. Although the experience-sharing seminars between the central ministries and local governments have not continued, knowledge has been shared as a part of ordinary guidance²⁵. Hence, the continuation of Output 5 is fair. Clear information was not obtained on the utilization status of the Discussion Paper developed to enhance the framework for budget scrutiny of Output 4, as well as on the specific status of Output 6. Thus, the continuation of project outputs is fair.

Regarding the continuation of the Project Purpose after project completion, the

²¹ Questionnaire to the implementing organization

²² In the questionnaire to the implementing organization, the level of understanding on the result chain and KPIs was covered in five levels, and the reply was the 2nd from the best

²³ Questionnaire to the implementing organization

²⁴ Interview to the implementing organization

²⁵ Interview to the selected local government

selected line ministries recognize that the percentage of the appropriately established result chains (Indicator 1) is between 70% and 90%²⁶. Some of the ministries mentioned that the ratio improved even compared with 2017, the year of project completion. Concerning KPIs, the response was also between 70% and 90%, stating it was the same as the project completion year, or it improved after project completion²⁷. As for the ratio of budget proposals produced in accordance with the standardized process, format, and description (Indicator 2), the selected line ministries were asked to evaluate it in 5 levels, and their responses were either 5 (the highest) or 4²⁸. Concerning the implementation of budget scrutiny in accordance with the guideline (Indicator 3), the guideline originally planned was not developed during the implementation period. However, specific information was not obtained on the development status after project completion. The ratio of proposals in which new initiatives were appropriately justified (Indicator 4 (reference indicator)) varies depending on the ministry; a specific tendency was not found²⁹. Thus, the continuation of the Project Purpose at the time of the ex-post evaluation is fair.

Therefore, the continuation of the Outputs and the Project Purpose at the time of the ex-post evaluation is assessed to be fair. As stated above, it became a hindering factor against the achievement of the Project Purpose that the outputs related to enhancing the framework (Outputs 3 & 4) were not achieved during the implementing period. It also partially affected the achievement of the Overall Goal negatively.

3.2.2.2 Other Positive and Negative Impacts

No impact on the natural environment was observed, and no relocation of residents or land acquisition was caused by the project. Concerning other indirect effects, no negative impact was observed.

As stated above, although the implementing organization could conceive that the linkage between MTEF and PBB was strengthened and the introduction of the PBB in budget allocation was enhanced, the supporting data was not available. Thus, the extent to which the budget allocation was enhanced could not be confirmed. Also, budget increases or decreases were decided based on the performance evaluations and national priorities (for approximately 60% of the programs) by the ministries. Thus, the achievement of the Overall Goal at the time of the ex-post evaluation is fair. Furthermore, the continuation of the

²⁶ Questionnaire to the selected line ministries

²⁷ Questionnaire to the selected line ministries

²⁸ Questionnaire to the selected line ministries

²⁹ In the questionnaire to the selected line ministries, out of the five levels (5 is the best), 2 ministries responded with 5, one ministry with 4, one ministry with 4 or 3, one ministry with 3, and one ministry responded it could not answer because budget proposals for new initiatives had not been formulated yet. Also, two ministries commented that the number of proposals for new initiatives themselves is limited.

Outputs and the Project Purpose after project completion is fair. Neither impact on the natural environment nor impact caused by the relocation of residents or land acquisition was observed and the other negative impact was not confirmed. Therefore, impact is assessed to be fair.

Based on the above, as the achievement of the Project Purpose and the outputs by project completion was fair, effectiveness is fair. Since achievement of the Overall Goal at the time of the ex-post evaluation is fair, and the continuation of the outputs and the Project Purpose after project completion was fair, impact is fair. Therefore, effectiveness and impact of the project are fair.

3.3 Efficiency (Rating: ②)

3.3.1 Inputs

The project’s planned and actual inputs at the time of the project completion are shown in Table 7.

Table 7: Planned and Actual Inputs

Inputs	Plan	Actual (Project Completion)
(1) Experts	(Phase 1) <ul style="list-style-type: none"> ● Long-term (or short-term experts of long-stay type): 1 person (enhancement of budgeting capacity) ● Short-term: as needed (Phase 2) <ul style="list-style-type: none"> ● Experts: Chief advisor/public financial management (PFM), PBB, performance evaluation, budgeting/scrutiny, and so on (no description of long-term or short-term) 	(Phase 1) <ul style="list-style-type: none"> ● Seven persons (chief advisor/budgeting one person, performance evaluation two persons, PBB two persons, administrative evaluation/administrative management two persons) Total: 48.5 MM ● Short-term (PBB, etc. five persons) (Phase 2) <ul style="list-style-type: none"> ● Six persons: Chief advisor/PFM reform, PBB, performance evaluation, budgeting/scrutiny, etc. (No description of long-term or short-term) Total: 71.56MM

(2) Trainees received	(Training in Japan) <ul style="list-style-type: none"> • Phases 1 & 2: No description of the number of persons (Third-country training) <ul style="list-style-type: none"> • Phases 1 & 2: No description of the number of persons 	(Training in Japan) 84 persons <ul style="list-style-type: none"> • Phase 1: 59 persons • Phase 2: 25 persons (Third-country training) 43 persons <ul style="list-style-type: none"> • Phase 1: 20 persons (US, Canada) • Phase 2: 23 persons (New Zealand, India, Sri Lanka)
(3) Equipment	<ul style="list-style-type: none"> • Phases 1 & 2 (for the experts): office equipment, PC (no description of the amount) 	<ul style="list-style-type: none"> • Phase 1: Office equipment (PC 1, router 1, facsimile machine 1, printer 1, scanner 1, projector 1) • Phase 2: PC 1; for others, the equipment provided for Phase 1 was utilized
(4) Local Cost	<ul style="list-style-type: none"> • Phases 1 & 2: No description of the amount 	<ul style="list-style-type: none"> • Phase 1: 36 million yen (at the time of the Mid-term review) • Phase 2: No description of the amount
(5) Local Experts	<ul style="list-style-type: none"> • Phase 1: No description of the number of persons • Phase 2: No description 	<ul style="list-style-type: none"> • Phase 1: <ul style="list-style-type: none"> - Local experts: 5 persons (PBB, PFM, monitoring & evaluation) - Local coordinator: 2 persons • Phase 2: None
Japanese Side Total Project Cost	Total: 560 million yen <ul style="list-style-type: none"> • Phase 1: 260 million yen • Phase 2: 300 million yen 	Total: 648 million yen <ul style="list-style-type: none"> • Phase 1: 320 million yen • Phase 2: 328 million yen
Indonesian Side Total Project Cost	(Phases 1 & 2) <ul style="list-style-type: none"> • Allocation of counterparts • Provision of office space and maintenance cost of office equipment • Electricity and communication cost • Domestic travel cost of counterparts 	(Phases 1 & 2) <ul style="list-style-type: none"> • Allocation of counterparts (Project director 1 person, project manager 1 person, technical counterpart 1 person (phase 1 only)) • Office clerk • Office space, electricity cost

* MM stands for man month.

3.3.1.1 Elements of Inputs

Concerning major inputs from the Japanese side, the implementing organization was asked to rate the quality, quantity, and timeliness of dispatch of experts, trainees received, and equipment provision according to 5 levels (5 is the best). The responses were either 4 or 5, except that the quantity of the experts and trainees received was 3, and timeliness of trainees received was 3³⁰. There was no problem in the inputs from the Japanese side. The inputs from the Indonesian side were implemented in accordance with the plan, and no specific problem was observed in terms of quality, quantity, or timeliness.

3.3.1.2 Project Cost

The total project cost borne by the Japanese side was 648 million yen (Phase 1: 320 million yen, Phase 2: 328 million yen). This exceeded the plan (116% of the intended total; Phase 1: 123%, Phase 2: 109%).

3.3.1.3 Project Period

The project period was 6 years and 11 months. Phase 1 took 3 years and 8 months (including an extension of 8 months), and Phase 2 took 3 years and 3 months (including extension of 3 months). This exceeded the planned period by 115% (Phase 1: 122%, Phase 2: 108%).

The objectives of extending the project period were to cope with the remaining tasks in Phase 1 (setting performance indicators in the next *RPJMN*, improving the quality of public expenditure, and training in Japan) and supporting the new guideline draft based on the introduction of the National Priorities and the National Priority Projects in Phase 2. Although the project scope was increased in Phase 2 (support to draft the new guideline based on the introduction of the National Priorities and the National Priority Projects on project planning by the ministries and its scrutiny), multiple outputs were not achieved because the activities could not be conducted. Thus, it cannot be assessed that the addition of project scope justifies the excess of the project cost and period.

Both the project cost and project period exceeded the plan. Therefore, the efficiency of the project is fair.

3.4 Sustainability (Rating: ③)

3.4.1 Policy and Political Commitment for the Sustainability of Project Effects

Presidential Decree No. 17/2017, which aimed at promoting PBB and synchronization of national development plan with the budgeting process, was still valid at

³⁰ Questionnaire to the implementing organization

the time of the ex-post evaluation³¹. Moreover, strengthening the PBB, the Money Follows Program Policy, and so on was required in the Joint Circulation Letter concerning *Guidance of Planning and Budgeting System Redesign* in June 2020. PBB is not the only criterion for budgeting but is one factor in budgeting, together with the National Priorities, Holistic, Integrated, Thematic, and Spatial (HITS), and so on³². However, the direction to strengthen the linkage between PBB and MTEF had been maintained at the time of the ex-post evaluation and is expected to continue³³. Therefore, sustainability concerning the aspects of policy and political commitment is high.

3.4.2 Institutional/Organizational Aspect for the Sustainability of Project Effects

The planning and budgeting process is implemented by BAPPENAS and the MOF. BAPPENAS is responsible for the planning process and the MOF for the budgeting process³⁴. At the time of planning, these processes were not sufficiently synchronized. The ministries submitted *the Annual Work Plan (Renja K/L)* to BAPPENAS and *the Annual Budget Plan (RKA K/L)* to MOF. The documents' structures were similar, but the logical composition was not the same. In particular, after the MOF introduced architecture and performance information (ADIK) in 2015, the difference between the two became clear, which led to confusion and frustration among the staff in charge of planning at the ministries³⁵.

However, *Presidential Decree No.17/2017* resulted in an improved relationship between BAPPENAS and MOF, as well as enhanced synchronization of the planning and budgeting processes at the time of the ex-post evaluation³⁶. Moreover, BAPPENAS set the budget ceiling together with MOF at the time of the ex-post evaluation in addition to its conventional roles (before the above decree, its role was limited to the indicative ceiling)³⁷. Although specific data on transitions of staff allocation at the implementing organization could not be obtained, a sufficient number of staff members were secured at the time of the ex-post evaluation, according to BAPPENAS³⁸. Therefore, the sustainability of the institutional/organizational aspect is high.

3.4.3 Technical Aspect for the Sustainability of Project Effects

The project improved the understanding of PBB operation by BAPPENAS staff at the focal directorate. However, the directorate has comparatively many young staff members,

³¹ Questionnaire to the implementing organization. The formal name is *Government Regulation no. 17 of 2017 concerning Synchronization of the National Development Planning and Budgeting Process*

³² Interview to the implementing organization

³³ Questionnaire and interviews to the implementing organization.

³⁴ *The government regulations No.44/2006, No.90/2010, PCR of Phase 2* (p47)

³⁵ *PCR of Phase 2* (p47)

³⁶ Questionnaires to BAPPENAS, the MOF, and the selected line ministries

³⁷ Questionnaire to the implementing organization

³⁸ Questionnaire to the implementing organization

who do not have sufficient training or practical experiences. Hence, their understanding of the concept of MTEF-PBB is insufficient compared with the senior staff³⁹. The knowledge is kept to the selected line ministries at the time of the ex-post evaluation. However, some people are concerned about the knowledge gap between the senior and young staff. Therefore, the sustainability of the technical aspect is fair.

3.4.4 Financial Aspect for the Sustainability of Project Effects

The transition of the BAPPENAS budget at the time of the ex-post evaluation is as follows⁴⁰. Except for Fiscal Year 2020, the budget amount has increased annually. The reason for the decrease in 2020 was the cost of anti-COVID-19 actions by the GOI. At the Directorate of Development Funding and Allocation, which plays a core role in promoting PBB, the budget for ordinary activities is secured, although they receive partial external support⁴¹. Thus, sustainability concerning the financial aspect is high.

Table 8: The Financial Status of the Concerned Sections of BAPPENAS

(Unit: Rupiah)

	2016	2017	2018	2019	2020	2021
Budget	3,672,803.000	3,359,003.000	6,534,000.000	11,879,778.117	6,215,610.000	12,922,705.000
Expenditure	2,854,892.304	3,302,324.209	5,296,199.028	9,139,340.592	6,051,709.871	5,973,025.763
Balance	817,910.696	56,678.791	1,237,800.972	2,740,437.525	163,900.129	6,949,679.237

Source: BAPPENAS

Remarks: Year 2021 shows the amount until June 2021.

Sustainability from the perspective of policy and political commitment is high, as the direction to promote MTEF-PBB is still maintained at the time of the ex-post valuation. Sustainability regarding the institutional/organizational aspect is high because the synchronization of planning processes by BAPPENAS and budgeting processes by the MOF was enhanced by *Presidential Decree No.17/2017*. Sustainability from the technical aspect is mostly high, because the staff's knowledge on PBB at BAPPENAS and the selected line ministries has mostly been maintained, except for the young staff. Sustainability from the financial perspective of the implementing organization is high.

No major problems have been observed in the policy background and the institutional/organizational, technical, financial aspects. Therefore, sustainability of the project effects is high.

³⁹ Questionnaire and interview to the implementing organization

⁴⁰ BAPPENAS

⁴¹ Questionnaire to the implementing organization

4. Conclusion, Lessons Learned, and Recommendations

4.1 Conclusion

This project was implemented to align the budget process with the improved methodology under PBB and MTEF systems at BAPPENAS and the selected line ministries by enhancing the understanding of PBB for those concerned and improving the framework of national budget proposals and scrutiny. The project direction, which was aimed at promoting PBB implementation, sufficiently corresponded with the Indonesian policy and development needs, as well as Japan's aid policy, from the project planning stage to project completion. Thus, the relevance of the project is high. Although the understanding those who were concerned of the PBB methodology up to project completion was mostly high, the intended outputs related to enhanced frameworks for budget proposals and scrutiny were not achieved, and achievement remained fair. Consequently, the achievement of the Project Purpose (i.e., implementation of the budgeting process in accordance with the improved methodology under PBB and MTEF systems at BAPPENAS and the selected line ministries) was fair. At the time of the ex-post evaluation, the achievement of the Overall Goal was also fair, and no negative impact has been observed. Thus, effectiveness and impacts are fair. Both the project cost and duration exceeded the plan. Hence, the project has fair efficiency. No major problems have been observed in the policy background or the institutional/organizational, technical, or financial aspects. Therefore, sustainability of the project effects is high. In light of the above, this project is evaluated to be satisfactory.

4.2 Recommendations

4.2.1 Recommendations to the Implementing Agency

BAPPENAS should conduct training for young staff members at the related directorates to strengthen their practical knowledge of PBB on regular basis. If possible, it is desirable to provide the same training with young staff members at the line ministries.

4.2.2 Recommendations to JICA

If implementing the above training by BAPPENAS is difficult, JICA should support either implementation of the training or dispatch of a lecturer.

4.3 Lessons Learned

Planning a project that presupposes cooperative relationship between/among ministries

This project was challenging regarding its high goal, i.e., to improve the national budget system of a whole country. To be successful, cooperation from a certain ministry in addition to the counterpart ministry was indispensable. However, the cooperation could not

be obtained during the implementation period. This affected negatively to the achievement of some outputs, the Project Purpose resulting from those outputs and even the Overall Goal. In planning a project that presupposes a cooperative relationship between/among ministries that do not necessarily have this relationship (but cooperation is indispensable for the project's success), it is essential to fully coordinate and confirm specific role to be played in the project by respective party at the planning stage, and to include the ministry in the signers of R/D, in which each role should be recorded clearly.

Federal Democratic Republic of Ethiopia

FY2020 Ex-Post Evaluation of Japanese Grant Aid Project

“The Project for Water Supply Development to the Small Towns in Rift Valley Basin
in Southern Nations, Nationalities, and Peoples' Regional State”

External Evaluator: Megumi Sakata

Foundation for Advanced Studies on International Development

0. Summary

This project was aimed at providing safe water by constructing and renovating water supply facilities in 10 small towns, thereby improving access to safe water for local communities in Southern Nations, Nationalities, and Peoples' Regional State (hereinafter referred to as “SNNPR”) of Ethiopia.

This project was consistent with the Ethiopia’s development plan goal to improve water supply rates in rural areas and the nation overall by developing water resources and improving water supply facilities, and the development need was high. The objective was also consistent with Japan’s ODA policy. Project relevance is high for all these reasons. Although some plans have still not been achieved by the Ethiopian side, the project’s efficiency is considered high: both the project cost and the period were within those planned; and the water facilities were constructed as planned, with reasonable design changes. The target water supply amount was achieved to certain extent, and positive impacts included decreased water collection time for residents and increased study time for children. However, there were some negative impacts on land acquisition matters. Therefore, the project effectiveness and impacts are fair. In terms of operation and maintenance (O&M), several weaknesses exist, such as insufficient staff numbers and management of monitoring records. However, the necessary financial and technical work was accomplished at each organization. Although some small towns were confronted with a lack of finances within a year, most of the small towns’ overall annual finances remain in surplus. Consequently, the sustainability of the project’s effects is fair.

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

1. Project Description



Project Location (SNNPR)



Reservoir (Alem Gebeya)

1.1 Background

In Ethiopia, the water supply rate in rural areas is lower than that in urban areas. In SNNPR, the water supply rate was 51.7% (2011/12). In rural areas of the SNNPR, it was 50.4%, lower than the national average of 68.0% (2010). In rural areas, where much of the population lives, residents spend a great deal of time and effort to secure domestic water, including safe drinking water. The occurrence of waterborne diseases caused by unsanitary use of water has also been a problem. The Rift Valley area, which is the target of this project, forms part of the Great Rift Valley of Africa, which is susceptible to drought. The area was severely damaged by drought in 2008 and 2011. Especially in small towns, whose populations are increasing dramatically in SNNPR, the water supply facilities were aging and funds for facility construction were insufficient. Thus, it was necessary to support the development of water supply facilities. Based on this background, Southern Nations Nationalities, and Peoples' Regional State Water Resources Bureau (hereinafter referred to as "WB"¹) requested grant aid from Japan to construct water supply facilities using deep wells and to develop O&M capabilities (by technical support).

1.2 Project Outline

The objective of this project was to provide safe water by constructing and renovating water supply facilities in 10 small towns, thereby contributing to improvement of access to safe water for local communities in Southern Nations, Nationalities, and Peoples' Regional State of Ethiopia.

Grant Limit /Actual Grant Amount	JPY 1,324 million/JPY 1,232 million
Exchange of Notes Date /Grant Agreement Date	March 2015/March 2015
Executing Agency	Southern Nations Nationalities, and Peoples' Regional State Water Resources Bureau, Federal Democratic Republic of Ethiopia
Project Completion	February 2017
Contractor	Tone Engineering Corporation
Consultant	Kokusai Kogyo Co., Ltd.

¹ The name of the counterpart organization varies at each phase:

- At project planning phase: *Southern Nations, Nationalities, and Peoples' Regional State Water Resources Bureau*
- At project completion: *Water and Irrigation Development Bureau of Southern Nations, Nationalities, and Peoples' Regional State*

- At ex-post evaluation survey: *Bureau of Water, Mines, and Energy Development*

*The name of the executing agency is referred to as WB regardless of the phase in this report.

Basic Design Survey	<p>April 2013 - January 2015 (Preparatory Survey)</p> <p>March 2015 - October 2015 (Detailed Design Survey)</p>
Target Area	<p>10 Small Towns in SNNPR (Koshe, Kela, Tiya, Adilo, Teferi Kela, Mito, Alem Gebeya, Kibet, Tebela, Dalocha)</p>
Related Projects	<p><i>The Ethiopian Water Technology Center Project²</i></p> <p>Phase 1: 1998 - 2003</p> <p>Phase 2: March 2005 - March 2008</p> <p>Phase 3: January 2009 - January 2014</p> <p><i>The Water Sector Capacity Development Project in Southern Nations, Nationalities, and Peoples' Region</i></p> <p>December 2007 - December 2011</p> <p>Target Areas: 6 woredas of 6 zones:</p> <p>Angacha woreda of Kembata Timbaro zone, Arba Minch Zuria woreda of Gamo Gofa zone, Bolososore woreda of Wolayita zone, Hula woreda of Sidama zone, Loma woreda of Dawro zone, Silte woreda of Silte zone</p> <p><i>The Study on Groundwater Resources Assessment in the Rift Valley Lakes Basin</i></p> <p>December 2009 - November 2011</p>

² Through Phases 1 and 2, the Addis Ababa Training Center (renamed to Ethiopian Water Technology Center in 2005) was established as a core institution for developing the human resources involved in water resource development. The goal was to train and increase the number of engineers engaged in groundwater management and water supply management to construct and maintain sustainable water supply facilities. In Phase 3, the center became a public training institution, the Ethiopian Water Technology Institute (EWTI) in August 2013. EWTI served as a testing center for the water sector to evaluate candidates for the Ethiopian vocational standard qualification. (Source: Ex-post evaluation [internal evaluation] result sheet: The Ethiopian Water Technology Center Project Phase 3)

2. Outline of the Evaluation Study

2.1 External Evaluator

Megumi Sakata, Foundation for Advanced Studies on International Development

2.2 Duration of Evaluation Study

This ex-post evaluation study was conducted with the following schedule.

Duration of the Survey: October 2020 - November 2021

Duration of the Field Survey: April 6 - May 1 and July 28 - 30, 2021 (Conducted by the local consultant)

2.3 Constraints during the Evaluation Study

This survey was conducted remotely without overseas travel due to the COVID-19 pandemic's outbreak. Consequently, information collection was limited. Online interviews with the executing agency were conducted with a local consultant, but the internet connection was not available in any of the 10 small towns that were the main respondents for the survey. Therefore, interviews of stakeholders such as water management organizations (hereinafter referred to as "WMOs") and residents, as well as water supply facilities inspections and other related information collection, were conducted by the local consultant. It was not possible for the evaluator to check the original raw data during field interviews. Furthermore, the period of the first field survey was close to the election period in Ethiopia. As a result, appointments with respondent organizations were suddenly changed, postponed, or shortened, which affected the amount of information collected.

3. Results of the Evaluation (Overall Rating: B³)

3.1 Relevance (Rating: ③⁴)

3.1.1 Consistency with the Development Plan of Ethiopia

At the planning phase (2015), this project was a part of the *Universal Access Program (UAP: 2005; UAP2: February 2009)*, a strategic plan of the World Bank's *Water Sector Development Program (2002)*. Positioned as such, it aimed to improve the water supply rate in rural areas. The UAP's implementation project plan, the *One WASH National Program (Phase 1: 2013 - 2015, Phase 2: 2015-2020)*, aimed to develop water supply facilities in small towns. The Ethiopian government's national development plan (*Growth and Transformation Plan, 2010-2015*) listed improving the nation's water supply rate by developing water resources and water supply facilities as an important matter.

At the time of the ex-post evaluation (2021), the Ethiopian government's national

³ A: Highly satisfactory, B: Satisfactory, C: Partially satisfactory, D: Unsatisfactory

⁴ ③: High, ②: Fair, ①: Low

development plan (*Growth and Transformation Plan II (GTP II) (2015/16-2019/20)*) and its subsequent *Ten Years Development Plan (2021-2030)* list improving the nation's water supply rate by developing water resources and water supply facilities as an important matter.

Based on the above, the Ethiopian government promoted the improvement of the rural water supply rate both at the time of planning and ex-post evaluation, and this project was highly consistent with Ethiopia's development policy.

3.1.2 Consistency with the Development Needs of Ethiopia

More than 90% of the population of 15 million in SNNPR lives in rural areas, and the population is increasing, especially in small towns. SNNPR's water supply rate was 51.7% in 2011 and 2012 (source: WB), and just 50.4% in rural areas. This fell far below the national average of 68.0% (2010). The Rift Valley region of SNNPR is part of the Great Rift Valley of Africa, which is susceptible to drought and was severely affected by drought in 2008 and 2011. At the time of planning, in addition to the aging of facilities in small towns, there was a shortage of facility construction funds. In some target areas, the fluoride concentration of existing water sources was high and the water was not suitable for drinking. There were problems for water source development in terms of quantity and quality of water.

At the time of the ex-post evaluation, all 10 small towns in the target area suffered from water shortages. In 2021, seven of the small towns suffered from droughts⁵.

There has been a water shortage from the time of planning through the ex-post evaluation; thus, the need for this project is high.

3.1.3 Consistency with Japan's ODA Policy

In the *Country Assistance Policy for the Federal Democratic Republic of Ethiopia (2014)*, which was developed at the time of planning of this project, agriculture and rural development were set as priority matters. In addition, in the *JICA Country Analysis Paper*, securing water for living, agricultural use, and livestock was considered an important issue that could contribute to reducing rural poverty.

Based on the above, this project was in line with Japan's aid policy at the time of planning.

Implementation of this project has been highly relevant to Ethiopian development policy and needs, as well as Japan's ODA policy. Therefore, its relevance is high.

⁵ Source: Interview results from STs' WMOs

3.2 Efficiency (Rating: ③)

3.2.1 Project Outputs

As for the water supply facilities, the number and locations of public faucets and the number of break pressure tanks changed from the initial plan. These design changes were made for technical validity reasons considering the need for public faucets⁶, land use conditions at the time of construction, and topographical differences.



Generator House (Mito)

In the soft component (technical assistance) program, the target number of staff members was not entirely achieved due to the lack of budget of WMOs in each small town. O&M skills were not improved as expected by the woredas' water offices⁷ and WMOs. Training time was short according to the participants. Technical training (guidance on basic knowledge of water supply facilities, technical failure diagnosis, reporting, and repair methods), and accounting training (guidance on how to collect and manage water fees, how to keep a balance sheet, how to record the operational status of water supply facilities, etc.) were carried out for only about half a day after the water supply facilities were built. On the other hand, recognition of the WMO support system by related organizations was improved, water fee revision plans were formulated, and training to promote residents' awareness of safe water use were carried out and achieved as planned. Although the Japanese side implemented the soft component program as planned, its expected effects were only partially achieved since the training time was short. The target staffing number was not well achieved due to budget shortages on the executing agency's side.

The obligations of the Ethiopian side were to secure construction land, access roads, and storage space for construction materials; connect wells to commercial power; and construct steel fences (for wells and reservoirs), and wooden fences (for public faucets). Construction sites, access roads, and storage areas for construction materials were secured as planned. Nine of the 14 wells were not connected to commercial power due to reasons such as lack of funds in each small town or lack of foreign currency to procure transformers, which had to be imported. Some steel fences and wooden fences were not installed due to lack of funds in each small town.

As mentioned, the Japanese side implemented the soft component program as planned, but its expected effects were not entirely attained. Although some of the Ethiopian side's obligations were partially unachieved due to lack of funds, the water supply facilities were constructed as

⁶ The need for public faucets in some small towns changed under the situation that private household faucets were expected to be promoted by the small towns' budget. Considering the widespread use of private household faucets, the water supply facilities (wells and reservoirs), constructed by this project, are connected to both public faucets (by this project) and private household faucets (by the small towns).

⁷ Woreda: the 3rd level of administrative division in Ethiopia. There exist the SNNPR, zones, woredas, and small towns. Water supply departments at each organizational level were engaged in this project.

planned with valid design changes considering the needs at the time of construction. Therefore, the planned outputs were mostly achieved.

Table 1-1: Comparison of Planned and Actual Project Scope (1)

Output 1	Planned				Actual			
	Wells	Generator Houses	Pipeline (m)	Public Faucets	Wells	Generator Houses	Pipeline (m)	Public Faucets
Koshe	1	1	8,667	17	1	1	8,849	17
Kela	2	2	14,340	18	2	2	14,622	18
Tiya	2	2	6,600	8	2	2	7,097	8
Adilo	2	2	7,330	12	2	2	7,605	13
Teferi Kela	2	2	7,510	16	2	2	7,737	16
Dalocha	0	0	12,240	18	0	0	12,431	10
Mito	1	1	3,850	15	1	1	3,731	15
Alem Gebeya	1	1	8,300	13	1	1	8,114	13
Kibet	2	2	17,570	23	2	2	18,382	18
Tebela	1	1	16,020	16	1	1	16,604	10
Total	14	14	102,427	156	14	14	105,172	138

(Source: Documents provided by JICA, WMO interview results)

Table 1-2: Comparison of Planned and Actual Project Scope (2)

Output 2	Planned			Actual		
Small Town	Reservoirs	Collection Chambers	Break Pressure Tanks	Reservoirs	Collection Chambers	Break Pressure Tanks
Koshe	1			1	0	
Kela	1			1	0	
Tiya	2			2	0	
Adilo	1		1	1	0	1
Teferi Kela	1			1	0	
Dalocha	0	1	1	0	1	1
Mito	1			1	0	
Alem Gebeya	1			1	0	
Kibet	1			1	0	
Tebela	1		1	1	0	2
Total	10	1	3	10	1	4

(Source: Documents provided by JICA, WMO interview results)

Table 1-3: Comparison of Planned and Actual Project Scope (Soft Component)

Soft Component Program Outputs	Planned	Actual
1. Comprehension of WMO support systems	Recognize the role of each organization and support system for WMOs	Recognized the role of each organization to support WMOs
2. Preparation of operation and maintenance (O&M) systems for the water supply facilities	Review appropriate personnel composition of WMOs: Engineer: 3 Accountant: 3, Water Fee Collector: 1 per public faucet	- Engineer: Unachieved 3: 10 Small towns (STs) (reason for non-achievement: lack of funds) - Accountant: Achieved 3: 2 STs Unachieved 3: 8 STs (reason for non-achievement: lack of funds) -Water Fee Collector: Achieved 1 per public faucet: 10 STs
	Develop terms of use	Developed terms of use: 10 STs

3. Develop plans for appropriate water fee revisions	Develop water fee revision plans	Developed water fee revision plans: 10 STs
4. Improve woreda water offices' (WWOs') O&M skills	Comprehend the content of the technical training with EWTI and invite a lecturer	<ul style="list-style-type: none"> - Conducted technical training jointly with WWOs and WMOs. Invited a former EWTI staff member as a lecturer. - No improvement in O&M skills: 10 WWOs, 10 STs (Reason: Only a few hours of technical training took place, and did not lead to improvement.)
5. Improve WMOs' O&M skills	<ul style="list-style-type: none"> - Conduct technical training for WMOs given by WWO staff members who participated in the training above - Conduct accounting training 	<ul style="list-style-type: none"> - Conducted joint technical training with WWOs and WMOs - Conducted accounting training for WMOs - Improved skills: 2 STs - No skill improvement: 8 STs (Reason: Only a few hours of technical/accounting training took place, which did not lead to improvement)
6. Promote residents' understanding of safe water use	Promote residents' understanding of safe water use	Residents started to use water more safely by using public faucets after the construction of the water supply facilities. They had used rainwater or river water before the construction. (10 STs)

(Source: Documents provided by JICA; interviews with WMOs, WWOs, zone water offices, BW)

Table 2: Ethiopian Side Obligations

Planned	Actual
Secure land for construction	Secured land: 8 STs (Exceptions: Dalocha and Mito, no land acquisition needed)
Secure access roads	Secured access roads: 10 STs
Secure storage space for construction materials	Secured storage spaces: 10 STs
Connect to commercial electric power	Not connected to commercial electric power: 9 out of 14 wells ⁸
Construct steel fences for wells and reservoirs	No fences constructed: 5 STs (Kela, Tiya, Alem Gebeya, Tebela, and Dalocha) (Reason: lack of funds) ⁹
Construct wooden fences for public faucets	No fences constructed: 5 STs (Tiya, Dalocha, Tebela, Alem Gebeya, Teferi Kela) Partially constructed fences: 2 STs (Kela, Kibet) (Reason: lack of funds) ¹⁰

(Source: Documents provided by JICA, interviews with WMOs, BW)

3.2.2 Project Inputs

3.2.2.1 Project Cost

The total project cost during planning was 1,345 million yen (1,324 million yen borne by the Japanese side, 21.4 million yen borne by the Ethiopian side). The actual total cost is unknown, as no information on the actual costs borne by the Ethiopian side was available. The actual cost borne by the Japanese side was 1,232 million yen (93% of the planned budget¹¹), which was within the plan. The reason for the decrease in cost borne by the Japanese side was because the number of public faucets decreased from 156 (planned) to 138 (actual), considering the need for public faucets and land use conditions at the time of construction.

3.2.2.2 Project Period

The planned project period was 24 months (April 2015-March 2017). The actual period also took 24 months (March 2015-February 2017).

⁸ Commercial electric power connections not completed (at ex-post evaluation): 6 out of 14 wells in 4 STs due to lack of funds (Kela: 2, Adilo: 2, Tebela: 2, Teferi Kela: 1/2)

⁹ Steel fences not constructed (at ex-post evaluation): 2 STs (Kela, Tiya).

Partially constructed: 3 STs (Alem Gebeya, Tebela, Dalocha) (Reason: lack of funds)

¹⁰ Wooden fences not constructed (at ex-post evaluation): 1 ST (Alem Gebeya).

Partially constructed: 3 STs (Kela, Dalocha, Tebela) (Reason: lack of funds)

¹¹ Since no information on the costs borne by the Ethiopian side was available, the evaluation is done by the costs borne by the Japanese side.

Although the obligations of the Ethiopian side (commercial electric power connections, fence construction) and soft component program goals (skill improvement) were partially not achieved, the project cost and period, facility construction (regarding the design changes from planning phase by the consultant as valid), and soft component program implementation took place as planned. Therefore, the project's efficiency is high.

3.3 Effectiveness and Impacts¹² (Rating: ②)

3.3.1 Effectiveness

3.3.1.1 Quantitative Effects

(1) Water Supply Amount

The operational and effect indicators targeted by this project resulted in the following.

Table 3-1: Operational and Effect Indicators

Average daily water supply amount (m ³ /day) (the amount from reservoirs)	Baseline	Target* ¹	Actual* ² (rounded to nearest whole number)			
	2013 Actual	2020 (3 years after completion)	2017 June average	2018 June average	2019 June average	2020 June average, percentage of target
9 STs Total*	646	2,137	870	1,062	1,206	1,302 (61%)
Koshe	144	344	295	274	275	218 (63%)
Kela	24	185	37	74	62	114 (61%)
Tiya	29	97	13	32	45	42 (43%)
Adilo	56	240	n/a	83	77	84 (35%)
Teferi Kela	86	174	83	85	75	53 (30%)
Dalocha* ³	140	360	n/a	n/a	n/a	n/a
Mito	23	206	50	66	101	130 (63%)
Alem Gebeya	30	188	48	58	89	176 (94%)
Kibet	98	375	246	272	337	312 (83%)
Tebela	156	328	98	118	145	173 (53%)

(Source: Documents provided by JICA and the project consultant, WMO interviews)

*1 *2 Both target and actual amount include the water supply amount from reservoirs which had existed before this project, and the water supply amount from reservoirs by this project. The water supply amount data only from the facilities by this project was not available.

*3 Evaluated data of 9 STs except Dalocha. Outside of this project, Dalocha installed a well, a reservoir, and a generator themselves in February 2018. No information before that time was available, because the facilities were managed by an organization established at the same time. Since the amount of water flow from Dalocha's

¹² Sub-rating for effectiveness is to be put with consideration of impacts.

independent project was not available, Dalocha is excluded from the evaluation of the water supply amount for effectiveness and the water supply amount of the remaining 9 STs is evaluated.

Table 3-2: Relevant Indicators

Reference: Flow amount from well ¹³ (m ³ /day)	Baseline* ¹	Actual* ²			
	2013 Actual	2017 June average	2018 June average	2019 June average	2020 June average
9 STs Total	646	894	1,086	1,259	1,360
Koshe	144	301	280	286	223
Kela	24	40	75	62	114
Tiya	29	14	33	46	44
Adilo	56	n/a	86	87	89
Teferi Kela	86	84	87	75	54
Dalocha	140	n/a	n/a	n/a	n/a
Mito	23	55	69	108	137
Alem Gebeya	30	52	61	95	186
Kibet	98	249	275	353	337
Tebela	156	99	120	147	176

(Source: Documents provided by JICA, WMO interviews)

*1 *2 Both target and actual amount include the flow amount from wells which had existed before this project, and the flow amount from wells by this project. The flow amount data only from the facilities by this project was not available.

The total daily water supply amount (water flow from reservoirs) of the nine small towns was 1,302 m³/day, which was 61% of the FY2020 target value of 2,137 m³/day. In Tiya, Adilo, and Teferi Kela, it was as low as 30% - 40%, but the significant factor which made the difference compared to other small towns was not clear from the information collected¹⁴.

The exact reasons why the target values were not achieved are difficult to identify from the limited information collected in the ex-post evaluation (interviews with WB, WMOs, and public

¹³ The amount of water that flowed through the reservoir (1,302m³) in Table 3-1, as well as the flow amount from the well (1,360m³) in Table 3-2 are approximate values. Therefore, it is regarded that water was distributed appropriately from the well to the reservoir.

¹⁴ Out of all 10 small towns, 7 small towns have increased the operating hours of water supply facilities than those at the time of planning, to respond to the increase in demand. Tiya and Teferi Kela have increased the operating hours by 2 hours each, likewise. However, the increased operating hours are; Tiya: from 12 hours to 14 hours, Teferi Kela: from 10 hours to 12 hours, (Adilo: from 12 hours to 12 hours, no increase). Compared to other small towns, which have increased by 4 to 6 hours, and even the 2 small towns without increase have been operated for a long time of 16 hours or more, the increased hours and final operating hours could be considered as slightly less. Regarding population growth, a significant increase has been seen in all 10 small towns since the time of planning, but the growth rate is about 120% of the estimate at the time of planning in all small towns. Therefore, the population growth of the above mentioned 3 small towns is not particularly remarkable.

faucet users). The points that can be considered as undeniable factors are described below.

As for the undeniable factor related to the existing facilities, there is a possibility that the existing facilities' failures caused by aging led to the decrease in the water supply amount and affected the target amount to be unachieved.

In addition, due to the natural environment, the possibility of a groundwater level decrease due to insufficient precipitation is considered an undeniable factor. Since the rainfall¹⁵ in 2014 and 2017 was lower than average in SNNPR, the groundwater might have had decreased due to insufficient precipitation, although it is not possible to identify a direct causal relationship.

Furthermore, due to the O&M system, deterioration of pumping ability due to aging and filter clogging can be considered as the undeniable potential reasons. Although the WMOs in the small towns can handle necessary repairs at the time of malfunction, pumping ability cannot be checked regularly by regular WMO maintenance. Doing so requires heavy machinery, which these small towns do not possess¹⁶. Because these factors cannot be examined unless a pump is pulled up using heavy machinery, it cannot be determined whether the cause of the poor flows is decreased pumping ability, but it is still an undeniable factor.

(2) Other Relevant Indicators

In addition to daily average water supply amounts from reservoirs which is set as an indicator of effectiveness, the total population and household numbers of the small towns involved in the project are shown below as reference.

Table 4: Other Relevant Indicators

Relevant Indicators (10 STs Total)	Actual		
	FY2017	FY2018	FY2019
Population	-	107,508	112,643
Estimated number of households ¹⁷	-	19,946	20,899
Private faucet-using households ¹⁸	7,030	10,442	12,241
Public faucet-using households	748	1,110	1,377

(Source: WMO interviews)

*Population and estimated households in FY2017 are unknown.

¹⁵ Source: Annual reports by National Meteorological Agency

¹⁶ Confirmed during WB interview that pump filter clogging cannot be found without using heavy machinery, which the STs do not possess.

¹⁷ Estimated number of households: the estimated number divided by the average household number of 5.39 (same calculation used at time of planning)

¹⁸ The wells and reservoirs constructed by this project had been planned to be connected to private households as well as public faucets by the Ethiopian side. The STs extended pipelines and connected to private households as planned.

Actual numbers for FY2020 were unknown, as ex-post evaluation was conducted before end of fiscal year.

The estimated population in 2020 at the time of planning was 91,688, but it had already reached 112,643 in FY2019, showing that the region's population growth was greater than expected. To meet the greater water supply needs based on this population growth, WMOs in small towns took measures such as increasing the operating hours of generators and pumps.

(3) Quality of Water Sources

The WMOs of eight small towns conduct water quality inspections by bringing water samples to the WB's water quality inspection center. Although testing has not been implemented in two small towns, one of the small towns is considering water quality inspection beginning from 2022. All interviewed residents of the 10 small towns answered that there was no problem with the water quality. No water quality problems were found in any of the eight small towns that have conducted water quality inspections; thus, it is considered that there are almost no problems with water quality.

3.3.1.2 Qualitative Effects (Other Effects)

As qualitative effects of this project, it was expected that incidence of waterborne diseases would decrease, women's advancement in society would improve and children's schooling opportunities would increase thanks to the reduced water-fetching workload. Since it is considered to be appropriate to evaluate these effects by impacts, these are analyzed and evaluated by impacts.

3.3.2 Impacts

3.3.2.1 Intended Impacts

(1) Decrease of Water-Fetching Workload

According to interviews with residents using public faucets in each small town, the average time spent fetching water among all 10 towns decreased to 1.7 hours per day at the time of ex-post evaluation (2021), compared with 3.5 hours per day at the time of project completion (2017). Also, residents stated that the frequency of water fetching had decreased from twice a day to once a day in two of the small towns. Consequently, it can be considered that water-fetching workload decreased.

Table 5: Time Spent Fetching Water

Water-Fetching Time	2017 (at completion)	2021 (at ex-post evaluation)
10 STs' Average	3.5 hours/day	1.7 hours/day

(Source: Interviews with public faucet users in each ST¹⁹)



Public Faucet (Teferi Kela)

(2) Decrease of Waterborne Diseases

According to the information of public clinics in each of the 10 small towns, the total number of patients²⁰ with waterborne disease symptoms such as diarrhea or skin disease and/or diseases including typhoid was 2,534 out of 107,508 in FY2018 (2.4% morbidity against population). In FY2019, the amount increased to 3,254 (2.9%) out of 112,643. However, there are several factors that can give rise to waterborne diseases, such as unsanitary latrine/waste conditions as well as poor water quality. Therefore, improving the water quality alone does not always reduce waterborne disease prevalence. In addition, the relationship between the number of patients of the public clinics where these data were collected and the users of well water constructed by this project is unknown. As a more direct information source, interview results from the residents who actually used the new public faucets are used for evaluation. According to interviews with residents, waterborne diseases decreased in nine²¹ of the 10 small towns. Although the representativeness of the interviews' small sample size is a concern, and the causal relationship between the quality of the water used and the waterborne diseases cannot be clearly determined, it is considered that the effect has been exhibited to some extent.

(3) Promotion of Women's Advancement in Society

According to the interviews with residents using public faucets in each small town, to find out how the time women spent fetching water had changed. Respondents stated that the time freed up by shorter water-fetching times was allocated for housekeeping in eight of the small towns, and for childcare in two of the small towns. Therefore, in terms of women's social advancement, the expected effect is not exhibited.

¹⁹ A total of 40 residents were interviewed who were using the public faucets in all 10 STs during physical facility check of public faucets. Interviews were conducted with the following people who responded to interviews while using public faucets in each small town. There was a time constraint for interviews, as there were many organizations and towns to visit. Thus, the results of the residential interviews are shown by small town. (4 residents each in Koshe, Kela, Kibet, and Alem Gebeya; 3 residents each in Tiya, Teferi Kela, and Tebela; 5 residents each in Dalocha, Mito, and Adilo)

²⁰ No data was available except for diarrhea, skin disease and typhoid, and the data in FY2018, and FY2019.

²¹ No change in 1 ST (Kela)

(4) Increased Study Time for Children

According to the interviews with residents using public faucets to find out how the time children spent fetching water had changed. Residents answered that more time was spent on studying and schooling in eight of the towns²². Since the children of the interviewed households had been enrolled in school even before the project's completion, there was no change in enrollment. However, it can be considered that the effect is exhibited to some extent since there were some answers that they spent more time for studying and school.

(5) Changes Due to Public Faucet Installation

Regarding the implementation of hand washing, enough answers were not collected from the resident interviews. However, six towns rarely used rainwater at the time of ex-post evaluation, while seven towns had used it frequently or occasionally before. Furthermore, even in the small towns that responded that they used rainwater occasionally, it was not for drinking purposes, but for other uses such as washing. In this way, the installation of public faucets is considered to have led to behavioral changes among residents to use different water sources properly for their different purposes and to secure safe drinking water.

3.3.2.2 Other Positive and Negative Impacts

(1) Impacts on the Natural Environment

The environmental category for this project was B. Because this project was constructed using manual excavation, no pollution, noise, or soil erosion occurred, and no claims of pollution or noise emerged in the resident interviews conducted in the 10 small towns. There is a World Heritage site in Tiya, but the site was divided, and access was controlled using only one entrance. Moreover, it was far from the project site, so the construction caused no impact.

(2) Resettlement and Land Acquisition

As a result of this project's implementation, alternative land compensation was provided in five small towns, and compensation fee was paid in one small town. In 1 small town (Kela), the landowner of the area around one public faucet and the small town's land administration department have not reached an agreement on the amount of compensation, and they remain in dispute, but in the other small towns, compensation was provided. No further details could be obtained because land management is under the jurisdiction of the land administration department, not the interviewed WMOs.

In addition, in 1 small town (Tiya), there was a complaint about farmland used as an access road during the construction, but the farmland was already been returned, and the issue has been resolved. There was also a complaint that the water supply pipe obstructed the passage in 1 small

²² No change in 2 STs.

town (Adilo), but this was resolved through discussions.

Therefore, this project's land acquisition activities can be considered that appropriate measures were taken based on the *Guidelines for Environmental and Social Considerations (April 2010)*, even though one issue remains unresolved in 1 small town (Kela). In addition, because land management is under the jurisdiction of the small towns' land administration departments, the WB did not know about this matter. However, they stated that it is possible to urge Kela to solve the problem in the near future.

Table 6: Measurements for Land Acquisition

Small Town	Measurement for Land Acquisition ²³
Koshe	Alternative land compensation for the landowners of a reservoir and a generator
Kela	Alternative land compensation for the landowner of a reservoir (In the ex-post evaluation survey, the WMO made a comment about an ongoing dispute that was not recorded on the inspection sheet. In this conflict between the landowner of one public faucet and the ST's land administration department, the parties did not reach an agreement on the compensation amount. Land management is under the jurisdiction of the land administration department, not the WMO, so no further details could be obtained, such as when the issue occurred.)
Tiya	It seems that the farmland used as an access road has already been returned to the landowner of Reservoir #2.
Adilo	Residents' complaints that the newly installed water supply pipe obstructed pedestrians' walk have been resolved through discussion.
Teferi Kela	Alternative land compensation for the landowner of Generator House #1
Dalocha	No land acquisition
Mito	No land acquisition
Alem Gebeya	Access to Public Faucet #11 inside the bus terminal remains disputed. There are no land acquisition issues. See "Disputes with Residents" for details.
Kibet	Alternative land compensation for the landowner of a reservoir
Tebela	Compensation of Birr 80,000 paid to the landowner of a reservoir for 0.4 ha of land Alternative land compensation for the landowners of Public Faucets #3 and #4

(Source: Inspection report provided by JICA; WMOs interview results in the ex-post evaluation survey)

²³ Since land management and land acquisition are under the jurisdiction of the land administration department, which is different from the interviewed organization (WMOs in STs), the information obtained was limited even after repeated additional surveys.

(3) Disputes with Residents

There have been no particular tribal conflicts related to securing water. However, in the case of the public faucet inside the bus terminal in Alem Gebeya, the installation of a steel fence by the bus terminal company in March 2018 to separate the terminal area from neighboring areas obstructed residents' access to the public faucet. At the time of the ex-post evaluation, the public faucet was not used due to insufficient water supply. The WMO commented that they had a prospect and measurement to resolve the issue to improve the residents' access by consulting with the responsible small town's land administration department at the time of resuming the use of the public faucet.

In light of the above, the construction of the water supply facilities increased the available water supply, and this project achieved 61% of its targeted water supply amount. The residents' workload and the frequency of their water-fetching, and the incidence of waterborne diseases also decreased. And the study time of the children in charge of water-fetching increased. The construction caused no issues such as pollution, noise, soil erosion, or changes to the natural environment. Although there is an unsolved land acquisition issue, appropriate measures were generally taken by the small town, based on the compensation policy. Regarding the use of facilities, there is an unresolved dispute with the residents, but it does not need to be resolved immediately, and there are prospects for resolution.

Considering the above-mentioned matters comprehensively, the effectiveness and impacts are regarded as fair because the expected effects were achieved to a certain extent, though there were some problems emerged to some effects.

3.4 Sustainability (Rating: ②)

3.4.1 Institutional/Organizational Aspects of Operation and Maintenance

(1) Role of Each Organization

The table below shows the roles of each organization engaged in the operation and maintenance of the water supply facilities. The roles are divided by organizational level. In addition, all the organizations, including the WB, five zone water offices, 10 WWOs, and 10 WMOs, reported that they recognized the roles of each organization in supporting WMOs.

Table 7: Operation and Maintenance Roles of Each Organization

Organization	Role
WB	Address serious technical failures, such as those requiring the rental of heavy machinery
Zone water offices	Address serious technical failures, such as those requiring the rental of heavy machinery

Woreda water offices	Dispatch repair technicians in case of small or medium technical failures
WMOs of STs	Formulate and collect water fees, manage finances, monitor water supply facilities, address small technical failures, etc.

(Source: Documents provided by JICA; interview results from each organization)

(2) Communication among Each Organization

At the time of planning, insufficient reporting to the zone water offices or the WB in the event of serious failures led to delays in repairs. The necessity of strengthening cooperation between organizations was addressed.

At the time of the ex-post evaluation, there were the cases in which the assistance provided by the zone water offices and the WB was delayed for two small towns²⁴. However, the WMOs reported issues properly, and there were no delays for other small towns. Therefore, it can be considered that the communication between organizations improved, leading to appropriate operation and management.

(3) WB Personnel Composition

The WB's personnel composition is as shown in the table below, indicating that the number of the staff members increased from the time of planning (2014) to the time of the ex-post evaluation (2021).

Table 8: Composition of Personnel Engaged in the Water Supply Sector in the WB

Role	Planned		Actual	
	Detailed Roles	Number of Personnel	Detailed Roles	Number of Personnel
Engineering	Engineer, Electrician, Geologist, Excavator, Water Inspector, Field Worker	40	Expert	86
Other	Socioeconomist, Driver, Secretariat	24	Administrator, HR, Accountant, Driver, Guard	29
Total		64		115

(Source: Documents provided by JICA; the WB interview results)

²⁴ Tebela: An assistance for a generator maintenance request was delayed.

Dalocha: An assistance for a pump maintenance request was delayed.

Adilo: The delay resulted from the WMO's lack of ability to pay for generator maintenance, not that of the zone water office or the WB, so it was not included as related to communication issues.

(4) Organizational and Monitoring Aspects of the WWOs

Except for Humbo Woreda, which administers Tebela, staffing at the WWOs was insufficient because additional employment was not possible due to lack of funds.

The WWOs monitored water supply facilities in four of the small towns, but not in six of them. This is because that the WWOs considered that the water supply facility monitoring was to be carried out by the small towns due to the personnel shortage at the WWOs. In addition, except for in Tiya, water quality was not inspected because the WWOs were not capable of performing these inspections, which they left to the small towns.

(5) Organizational/Monitoring Aspects of the WMOs

The table below shows the WMOs' personnel composition.

Table 9: Personnel Composition of the WMOs

Role	Planned Number of Personnel	Actual Number of Personnel (at ex-post evaluation in 2021)
Engineer	Greater than or equal to 3	Achieved: 10 STs (All 10 STs considered this insufficient, but additional recruitment was impossible due to lack of funds.)
Accountant	3	Achieved: 2 STs (Dalocha considered this number insufficient despite having greater than or equal to three accountants, but additional recruitment was impossible due to lack of funds.)
		Not achieved (1 or 2 accountants): 8 STs (However, two STs considered this number sufficient.)
Water Fee Collector	1 per public faucet	Achieved: 10 STs (1 collector per operating public faucet)

(Source: Documents provided by JICA; WMOs interview results)

Although the planned engineer staffing levels were achieved in all 10 small towns, the WMOs considered these levels insufficient. They stated that there was a shortage of personnel with the required skills; this is not necessarily related to the number of engineers but one of the causes could be considered as a lack of technical ability due to lack of training. In contrast, no small towns reported delays in handling small and medium technical failures that could be handled at the small-town level.

During planning, it was pointed out that the accounting management methods and ability level varied from town to town, and there were cases of lost past account ledgers, as well as unknown numbers and calculation mistakes in the ledgers, even though accountants recorded monthly expenditures in these ledgers. At the time of the ex-post evaluation, all 10 small towns reported that they recorded information properly without problems and the necessary financial information was collected by the 10 small towns, although the original data were unavailable. Consequently, it can be considered that the accounting has been basically done properly. Even so, certain WMOs took more time than others to calculate the average daily water supply, so gaps in accounting skills emerged among the small towns.

Regarding water fee collectors, one collector assigned per public faucet was planned and one collector per public faucet in operation was assigned in all 10 small towns²⁵.

Water supply facilities were monitored irregularly in nine small towns. Of these, only Tiya reported that it kept monitoring records. In Koshe, monitoring was not conducted. The reason for this is unknown, but as is the case with inexecution of water quality inspections (described later) it is thought that they did not have a custom of monitoring.

Regarding water quality inspections, the WMOs in eight small towns brought sample water to the WB's water quality inspection center on an irregular basis to request inspections. Of these towns, only Tiya reported keeping inspection records. Inspections were not conducted in two small towns, one of which (Koshe) reported that there was no custom of conducting water inspections, but that they would consider doing so starting the next year. Adilo reported that no inspections were performed due to a lack of inspection tools. In the interviews, residents from all 10 small towns reported that the water quality was good and without any problems. In all eight small towns where inspections were conducted, it was confirmed that no issues related to water quality arose. Therefore, it can be considered that there were basically no problems with the water quality.

As explained above, although communication between organizations improved, and necessary repair and accounting measures were implemented, there was a shortage of skilled personnel. Furthermore, in many cases, no monitoring records were kept despite the fact that monitoring has been generally conducted, hence, the operation and maintenance system can be considered as vulnerable.

(6) Cooperation with Related Projects

At the time of planning, human resource development for water supply management²⁶ was

²⁵ Several public faucets were not in operation due to the shortage of water supply. See 3.4.4 Status of Operation and Maintenance for details.

²⁶ In a related project, the EWTI, was established as a human resource development center for engineers engaged in the management of groundwater and water supplies to facilitate the construction, operation, and maintenance of sustainable water supply facilities.

done through the EWTI (1998-2013), and synergistic effects with this project were expected. As a result, a former staff of EWTI, which was established in the related project, was invited to serve as a lecturer for technical training on the soft component program for the WWOs and WMOs. At the time of project completion, there were the comments that the training guidance was effective and the manual was useful for technical improvement, however, at the time of ex-post evaluation, there were the comments from 8 WMOs that the training time was only a few hours and could not lead to the improvement of the technical skills. Therefore, although there was a connection to a related project in that a former employee of the training institution established in the related project was served as a training instructor, it is considered that the expected synergistic effect was not clearly exhibited.

3.4.2 Technical Aspects of Operation and Maintenance

The WWOs provided support for minor and medium technical failures that could not be handled by the WMOs in the small towns alone. Zone-level water offices and the WB also provided support for serious technical failures requiring heavy machinery.

In the event of minor or medium failures to be addressed by the WWOs, six small towns reported no delays, and four reported occasional delays. Delays occurred due to a lack of repair funds at the town level or due to high repair request volume at the woreda level. In the event of serious failures to be addressed by the zone water offices or the WB, three small towns reported delays. In the case of one such town, the delay arose from a lack of generator maintenance funds at the town level.

Regarding small and medium-sized failures, woreda-level support was seldom necessary in nine small towns, as the WMOs in those towns were able to handle these issues. As for the frequency with which the small towns made repair requests of other organizations, nine small towns reported that the frequency had decreased at the time of project completion, but at the time of the ex-post evaluation, five small towns²⁷ reported that the request frequency had increased due to technical failures associated with long-term use of parts.

For those technical failures that the small towns could address themselves, repairs occurred in a timely manner and without delays²⁸. Those failures beyond the small towns' ability to address were reported properly, and requests were made to the appropriate organizations such as the woreda, zone, or WB²⁹. Consequently, matters which could be handled by the small towns were addressed appropriately even though the towns' technical abilities were limited.

²⁷ The other five small towns reported that the frequency decreased.

²⁸ All 10 small towns reported handling the repairs they were equipped to address in a timely manner and without delays.

²⁹ Although reports and requests to upper administrative organizations were made appropriately, there were some delays due to a lack of repair funds. See 3.4.3 Financial Aspects of Operation and Maintenance for details.

Furthermore, at the time of planning, the soft component program was aimed at improving operation and maintenance skills through technical and accounting training, but at the time of the ex-post evaluation, only two small towns reported that staff members had improved their technical skills through the training provided, and the other eight reported that staff members' skills did not improve. In particular, some training sessions lasted only a few hours, so they did not lead to substantial skill improvement. In addition, there were no technical training opportunities in nine small towns, and no towns offered accounting training after project completion³⁰. However, although it was not training, eight small towns reported receiving accounting advice from the WWOs about once a year.

3.4.3 Financial Aspects of Operation and Maintenance

(1) Annual Financial Status of the WMOs

The financial status of the WMOs is shown below.

**Table 10: Annual Financial Status of STs' WMOs
at Planning and at the Ex-Post Evaluation**

Small Town	At Planning (2014)	At Ex-Post Evaluation (2021)
	Balance	Balance
Koshe	Surplus	Surplus (The town was occasionally unable to pay repair costs, so it paid them after collecting the following month's water fees.)
Kela	Deficit	Surplus (The town was occasionally unable to pay staff members' salaries, so the woreda provided support instead.) (The town was occasionally unable to pay repair costs, so it paid them after collecting the following month's water fees.)
Tiya	Surplus	Surplus
Adilo	Surplus	Surplus (There were delays in generator maintenance due to a lack of repair funds.) (The town was occasionally unable to pay staff members' salaries, so it paid them after collecting the following month's water fees.)

³⁰ The WB provided annual technical and accounting training for zone water offices, but no training was provided for the WWOs and the WMOs.

Teferi Kela	Deficit	Nearly at the break-even point (financially unstable) (The town was occasionally unable to pay its staff members' salaries, so the woreda provided support instead. This occurred because of the lack of water supply, which is the source of income, and the WMOs implemented measures such as increasing pump operation time.) (The town was occasionally unable to pay repair costs, so the woreda provided support instead.)
Dalocha	Surplus	Surplus
Mito	Surplus	Surplus
Alem Gebeya	Deficit	Surplus
Kibet	Deficit	Surplus
Tebela	Deficit	Surplus

(Source: Documents provided by JICA; WMOs interview results)

(2) Water Fee Collection

The water fee collection status of the small towns' WMOs is shown below.

Table 11: Water Fee Collection Status

Status of Water Fee Collection	Public Faucet	Private Household Faucet
	Number of Small Towns	
No Delays	5 STs	5 STs
Rarely Delayed	2 STs	2 STs
Occasionally Delayed	2 STs (Measure: the water supply was stopped if the fee remained unpaid after warnings were issued.)	2 STs (Measure: the water supply was stopped if the fee remained unpaid after warnings were issued.)
Frequently Delayed	1 ST (Measure: the water supply was stopped if the fee remained unpaid after warnings were issued.)	1 ST (Measure: the water supply was stopped if the fee remained unpaid after warnings were issued.)

(Source: WMO interview results)

Water fees were revised as needed in each small town, even after the soft component program and project were completed. The WMO interview results indicate that the residents of seven small towns accepted these revisions, whereas the residents of the other three small towns dissented. Interviews with residents revealed that they opposed the revised fees because they

were dissatisfied with the lack of water supply.

Based on the above, the financial statuses of the 10 small towns' WMOs were generally in surplus, but within a year, some small towns faced a lack of funds to cover repair costs and staff salaries. Although there were some instances of delinquent payments for public and private household faucets, appropriate measures were implemented, and the water fee collection was performed appropriately. Considering the mentioned matters comprehensively, it is considered that there have been no serious financial problems, although some issues did arise.

3.4.4 Status of Operation and Maintenance

The operation status of the water supply facilities constructed by this project is as shown below.

Table 12: Operation Status of the Water Supply Facilities

Small Town	Well	Generator House	Reservoir	Pipeline	Break Pressure Tank	Public Faucet*1
Koshe	In operation	In operation	In operation	In operation	-	Partially in operation (5/17 in operation. Reason: low pressure)
Kela	In operation	In operation	In operation	In operation	-	Partially in operation (9/18 in operation Reason: none provided)
Tiya	In operation	In operation	In operation	In Operation	-	Partially in operation (3/8 in operation. Reason: a lack of water supply)
Adilo	Partially in operation (1/2 not in operation due to lack of water supply.)	Partially in operation (1/2 not in operation due to maintenance requirement.)	In operation	In operation	In operation	Partially in operation (8/13 in operation. Reason: none provided)

Teferi Kela	In operation	In operation	In operation	In operation	-	In operation (all 16 in operation)
Dalocha	In operation*	In operation*	In operation* 2	In operation	In operation	Partially in operation (occasionally water did not reach to the public faucets due to a lack of water supply)
Mito	In operation	In operation	In operation	In operation	-	Partially in operation (14/15 in operation. Reason: low pressure)
Alem Gebeya	In operation	In operation	In operation	In operation	-	Partially in operation (7/13 in operation. Reason: a lack of water supply)
Kibet	In operation	In operation	In operation	In operation	-	Partially in operation (10/18 in operation. Reason: none provided.)
Tebela	In operation	In operation	In operation	In operation	Partially in operation (1/2 not in operation due to insufficient water pressure*)	Partially in operation (2/10 in operation. Reason: decreased needs due to increase in private household faucets* ³)

(Source: WMO interview results)

Break Pressure Tank: The symbol “-” indicates that such a tank was not needed and not planned.

*1 Public faucets were partially in operation except for in Teferi Kela. Although Dalocha reported that all 10 of its faucets were in operation, water occasionally did not reach to an unspecified number of these faucets due to a lack of water supply. Therefore, it is considered as partially in operation.

*2 Dalocha: The ST developed the well, reservoir, and generator house on its own outside of this project; the water is distributed to the public faucets, which were developed by this project. (Source: Inspection sheet; WMO interview results)

*3 Tebela: Although two break pressure tanks were installed, one installed in the lower area became unnecessary because the number of private household faucets connected within the area from that break pressure tank till the end

of the public faucets increased more than expected, causing the water pressure of the public faucets to decrease. Therefore, only the break pressure tank installed in the upper area was used. At the time of project completion, the need for public faucets had decreased because private household faucets became common after water fees were lowered in February 2017. However, two public faucets were used at the time of ex-post evaluation, compared with zero public faucets at the time of inspection. These might have served to meet the needs of new settlers after the water fee revision. (Source: Inspection report)

Although one well was not in use due to insufficient water supply, and one generator was not operational because it required maintenance, most of the water supply facilities were properly utilized and functioning. In contrast, the public faucets remained partially in operation in all small towns due to lack of water supply except for Teferi Kela. However, currently operational public faucets are functioning without problems.

In light of the above, regarding institutional/organizational aspects of operation and maintenance, communication between organizations improved, and necessary measures were taken in terms of technical and accounting aspects, although there is a recognized shortage of skilled staff members. Monitoring was generally performed, but results were seldom recorded, so the organizational aspect of operation and maintenance is somewhat vulnerable. In technical terms, the small towns address necessary maintenance and repairs adequately, but some delays in repair are found when support requests have been made to the upper organizations. Financially, most of the small towns maintained a surplus except for occasional lack of funds during the year. As for the water supply facilities' operation status, most public faucets were only partially in operation, due to insufficient water supply, low pressure, and the early spread of private household faucets in one small town. Therefore, there are some facilities which are not utilized with the same reasons. Based on the above, there are some problems with the organizational, technical, and financial aspects of operation and maintenance, and the sustainability of this project's effects is considered as fair.

4. Conclusion, Lessons Learned and Recommendations

4.1 Conclusion

This project was aimed at providing safe water by constructing and renovating water supply facilities in 10 small towns, thereby improving access to safe water for local communities in SNNPR of Ethiopia.

This project was consistent with the Ethiopia's development plan goal to improve water supply rates in rural areas and the nation overall by developing water resources and improving water supply facilities, and the development need was high. The objective was also consistent with Japan's ODA policy. Project relevance is high for all these reasons. Although some plans have still not been achieved by the Ethiopian side, the project's efficiency is considered high: both the project cost and the period were within those planned; and the water facilities were

constructed as planned, with reasonable design changes. The target water supply amount was achieved to certain extent, and positive impacts included decreased water collection time for residents and increased study time for children. However, there were some negative impacts on land acquisition matters. Therefore, the project effectiveness and impacts are fair. In terms of operation and maintenance (O&M), several weaknesses exist, such as insufficient staff numbers and management of monitoring records. However, the necessary accounting and technical work was accomplished at each organization. Although some small towns were confronted with a lack of finances within a year, most of the small towns' overall annual finances remain in surplus. Consequently, the sustainability of the project's effects 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

Because some small towns are not connected to commercial electric power, it is recommended to encourage commercial electric power agencies to connect to these small towns, if necessary, after confirming their situations. Although staffing targets were mostly achieved, and the actual work was done appropriately, the WMOs reported a shortage of skilled staff members, and related training was not systematically provided after this project ended. Therefore, it is recommended to consider the implementation of technical and accounting training for the WWOs and the WMOs in small towns in the near future. In addition, because some small towns are facing difficulty in paying for repairs, it is suggested requesting these costs be covered by upper organizations or that they receive additional budget allocations so the WB can cover the costs. As for the shortage of personnel with operation and maintenance skills, it is recommended to encourage mutual support structures within the small towns themselves, not just in the form of support from upper organizations. Regarding the ongoing dispute with the landowner of the public faucet in one small town, it is expected to check on the current situation with the land administration department and urge the parties to come to a resolution. Also, it is suggested pulling up the pump, using heavy machinery, if necessary, to examine whether its pumping ability is reduced due to clogging or any other reasons. It is also recommended to encourage the two small towns that do not conduct water inspections to utilize the WB's water inspection laboratory.

4.2.2 Recommendations to JICA

None

4.3 Lessons Learned

Set feasible goals for soft component programs for the grant aid project and strengthen cooperation with related projects

It is considered as difficult to aim at improving operation and maintenance skills for this project, which was conducted in as many as 10 small towns with many other organizations, as the basic purpose of a soft component program for a grant aid project is to utilize the constructed facilities appropriately. In addition, operation and maintenance capacity was expected to improve via the cooperation with EWTI, which was established by a related project. However, the extent of the cooperation was limited to the fact that one former EWTI staff member served as a training lecturer. Thus, the expected synergetic effects have been limited. Therefore, it is recommended to set realistically feasible goals for a soft component program. If further capacity improvement is expected through synergistic effects with related projects, it is necessary not only to invite instructors, but also to strengthen the cooperation system through activities such as continuing the training implementation. In addition, operation and maintenance training should, to the extent possible, be of sufficient length and provide more practical instruction for participants about inspection, maintenance, and repairs by actually using the newly constructed facilities. It is also important to support the improvement of operation and maintenance skills by incorporating the formulation of continuous training system and annual training plans into the soft component program. This will facilitate the continuous provision of training after the project ends.

Federal Democratic Republic of Ethiopia

FY2020 Ex-Post Evaluation Report of
Japanese Grant Aid Project

“The Project for Construction of Secondary Schools in Amhara Region”

External Evaluator: Maki Hamaoka

Foundation for Advanced Studies on International Development

0. Summary

This project was implemented to improve access to and the educational environment for secondary education in Amhara region in Ethiopia by constructing new secondary schools and expanding existing secondary schools.

This project’s implementation is highly consistent with Ethiopia’s development policy, which emphasizes access to basic education and improvement of the educational environment as well as the target region’s developmental needs for basic education, and with Japan’s ODA policy for Ethiopia, which emphasized the education sector. Therefore, the project’s relevance is high. Although the project outputs and costs were as planned, the project period exceeded the plan. Therefore, the project’s efficiency is fair. Project implementation fully contributed to access to basic education and improvement of the educational environment by establishing new secondary schools and expanding classrooms in existing schools. The initial project effect target was achieved. In addition, it was confirmed that all 13 schools surveyed enjoyed impacts such as reductions in student dropout rates, improvement of students’ motivation to learn, improvement of teachers’ motivation to teach, and their class management by improving the educational environment. Therefore, effectiveness and impacts of the project are high. Some minor problems have been observed in terms of the technical aspect, financial aspect and current status of the operation and maintenance system. Therefore, sustainability of the project effects is fair.

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

1. Project Description



Secondary school constructed
by this project

1.1 Background

During the planning stage, in Ethiopia, the number of applicants for secondary education increased along with the primary education enrollment rate, causing problems such as a shortage of schools and classrooms and overcrowding of classrooms. In Amhara region, the gross enrollment ratio¹ (GER) in primary education (grades [G] 1-8) was 98.4% (2008/09), while the GER in general secondary education (G9-10) was only 38.4%. The shortage of schools and classrooms was pointed out as one of the causes for this. As of 2008/2009, there were 1,703 primary schools in the region, but only 82 secondary schools, a very limited number. In the eight cities targeted by this project, many problems occurred due to the lack of secondary schools: (1) overcrowded classes, (2) two-shift classes, (3) long-distance commuting to schools in the city center from remote areas, and (4) admission restrictions. There was an urgent need to construct secondary education facilities. Under these circumstances, grant aid was implemented in Amhara region to build new secondary schools and expand classrooms at existing schools.

1.2 Project Outline

The objective of this project was to improve access to and educational environments in secondary education in Amhara region by constructing new secondary schools and expanding existing secondary schools' facilities.

Grant Limit /Actual Grant Amount	1,208 million yen/1,208 million yen
Exchange of Notes Date /Grant Agreement Date	November 2011/November 2011
Executing Agency	Amhara Regional Education Bureau (AREB)
Project Completion	January 2018
Target Area	8 cities, 17 secondary schools
Main Contractors	<p><Construction works> Group 1: Eight secondary schools to be newly constructed Lot 1: Unity Engineering PLC Lot 2: Satcon Construction PLC Lot 3: Beha Construction PLC Lot 4: A.M.B Construction PLC Lot 4(R): Bayray Tadesse Building Contractor (Re-contracted after canceling the contract with the original contractor) Lot 5: Rediete Dagem Engineering & Construction PLC Lot 6: Yoakin Construction Lot 6(R): Mela Engineering & Construction PLC (Re-contracted after canceling the contract with the original contractor) Lot 7: Yotek Construction PLC</p>

¹ The number of students at a certain educational stage divided by the official school age population for that educational stage, regardless of age.

	<p>Lot 8: Nasew Construction PLC</p> <p>Group 2: Nine existing schools</p> <p>Lot 9: Quarit Construction PLC</p> <p>Lot 10: Yohanes Abreha General Contractor</p> <p>Lot 11: WT&T Construction PLC</p> <p>Group 3: Additional works utilizing the remaining balance</p> <p>Lot 12 : Livecone Construction</p> <p>Lot 13 : Abas Construction PLC</p> <p>Lot 14 : Bayray Tadesse Building Contractor</p> <p><Procurement of school furniture></p> <p>Lot 1 : Ketsela Bekele General Metal Work & Furniture</p> <p>Lot 2 : Maika Household and Office Furniture</p>
Main consultant	Mohri Architect & Associates, INC.
Procurement agency	Japan International Cooperation System
Outline design	July 2010 – July 2011
Related Projects	<p><JICA></p> <p>The Project for Mathematical Understanding for Science and Technology (MUST) (Technical cooperation project, March2019 – August 2023)</p> <p>To support the efforts of the Federal Ministry of Education of Ethiopia to revise mathematics curriculum and textbooks, JICA is implementing quality control support for these textbooks from G1 to G12. The project aims to strengthen the capacity of textbook writers and support textbook revision, especially for secondary education. When textbooks are revised and distributed nationwide with JICA support, the secondary schools under this project will benefit.</p> <p><Other donors></p> <p>World Bank, Finland, Sweden, Italy, Netherlands, United Kingdom, etc.: General Education Quality Improvement Program/GEQIP1:2009-13, GEQIP2: 2014-18, GEQIP-E: 2017-2022</p> <p>Comprehensive activities such as curriculum/textbook/evaluation development, teacher capacity building, and educational administration management are underway.</p>

2. Outline of the Evaluation Study

2.1 External Evaluator

Maki Hamaoka, Foundation for Advanced Studies on International Development

2.2 Duration of Evaluation Study

This ex-post evaluation study was conducted with the following schedule.

Duration of the Study: October 2020 – November 2021

Duration of the Field Study by local consultant: March 2021 – August 2021

2.3 Constraints during the Evaluation Study

(1) Due to the worldwide influence of coronavirus disease 2019 (COVID-19), this ex-post evaluation was carried out remotely with a local consultant's field survey, as an external Japanese evaluator could not travel. In the southeastern part of Amhara region, armed conflicts had occurred prior to the field survey. The armed conflicts in the area became severe immediately after the field survey began. In addition, protests against the persecution of Amharic peoples threatened the security of the entire region, and the local consultant returned to the capital after visiting 13 schools. The remaining four schools could not be visited.

(2) For one of the above four schools, the local consultant was able to partially obtain answers to the questionnaire via telephone or email. For the remaining three schools, the local consultant continued to request information over the phone and email several times over the course of several months, but the security of the Amhara region continued to deteriorate and school officials could not be contacted. Information could not be collected from those schools. As a result, 13 schools were visited and answers to the questionnaire were collected from 14 schools.

3. Results of the Evaluation (Overall Rating: B²)

3.1 Relevance (Rating: ③³)

3.1.1 Consistency with the Development Plan of Ethiopia

During the ex-ante evaluation, the Government of Ethiopia formulated a series of poverty-reduction plans for it to become a middle-income country by 2020–2023 and was implementing *the Growth and Transformation Plan (GTP) (2010/11-2014/15)*. One of the goals of the GTP was to achieve the Millennium Development Goals in the social sector by expanding education and health services. In addition, the Government of Ethiopia implemented its *Education Sector Development Program (ESDP) IV: 2010/2011-2014/2015* as an education sector strategy. ESDP-IV was aimed at i) improving the quality of education and ii) access to and equity of education, with the aims of realizing universal primary education by 2015 and universal general secondary education (G9–10) by 2020.

At the time of the ex-post evaluation, the Ethiopian government stated in its *Ten Years Development Plan (2021-2030)* that basic social services such as food, safe water, health, and education are to be accessible to all citizens regardless of economic conditions as measures of prosperity. The long-term vision is that Ethiopia will be a leader in Africa.⁴ Specifically, the Ethiopian government aims to provide fair, high quality, free education from preschool through

² A: Highly satisfactory, B: Satisfactory, C: Partially satisfactory, D: Unsatisfactory

³ ③: High, ②: Fair, ①: Low

⁴ Source: Ten Years Development Plan (2021), p19

secondary education as human resources development plan.⁵ Regarding the education sector strategy, *ESDP-V (2015/16-2019/20)* focuses on improving the quality, access, equity, and internal efficiency of general education. The aim of ESDP-V is to increase the GER of general secondary education to 74% for both boys and girls by FY 2019/2020, as compared to 37% for girls and 40% for boys in FY 2013/2014.⁶

In light of the above, this project was implemented to improve access to and the educational environments in general education facilities. The project was highly relevant to the Government of Ethiopia's development policy during both the ex-ante evaluation and the ex-post evaluation.

3.1.2 Consistency with the Development Needs of Ethiopia

(1) Need for Construction of Secondary Education Facilities

1) Enrollment

Table 1 shows the number of students enrolled in secondary education in Ethiopia and in Amhara region from the time of ex-ante evaluation to the time of ex-post evaluation. The number of students enrolled increased year by year, and the annual average growth rate of Amhara region was higher than the national average. Another characteristic of secondary education in Amhara region is that the number of girls enrolled has exceeded that of boys since FY 2012/13.

Table 1: Secondary Education Enrollment Status in Ethiopia and the Amhara Region

Region	Item	2010/11	2011/12	2012/13	2013/14	2014/15	2015/16	2016/17	2017/18	2018/19	2019/20	Annual average growth rate (%)
Amhara Region	Male	220,760	214,985	237,247	246,007	246,007	289,198	301,423	325,114	366,737	440,059	8.0%
	Female	204,063	208,375	240,271	253,031	253,031	307,402	317,222	343,505	377,016	454,296	9.3%
	Total	424,823	423,360	477,518	499,038	499,038	596,600	618,645	668,619	743,753	894,355	8.6%
National	Male	976,822	960,353	1,010,821	1,057,024	1,109,877	1,276,046	1,358,168	1,430,772	1,526,653	1,874,201	7.5%
	Female	773,312	805,658	888,910	941,331	998,238	1,145,117	1,201,009	1,235,969	1,293,482	1,592,771	8.4%
	Total	1,750,134	1,766,011	1,899,731	1,998,355	2,108,115	2,421,163	2,559,177	2,666,741	2,820,135	3,466,972	7.9%

Source: Education Statistics Annual Abstract, September 2019-March 2020 (2020), Education Statistics Annual Abstract 2009 E.C. 2016/17 (2017), 2008 E.C. 2015/16 (2016), 2007 E.C. 2014/15 (2015)

2) GER

During the ex-ante evaluation, GER in primary education was 98.4% (2008/09) in Amhara, while GER in general secondary education (G9-G10) was only 38.4% (2008/09).⁷ One reason for this was the lack of schools and classrooms (see 1.1 Background).

By the ex-post evaluation, GER in Amhara region had grown to 47.9% for secondary education as a whole, 64.2% for general secondary education, and 31.3% for preparatory secondary education. Although the figures improved year by year, they are far from the GER

⁵ Source: Ten Years Development Plan (2021), p59

⁶ Source: ESDP V (2015), p38

⁷ Source: Preparatory survey report in Japanese, p1-5

target of 74% enrollment by 2020. The reasons are that the number of students who have completed primary education is small and that the number of secondary schools is still limited.

In light of the above, the need for educational facilities in Amhara region was high for secondary education at both the ex-ante and ex-post evaluation stages.

3.1.3 Consistency with Japan's ODA Policy

The *Country Assistance Policy for Ethiopia (2012)* of the Ministry of Foreign Affairs established education as a priority area for cooperation with Ethiopia from the perspective of human resource development to support food security and industrialization. In addition, in the *Yokohama Action Plan (2008)*, formulated at the 4th Tokyo International Conference on African Development, this project was positioned as an important project that could contribute to the realization of Japan's commitment to the education sector and to achievement of the Millennium Development Goals in the education sector.⁸ The project was consistent with Japan's ODA policy during planning.

In light of the above, this project's implementation has been highly relevant to Ethiopia'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

(1) Japanese Outputs

Through this project, the establishment of eight secondary schools, expansion of general classrooms at nine existing secondary schools, and procurement of furniture at all target schools were carried out as planned (see Tables 2 and 3). The plans shown in Tables 2 and 3 are a result of the second detailed design: Remaining construction at one school had to be redesigned, as a contract was canceled due to the contractor's inability to perform the work. The main changes from the scope planned in the preparatory survey are as follows.

- Cancellation of Libraries in Two Existing Schools

As a result of the bidding process for construction work for the first group of schools, the funds for procuring furniture and equipment for the second group were insufficient. Thus, the construction of libraries at the six existing schools was removed from "Classroom Block + Library." At four of these schools, libraries were subsequently constructed utilizing the balance generated after bidding for the second group. As a result, libraries were ultimately not established at two of the existing schools.

⁸ Source: Ex-ante evaluation table (2012), p1

- Cancellation of Contract due to Nonfulfillment at One New School (WD-6)

Regarding WD-6, the contract was canceled in the middle of construction in July 2014 due to the contractor's inability to perform construction work. After calculating the cost of the remaining construction, design, and supervision; and the procurement agency; the balance after cancellation was not enough to construct all planned facilities, so the library block and laboratory block A, laboratory block B, Administration block A, Administration block B, one latrine block, and part of the exterior construction were carried out by the Ethiopian side instead of grant aid.

Table 2: Planned and Actual Facility Construction Outputs

Building	Planned	Actual	Remarks
【8 new schools】			
Regular classrooms (8 classrooms per story)	23	23	4 buildings in each of 5 school and 1 building in each of 3 school. 23 buildings x 8 classrooms = 184 classrooms
Regular classrooms (12 classrooms per story)	6	6	2 buildings were built in each of 3 school. 6 buildings x12 classrooms = 72 classrooms
<u>Total of regular classrooms</u>	256	256	
Library blocks	7	7	WD-6 contract canceled during construction due to contractor's inability to perform the work. Balance after cancellation was insufficient to construct all planned facilities, so library block was built by the Ethiopian side instead of using grant aid.
Laboratory blocks	22	22	Block A (1 science laboratory): 2 blocks in each of 7 school, 1 block in 1 school, 15 buildings total Block B (science laboratory, information communication technology (ICT) center, satellite receiver center): 7 schools excluding WD-6, 7 blocks total. WD-6: Balance after original contract cancellation was insufficient to construct all planned facilities. One of 2 laboratory Blocks A and laboratory Block B were constructed by the Ethiopian side instead of via grant aid.
Administration Block A (Director's room, vice directors' rooms, secretary's room, administration office room)	7	7	WD-6: Balance after original contract cancellation was insufficient to construct all planned facilities. Administration Blocks A and B were constructed by the Ethiopian side instead of via grant aid.
Administration Block B (Financial office rooms, record room, document storage, janitor room, mini-media room)	7	7	
Administration Block C (Staff room and resource center)	8	8	
Latrine Block (8 booths for students, teachers, and staff)	23	23	3 blocks each in each of 7 school except WD-6. Two blocks were built at WD-6. WD-6: Balance after original contract cancellation was insufficient to construct all planned facilities. One of 3 latrine blocks was constructed by the Ethiopian side instead of via grant aid.
【Existing 9 schools】			
Classroom block (4 rooms)	9	9	9 blocks x 4 rooms = 36 classrooms
Classroom block + library	4	4	4 blocks x 4 rooms = 16 classrooms
<u>Total of regular classrooms</u>	52	52	
Library blocks	7	7	Initially, library blocks were planned at all 9 target schools, but as a result of bidding for the first group of construction work, furniture and equipment funds for the second group were insufficient. Library blocks were canceled for 6 schools. Library blocks were later built in 4 of them using the balance after Group 2 bidding. Library blocks were ultimately not constructed at 2 existing schools.

Source: Documents provided by JICA

Note: Regular classrooms are classrooms in which students take regular lessons.

Table 3: Planned and Actual Furniture Procurement Outputs

Room	Quantity		Furniture and Quantity (quantity per room)	
	Planned	Actual	Planned	Actual
Regular classrooms	256	256	Tablet chair (40), teacher's desk (1), teacher's chair (1), chalkboard (1), white board (1), notice board (1)	As planned
Library (Capacity: 150)	11	11	Library desk (25), library chair (151), catalogue box (1), file cabinet (1), kneehole desk (1), bookshelf (26), chalkboard (1), notice board (1)	As planned
Library (Capacity: 300)	3	3	Library desk (50), library chair (301), catalogue box (1), file cabinet (1), kneehole desk (1), bookshelf (26), chalkboard (1), notice board (1)	As planned
Science laboratory (physics)	22	22	Stool (42), teacher's desk (1), teacher's chair (1), demonstration table (1), work bench (20), cupboard A (4), cupboard B (1), chalkboard (1), notice board (2)	As planned
Science laboratory (chemistry)				As planned
Science laboratory (biology)				As planned
Resource center	8	8	Office desk (10), chair (16), cupboard A (10), Book desk (2), Shelf (10), chalkboard (2), notice board (2)	As planned
ICT center	7	7	Computer desk (20), chair (41), teacher's desk (1), shelf (1), whiteboard (1), notice board (1)	As planned
Director's office	7	7	Office desk (1), meeting table (1), armrest chair (2), office chair (8), cupboard A (2), file cabinet (2), notice board (2)	As planned
Vice director's offices (2 offices)	7	7	Office desk (2), meeting table (2), armrest chair (2), office chair (12), cupboard A (2), file cabinet (2), notice board (2)	As planned
Secretary's room	7	7	Office desk (2), office chair (14), cupboard A (2), file cabinet (2), shelf (2)	As planned
Financial office room	7	7	Office desk (4), armrest chair (4) office chair (8), cupboard A (4), file cabinet (4)	As planned
Administration office room	7	7	Office desk (3), armrest chair (3), office chair (6), cupboard A (3), file cabinet (3)	As planned
Record office and storage	8	8	Office desk (1), office chair (1), cupboard A (1), file cabinet (1), shelf (4)	As planned
Staff room	8	8	Office chair (30), meeting table (5), file cabinet (6), chalkboard (1), notice board (1), locker (15)	As planned

Source: Documents provided by JICA

(2) Ethiopian Side Outputs

The outputs to be undertaken by the Ethiopian side included securing the land; forming the land; construction of access roads and removing obstructions; providing electrical connection for all target schools and water connection; constructing gates, fences, and guard rooms; constructing drinking fountains; constructing sports grounds; providing apparatus for distance learning curriculum and computers; and science laboratory materials for new schools only.

Of the outputs that the eight new schools needed to complete prior to the commencement of construction, securing the land and forming the land were carried out as planned. However, construction was delayed at four schools by one to two months because it took time to arrange heavy equipment for the construction of access roads. Some heavy equipment could not enter the sites due to rainfall, either. In addition, at the time of final inspection, these outputs required to be

completed before the start of school operation were delayed: electrical connections, water connections, and construction of drinking fountains. As shown in Table 4, at the time of ex-post evaluation, the Ethiopian side had completed electrical connections at all target schools, but some schools have still not completed water connection or construction of sports grounds. In schools where the water connections are not completed, water cannot be used, so laboratory classrooms are only partially operated, which affects the operation of the facility.

Table 4: Progress on the Ethiopian Side’s Obligations in the Secondary Schools

Item		Number of target schools	Ex-post evaluation (2021)			
			Completed	Underway	Not undertaken	n/a
1	Electrical connection	17	17	0	0	0
2	Water connection to laboratories ^{Note}	8	4	1	0	3
3	Water connection to toilets ^{Note}	8	4	1	0	3
4	Construction of gates, fences	8	7	1	0	0
5	Construction of guard rooms	8	6	0	0	2
6	Construction of drinking fountains	8	5	0	1	2
7	Preparation of sports grounds	8	3	3	0	2
8	Installation of apparatus for distance learning curriculum	8	7	0	0	1
9	Provision of computers	8	6	0	0	2
10	Provision of science laboratory materials	8	5	1	0	2
11	Provision of educational equipment and books for libraries	8	5	1	0	2

Source: Prepared by the evaluator based on field study results

Note: Budget estimation during planning referred to “water connection” as connection of water to the school compound and did not include the costs of connecting water pipelines to the school facilities. However, because facilities such as laboratory and handwashing facilities installed beside latrine blocks can be operated properly with water, the evaluator judged the water connection to be completed if water pipelines were connected to the building.

Regarding the delay in Ethiopian-side outputs, the procurement agency confirmed output progress regularly and urged the AREB and the officers in charge of the woreda’s education offices to implement the obligations by telephone or letter during construction. In addition, the procurement agency directly urged the woreda’s education officer and school directors during the site visit, but the obligations were not easily implemented. There are multiple factors behind the delays. For example, in Ethiopia, where decentralization is prevalent, it is difficult for the AREB to pass instructions to the woreda’s education bureau, and related organizations are slow to respond to outputs that require the cooperation of other organizations, such as electrical connections. Also, if a budget request could not be approved in one year, it was necessary to wait

for nearly a year until the budget formulation time for the following year.⁹

3.2.2 Project Inputs

3.2.2.1 Project Cost

As for the project cost, because no information on the actual costs borne by the Ethiopian side was available, only the planned and actual costs borne by the Japanese side were evaluated. The total cost during planning was 1,262 million yen, with 1,208 million yen borne by the Japanese side and 54 million yen borne by the Ethiopian side. The actual cost borne by the Japanese side was 1,208 million yen, 100% of the planned budget.

3.2.2.2 Project Period

As shown in Table 5, the actual project period was 77 months, against a planned 72 months (109% of the planned period). The difference between the plan and the actual result is due to several reasons. First, the tender/contract period exceeded the planned period due to re-tender. The commencement of construction work on schools themselves was delayed by access road construction delays on the Ethiopia side. Construction was interrupted by the rainy season, as well.

Table 5: Planned and Actual Project Periods

	Planned ^{Note}		Actual	
	Period	Months	Period	Months
Overall period	August 2011– July 2017	72 months	September 2011– January 2018	77 months

Source: Documents provided by JICA

Note: This period started on the month when the procurement agency contract was concluded and ended when all works and procurements were completed. However, the period for the reimbursement procedure is not included. In addition, the contract for Lot 6 in Group 1 was canceled in July 2014 due to the contractor's inability to perform the work. A design change was made to carry out the remaining construction using a new contractor. In the case of grant aid by the procurement agency method, the planning period is regarded as the period based on the detailed design. After the Lot 6 design change, the completion date was set as July 2017, when the completion of construction works as well as furniture and equipment procurement were expected.

Although the project cost was within the plan, the project period exceeded the plan. Therefore, the project's efficiency is fair. The constructed schools have been used as schools after handing them over to the Ethiopian side, but there were delays in some outputs borne by the Ethiopian side.

⁹ Source: Procurement agency's answers to the questionnaire.

3.3 Effectiveness and Impacts¹⁰ (Rating: ③)

3.3.1 Effectiveness

3.3.1.1 Quantitative Effects (Operation and Effect Indicators)

(1) Number of Students in Newly Established Schools

Through this project, a total of 256 classrooms were constructed in eight secondary schools, 32 classrooms in each school. For this indicator, the number of enrolled students by school is compared with the enrollment capacity of 1,280 students (See Table 6). Among the eight schools, the actual number was 6,558 students against a target value of 6,400 (102% of the capacity). This amount includes the five schools for which enrollment data was available at the time of ex-post evaluation.

Table 6: Number of Students in Newly Established Schools

ID	Zone	Woreda	School	Base line	Target		Actual										Satisfaction rate for enrollment capacity (%)	
					Classrooms	Enrollment capacity	At the time of final inspection (2018/19)					At the time of ex-post evaluation (2020/21)						Enrollment capacity
							G9	G10	G11	G12	Total	G9	G10	G11	G12	Total		
GD-1	North Gondar	Gondar	Kebele 18	0	32	1,280	568	288	245	187	1,288	n/a					1,280	n/a
BH-2	Bahir Dar	Bahir Dar	Kebele 14	0	32	1,280	344	208	93	215	860	373	460	213	235	1,281	1,280	100.1%
DS-3	South Wollo	Dessie	Boru Selasie K.14	0	32	1,280	218	174	0	0	392	251	151	86	0	488	1,280	38.1%
DM-4	East Gojjam	Debre Markos	Kebele 3	0	32	1,280	717	411	404	384	1,916	514	615	465	419	2,013	1,280	157.3%
DB-5	North Shoa	Debre Birhan	Kebele 6	0	32	1,280	841	593	0	0	1,434	n/a					1,280	n/a
WD-6	North Wollo	Woldia	Defrega Kibi Kebele	0	32	1,280	303	160	0	0	463	435	300	300	157	1,192	1,280	93.1%
DT-7	South Gondar	Debre Tabor	Debre Tabor Evesus	0	32	1,280	503	279	405	562	1,749	490	433	282	379	1,584	1,280	123.8%
GK-8	West Gojjam	Gonji Kolela	Gonji Kolela	0	32	1,280	805	724	446	348	2,323	n/a					1,280	n.a.
Total					256	10,240	4,299	2,837	1,593	1,696	10,425	2,063	1,959	1,346	1,190	6,558	6,400	102.5%

Source: Preparatory survey report, and developed by the evaluator based on target schools' answers to the questionnaire
 Note: Enrollment capacity (40 persons) x 32 classrooms = 1,280 students (Source: preparatory survey report)

By school, the number of students enrolled in four schools met their capacity, and the number of students enrolled in one school was small. The reason for the low enrollment in one school (DS-3) is that some students drop out of school to help with household chores as they advance through the grades due to their family's financial situation.¹¹ As a result, fewer students go on to the preparatory secondary education, and fewer students transfer from existing schools to DS-3 than expected.¹² At the time of final inspection in 2019, the number of students advancing from

¹⁰ Sub-rating for Effectiveness is to be put with consideration of Impacts.

¹¹ Source: Interview with DS-3 school director and vice director.

¹² During planning, we assumed that some percentage of existing secondary school students in the same school districts as the new schools would be transferred to the new schools. The total number of classrooms needed in the three existing schools (DS-15, DS-17, one existing school not covered by this project) in the school district of Dessie City, South Wollo Prefecture, where DS-3 is located, was 62 (Source: Preparatory Survey Report p3-8, 3-9). In that respect, the construction of 32 classrooms in DS-3 by this project met secondary education development needs for facilities in Dessie City. However, in Ethiopia, parents tend to prefer existing schools that are already functioning to new schools (source: JICA Ethiopia office interview). In Dessie City, it seems that few students transferred from existing schools to new schools as expected. In fact, DS-15 and DS-17 are still overcrowded, although classroom overcrowding has been

G10 to G11 was too small to offer preparatory secondary education in DS-3, so students advancing to G11 were forced to commute to other schools in Dessie City. Since DS-3 has recently started offering preparatory secondary education, the number of students enrolled in it is small; however, the situation is improving compared to the time of final inspection, when there were no students in preparatory secondary education.

In light of the above, four out of the five schools for which enrollment data was obtained at the time of ex-post evaluation had sufficient numbers of enrolled students. One school with a small student population that did not offer preparatory education at the time of final inspection has begun offering preparatory secondary education as of ex-post evaluation. Considering the improvement of the situation, achievement of this indicator is judged to be high.

(2) Average Number of Students per Classroom for the Existing Schools

A total of 52 classrooms were constructed by this project for the nine existing schools, and the number of regular classrooms totaled 353 after the project. As shown in Table 7, the number of students of the nine schools per general classroom was 76 against a target of 71.5 (achievement level 94%).

Table 7: Average Number of Students per Classroom for the Existing 9 schools

ID.	Zone	Woreda	Schools	Baseline			Target			Actual (Ex-post Evaluation)					
				(a) Existing classrooms (CRs)	Enrollment (2010/11)	(c) Students per CR (b/a)	(d) Number of CRs to be constructe d by this project	(e) Number of CRs after the project (a+d)	(f) Students per CR (b/e)	(g)Number of CRs constructe d by the project	(h) CRs used as regular CRs	(i) Total number of CRs used as regular CRs (a+g)	Enrollment (2020/21)	(k) Students per CR (j/i)	Target/ Actual
					Total (b)								(j) Total		
BD-9	Bahir Dar	Bahir Dar	Tana	43	2,904	68	4	47	62	4	0	43	3,791	88	70%
BD-10	Bahir Dar	Bahir Dar	Ghion	34	2,839	84	4	38	75	8	4	42	4,253	101	74%
BD-11	Bahir Dar	Bahir Dar	Fasilo	33	2,117	64	4	37	57	8	8	41	2,002	49	117%
GD-12	North Gondar	Gondar	Fasiladas	28	3,357	120	4	32	105	4	4	32	2,015	63	167%
GD-13	North Gondar	Gondar	Edgit Feleg	17	2,019	119	4	21	96	4	4	21	3,421	163	59%
GD-14	North Gondar	Gondar	Azezo	27	3,140	116	4	31	101	8	8	35	3,478	99	102%
DS-15	South Wollo	Dessie	Hottie	60	3,467	58	4	64	54	4	0	64	3,421	53	101%
DS-16	South Wollo	Dessie	Niguse Michael	28	2,157	77	4	32	67	4	4	32	1,933	60	112%
DS-17	South Wollo	Dessie	Kidame Gebya	31	2,092	67	4	35	60	8	8	39	2,210	57	105%
Total				301	24,092	80	36	337	71.5	52	40	349	26,524	76	94%

Source: Preparatory survey report, and developed by the evaluator based on target schools' answers to the questionnaire

The number of students per classroom decreased almost as targeted at six out of nine schools. Compared to the national and regional target of 40 students per classroom, the national and regional averages of students per classroom at the time of ex-post evaluation were 64.3 and 61.0,

alleviated as planned. At the time of planning, it is difficult to predict the number of dropouts from new schools and whether students will actually transfer from existing schools to new schools. For these reasons, it cannot be said that there was no need for the establishment of a new secondary school in Dessie City just because the number of students enrolled in DS-3 was small.

respectively.¹³ The declining number of students per classroom in five of the six schools is close to the regional average, although there is a gap from the regional target.

The current status of the three schools where the number of students per classroom has not decreased is as follows:

- In BD-9, the number of students enrolled in preparatory secondary education (G11, G12) is increasing compared to the time of planning.
- In BD-10, since four out of eight regular classrooms constructed by this project are used as ICT rooms instead of regular classrooms, the number of classrooms operated as regular classrooms is fewer than planned. Regular classrooms were converted to ICT rooms because the existing classrooms are unlocked, built with earthen walls and tin roofs, are of poor quality, and are not suitable for storing precision equipment such as computers and printers.¹⁴
- In BD-12, the number of G12 students was greater than expected during the planning phase.

Six of the nine target schools achieved their target values, and the degree of indicator achievement is as high as 94%. The degree of achievement of this indicator is judged to be high because classroom overcrowding was alleviated compared to the time of planning. Improvement of the learning environment was confirmed.

(3) Number of Students per Library Seat for the Existing Schools

The average number of students per library seat for the seven schools where libraries were constructed in the project was 11, against the target of 10 (see Table 8). In six of the seven schools, the number of students per library seat was almost in line with the target. The last school, which had a slightly larger gap between the target value and the actual value, was affected by the fact that many students go on to preparatory secondary education.

¹³ Education Statistics Annual Abstract, September 2019-March 2020 (2020)

¹⁴ Source: Interview with BD-10 director

Table 8: Number of Students per Library Seat for the Existing Schools

No.	Zone	Schools	Baseline			Target						Actual		
			(a) Seats of Existing Library	Enrollment (2010/11) (b) Total	(c) Number of Students per Seat	(d) Planned Capacity of Library	(e) Number of Seats after the Project (a+d)	(f) Number of Students per Seat (b/e)	(g) Number of Seats of Library constructed by the Project	(h) Number of seats after the project (a+d)	(i) Number of students per seat after the scope change (b/e) (* Only for schools where this project constructed a library)	Enrollment (2020/21) (j) Total	(k) Number of students per seat (j/k)	Target/Actual
BD-9	Bahir Dar	Tana	100	2,904	29	300	400	7	300	400	7	3,791	9	77%
BD-10	Bahir Dar	Ghion	70	2,839	41	150	220	13	150	220	13	4,253	19	67%
BD-11	Bahir Dar	Fasilo	90	2,117	24	150	240	9	150	240	9	2,002	8	106%
GD-12	North Gondar	Fasiladas	90	3,357	37	300	390	9	300	390	9	2,015	5	167%
GD-13	North Gondar	Edgit Feleg	50	2,019	40	150	200	10	0	0	0			
GD-14	North Gondar	Azezo	50	3,140	63	150	200	16	150	200	16	3,478	17	90%
DS-15	South Wollo	Hottie	0	3,467		300	300	12	300	300	12	3,421	11	101%
DS-16	South Wollo	Niguse	0	2,157		150	150	14	0	0	0			
DS-17	South Wollo	Kidame Gebya	108	2,092	19	150	258	8	150	258	8	2,210	9	95%
		Total	558	24,092	43	1,800	2,358	10	1,500	2,008	10	21,170	11	94%

Source: Preparatory survey report and developed by the evaluator based on target schools' answers to the questionnaire

Six of the seven schools achieved the target number of students per library seat, and the library usage environment had improved since project planning began. The degree of achievement for this indicator was judged to be high.

3.3.1.2 Quantitative Effects (Operation Indicators)

In ex-post evaluations of similar projects for primary and secondary school construction, one commonly evaluated operation indicator is whether the facilities constructed in the project are operated according to their originally designated purposes. Therefore, operation indicators were considered a necessary part of the ex-post evaluation, and they were added with the consent of the concerned parties.

Table 9 shows the operational status of the school facilities constructed in this project. As a whole, 243 classrooms, 88% of the 276 classrooms confirmed at the time of the field survey, were being used as regular classrooms as intended. At the new schools, 32 regular classrooms were built at each school. At one school (DS-3), 13 classrooms were unused due to the small number of students. The main reason this school had a higher percentage of unused classrooms than did other schools is as described in 3.3.1.1 Quantitative Effects (Operation and Effect Indicators) (1) Number of Students in Newly Established Schools.

For existing schools, 12 of the 44 regular classrooms were being used as ICT rooms. The existing classrooms do not have locks, and because they were very old, they were built with earthen walls and tin roofs, so they were not suitable for storing precision equipment such as computers and printers. Therefore, the three schools were using new regular classrooms as ICT rooms because they are suitable for storing computers and printers. In addition, one school was

using one regular classroom as a vice-director's room.¹⁵

As for special classrooms, a total of 22 laboratories were constructed at eight new schools, three in seven schools, and one in one school. The operational status of 13 of these laboratories at five schools (three in four schools, one in one school) was confirmed in the field survey. Of these, six laboratories at two schools (BH-2, DS-3) were partially used, mainly because of incomplete water connections and lack of lab technicians. The library was partially used in two schools and unused in one school in the 10 schools assessed.

As a whole, although the evaluation confirmed that some regular classrooms and special classrooms and one library were partially utilized or unused in a small number of schools, the operation status of the facilities constructed in this project was good.

Table 9: Operational Status of Facilities

Facility	Quantity	Operational status					Remarks	
		A: Used as originally intended	B: Partially used	C: Unused	D: Used for other purposes	Unconfir- med		
New Schools								
1	Regular classrooms	256	211	0	13	0	32	There are unused regular classrooms where the number of students is small.
2	Science laboratory (chemistry)	8	3	2	0	0	3	
3	Science laboratory (biology)	7	2	2	0	0	3	
4	Science laboratory (physics)	7	2	2	0	0	3	
5	Library	7	2	1	1	0	3	The reason for non-use is that students are not very aware of the need to use the library.
6	ICT center	7	3	1	0	0	3	
7	Administration building	10	10	0	0	0		The administration building includes the office of director and secretary, vice director's offices, administration and finance office, record room, storage, staff room.
8	Latrines for teachers and students	10	10	0	0	0		
Existing schools								
1	Regular classrooms	52	32	0	0	12	8	At the three schools where eight regular classrooms were constructed by this project, regular classrooms are used as ICT rooms. In addition, one room is used as vice-director's room in one school. The reason was that the regular classrooms constructed by this project are more suitable than existing classrooms for storing computers and printers because they are locked.
2	Library	6	5	1	0	0	0	

Source: Prepared by the evaluator based on the field study results

As described above, the number of students enrolled in the new schools constructed in this project met the projections, and the overcrowding of classrooms in the existing schools was alleviated. Special classrooms were partially utilized or unused in some schools. However, given the emphasis on the operation of regular classrooms in light of the project objectives of improving

¹⁵ Source: Field survey and answers to the questionnaire from the school

access to basic education by solving problems identified during planning, such as long-distance commutes and admission restrictions due to lack of facilities, the effectiveness was judged as high in the ex-post evaluation.

3.3.2 Impacts

3.3.2.1 Intended Impacts

In this project, access to basic education and improvement of the educational environment were expected as impacts. In the ex-post evaluation, these impacts were examined focusing on (1) improvement of school attendance, (2) improvement of quality of secondary education through improvements in the learning environment, and (3) increased student motivation to attend school.

(1) Improvement of School Attendance

Quantitative data on attendance rates and dropout rates could not be confirmed. Six of the 12 schools that answered the questionnaire reported increased attendance and decreased dropout rates due to the elimination of long-distance commuting, which was one of the problems before the project was implemented.¹⁶

(2) Improvement of Quality of Secondary Education through Improvements in the Learning Environment

This project alleviated the overcrowding of classrooms in existing schools and reduced the number of students per teacher. As a result, teachers reported reduced burden in managing their classes and improved teaching conditions compared to before project implementation.¹⁷

(3) Increased Student Motivation to Attend School

Before project implementation, the existing nine schools were aging and the windows, walls, ceilings, etc., were noticeably damaged. Some schools had no choice but to use dangerous, semi-collapsed classrooms, while others used community-built clay walls and temporary classrooms with tin roofs. Because of these conditions, students were taking classes while feeling the heat in the classrooms when it was hot outside and cold when it was cold outside. In addition, some schools were so overcrowded that a calm environment for classes could not be maintained.

After project completion, students attended classes in the concrete classrooms constructed in this project and were no longer affected by the cold or heat of the outside air, and most classrooms

¹⁶ Source: Interviews with a total of 20 school teachers and staff; two at each of eight school: director and vice-director at six schools, director and curriculum team leader at one school, director and planning team leader at one school, director at four schools)

¹⁷ Source: Interviews with a total of 12 school teachers and staff from eight existing schools; director, vice-director at four schools, director at four schools.

were no longer overcrowded. Teachers and administrators reported that students' motivation to learn was improved because they were able to concentrate on learning.¹⁸

In addition, it was confirmed at multiple schools during the field survey that students use the library for learning even on weekends due to the establishment or expansion of the library.¹⁹



Students concentrating in class



Students studying in the library on a weekend

As mentioned above, improvement of the educational environment improved teachers' motivation to teach, improving class management and students' motivation to learn.

3.3.2.2 Other Positive and Negative Impacts

(1) Impacts on the Natural Environment

This project had no negative impacts on the natural environment.

(2) Resettlement and Land Acquisition

During the planning stage, implementation of the project was not expected to require resettlement or land acquisition. At the time of the ex-post evaluation, the JICA Ethiopia Office and the AREB confirmed that unexpected illegal occupation of the site for BH-2 caused a delay in the start of construction, which had taken the time to resolve.

(3) Unintended Positive/Negative Impacts

a) Reducing the financial burden on parents

Before project implementation, some students stayed in the city, away from home, to attend secondary school. After project completion, these students were able to attend school while living at home. This had a positive family-level economic impact through reduced expenses for accommodation in the city. In addition, administrators reported that students were happy that they could live at home with their families and still attend school.²⁰

¹⁸ Source: Interviews with a total of 12 school teachers and staff from eight existing schools; director, vice-director at four schools, director at four schools.

¹⁹ Source: Interviews with a total of 12 school teachers and staff from eight existing schools; director, vice-director at four schools, director at four schools. And observation of the operational status of libraries during the field survey.

²⁰ Source: Director, vice-director of DS-3, director of DM-4, director of DS-16.

b) Impact on gender aspects (improving access to latrines for female students)

According to the Ethiopian Federal Education Standards of Secondary Education and the Amhara National Regional State School Construction Standards, schools should have separate latrines blocks for female students and male students. In this project, separate latrine blocks for female and male students, with sufficient physical separation to prevent interaction were constructed in eight new schools. As a result, teachers and administrators reported that female students were using the toilets without embarrassment and without fear of the sexual harassment that had occurred when female and male students did not have separate toilets.²¹

c) Consideration for students with disabilities

In this project, wheelchair ramps were built on the first floor of all new school facilities, passages between the blocks of school buildings were paved. The evaluation confirmed that 10 students with disabilities enrolled in three of the eight newly established schools.

In light of the above, the project's three effect indicators were achieved, and the operational status of the facilities constructed in the project was good, as a whole. This project fully contributed to access to basic education and improvement of the educational environment by establishing new secondary schools and expanding classrooms in existing schools, achieving the initial project effect target. In addition, all 13 schools surveyed reported impacts, such as increased student motivation to learn and improvement of teachers' motivation to teach, and six schools reported improvements in lesson management and reductions in student dropout rates. Therefore, effectiveness and impacts of the project are high.

3.4 Sustainability (Rating:②)

3.4.1 Institutional/Organizational Aspect of Operation and Maintenance

The roles of stakeholders in education from the planning stage to the ex-post evaluation are shown in Table 10.

²¹ Source: Interviews with a total of 7 teachers and staff from 4 schools; the director of BH-2, the director and vice-director of DS-3, the director and planning team leader of WD-6, and the director and curriculum team leader of DT-7)

Table 10: Administrative Organization in the Education Sector

Organization	Role
Federal Ministry of Education	To formulate national education policy; formulate, implement, and monitor education sector development plans; provide technical support to regional education bureaus; develop and formulate the secondary education curriculum; prepare secondary education teaching materials; select secondary school teachers; and implement a unified national examination system
Regional education bureau	To formulate and implement regional education development plans, provide professional and technical support to zonal and woreda education bureaus, assign teachers, develop and formulate primary education curricula, standardize education levels in the region, and supervise construction projects by donors
Zonal education bureau	To implement various tasks and activities that cannot be carried out at the woreda level, coordinate the distribution of textbooks, and distribute teaching materials
Woreda education bureau	To establish and manage primary, secondary, and vocational training schools; provide support services to each school; form concrete plans based on regional education development plans and their implementation; comply with federal and regional education standards; form measures for disseminating education in the woreda (especially primary education) and their implementation; and form necessary community mobilization plans for constructing schools and procuring educational equipment
Community	To provide labor, materials, and funds for the school's operation and maintenance through a PTA; share maintenance costs; and form and monitor the school-improvement plan (including the budget)

Source: Developed by the evaluator based on the field survey results

After implementation of the project, teacher at 10 of the 12 schools for which data was obtained were assigned 40 students or fewer, which meets the national and regional standard of 40 students per teacher.

Of the 13 schools that answered the questionnaire, eight reported staff shortages. In some cases, schools do not actually hire laboratory technicians or librarians due to the lack of budget of the woreda administration and in some cases, PTA hires staff such as secretaries, guards, and cleaners to keep the school functioning. In schools where no lab technicians or library librarians are assigned, the laboratories and libraries are only partially operated due to the lack of staff, which affects the effective operation of the facility.

PTAs were established in all 13 schools that responded to the questionnaire and are all active. The main roles of PTA are (1) formulation and monitoring of the school improvement plan, (2) awareness-raising activities to promote school attendance, (3) sharing of school operation and maintenance costs, and (4) provision of labor for school maintenance and so on.

As a school, there is no problem with the daily organizational aspect of operation and maintenance. Although the operation and maintenance system is generally functioning because PTA actively supports the operation and maintenance of schools, some of schools lack lab technicians and library librarians. Since the non-assignment of staff affects the effective operation

of the facility and it is necessary to improve the staffing, it was judged that the sustainability of the operation and maintenance aspects is fair.

3.4.2 Technical Aspect of Operation and Maintenance

At all 13 schools surveyed, school maintenance committees conduct annual inspections of facilities and equipment during the summer holidays and record the inspection results. Schools reported that each defect found was repaired, but as described in 3.4.4. Status of Operation and Maintenance, 40% of the tablet chairs reported as damaged in the field survey was still unrepaired.



Damaged tablet chair. The chair in the back is used with the tablet removed.

Regarding future maintenance plans, the 14 schools that responded to the questionnaire answered that they would implement repairs of defects during the summer holidays. Given this situation, annual inspections are not sufficiently frequent, and schools are required to repair defects quickly, without leaving them until regular inspections.

Although schools carry out inspections regularly, technical sustainability was judged to be fair because defects in school facilities and equipment were not repaired in a timely fashion and there is room for improvement.

3.4.3 Financial Aspect of Operation and Maintenance

The budget for school operation and maintenance is funded by public subsidies and community support. The former includes (1) a Block Grant²² and (2) a GEQIP School Grant,²³ and the latter is (1) PTA annual fees, (2) donations, (3) fundraising activity profits, and (4) tuition fees (170 Birrs/year for G11–12 students). Tables 11 and 12 show the evaluation of the operation and maintenance budget and financial sustainability of the target schools.

²² Subsidies distributed by the Federal Ministry of Education to the regional education bureaus and then to the woreda education bureaus. The amount per student is 20 Birrs per year for G9-10 student. Although the amount is fixed, the actual amount varies depending on the financial situation of the region and woreda (Source: Interviews with the Regional Education Bureau at the time of ex-post evaluation).

²³ As part of the school improvement plan of GEQIP, a fixed amount per student is allocated directly to the school. The amount was 40 Birr per student per year at the time of planning (2011) and 50 Birr per year at the time of ex-post evaluation (2020) (Source: Interviews with the Regional Education Bureau at the time of ex-post evaluation).

Table 11: Operation and Maintenance Budget by School

Unit: Ethiopian Birr

School ID	GD-1	BH-2	DS-3	DM-4	DB-5	WD-6	DT-7	GK-8	BD-9	BD-10	BD-11	GD-12	GD-13	GD-14	DS-15	DS-16	DS-17	
Number of classrooms																		
Enrollment ^{Note 1}	G9-10	n.a.	833	402	1,129	n.a.	735	923	n.a.	1,927	2,341	1,129	1,654	2,465	1,654	1,466	1,349	
	G11-12	n.a.	448	86	884	n.a.	457	661	n.a.	1,864	1,912	840	886	1,757	1,013	1,767	861	
Total			1,281	488	2,013		1,192	1,584		3,791	4,253	2,002	2,015	3,411	3,478	3,421	1,933	2,210
1 Estimate of public subsidies (calculated based on the prescribed amount of public subsidies and the number of students enrolled at the time of ex-post evaluation)																		
(1) Block Grant ^{Note 2}	n.a.	49,980	24,120	67,740	n.a.	44,100	55,380	n.a.	115,620	140,460	69,720	67,740	99,240	147,900	99,240	87,960	80,940	
(2)-1 School Grant ^{Note 3}	n.a.	49,980	24,120	67,740	n.a.	44,100	55,380	n.a.	115,620	140,460	69,720	67,740	99,240	147,900	99,240	87,960	80,940	
(2)-2 School Grant	n.a.	31,360	6,020	61,880	n.a.	31,990	46,270	n.a.	130,480	133,840	58,800	62,020	122,990	70,910	123,690	32,690	60,270	
(3) Total of public subsidies	n.a.	131,320	54,260	197,360	n.a.	120,190	157,030	n.a.	361,720	414,760	198,240	197,500	321,470	366,710	322,170	208,610	222,150	
Source of budget																		
1. Public subsidies																		
(1) Block Grant ^{Note 2}	n.a.	n.a.	8,000	n.a.	n.a.	n.a.	14,015	n.a.	129,000	n.a.	73,410	151,200	12,000	3,700	207,180	85,000	n.a.	
(2) School Grant ^{Note 3}	n.a.	n.a.	15,000	n.a.	n.a.	n.a.	101,690	n.a.	233,220	n.a.	140,570	23,000	5,000	172,550	121,430	52,000	n.a.	
(3) Total of public subsidies	n.a.	n.a.	23,000	n.a.	n.a.	n.a.	115,705	n.a.	129,000	245,000	213,980	174,200	17,000	328,610	328,610	137,000	n.a.	
Comparison with the estimate of public subsidies (%)	n.a.	n.a.	42%	n.a.	n.a.	n.a.	74%	n.a.	36%	59%	108%	88%	5%	90%	102%	66%	n.a.	
2. Community contribution																		
(1) Tuition fee for G11-12, PTA annual fees and donations	n.a.	n.a.	50,000	n.a.	n.a.	n.a.	300,000	n.a.	114,000	1,200,000	462,490	307,000	109,860	172,210	1,171,040	580,000	n.a.	
(2) Fundraising activity	n.a.	n.a.	75,000	n.a.	n.a.	n.a.	16,000	n.a.	3,700	70,000	6,000	12,000	241,500	0	135,326	0	n.a.	
(3) Total of community contribution ((1)+(2))	n.a.	n.a.	125,000	n.a.	n.a.	n.a.	316,000	n.a.	117,700	1,270,000	468,490	319,000	351,360	172,210	1,306,366	580,000	n.a.	
Total budget (1+2)	n.a.	500,000	148,000	810,086	n.a.	400,000	431,705	n.a.	246,700	1,515,000	682,470	493,200	368,360	500,820	1,634,976	717,000	n.a.	
Budget per student	n.a.	390	303	402	n.a.	336	273	n.a.	65	356	341	245	108	144	478	371	n.a.	

Source: Preparatory survey report and developed by the evaluator based on the interviews at the time of ex-post evaluation.

Note 1: In planning, the number of students was calculated as the number of planned classrooms × the number of students per classroom (40 students × 2 (double shift)).

Note 2: In planning, the Block Grant was 20 Birr per student for G9–10. The estimation was calculated by multiplying the above enrollment capacity by 20 Birr.

Note 3: In planning, the school grant was 50 Birr per year for G9–10 and 60 Birr for G11–12. At the time of the ex-post evaluation, it was 60 Birr for G9–10 and 70 Birr for G11–12.

Table 12: Evaluation of Financial Sustainability by School

School ID	GD-1	BH-2	DS-3	DM-4	DB-5	WD-6	DT-7	GK-8	BD-9	BD-10	BD-11	GD-12	GD-13	GD-14	DS-15	DS-16	DS-17
(1) Public subsidies	n.a.	n.a.	1	n.a.	n.a.	n.a.	2	n.a.	1	2	3	3	1	3	3	2	n.a.
(2) Community contribution	n.a.	n.a.	1	n.a.	n.a.	n.a.	2	n.a.	1	2	2	1	1	1	3	3	n.a.
Overall evaluation	n.a.	2	1	2	n.a.	2	2	n.a.	1	2	2	2	1	2	3	2	n.a.
Remarks			The amount of public subsidy is small. The PTA annual fee is set at 200 Birr, but the actual collection is about 100 Birr/student, and the financial support of the community is vulnerable.	The budget is secured to a certain extent.		The budget is secured to a certain extent.			The amount of PTA annual fee collected is small compared to the number of students. In fact, two-thirds of the students have a certification from the kebele revealing their inability to pay for the school.		The annual PTA membership fee per student is less than that of other schools, and the income from income-generating activity is also small.	The school receives a certain amount of public subsidies, but the community financial support is small.	Both public subsidies and community financial support are small.	Community financial support is small.	Both public subsidies and financial support for the community are secured.	Although the amount of public subsidy is small, the PTA annual membership fee which amount per student is large and has a high collection rate, compensates for the late	

Source: Developed by the evaluator based on interviews during the field study.

Note: The degree of sufficiency of each item is classified as being in one of three stages: 3: high, 2: fair, and 1: low. Public subsidy is judged to be 1 if a Block Grant was not allocated as of March 2021 or if the grant was less than the specified amount.

As Table 11 shows, all 14 schools that responded to the questionnaire reported delays in or reduced amounts of public subsidies. Delays and reductions in public subsidies were due to federal budget deficits and prioritization of spending in areas deemed more urgent than education (e.g., health). Under these circumstances, the PTA allocates annual membership fees, profits from fundraising activities, and donations to school operating expenses to operate the school.

For some schools, financial support from the community can cover the school's operating expenses, while for others, many households in the communities do not earn cash income, and

the PTA cannot collect sufficient annual membership fees. Fund mobilization levels vary depending on local economic conditions and community capacity.

As shown in Table 12, which presents the financial status and sufficiency of public subsidies and community support for the 13 schools that answered the questionnaire, the status of one school was judged to be high, nine schools were fair, and three schools were low.

Regarding the outlook for the future budget, although the government attaches importance to the education sector, it places a higher priority on urgent matters such as the health sector's ability to manage COVID-19. In the education sector, funds needed to operate schools under COVID-19 conditions, such as for increasing the number of teachers to allow double shift and for purchasing masks and alcohol are prioritized. Under these circumstances, delays and reductions in public subsidies for daily school operating expenses are expected to continue.

Given the above, although the schools are highly regarded for their ability to keep the schools running through the self-help efforts of the community using various resources such as PTA membership fees and profits from fundraising activities. Because of the delays and reductions in public subsidies and the amount of financial support from the community, the financial status of 12 of the 13 schools surveyed was classified as medium to low. Therefore, the overall financial sustainability was judged to be fair.

3.4.4 Status of Operation and Maintenance

The final inspection in 2019 confirmed cracks and peeling in the mortar finish on walls, columns, and ceilings, peeling paint, and roof leaks as common defects for each facility, and these were repaired. Common furniture defects confirmed for each facility included bolts and rivets missing from desks and chairs, damage to the welded part of the chair frame, and peeling of the surface material of the desks and chairs. Repairs such as reattaching bolts and rewelding frames were carried out. The final inspection also found graffiti and holes made with ballpoint pens on the tablets of students' tablet chairs, and many tablet chairs had been left outdoors without being returned to the classroom. In some schools, tablet chairs that needed loose bolts fixed were piled up in the warehouse. In addition, the door handle levers and the door locks were sometimes destroyed. In response, the consultant in charge of supervision wrote to the AREB and the target schools to request (1) regular cleaning, (2) proper handling and maintenance of furniture, and (3) proper management of keys including the provision of key boxes assigned to administrators. Table 13 shows each facility's status based on direct observation of the general classroom by the field survey assistant at the time of the ex-post evaluation review of photos by the evaluator.

Table13 : Status of Regular Classrooms

Classification	Number
A: Very good (clean, with no garbage or food waste on the floor)	3
B: Good (almost clean, with no garbage and food waste on the floor)	9
C: Some problems (not clean, with some garbage or food waste on the floor)	1
D: Many problems (not clean, with a lot of garbage or food waste on the floor)	0
Total	13

Source: Prepared by the evaluator based on the field survey

Table 14 shows the results of the field survey of the furniture and equipment in regular classrooms.

Table 14: Defects of Furniture and Equipment of Regular Classrooms

Item	Number of confirmed items	Number of damaged items	Percentage of confirmed items damaged
Tablet chair	1,230	499	41%
Notice board	42	24	42%
Chalk board	35	2	6%
Door	33	4	12%

Source: Prepared by the evaluator based on the field survey and from photo judgments

At the time of the ex-post evaluation, all the tablet chairs that had been procured in this project were damaged and were no longer in use at the two schools surveyed. These chairs are not included in the table above. School teachers and staff recognized that the damage to the tablet chairs was the result of poor quality. However, based on the final inspection mentioned above and the results of an ex-post evaluation conducted in FY2019 “The Project for Construction of Primary and Secondary Schools in the Southern Nations, Nationalities and Peoples’ Regional State,” which reported a similar situation as in this case with damaged tablet chairs were being used with damage and piled up in many of the target secondary schools, the main causes of damage to the tablet chairs are thought to be that (1) the users (mainly students) are not careful with the furniture and equipment and (2) the schools do not repair defects quickly.

As mentioned above, schools reported conducting annual inspections and repairing defects. However, many of the defects, such as loose door handles and loose bolts on desks and tablet chairs would not cause damage if regular preventive measures were implemented, such as tightening each time looseness is noticed, instead of checking once a year.

Overall, the facilities of the secondary schools in this project were generally better maintained than those of the secondary schools surveyed in a similar ex-post evaluation, FY2019 Ex-Post Evaluation of Japanese Grant Aid Project “The Project for Construction of Primary and Secondary Schools in the Southern Nations, Nationalities and Peoples’ Regional State.” Given

the remaining damage to furniture and equipment and the current lack of timely maintenance, the status of the operation and maintenance system was judged to be fair.

Some minor problems were observed in terms of technical aspects, financial aspects, and the current status of the operation and maintenance system. Therefore, the sustainability of the project effects is fair.

4. Conclusion, Lessons Learned and Recommendations

4.1 Conclusion

This project was implemented to improve access to and the educational environment for secondary education by constructing new secondary schools and expanding existing secondary schools in Amhara region in Ethiopia.

This project's implementation is highly consistent with Ethiopia's development policy, which emphasizes access to basic education and improvement of the educational environment as well as the target region's developmental needs for basic education, and with Japan's ODA policy for Ethiopia, which emphasized the education sector. Therefore, the project's relevance is high. Although the project outputs and the project costs were as planned, the project period exceeded the plan. Therefore, the project's efficiency is fair. The implementation of this project fully contributed to access to basic education and improvement of the educational environment by establishing new secondary schools and expanding classrooms in existing schools, and achieved the initial project effect target. In addition, it was confirmed that all 13 schools surveyed had impacts such as reductions in student dropout rates, improvement of students' motivation to learn, improvement of teachers' motivation to teach and their class management and teachers' motivation to teach by improving the educational environment. Therefore, effectiveness and impacts of the project are high. Some minor problems have been observed in terms of the technical aspect, financial aspect and current status of the operation and maintenance system. Therefore, sustainability of the project effects 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) Immediate Completion of Ethiopia's Obligations in Schools where they have not been completed

The obligations of the Ethiopian side were planned to be completed prior to the start of school operation, but due to budget shortages and delays in coordination with other organizations, water connections and construction of sports grounds had not yet been completed at some schools at the time of ex-post evaluation. In schools where water connections were not completed, laboratories constructed by this project are only partially used. To utilize facilities constructed through this

project in accordance with their initial purpose, it is necessary for the Ethiopian side to complete its obligations as soon as possible.

If it seems difficult to secure the budget from the woreda, it is recommended for PTA to make efforts to ensure financial resources by discussing means for securing them and by asking for donations, implementing or strengthening fund-raising activities for creating revenue. In addition, it is recommended that AREB makes a regular progress report on these obligations, perhaps monthly or quarterly, to the JICA Ethiopia office until the obligations are completed.

(2) Immediate Repair to Damaged Equipment and Strengthening Daily Maintenance (Recommendation to the executing agency and the target schools)

First of all, schools with damaged equipment and furniture should immediately repair the damaged equipment. Although we appreciate that the schools are carrying out repairs to damaged equipment through teachers, PTAs, and local contractors with limited financial resources, we found that the main cause of the damage was users, based on physical observation conducted at the time of ex-post evaluation and interviews with related parties.

In addition, periodic inspections have been carried out at all surveyed schools, but most schools do not perform repairs immediately, even when they recognize that the equipment is damaged. They repair all damaged equipment during school holidays. Such curative maintenance is important, but from now on, preventive maintenance should be strengthened. This means repairing damage while equipment is still usable, and tightening loose bolts based on inspection results.

— In order to raise the target woredas' and schools' awareness of these issues, it is desirable that AREB informs the woreda education bureaus and target schools of the above points in writing to encourage careful handling of furniture and equipment and implementation of preventive maintenance.

4.2.2 Recommendations to JICA

(1) Continuous Monitoring on the Obligations of Ethiopian Side and Maintenance Status of the Target Schools

Regarding the obligations of the Ethiopian side, it is desirable that the JICA Ethiopia office regularly checks on progress with AREB via e-mail or telephone, as it has practiced so far, and encourage implementation of the obligations frequently. It is also recommended that the JICA Ethiopia office visits target schools to directly monitor obligations on the Ethiopian side as well as the maintenance condition of the target schools. When visiting the target schools, aiming for synergy between grant aid and technical cooperation, it is recommended to take the opportunity to visit the Amhara region for the Project for Mathematical Understanding for Science and Technology, which is concurrently being implemented to introduce educational activities on new

mathematics curriculum for G9-12.

4.3 Lessons Learned

Early Involvement of Major Stakeholders in the Obligations of the Recipient Country

The outputs to be undertaken by the Ethiopian side included securing the land; forming the land; construction of access roads and removing obstructions; providing electrical connection for all target schools and water connection; constructing gates, fences, and guard rooms; constructing drinking fountains; constructing sports grounds; providing apparatus for distance learning curriculum and computers; and science laboratory materials for new schools only.

Despite repeated written and verbal encouragement from the concerned parties on the Japanese side to the Ethiopian side to implement these obligations, due to delays in budgetary procedures and coordination with other organizations, electrical connections, water connections, construction of water fountains, constructing of sports grounds were not completed in some schools at the time of the final inspection that was implemented one year after completion. At the time of the ex-post evaluation, electrical connections had been completed in all 17 schools, but water connections and constructing sports grounds had not been completed in some schools. In the schools where the water connection was not completed, it affected the effective operation of some facilities, such as the inability to conduct experiments using water in the laboratory.

— In this way, if the recipient country's obligations which required a certain budget is included in the project scope, and it is assumed that it would be difficult for the recipient country to implement its obligations with only public funds, concerned parties on the Japanese side should have urged government officials of the recipient country to implement their obligations on schedule in writing and verbally from the early stages of implementation. Additionally, the parties should have discussed specific ways to secure financial resources from collaborative stakeholders, such as target communities and influential people in the community. Then, they might have proceeded with implementing the recipient country's obligations in realistic ways.

In fact, in the "The Project for Construction of Primary and Secondary Schools in the Southern Nations, Nationalities and Peoples' Regional State Ethiopian Southern Nations, Nationalities" that was evaluated in FY2019, the woreda administration and parents who had long been anxious for the establishment of a secondary school in their community cooperated to save for the costs of electricity and water connection, and they coordinated with the Ethiopian Electric Power Authority from an early stage to complete obligations including electrical connections before starting school operations. Similarly, in the Amhara region, which is the target region of this project, the community is actively providing funds and labor for the operation of the school.

Involving local stakeholders from the early stages of implementation and fostering stakeholders' ownership will help promote financing and reduce risk of delays in implementing obligations of the recipient country.