Ex-Post Project Evaluation 2016:
PackageII-6
(Nigeria)

August 2017

JAPAN INTERNATIONAL COOPERATION AGENCY

VALUE FRONTIER CO., LTD

EV
JR
17-35

Disclaimer

This report compiles the result of the ex-post evaluations. These are conducted by external evaluators to ensure objectivity, and the views and recommendations herein do not necessarily reflect the official views and opinions of JICA. JICA is not responsible for the accuracy of English translation, and the Japanese version shall prevail in the event of any inconsistency with the English version.

Minor amendments may be made when the contents of this report is posted on JICA's website.

Comments by JICA and/or the Borrower (including the Executing Agency) may be added at the end of the evaluation report when the views held by them differ from those of the external evaluator.

Federal Republic of Nigeria

FY2016 Ex-Post Evaluation of Japanese Grant Aid Project

"The Project for Improvement of Rural Water Supply"

External Evaluator: Koichiro Ishimori, Value Frontier Co., Ltd.

0. Summary

The objective of the project was to enable access to safe water and the operation and maintenance of water facilities at 500 locations in five states[1] of Nigeria, by procuring equipment to construct water facilities and providing technical assistance in their operation and maintenance, thereby contributing to expanding access to safe water and improving the living environment in the entire regions through construction of water facilities other than the 500 locations. The project has been highly relevant to Nigerian development plan and development needs, as well as Japan's ODA policy. However, it is difficult to say that the project plan has been appropriate enough. Therefore, its relevance is fair. Both the project cost and project period were within the plan. Therefore, efficiency of the project is high. Besides this, it is difficult to say that quantitative indicators for project effects and impacts regarding the constructed water facilities using the equipment procured by the project have been sufficiently achieved. However, the qualitative effects and impacts that the constructed water facilities have been bringing about to the users are great. In short, the project has achieved its objectives to some extent. Therefore, effectiveness and impact of the project are fair. Some minor problems have been observed in terms of the financial aspect. Therefore, sustainability of the project effects is fair.

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

1. Project Description

Project Locations

Truck mounted drilling rig

1.1 Background

Nigeria is situated in the center of West Africa and surrounded by Benin to the west, Niger to

[1] Kebbi State, Niger State, Taraba State, Enugu State, and Ondo State

the north, and Cameroon to the east and the south. It has approximately 0.92 million square kilometers of land, which is almost equivalent to 2.5 times the land area of Japan, and approximately 182 million people, which is almost equivalent to 1.5 times the population of Japan. Nigeria was one of the greatest agricultural countries in Africa, producing various agricultural products. However, after the discovery of oil in the late 1960s, the country has changed its economic structure from one dependent on agriculture to one dependent on oil. It then repeatedly experienced civil wars over oil and the domestic affairs of the country were unstable for a long time. Consequently, infrastructural development lagged and the development of water facilities such as wells to enable access to safe water that was basic human needs[2] significantly lagged in rural areas.

1.2 Project Outline

The objective of the project is to enable access to safe water and the operation and maintenance of water facilities at 500 locations in five target states of Nigeria, by procuring equipment to construct water facilities and providing technical assistance in their operation and maintenance, thereby contributing to expanding access to safe water and improving the living environment in the regions through construction of water facilities other than the 500 locations.

G/A Grant Amount / Actual Grant Amount	1,163 million yen / 879 million yen
Exchange of Notes Date /Grant Agreement Date	February 2012 / February 2012
Responsible Agency	Federal Ministry of Water Resources (FMWR)
Executing Agencies	Rural Water Supply and Sanitation Agency (RUWASSA) in Kebbi State, Niger State, Taraba State, Enugu State and Ondo State[3]
Project Completion[4]	March 2014
Main Contractor	Toyota Tsusho Corporation
Main Consultant	Yachiyo Engineering Co., Ltd.
Basic Design	June 2010 - February 2011
Related Projects	“Project for Enhancing the Function of the National Water Resources Institute (2010 - 2014)” “Advisor on Rural Water Supply and Sanitation (2010 - 2011)”

[2] Basic human needs are the minimum things, health, and education required in the basic lives of human beings, such as food, clothing, and shelter.
[3] In Ondo State, Water and Sanitation (WATSAN) was the executing agency when the project began. It was then reorganized as RUWASSA in January 2017.
[4] Since the project scope described in G/A was the procurement of construction equipment for water facilities and provision of technical assistance in their operation and maintenance on the Japanese side, the definition of project completion is the completion of these aspects.

2. Outline of the Evaluation Study

2.1 External Evaluator

Koichiro Ishimori, Value Frontier Co., Ltd

2.2 Duration of Evaluation Study

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

Duration of the Study: September 2016 – September 2017

Duration of the Field Study: November 27, 2016 - December 21, 2016 and February 19, 2017 - March 3, 2017

2.3 Constraints during the Evaluation Study

Because of security reasons, the external evaluator stayed only in the capital city of Abuja and remotely conducted the ex-post evaluation study by directing local consultants at the project sites. This constrained the collection and analyses of information to some extent.

3. Results of the Evaluation (Overall Rating: C[5])

3.1 Relevance (Rating:②[6])

3.1.1 Consistency with the Development Plan of Nigeria

Nigeria Vision 20: 2020 of 2009, the national development plan of the government of Nigeria at the time of project planning, highlighted "access to safe water" and "construction of water facilities" as means to achieve its aims under one of three priorities, guaranteeing the well-being and the productivity of the people. The sector plan, *National Rural Water Supply and Sanitation Programme* in 2004 also highlighted "access to safe water" and "construction of water facilities" as means to achieve its aims.

The national development plan and sector plan were unchanged at the time of the ex-post evaluation; therefore, they are still valid.

Considering that the objective of the project was to enable access to safe water and operation and maintenance of water facilities in five target states, the project is judged to have been aligned to the development plan of Nigeria both at the time of project planning and ex-post evaluation.

3.1.2 Consistency with the Development Needs of Nigeria

The rate of access to safe water in Nigeria at the time of project planning was approximately 64% in 2011. The rate in rural areas was significantly lower at approximately 52%, whereas the rate in urban areas was approximately 80%[7]. Since *Nigeria Vision 20: 2020* in 2009 aims to achieve 100% by 2020, improving the rate was a great challenge. Under such circumstances,

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

[6] ③: High, ②: Fair, ①: Low

[7] World Bank, statistical data from *World Development Indicators* of 2015

the construction of water facilities in five target states was decreasing, because of deteriorating construction equipment, although they did have construction experience and capabilities.

The rate of access to safe water in Nigeria at the time of ex-post evaluation was approximately 68% in 2015. Although the gap between the rates in urban and rural areas is decreasing, the rate in rural areas is still low at approximately 57%, while that in urban areas is approximately 80%[8]. It is also far from the target of 100% by 2020 that the *Nigeria Vision 20: 2020* of 2009 is attempting to achieve.

In light of the above, the project is judged to have been aligned to the development needs of Nigeria both at the time of project planning and ex-post evaluation.

3.1.3 Consistency with Japan's ODA Policy

The *ODA Charter* in 2003, the aid policy of the government of Japan at the time of project planning, prioritized water and sanitation in one of its four pillars, "poverty alleviation". The *Mid-term Policy of ODA* in 2005 also prioritized the expansion of basic social services such as safe water in one of its four pillars, "poverty alleviation". Moreover, *JICA's project implementation plan* in 2006 prioritized assistance to improve the quality and quantity of water supply in rural areas in one of its two pillars, "infrastructural development in rural areas".

Considering that the objective of the project is to enable access to safe water and the operation and maintenance of water facilities in five target states, the project is judged to have been aligned to Japan's ODA Policy at the time of project planning.

3.1.4 Appropriateness of the Project Plan and Approach

The responsible agency for the project was FMWR. The executing agencies that actually constructed the water facilities using the equipment procured by the project were the RUWASSAs of Kebbi State, Niger State, Taraba State, Enugu State, and Ondo State. After procuring the equipment, each state government was supposed to allocate a budget to each RUWASSA, with which the RUWASSA was assumed to construct water facilities. However, construction of water facilities by the RUWASSAs has not progressed as planned, as described in section "3.3 Effectiveness," because the budget that each state government allocated was not sufficient, as described in section "3.5 Sustainability." In the Minutes of Discussions (M/D) at the time of project planning, the Nigerian counterparts (Acting Director of Department of International Cooperation at National Planning Commission, Acting Director of Department of Water Supply at FMWR, Honorable Commissioner of Ministry of Water Resources of Kebbi State, Honorable Commissioner of Ministry of Water Resources of Niger State, Honorable Commissioner of Ministry of Ware Resources of Taraba State, Governor of Enugu State, and Executive Chairman of WATSAN of Ondo State) agreed to secure the budget necessary for

[8] World Bank, statistical data from *World Development Indicators* in 2015

constructing water facilities, and signed the M/D. However, considering the fact that the success of the project depends on the budget allocation and that the governor of each state government has the ultimate administrative discretion on it, it was necessary to make detailed agreements with the governor as the final decision-maker for budget allocation at the time of project planning and every year during and after the project. It was also necessary to establish a system enabling stakeholders to check the budget allocation plans and construction plans according to the budget allocation plans of each state at the time of project planning. As such, JICA and FMWR could regularly monitor their progress and take measures to state governments based on their situation and needs from the project implementation stage. In light of the above, it is difficult to say that the agreement and the system at the time of project planning and project implementation were sufficient.

In conclusion, the project has been highly relevant to Nigerian development plan and development needs, as well as Japan's ODA policy. However, it is difficult to say that the project plan has been appropriate enough. Therefore, its relevance is fair.

3.2 Efficiency (Rating:③)

3.2.1 Project Outputs

The project consisted of procuring equipment to construct water facilities as "hard components", and providing technical assistance in their operation and maintenance as "soft components". Both components were achieved as planned.

【Hard Components】

Equipment in five target states	Planned outputs	Actual outputs
1. Equipment for drilling wells		
a) Drilling rig	1 unit in each state	Same as planned
b) High pressure air compressor		
c) Cargo truck with crane		
2. Equipment for survey and analysis		
a) Geophysical survey equipment	1 set in each state	Same as planned
b) Water analysis equipment		
c) Pumping test equipment		
3. Consumable materials for constructing water facilities		
a) Hand pump	100 sets in each state	Same as planned
b) Hand pump repair tool for villages		
c) Hand pump repair tool for Local Government Authority (LGA)	Kebbi State: 14 sets Niger State: 24 sets Taraba State:15 sets Ondo State: 18 sets Enugu State: 9 sets	Same as planned
d) Casing pipes and screen pipes	100 sets in each state	Same as planned
e) Drilling chemicals	1 set in each state	Same as planned

Source: Documents provided by JICA and executing agencies

【Soft Components】

Planned outputs	Actual outputs
1. Improving techniques for operation and maintenance of the equipment for drilling wells	
a) Borehole structures depending on geological features are designed.	All of points a) to d) were performed at the RUWASSAs in five target states during the project implementation period.
b) Construction management plan to shorten the construction period is developed.	
c) Borehole inventories are made.	
d) Maintenance plan of the equipment and introduction plan of repair tools are made.	
2. Improving the operation and maintenance systems of water facilities	
a) Operation and maintenance systems of water facilities are established and the work content is clarified.	The operation and maintenance systems of water facilities were established in five target states and the work content was clarified during the project implementation period.
b) Operation guidelines for supporting villages between executing agencies and LGAs are made and the delineation of support is clarified.	The operation guidelines for supporting villages and the operation and maintenance manual for water facilities were made between by the RUWASSAs and LGAs in five target states. The delineation of support was clarified in five target states during the project implementation period.
c) Water, Sanitation, and Hygiene Committees (WASHCOMs) are established in model communities. At the same time, the RUWASSAs and LGA officers that manage model communities obtain the knowledge to organize and enlighten communities.	WASHCOMs were established in all 15 model communities[9] of the five target states during the project implementation period. In addition, the RUWASSAs and LGA officers managing the model communities in the five target states received training and successfully obtained knowledge to organize and enlighten communities on the collection of water tariffs.

Source: Documents provided by JICA and executing agencies

3.2.2 Project Inputs

3.2.2.1 Project Cost

Although the changes in deployment of experts regarding operation guidance for the procured equipment resulting from deteriorating security added approximately 3 million yen in construction supervision costs, competition in the bidding process reduced the procurement costs by approximately 281 million yen. Consequently, while the planned cost on the Japanese side was 1,163 million yen, the actual cost was 879 million yen and within the plan, at approximately 76% of the planned cost. The planned and actual costs on the Nigerian side were unknown.

Planned cost	Actual cost
Japanese side	
1,163 million yen (Procurement cost: 1,076 million yen, construction supervision cost: 87 million yen)	879 million yen (Procurement cost: 789 million yen, construction supervision cost: 90 million yen)
Nigerian side	
Unknown	Unknown

Source: Documents provided by JICA and executing agencies

[9] Model communities in Kebbi State were Kwakwashe Fulani village, Shiyar Galbi Tiggi village, and Asarara village. Those in Taraba State were Jagampete village, Lanko village, and Bashin village. Those in Niger State were Gbata village and two other villages (unknown). Those in Enugu State were Ihunekweagu village, Obe Uno village, and Umuogba Gbata village. Those in Ondo State were Odudu village, Ipenmen village, and Igunsin village.

3.2.2.2 Project Period

The planned project period was 26 months from February 2012 (G/A date) to March 2014 (handover date of procured items). The actual period was 26 months, which was 100% of the planned period.

In conclusion, both the project cost and project period were within the plan. Therefore, efficiency of the project is high.

3.3 Effectiveness[10] (Rating:②)

The project was expected to enable access to safe water at 500 locations (100 locations in each state) within two years after procuring the equipment, by strengthening capabilities to operate and maintain the equipment as well as the constructed water facilities in five target states.

3.3.1 Quantitative Effects (Operation and Effect Indicators)

Operation Indicator① The number of water facilities at target villages[11]

		Baseline	Target[12]		Actual achievement[13]			
		2010	2014	2015	2013	2014	2015	2016
		Planned year	1 year after completion	2 years after completion	Completion year	1 year after completion	2 years after completion	3 years after completion
Kebbi State	Net increase	0	50	50	0	26	11	0
	(Grand total)	(0)	(50)	(100)	(0)	(26)	(37)	(37)
Niger State	Net increase	0	50	50	10	43	9	28
	(Grand total)	(0)	(50)	(100)	(10)	(53)	(62)	(90)
Taraba State	Net increase	0	50	50	0	22	57	21
	(Grand total)	(0)	(50)	(100)	(0)	(22)	(79)	(100)
Enugu State	Net increase	0	50	50	0	50	0[14]	0
	(Grand total)	(0)	(50)	(100)	(0)	(50)	(50)	(50)
Ondo State	Net increase	0	50	50	0	15	0	35[15]
	(Grand total)	(0)	(50)	(100)	(0)	(15)	(15)	(50)
Total	Net increase	0	250	250	10	156	77	84
	(Grand total)	(0)	(250)	(500)	(10)	(166)	(243)	(327)

Source: Documents provided by JICA and executing agencies

Note: In the project plan, the target number of constructed water facilities was planned to be achieved within two years after procuring the equipment. Since the handover of the procured items was in March 2014, the first year was from April 2014 to March 2015, the second from April 2015 to March 2016, and the third from April 2016 to March 2017. For convenience, the years in the table above are from April to March, and not as the Nigerian calendar year from January to December.

Actual achievements for 2013 (namely from April 2013 to March 2014)

As a result of providing technical assistance to construct water facilities in Niger State for the RUWASSA officers from five target states during the project implementation period, water facilities were constructed at 10 locations.

[10] Sub-rating for Effectiveness is to be put with consideration of Impact.

[11] The number of water facilities means the number of hand-pump deep wells that were newly constructed using the equipment procured by the project.

[12] The target was 50 locations in each state, and therefore in total, 250 locations in five target states in each year.

[13] Actual achievement means the actual number of water facilities that each state constructed in each year.

[14] No water facilities were constructed using the equipment procured by the project after the replacement of the governor who signed the M/D in 2015.

[15] The new governor who took office in February 2017 allocated a budget to the RUWASSA; therefore, RUWASSA constructed water facilities at 35 locations from February to March in 2017.

Achievement rate of the targets for 2014 (namely from April 2014 to March 2015)

The total number of water facilities as a net increase was 156, while the target was 250. Therefore, the achievement rate was approximately 62%. However, this differed widely by state from 30% in Ondo State to 100% in Enugu State.

The total number of water facilities as a grand total was 166, while the target was 250. Therefore, the achievement rate was approximately 66%.

Achievement rate of the targets for 2015 (namely from April 2015 to March 2016)

The total number of water facilities as a net increase was 77, while the target was 250. Therefore, the achievement rate was approximately 31%. However, this differed widely from 0% in Enugu State and Ondo State to 114% in Taraba State depending on the state.

The total number of water facilities as a grand total was 243, while the target was 500. Therefore, the achievement rate was approximately 49%.

In the project plan, the target for each RUWASSA was to construct water facilities at 50 locations each year within the first two years (from April 2014 to March 2016) after procuring items. However, as described later, the achievement rates of the targets as the net increase and the grand total for the first two years were approximately 52% on average,[16] because each state government allocated an insufficient construction budget to each RUWASSA.

Operation Indicator② The number of population with access to water at target villages

(Unit: thousand)

		Baseline	Target		Actual achievement			
		2010	2014	2015	2013	2014	2015	2016
		Planned year	1 year after completion	2 years after completion	Completion year	1 year after completion	2 years after completion	3 years after completion
Kebbi State	Net increase	0	13.2	13.2	0	6.8	2.9	0
	(Grand total)	(0)	(13.2)	(26.4)	(0)	(6.8)	(9.7)	(9.7)
Niger State	Net increase	0	13.2	13.2	2.6	11.4	2.4	7.4
	(Grand total)	(0)	(13.2)	(26.4)	(2.6)	(14.0)	(16.4)	(23.8)
Taraba State	Net increase	0	13.2	13.2	0	5.8	15.0	5.5
	(Grand total)	(0)	(13.2)	(26.4)	(0)	(5.8)	(20.8)	(26.3)
Enugu State	Net increase	0	13.2	13.2	0	13.2	0	0
	(Grand total)	(0)	(13.2)	(26.4)	(0)	(13.2)	(13.2)	(13.2)
Ondo State	Net increase	0	13.2	13.2	0	4.0	0	9.2
	(Grand total)	(0)	(13.2)	(26.4)	(0)	(4.0)	(4.0)	(13.2)
Total	Net increase	0	66.0	66.0	2.6	41.2	20.3	22.1
	(Grand total)	(0)	(66.0)	(132.0)	(2.6)	(43.8)	(64.1)	(86.2)

Source: Documents provided by JICA and executing agencies

Note: The estimated formula for the population with access to water is 264 people per location multiplied by 50 locations, totaling 13,200 people. For convenience, the years in the table above are from April to March, and not as per the Nigerian calendar year from January to December.

The number of population with access to water for both the planned target and actual achievement was calculated by multiplying the assumed number of population with access to water per location (264 people) by the number of water facilities in Indicator①. Therefore, the achievement rates of the targets as the net increase and the grand total of Indicator② from 2014 to 2016 were approximately 52%, the same as Indicator①.

[16] The achievement rates for net increase and grand total until March 2017, when the ex-post evaluation was conducted, were approximately 51% on average.

Effects Indicator　The rate of access to safe water[17] in target villages

(Unit: %)

	Baseline	Target		Actual achievement			
	2010	2014	2015	2013	2014	2015	2016
	Planned year	1 year after completion	2 years after completion	Completion year	1 year after completion	2 years after completion	3 years after completion
Kebbi State	24	－	－	－	34	39	39
Niger State	19	－	－	61	72	70	74
Taraba State	18	－	－	－	34	34	33
Enugu State	14	－	－	－	33	33	33
Ondo State	17	－	－	－	80	80	80
Average	18.4	－	－	61.0	50.6	51.2	51.8

Source: Documents provided by JICA and executing agencies
Note: For convenience, the years in the table above are from April to March, and not as per the Nigerian calendar year from January to December.

The average rate of access to safe water in the target villages of the five target states in 2010, before the project, was 18.4%. The average rate from 2014 to 2016, after the project, increased to about 51%. The details for each state are as follows:

Kebbi State　The rate in 2014 after the project, increased by 10 points from that in 2010 before the project. The rate further increased from 2014 to 2015, although it remained the same in 2016 as in 2015.

Niger State　The rate in 2013 when the project was completed, was 42 points more than that in 2010 before the project. The rate demonstrated an increasing trend since 2013, and has maintained a high level[18].

Taraba State　The rate in 2014 after the project, increased by 16 points from that in 2010 before the project. The rate has remained similar since 2014.

Enugu State　The rate in 2014 after the project, increased by 19 points from that in 2010 before the project. The rate increased in 2014, but has remained the same since 2015.

Ondo State　The rate in 2014 after the project, was 63 points more than that in 2010 before the project. The rate increased in 2014, and maintained a high level[19] in 2016.

[17] The rate of access to safe water means the rate of population with access to protected shallow and deep wells. The rate of the baseline in 2010 refers to the rate of population with access to protected shallow and deep wells that existed before the project. Meanwhile, the rate since 2013 refers to the rate of population with access to wells that existed before the project and wells that were constructed using the equipment procured by the project. However, the ex-post evaluation study found that the rate since 2013 was the rate of population with access to deep wells that were constructed by the project, because the project constructed deep wells with sufficient quantity and good quality of water. Consequently, people seldom use the protected shallow and deep wells that have existed before the project. The rate of access to safe water does not include contributions by other projects.

[18] The reason why the rate of access to safe water was higher than that in other states is because the average population in the target villages of the state is smaller than that in villages of other states, while the population with access to water is 264 people per location.

[19] Ditto.

【Performance】

As described in section "3.1.4 Appropriateness of the Project Plan and Approach," considering the fact that the success of the project depended on the budget for constructing water facilities that each state government was supposed to allocate to each RUWASSA and that the governor of each state government had the ultimate administrative discretion on it, it was necessary to make detailed agreements with the governor as the final decision-maker for budget allocation at the time of project planning and every year during and after the project. It was also necessary to establish a system enabling stakeholders to check the budget allocation plans and construction plans according to the budget allocation plans of each state at the time of project planning. As such, JICA and FMWR could regularly monitor their progress and take measures to state governments depending on their situation and needs from the project implementation stage. Specifically, as suggested at the report meeting for completion of the soft component: 1) each RUWASSA should report its progress on the construction of water facilities to the JICA Nigeria Office monthly, and 2) FMWR should monitor budget allocations from each state to each RUWASSA and if there is any problem, approach the governor so that each RUWASSA can receive the necessary budget. However, regarding 1), the ex-post evaluation study revealed that each RUWASSA had not reported its progress to the JICA Nigeria Office monthly, and the JICA Nigeria Office had not monitored progress regularly—for example, monthly—after project completion even though they had monitored it irregularly. Regarding 2), it revealed that FMWR had monitored budget allocations from each state to each RUWASSA annually and in case of any problem, they had approached executives such as the Honorable Commissioner of the Ministry of Water Resources in each state to ensure that the RUWASSA could receive the necessary budget. However, any follow-up activity took place one year after the approach; therefore, they could not take additional measures, such as petitions to the governor or other means of facilitation, that would have been required during the year. It was also important for the JICA Nigeria Office to regularly share the progress with FMWR and each RUWASSA and take additional measures if required.

3.3.2 Qualitative Effects (Other Effects)

①Increase in water volume

Given the new water facilities, it was expected that the volume of water available for domestic use would increase. Therefore, the ex-post evaluation study implemented a beneficiary survey[20] on 100 people at ten villages in nine LGAs of the five target states,[21]

[20] Because it was mostly the role of women to fetch water, the external evaluator considered women as the main beneficiaries. When selecting women, the local consultant selected those whom he met in the villages by chance and who kindly consented to being interviewed.

[21] The ten villages in the nine LGAs of five target states were as follows: Ubandawaki Village in Kalgo LGA and Kanzana Village in Bunza LGA of Kebbi State. Jita Village in Paikoro LGA and Gbata Village in Bosso LGA of Niger State. Gadalasheke Village in Yorro LGA and Kpanti Napu Village in Jalingo LGA of Taraba State. Ogbozinne

which were selected from all villages where water facilities were constructed. According to the results of the survey, 90 of 100 women responded that compared to the situation before the project, the volume of water available for domestic use "significantly increased," 7 responded that it "increased," and 3 responded that it "remained unchanged." Therefore, it is considered that the project has contributed to increasing water volume.

②Improvement in water quality

Given the new water facilities, it was expected that the quality of water available for domestic use would improve. According to the results of the survey, 96 of 100 women responded that compared to the situation before the project, the quality of water available for domestic use "significantly improved," and 4 responded that it "improved." [22] Therefore, it is considered that the project has contributed to improving water quality.

In addition, the survey asked the degree of satisfaction with the volume and quality of water. According to the results of the survey, 93 of 100 women responded that they were "highly satisfied," and 6 responded that they were "satisfied."[23] Therefore, it is considered that the degree of satisfaction with the volume and quality of water is high.

Water facility and beneficiaries in Gbata Village, Niger State

Water facility and beneficiaries in Kpanti Napu Village, Taraba State

③Improving techniques for drilling as well as operation and maintenance of the equipment

To continually drill wells, operation and maintenance techniques for the equipment after drilling are important. As a result of implementing the soft components, each RUWASSA was able to continually construct new water facilities in 2014 and 2015, one year and two years after the project respectively as mentioned above. Therefore, it is considered that

---

Ndiagu Akpugo Village and Amafor Agbani Village, both in the Nkanu West LGA of Enugu State. Araromi-Igoba Village in Akure North LGA and Apefon Village in Idanre LGA of Ondo State. To select villages, the local consultant selected those appropriate in consultation with the external evaluator in Abuja after obtaining information on security and considering accessibility to the villages in each state.

[22] The ex-post evaluation study did not use an analysis kit to analyze water quality. The beneficiaries' responses, "the quality of water available for domestic use significantly improved" and "the quality of water available for domestic use improved" was based on taste, odor, color, and turbidities perceived through the five senses.

[23] One person responded that she was "not satisfied" with the volume and quality of water. However, the reason was that the location of the new water facility was further away from the old one she used before the project, which was not related to water volume and quality. Therefore, the external evaluator considered that the response was irrelevant to the question.

operation and maintenance techniques for the equipment improved.[24] Although there were differences in the grand total of water facilities constructed by each RUWASSA, ranging from 37 in Kebbi State to 100 in Taraba State, this is considered to be attributed not to differences in the techniques of RUWASSAs, but to differences in the construction budget allocated by each state government to each agency.

④Improving the operation and maintenance systems of water facilities

Since the aforementioned outputs were achieved by implementing the soft components, the operation and maintenance systems of constructed water facilities were improved among the RUWASSAs, the LGAs, and the WASHCOMs in the target villages in each state.

3.4 Impacts

The project intended to construct water facilities at 500 locations in the five target states (100 locations in each state) within two years after procuring the equipment. Thereafter, the intended impacts were that each RUWASSA would construct water facilities at locations other than the 500 locations by procuring consumable materials to construct wells themselves using the equipment procured by the project. This would expand access to safe water and improve the living environment of all regions.

3.4.1 Intended Impacts

①Quantitative Effects

The number of water facilities under rural water supply development plan in the five target states[25]

(Unit: water facility)

		Baseline	Target	Actual achievement
		2010	2017	2016
Kebbi State	Grand total (Achievement rate)	－	410	50 (12%) Of which by the project 37 (9%)
Niger State	Grand total (Achievement rate)	－	650	1,758 (270%) Of which by the project 90 (14%)
Taraba State	Grand total (Achievement rate)	－	490	100 (20%) Of which by the project 100 (20%)
Enugu State	Grand total (Achievement rate)	－	250	611 (244%) Of which by the project 50 (20%)
Ondo State	Grand total (Achievement rate)	－	690	186 (27%) Of which by the project 50 (7%)
Ground total		－	2,490	2,705 (109%) Of which by the project 327 (13%)

Source: Documents provided by JICA and executing agencies
Note: For convenience, the years in the table above are from April to March, and not as per the Nigerian calendar year from January to December.

[24] According to FMWR and Enugu RUWASSA, Enugu RUWASSA currently retains its techniques for operating and maintaining the equipment and it is considered that they were also capable in 2015 even though it did not construct a water facility in 2015. Similarly, Ondo RUWASSA currently retains these techniques and constructed water facilities in 2016, although not in 2015. Therefore, it was considered that they were also capable in 2015.

[25] The number of water facilities under the rural water supply development plan refers to the number of hand-pump deep wells procured and constructed by the project and other donors.

The grand total of water facilities in 2016 (April 2016 to March 2017) was 2,705, which was approximately 109% of the planned target of 2,490 in 2017. On the other hand, the target was achieved mainly because of the number of water facilities constructed by other donors in Niger State and Enugu State. The achievement rates in Kebbi State, Taraba State, and Ondo State were low at 12%, 20%, and 27% respectively. Contributions by the project to achieving the target in 2017 were 327 as mentioned above, which is equivalent to approximately 13% of the total.

②Qualitative Effects

a) Relief from the labor of water collection

According to the aforementioned survey results, 83 of 100 women responded that the time spent collecting water "decreased," because of the new water facilities constructed using the equipment procured by the project. The average time spent collecting water a day decreased from approximately 86 minutes before the project to approximately 30 minutes after the project. One woman was even able to decrease the time spent from approximately 240 minutes to approximately 5 minutes. Therefore, it is considered that the project has contributed to relieving women of the labor associated with water collection.

b) Decrease in the number of times waterborne diseases were contracted

According to the aforementioned survey results, 60 of 100 women responded that the number of times that the family members contracted waterborne diseases a year "decreased," because they were able to access safe water after the project. The annual average number of times waterborne diseases were contracted per household decreased from approximately 1.4 times before the project to zero after the project. In one household, this number decreased from 5 to zero. Therefore, it is considered that the project has contributed to decreasing the number of times waterborne diseases were contracted to some extent.

c) Improving abilities to manage plans to drill wells

According to FMWR, each RUWASSA has improved its abilities to manage plans to drill wells such as construction plans, process management, and safety management by participating in the soft component activities that took place in Niger State. In 2016 (April 2016 to March 2017), three years after project completion, the RUWASSAs in Kebbi State and Enugu State did not construct new water facilities. Therefore, it is difficult to assess their current abilities to manage plans. However, the RUWASSAs in Taraba State, Niger State, and Ondo State developed construction plans and constructed new water facilities based on planned process management and safety management. Therefore, it is considered that they currently have abilities to manage plans.

d) Improving abilities to operate and maintain water facilities

According to FMWR, each RUWASSA has improved its abilities to operate and maintain water facilities by participating in the soft component activities that took place in Niger State. As described later, only 17 of 327 water facilities constructed in the five target states were currently out of service and is scheduled for repairs. Since this equals only to approximately 5% of the total, it is considered that each RUWASSA currently has abilities to operate and maintain water facilities.

3.4.2 Other Positive and Negative Impacts

①Impacts on the Natural Environment

None.

②Land Acquisition and Resettlement

None

③Unintended Positive/Negative Impact

According to the aforementioned survey results, 20 of 100 women started growing and selling agricultural products such as cassavas by using the time saved to collect water. Four women of the 20 who are interviewed said that they made an additional income of NGN 3,175 per month on average. Considering that the minimum monthly salary for government officers was NGN 18,000[26] in 2016 during the ex-post evaluation, the additional income of roughly NGN 3,000 per month was not a small amount to farmers. Therefore, it is presumed that the project has possibly contributed to improving livelihoods to some extent.

To summarize, the achievement rates of the number of water facilities as Operation Indicator① and the number of population with access to water as Operation Indicator②, which are both quantitative indicators for effectiveness, were approximately 52% on average. Therefore, some positive effects were observed. Meanwhile, the rate of access to safe water as Effects Indicator significantly improved from 18% before the project to 51% after the project (it is impossible to compare the planned target and actual achievement, because of a lack of target). Furthermore, the beneficiary survey reveals that ①the water volume and ②the water quality as qualitative effects increased and improved respectively. Implementation of the soft components also improved ③ the techniques for operation and maintenance of the equipment and ④operation and maintenance systems of water facilities, as qualitative effects.

Regarding the quantitative effects of impacts, the number of water facilities in the rural water supply development plan in the five target states achieved approximately 109% of the target for 2017 in March 2017. However, the achievement rates in states other than Niger State and Enugu State were low. Contributions by the project to achieving the target for the year 2017 were

[26] National Minimum Wage Amendment Act of 2011

limited to approximately 13% of the total. Meanwhile, the beneficiary survey reveals that qualitative effects, such as a) relief from the labor of water collection and b) decrease in the number of times waterborne diseases contracted, were improved. Replies from FMWR also confirm that the RUWASSAs c) improved their abilities to manage plans to drill wells and d) improved their abilities to operate and maintain water facilities. As another impact, it is presumed that the project has possibly contributed to improving livelihoods to some extent.

In light of the above, it is difficult to say that the quantitative indicators for project effects and impacts related to the constructed water facilities are sufficiently achieved. However, the qualitative effects and impacts that constructed water facilities have been bringing about to users are great.

In conclusion, the project has achieved its objective to some extent. Therefore, effectiveness and impact of the project are fair.

3.5 Sustainability (Rating:②)

This section analyzes the sustainability of the realized effects and impacts. As such, the external evaluator mainly analyzed the sustainability of effects and impacts related to the water facilities constructed at 327 locations.

3.5.1 Institutional Aspects of Operation and Maintenance

In the project plan, each RUWASSA (WATSAN in Ondo State) was meant to maintain the equipment procured and water facilities constructed by the project. Each RUWASSA (WATSAN in Ondo State) was also expected to establish WASHCOMs at all target villages in collaboration with the LGAs, while the WASHCOM was meant to operate and maintain water facilities daily.

①The RUWASSAs

There has been no change in the roles of the RUWASSAs, and the roles of the WATSAN of Ondo State have been transferred to the state's RUWASSA. At the time of ex-post evaluation study, most RUWASSAs had fewer staff than planned at Department of Water Supply in charge of operating the equipment and Department of Equipment Management in charge of maintaining the equipment. However, the institutional system of operation and maintenance of the equipment procured and maintenance of water facilities constructed by the project was maintained.

	Staff at Dept of Water Supply and Dept of Equipment Management	
	Planned number	Actural number
RUWASSA of Kebbi State	18	17
RUWASSA of Niger State	72	45
RUWASSA of Taraba State	46	46
RUWASSA of Enugu State	69	40
RUWASSA of Ondo State	27	23

②WASHCOMs

According to the RUWASSAs, WASHCOMs have been established in almost all target villages,[27] except Enugu State. Furthermore, the WASHCOMs in the villages where water facilities were constructed operate and maintain the water facilities daily. The site survey conducted by the local consultant while performing the aforementioned beneficiary survey confirmed that WASHCOMs in ten villages in the nine LGAs of the five target states employed operation and maintenance systems for the water facilities daily. The staff composition of WASHCOMs at ten villages is described in the table below. These were structured in all WASHCOMs so that the voice of women, who were the main users, were reflected.

	LGA	Village	Staff
WASHCOM of Kebbi State	Kalgo	Ubandawaki	Chairman, accountant, female leader, and other members, in total 10 (of which women were 3)
	Bunza	Kanzana	Chairman, accountant, female leader, and other members, in total 8 (of which women were 2)
WASHCOM of Niger State	Paikoro	Jita	Chairman, accountant, female leader, and other members, in total 10 (of which women were 3)
	Bosso	Gbata	Chairman, accountant, female leader, and other members, in total 11 (of which women were 3)
WASHCOM of Taraba State	Yorro	Gadalasheke	Chairman, accountant, female leader, and other members, in total 11 (of which women were 3)
	Jalingo	Kpanti Napu	Chairman, accountant, female leader, and other members, in total 10 (of which women were 5)
WASHCOM of Enugu State	Nkanu West	Ogbozinne Ndiagu Akpugo	Chairman, accountant, female leader, and other members, in total 9 (of which women were 4)
	Nkanu West	Amafor Agbani	Chairman, accountant, and other members, in total 7 (of which women were 1)
WASHCOM of Ondo State	Akure North	Araromi- Igoba	Chairman, accountant, and other members, in total 6 (of which women were 2)
	Idanre	Apefon	Chairman, accountant, and other members, in total 5 (of which women were 1)

In light of the above, it is presumed that there is no problem with the institutional aspects of operation and maintenance of the RUWASSAs and the WASHCOMs.

3.5.2 Technical Aspects of Operation and Maintenance

In the project plan, Department of Water Supply and Department of Equipment Management of each RUWASSA were expected to construct and maintain water facilities and maintain the procured equipment respectively. No problems were identified regarding their experience and abilities. Furthermore, in the project plan, the WASHCOMs established in villages under the guidance of the RUWASSAs and the LGAs were expected to operate and maintain the water facilities daily.

Meanwhile, JICA implemented a technical cooperation project, the “Project for Enhancing the Function of the National Water Resources Institute (NWRI)” from March 2010 to November 2014, when this grant aid project was being implemented. The technical

[27] WASHCOMs have been established even in villages without water facilities at this moment under the premise that one will be constructed in the future.

cooperation project developed curriculum modules for a geophysical survey, drilling, maintenance of equipment, and maintenance of water facilities in the NWRI of FMWR, and revised or developed text and other materials based on the modules. Partly because of this, the NWRI is able to train the RUWASSAs every year, and it is contributing to maintaining their technical skills.

①RUWASSAs

The RUWASSAs constructed water facilities from March 2015 to February 2017 based on *The Manual on Borehole Construction Management*, which was developed through the soft components of the project. They also performed small-scale maintenance activities such as replacing hand pumps and pipes for the constructed water facilities and large-scale activities such as repairing drainage. In addition, they maintained the procured equipment such as maintaining drilling equipment each time after drilling ten boreholes.

②WASHCOMs

According to the RUWASSAs, they provided the WASHCOMs with technical guidance, which enabled them to operate and maintain the water facilities daily, such as oiling the levers and tightening bolts of hand pumps. Therefore, it is presumed that there is no problem with the technical aspects of the WASHCOMs. The operation and maintenance situation of the water facilities managed by the WASHCOMs in ten villages in nine LGAs of the five target states, on which the local consultant conduced a site survey is elaborated later. However, the survey revealed no problem with the technical aspects of their daily operation and maintenance of water facilities.

In light of the above, it is presumed that there is no problem with the technical aspects of the operation and maintenance activities of the RUWASSAs and the WASHCOMs.

3.5.3 Financial Aspects of Operation and Maintenance

Each RUWASSA was expected to secure NGN 8 million to 31.5 million annually to construct water facilities within the first two years after procuring the equipment, and NGN 22 million to approximately 45.5 million within the next three years. It was also expected that they secure NGN 7.97 million annually to maintain the procured equipment and NGN 38,000 per water facility for maintenance. Furthermore, the WASHCOMs in the villages where water facilities were constructed were meant to collect NGN 132[28] per person annually from the water facility users for maintenance such as regularly replacing spare parts and other activities, and to save NGN 35,000 annually aside from the budget by RUWASSAs.

[28] It was presumed that the annual maintenance cost of a water facility was NGN 35,000. Since the assumed population with access to water per water facility was 264 people, the annual cost per person was NGN 132.

①RUWASSAs

RUWASSAs have not been able to completely or sufficiently secure the budget needed to construct water facilities and maintain them and the procured equipment. Since the insufficient budget for constructing water facilities was already negatively evaluated as a factor explaining the fewer number of constructed water facilities than planned in the sections on relevance and the effectiveness and impact, the external evaluator analyzed RUWASSAs' budgets to maintain the water facilities over the past three years.

RUWASSA of Kebbi State (NGN 10,000)	Target after 2014	Actual amount 2014	Actual amount 2015	Actual amount 2016
(1) Budget	－	535	604	144
(2) Construction cost of water facilities	－	391	460	0
(3) Running cost	－	144	144	144
Of which maintenance cost (achievement rate)	937	33 (4%)	53 (6%)	85 (9%)
(1)-(2)-(3) Balance	－	0	0	0

Source: Documents provided by executing agencies
Note 1: The years in the table above are as per the Nigerian calendar year from January to December.
Note 2: Since the planned budget was unknown, planned and actual maintenance costs were compared and the achievement rate analyzed.

The RUWASSA of Kebbi State was expected to annually secure about NGN 7.97 million to maintain the procured equipment and about NGN 1.4 million[29] to maintain the water facilities. However, the actual amounts were significantly lower than the target. In addition, the budget in and after 2017 and the future was unknown at the time of ex-post evaluation.

RUWASSA of Niger State (NGN 10,000)	Target after 2014	Actual amount 2014	Actual amount 2015	Actual amount 2016
(1) Budget	－	3,587	4,500	1,400
(2) Construction cost of water facilities	－	1,150	437	713
(3) Running cost	－	1,163	936	600
Of which maintenance cost (achievement rate)	1,139	1,163 (102%)	936 (82%)	600 (53%)
(1)-(2)-(3) Balance	－	1,274	3,127	87

Source: Documents provided by executing agencies
Note 1: The years in the table above are as per the Nigerian calendar year from January to December.
Note 2: Since the planned budget was unknown, planned and actual maintenance costs were compared and the achievement rate analyzed.

The RUWASSA of Niger State was expected to annually secure about NGN 7.97 million to maintain the procured equipment and about NGN 3.42 million[30] to maintain the water facilities. However, the actual amounts after 2015 were lower than the target. In addition, the budget in and after 2017 was unknown at the time of ex-post evaluation.

[29] NGN 38,000 per water facility x 37 water facilities (2016) = about NGN 1.4 million
[30] NGN 38,000 per water facility x 90 water facilities (2016) = about NGN 3.42 million

RUWASSA of Taraba State (NGN 10,000)	Target after 2014	Actual amount 2014	Actual amount 2015	Actual amount 2016
(1) Budget	－	4,338	3,970	3,220
(2) Construction cost of water facilities	－	722	459	2,099
(3) Running cost	－	3,496	529	1,121
Of which maintenance cost (achievement rate)	1,177	2,011 (170%)	529 (45%)	938 (80%)
(1)-(2)-(3) Balance	－	120	2,982	0

Source: Documents provided by executing agencies
Note 1: The years in the table above are as per the Nigerian calendar year from January to December.
Note 2: Since the planned budget was unknown, planned and actual maintenance costs were compared and the achievement rate analyzed.

The RUWASSA of Taraba State was expected to annually secure about NGN 7.97 million to maintain the procured equipment and about NGN 3.8 million[31] to maintain the water facilities. However, the actual amounts after 2015 were lower than the target. In addition, the budget in and after 2017 was unknown at the time of ex-post evaluation.

RUWASSA of Enugu State (NGN 10,000)	Target after 2014	Actual amount 2014	Actual amount 2015	Actual amount 2016
(1) Budget	－	17,011	7,951	973
(2) Construction cost of water facilities	－	15,950	6,890[32]	0
(3) Running cost	－	1,061	1,061	973
Of which maintenance cost (achievement rate)	987	500 (51%)	150 (15%)	60 (6%)
(1)-(2)-(3) Balance	－	0	0	0

Source: Documents provided by executing agencies
Note 1: The years in the table above are as per the Nigerian calendar year from January to December.
Note 2: Since the planned budget was unknown, planned and actual maintenance costs were compared and the achievement rate analyzed.

The RUWASSA of Enugu State was expected to annually secure about NGN 7.97 million to maintain the procured equipment and about NGN 1.9 million[33] to maintain the water facilities. However, the actual amounts after 2014 were lower than the target. In addition, the budget in and after 2017 was unknown at the time of ex-post evaluation.

[31] NGN 38,000 per water facility x 100 water facilities (2016) = about NGN 3.8 million
[32] Although NGN 68.9 million was spent constructing water facilities in 2015, these were constructed without using the equipment procured by the project. Therefore, the number of water facilities constructed as part of the project in 2015 was zero.
[33] NGN 38,000 per water facility x 50 water facilities (2016) = about NGN 1.9 million

RUWASSA of Ondo State (NGN 10,000)	Target after 2014	Actual amount 2014	Actual amount 2015	Actual amount 2016
(1) Budget	－	3,062	0	0
(2) Construction cost of water facilities	－	945	0	0
(3) Running cost	－	2,117	0	0
Of which maintenance cost (achievement rate)	854	2,035 (238%)	0 (0%)	0 (0%)
(1)-(2)-(3) Balance	－	0	0	0

Source: Documents provided by executing agencies
Note 1: The years in the table above are as per the Nigerian calendar year from January to December.
Note 2: Since the planned budget was unknown, planned and actual maintenance costs were compared and the achievement rate analyzed.

The RUWASSA of Ondo State was expected to annually secure about NGN 7.97 million to maintain the procured equipment and about NGN 0.57 million[34] to maintain the water facilities. However, the actual amounts in 2015 and 2016 were both zero. In 2017, Ondo State government allocated a budget to the RUWASSA of Ondo State, which enabled the RUWASSA to construct water facilities at 35 locations in January and February as mentioned earlier, though the amount was unknown.

②WASHCOMs

According to the RUWASSAs, some WASHCOMs in villages where water facilities were constructed could not preserve enough budget to maintain the water facilities, although they were expected to do so. Half the WASHCOMs in the ten villages in the nine LGAs of the five target states, on which the local consultant conducted the site survey, were unable to collect fees for the budget required to maintain the water facilities.

	LGA	Village	Situation of fee collection for maintaining water facilities
WASHCOM of Kebbi State	Kalgo	Ubandawaki	NGN 48,000 over annually planned NGN 35,000 was collected.
	Bunza	Kanzana	NGN 50,000 over annually planned NGN 35,000 was collected.
WASHCOM of Niger State	Paikoro	Jita	NGN 50,000 over annually planned NGN 35,000 was collected.
	Bosso	Gbata	NGN 150,000 over annually planned NGN 35,000 was collected.
WASHCOM of Taraba State	Yorro	Gadalasheke	NGN 84,000 over annually planned NGN 35,000 was collected.
	Jalingo	Kpanti Napu	Fee collection was not started yet, since the water facliliy was just constructed.
WASHCOM of Enugu State	Nkanu West	Ogbozinne Ndiagu Akpugo	Fee was not collected, because users thought that RUWASSA should cover the cost.
	Nkanu West	Amafor Agbani	Fee was not collected, because users thought that RUWASSA should cover the cost.
WASHCOM of Ondo State	Akure North	Araromi- Igoba	Fee was not collected, because users thought that RUWASSA should cover the cost.
	Idanre	Apefon	Fee was not collected, because users thought that RUWASSA should cover the cost.

3.5.4 Current Status of Operation and Maintenance

Current status of the operation and maintenance of water facilities constructed in villages in five target states is as follows:

Kebbi State　4 of 37 water facilities were out of service, because no budget was allocated to repair them. However, repairs were planned when the budget was

[34] NGN 38,000 per water facility x 15 water facilities (2016) = NGN 0.57 million

allocated. Furthermore, the site survey conducted by the local consultant on the water facilities constructed in Ubandawaki Village and Kanzana Village indicated no problems with their operation and maintenance.

Niger State 2 of 90 water facilities were out of service. However, repairs were planned when the budget was allocated. Furthermore, the site survey conducted by the local consultant on the water facilities constructed in Jita Village and Gbata Village indicated no problems with their operation and maintenance.

Taraba State 3 of 100 water facilities were out of service. However, repairs were planned when the budget was allocated. Furthermore, the site survey conducted by the local consultant on the water facilities constructed in Gadalasheke Village and Kpanti Napu Village indicated no problems with their operation and maintenance.

Enugu State All 50 water facilities were in service. The site survey conducted by the local consultant on the water facilities constructed at Ogbozinne Ndiagu Akpugo Village and Amafor Agbani Village indicated no problems with their operation and maintenance, although a maintenance fee was not collected.

Ondo State 8 of 50 water facilities were out of service, because no budget was allocated to repair them. However, repairs were planned when the budget was allocated. Furthermore, the site survey conducted by the local consultant on the water facilities constructed in Araromi-Igoba Village and Apefon Village indicated no problems with their operation and maintenance, although a maintenance fee was not collected.

As mentioned above, only 17 of the 327 water facilities constructed in villages of the five target states were out of service. As such, the out-of-service ratio was equivalent to approximately 5% of the total number and significantly lower than that of the water facilities constructed by other donors (approximately 30% two years after completion[35]). In addition, since repairs were planned for the 17 out-of-service water facilities once the budget was allocated, it is considered that there is no problem with the current status of operation and maintenance of the water facilities.

In conclusion, some minor problems have been observed in terms of the financial aspect. Therefore, sustainability of the project effects is fair.

4. Conclusion, Lessons Learned and Recommendations

4.1 Conclusion

The objective of the project was to enable access to safe water and the operation and maintenance of water facilities at 500 locations in the five target states of Nigeria by procuring

[35] World Bank, "Nigeria Water, Sanitation, and Hygiene (WASH) Poverty Diagnostics: Preliminary Report (2016)"

equipment to construct water facilities and providing technical assistance in their operation and maintenance, thereby contributing to expanding access to safe water and improving the living environment in the entire regions through construction of water facilities at more than the 500 locations. The project has been highly relevant to Nigerian development plan and development needs, as well as Japan's ODA policy. However, it is difficult to say that the project plan has been appropriate enough. Therefore, its relevance is fair. Both the project cost and project period were within the plan. Therefore, efficiency of the project is high. Besides this, it is difficult to say that quantitative indicators for project effects and impacts regarding the constructed water facilities using the equipment procured by the project have been sufficiently achieved. However, the qualitative effects and impacts that the constructed water facilities have been bringing about to their users are great. In short, the project has achieved its objectives to some extent. Therefore, effectiveness and impact of the project are fair. Some minor problems have been observed in terms of the financial aspect. Therefore, sustainability of the project effects is fair.

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

4.2 Recommendations

Recommendation to executing agencies and JICA

Considering that the number of water facilities in the five target states has not increased as planned, it is important for FMWR, the RUWASSAs, and the JICA Nigeria Office to establish a monitoring system that enables stakeholders to check their progress on constructing the water facilities, and share information on construction progress including budget allocations from state governments to the RUWASSAs[36] more frequently -at least quarterly- and regularly. This would enable them to take timely and joint measures towards state governments (especially the governor, who has the ultimate decision-making discretion) to discuss solutions, if problems emerge. If face-to-face meetings are difficult, documents should be submitted.

4.3 Lessons Learned

Securing budget allocations from the recipient government after procuring the equipment in the project plan

The project was a type of the project which intended to procure equipment for constructing water facilities. The recipient government was expected to construct them by using the procured equipment through its own budget. In other words, the effects, impacts, and sustainability of the

[36] It is appropriate to share the information at least until when water facilities are constructed at 100 locations in each state using all 100 sets of consumable materials for construction by the project, such as hand pumps. In other words, this is until water facilities are constructed at another 63 locations in Kebbi State, another 10 in Niger State, another 50 in Enugu State, and another 50 locations in Ondo State. Taraba State has already constructed water facilities at 100 locations.

project heavily depended on budget allocations from the recipient government after procuring the equipment. However, the agreement to secure budget allocations from recipient governments as well as the system monitoring the budget allocation and construction plans among the stakeholders and taking measures depending on the situation and needs were inadequate. Consequently, some problems have been observed in effects, impacts, and part of sustainability. When planning a similar project in the future, especially in Nigeria, it is imperative to make detailed agreements on the budget allocation plan. These should be formulated in collaboration with the final decision-maker at the recipient government at the time of project planning and every year during and after the project in order to secure budget allocations after procuring the equipment. It is also important to establish a system which enables stakeholders to check the budget allocation plans and construction plans based on the budget allocation plans promised in the agreements at the time of project planning. Progress should then be regularly monitored, and measures need to be taken during and after the project depending on the situation to match needs of the project sites from the project implementation stage.

Federal Republic of Nigeria

FY2016 Ex-Post Evaluation of Japanese Grant Aid Project

"The Project for Construction of Additional Classrooms for Primary Schools (Phase II) "

External Evaluator: Koichiro Ishimori, Value Frontier Co., Ltd.

0. Summary

The objective of the project was to improve educational environment by constructing school facilities such as classrooms at primary schools in Kano State, contributing to expanding access to and improving the quality of primary education. The project has been highly relevant to Nigerian development plan and development needs, as well as Japan's ODA policy in terms of improving environments of and access to primary education. Therefore, its relevance is high. While the project cost was within the plan, the project period exceeded the planned period. Therefore, efficiency of the project is fair. The operation and effect indicators for the quantitative effects of effectiveness (such as the number of appropriate classrooms) have achieved their targets. Moreover, the indicators for the qualitative effects (such as daily class management) have shown improvement to a certain extent. Since impacts have also been observed in stable class management, which is no longer affected by weather throughout the year, and on disabled students, effectiveness and impact of the project are high. Meanwhile, major problems have been observed in terms of the institutional, technical, and financial aspects of operation and maintenance, and the current status of the constructed school facilities does not seem good. Therefore, sustainability of the project effects is low.

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

1. Project Description

Project location

Classroom constructed by the project at Tumfafi Primary School

1.1 Background

Nigeria was one of the greatest agricultural countries in Africa, producing various agricultural products. However, after the discovery of oil in the late 1960s, the country has changed its economic structure to one dependent on oil. It then repeatedly experienced civil wars over oil

and the domestic affairs of the country were unstable for a long time. Consequently, infrastructural development lagged and the development of primary school facilities providing basic education[1] that is basic human needs[2] significantly lagged in rural areas. Based on a request from the government of Nigeria, the government of Japan implemented a grant aid project called "the Project for Construction of Additional Classrooms for Primary Schools" from 2004 to 2008 in Niger State, Plateau State, and Kaduna State in the west, east, and north of the country, respectively. The project ended up developing 490 school facilities, such as classrooms, at 70 schools in the 3 states. However, there was still a great demand for primary schools in rural areas. Therefore, the government of Nigeria requested from the government of Japan a new grant aid project called "the Project for Construction of Additional Classrooms for Primary Schools (Phase II)" in Kano State, Katsina State, Ebonyi State, Oyo State, Borno State, Adamawa State, and Gombe State, where there was great demand. Based on this request, the government of Japan implemented the outline design from 2009 to 2010, presuming an application of "the Grant Aid Project for Community Empowerment[3]" which was newly created in 2006. Afterwards, it was decided to implement the project only in Kano State, where the demand was greatest.

1.2 Project Outline

The objective of the project was to improve educational environment by constructing school facilities such as classrooms at primary schools in Kano State, contributing to expanding access to and improving the quality of primary education.

---

[1] According to the JICA's Thematic Guidelines on Basic Education, there is no universal definition of basic education. Generally, however, "educational activities enabling people to acquire knowledge and skills required to live in a society" are called "basic education." They usually include infant care, preschool education, primary education, junior secondary education, and non-formal education to cover the aforementioned education such as literacy education, adult education, religious education, and community education.

[2] Basic human needs are the minimum things, health, and education required in the basic lives of human beings, such as food, clothing, and shelter.

[3] This is an aid scheme that ensures quality in line with local needs and enables further cost reductions by means of introducing local specifications and designs as well as using local contractors and materials. The concerned sub-scheme was abolished together with other grant aid sub-schemes in the fiscal year of 2015, and it is now classified as a "procurement agent method."

G/A Grant Amount /Actual Grant Amount		1,132 million yen /1,132 million yen
Exchange of Notes Date /Grant Agreement Date		June 2010 /June 2010
Responsible Agency		Universal Basic Education Commission (UBEC)[4]
Executing Agency		Kano State Universal Basic Education Board (Kano SUBEB)[5]
Project Completion		September 2012
Concerned Parties to the Project	Main Contractors	Lot1 and Lot 5: Samboo Construction J.V. Company Ltd. Lot 2 and Lot 3: Best & Crompton Engineering Africa Ltd. Lot 4: Ciroco Nig. Ltd.
	Main Consultant	Yachiyo Engineering Co., Ltd.
	Procurement Agent	Japan International Cooperation System (JICS)
Outline Design		August 2009 - June 2010
Detailed Design		2010
Related Projects		Grant Aid Project The Project for Construction of Additional Classrooms for Primary Schools in the Federal Republic of Nigeria (Lot 1: August 2004, Lot 2: July 2005, and Lot 3: July 2006) Other Donors' Projects Department for International Development of the United Kingdom (DFID) "Capacity for Universal Basic Education Project (2003 - 2008)" and "Education Sector Support Programme in Nigeria (2008 - 2017)" United States Agency for International Development (USAID) "Community Participation for Action in Social Sector (2004 - 2009)" World Bank (WB) "State Education Sector Project (2007 - 2011)"

2. Outline of the Evaluation Study

2.1 External Evaluator

Koichiro Ishimori, Value Frontier Co., Ltd.

2.2 Duration of Evaluation Study

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

Duration of the Study: September 2016 - September 2017

Duration of the Field Study: November 27, 2016 - December 21, 2016 and February 19, 2017 - March 3, 2017

2.3 Constraints during the Evaluation Study

During the ex-post evaluation study, the external evaluator could only collect and analyze information in the capital city of Abuja for security reasons. Therefore, he planned for a local

[4] The UBEC is a central organization under the Federal Ministry of Education working on the provision of compulsory education consisting of six years of primary education and three years of junior secondary education.
[5] Kano SUBEB is a government entity in Kano State under the UBEC that works on the provision of compulsory education.

consultant to visit the concerned primary schools in Kano State and 6 selected schools[6] out of the 33 involved in the project, in consultation with the UBEC. However, again for security reasons, the local consultant's visit to Kano State was cancelled. Consequently, the external evaluator collected information through the UBEC during the first field study in Nigeria. In order to supplement the information needed for the ex-post evaluation, the local consultant was allowed to visit Kano State under certain conditions of safety management for 5 days during the second field study. Therefore, the local consultant visited and collected information at Kano SUBEB and 3 related schools[7] out of the 6 selected schools due to time limitations. As described above, there were various constraints on the collection of information pertinent to the project. Other specific and concrete constraints on the interviews and as such are described in the relevant parts.

3. Results of the Evaluation (Overall Rating: C[8])

3.1 Relevance (Rating:③[9])

3.1.1 Consistency with the Development Plan of Nigeria

The *National Economic Empowerment Development Strategy* of 2003, the national development plan of the government of Nigeria at the time of project planning, highlighted the "empowerment of the people," including the "enhancement of education" under one of four priorities, "improvement of social charters." The *Nigeria Vision 20: 2020* of 2009, the subsequent national development plan with a long-term vision until 2020, highlighted "human development" and mentioned "improving the quality of educational facilities" as a means to achieve the goal under one of three priorities, "guaranteeing the productivity and health of the people." The *Ten Year Strategic Plan* of 2007, an education sector plan, also mentioned the "construction of appropriate classrooms at primary and junior secondary schools" under one of four priorities, "standards."

The *Nigeria Vision 20: 2020* of 2009 was unchanged at the time of the ex-post evaluation; therefore, the project is still aligned with the national development plan. Meanwhile, the

---

[6] When selecting schools, the external evaluator selected 3 schools, in addition to 3 model schools, among the 33 concerned schools. Model schools were schools where a maintenance activity of school facilities and a workshop for promoting maintenance activities etc. were implemented by the soft components of the project. They were Rano Dawaki Primary School of Lot 2 and Bichi Kanti Primary School and Tumfafi Primary School of Lot 3. Meanwhile, the external evaluator selected 3 other schools by considering their security and accessibility as well as the operation and maintenance situation of the school facilities at the time of the inspection of defects. At the time of the inspection of defects, 12 out of 33 schools were rated as A (very good), another 12 were B (good), 4 were C (a few damages), and 5 were D (many damages). Therefore, when selecting schools at the time of the ex-post evaluation, the external evaluator selected 2 rated A, another 2 rated B, 1 rated C, and 1 rated D, by paying attention to the total balance. Since Rano Dawaki Primary School of Lot 2 was rated B and Bichi Kanti Primary School and Tumfafi Primary School of Lot 3 were both rated A, the external evaluator decided to select 1 school each rated B, C, and D from Lots 1, 4, and 5. After considering the aforementioned conditions, the external evaluator selected Balan Primary School of Lot 1, Danmandanho Primary School of Lot 4, and Tudun Yola Primary School of Lot 5.

[7] In consideration of security and accessibility, the external evaluator selected 2 model schools, namely Bichi Kanti Primary School and Tumfafi Primary School of Lot 3 and Tudun Yola Primary School of Lot 5.

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

[9] ③: High, ②: Fair, ①: Low

subsequent education sector plan, the *4-Year Strategic Plan for the Development of the Education Sector 2011-2015* of 2012, highlighted the "provision of appropriate classrooms and school furniture at primary and junior secondary schools" under one of six priorities, "access and equity." Also, *Education for Change: A Ministerial Strategic Plan 2016-2019*, the new education sector plan that the federal ministry of education was making at the time of the ex-post evaluation, highlighted the "construction of 287,500 classrooms at the existing primary and junior secondary schools from 2017 to 2019."

The project was expected to improve the educational environment by constructing school facilities such as classrooms at primary schools in Kano State, contributing to expanding access to and improving the quality of education; therefore, the project is judged to have been aligned with the development plan of Nigeria at the time of both the project planning and ex-post evaluation.

3.1.2 Consistency with the Development Needs of Nigeria

The net enrollment rate of primary schools in Nigeria at the time of project planning was on the rise, from 63% in 1999 to 66% in 2010.[10] However, the quality of education had much room to improve. In particular, the number of students per classroom in primary schools in Kano State was 92 in 2007/2008, significantly exceeding the national standard of 40 that the UBEC had set in the *Universal Basic Education Plan* of 1999.[11] Even worse, the number of students per classroom at the concerned primary schools in Kano State was 96 in 2009 due to a lack of classrooms. Besides, as many desks and chairs were broken, students were forced to sit either directly on the floor or a chair designed for two students with more than two students, resulting in a situation where students had to take classes in a cramped environment.[12]

Partly because of the effects of the project, the number of students per classroom at primary schools in Kano State in 2016 (at the time of the ex-post evaluation) had decreased to 88[13], compared to the number at the time of project planning. However, it still significantly exceeds the national standard of 40. Moreover, as many desks and chairs are still broken, students are still forced to sit either directly on the floor or a chair designed for two students with more than two students, resulting in the same situation where students have to take classes in a cramped environment.

Since many classrooms were and still are under a poor learning environment, it has been an urgent matter to develop and enhance the learning environments, such as classrooms. Therefore, the project is judged to have been aligned with the development needs of Nigeria and Kano State at the time of both the project planning and ex-post evaluation.

[10] Statistical data from the World Development Indicators.
[11] Document provided by the JICA.
[12] Document provided by the JICA.
[13] Annual School Census Report 2016 of Kano State.

3.1.3 Consistency with Japan's ODA Policy

The *ODA Charter* of 2003, the aid policy of the government of Japan at the time of project planning, raised "poverty alleviation" as one of its four pillars, and prioritized "education" in the pillar as a cooperation sector for assisting human and social development in developing countries. The *Mid-term Policy of ODA* of 2005 also raised "poverty alleviation" as one of its four pillars, and prioritized the "expansion of basic social services such as education" in the pillar. Moreover, the JICA's *Project Implementation Plan* of 2006 raised "infrastructural development in rural areas" as one of its two pillars and prioritized "assistance contributing to qualitative and quantitative enhancement of primary education, such as construction of primary schools by grant aid projects." Furthermore, the *Yokohama Action Plan* of 2008, which the fourth Tokyo International Conference on African Development (TICAD IV) set as its road map afterwards, raised "improving access to and the quality of primary education including the construction of approximately 5,500 classrooms at 1,000 primary and junior secondary schools."

Since the project was intended to construct classrooms at primary schools by the grant aid project, it is judged to have been aligned with Japan's ODA Policy at the time of project planning.

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

3.2 Efficiency (Rating:②)

3.2.1 Project Outputs

The project consisted of constructing school facilities as hard components and providing technical assistance on their operation and maintenance as soft components. The hard components were increased because the residual fund allowed for more outputs than planned, while the soft components were implemented mostly as planned.

【Hard Components】

As described below, the project achieved all hard components from Lots 1 to 4 as planned. Besides, bidding prices were lower than the estimated prices due to competition, so the residual fund allowed for the addition of Lot 5. Consequently, the project added 3 extra schools to its scope for a total of 30 classrooms in 6 school buildings, as well as 6 toilet buildings. Accordingly, school furniture was also distributed. The planned and actual outputs for each lot of hard components are described below.

Table 1: Planned Hard Components

Area	Schools	Classrooms		Toilet buildings	School furniture			
		Buildings	Classrooms		Desks/chairs for students[14]	Desks/chairs for teachers	Black boards	Notice boards
Lot 1: Western Kano	8	13	53	11	1,060	53	53	53
Lot 2: Southern Kano	6	15	62	12	1,240	62	62	62
Lot 3: Northern Kano	8	20	76	14	1,520	76	76	76
Lot 4: Eastern Kano	8	23	96	18	1,920	96	96	96
Total	30	71	287	55	5,740	287	287	287

Source: Documents provided by the JICA and the executing agency

Table 2: Actual Hard Components

Area	Schools	Classroom		Toilet buildings	School furniture			
		Buildings	Classrooms		Desks/chairs for students	Desks/chairs for teachers	Black boards	Notice boards
Lot 1: Western Kano	Same as planned							
Lot 2: Southern Kano								
Lot 3: Northern Kano								
Lot 4: Eastern Kano								
Lot 5: Central Kano	3	6	30	6	600	30	30	30
Total	33[15]	77	317	61	6,340	317	317	317

Source: Documents provided by the JICA and the executing agency

[14] In each classroom, 20 sets were deployed.

[15] The 33 schools are as follows: From Lot 1, 8 schools (Kimbugawa Primary School, T/Kaya Primary School, Yola Z/Gari Primary School, Chinkoso Primary School, Kadana Primary School, Balan Primary School, T/Garu Primary School, and Buremawa Primary School); From Lot 2, 6 schools (Rano Dawaki Primary School, Rurum Science Primary School, Ruwan Kanya Primary School, Tagwaye Primary School, Doguwa Primary School, and Fassi A Primary School); From Lot 3, 8 schools (Natsugunne Primary School, Bichi Kanti Primary School, Badume Primary School, Jalli Primary School, Tumfafi Primary School, Kwa Primary School, Danbatta Kanti Primary School, and Lambu Science Primary School); From Lot 4, 8 schools (Amaryawa Primary School, Kumbotso Primary School, Zakirai Yamma Primary School, Kwankwaso Primary School, Indabo Central Primary School, Zango Primary School, Danmadanho Primary School, and Alkalawa Primary School); and From Lot 5, 3 schools (Shagogo Central Primary School, Tudun Yola Primary School, and Fajewa Central Primary School).

【Soft Components】

The project plan included the following soft components and they were implemented almost as planned.

Table 3: Planned and Actual Soft Components

Planned	Actual
a) Development of a manual on school facility maintenance	The JICA took a participatory approach when preparing a draft manual, so that the Nigerian side could take ownership of spontaneously maintaining the school facilities. Then, task force members of Kano SUBEB (the director of planning, research, and statistics; officers in charge of maintaining the school facilities; experts in education statistics; and others) examined the draft manual and completed it.
b) Implementation of maintenance activities [16] at 3 model schools	Practical maintenance activities of school facilities for 73 head masters and teachers of each model school and concerned school nearby were implemented at Bichi Kanti Primary School on May 28, 2012, Tumfafi Primary School on May 30, 2012, and Rano Dawaki Primary School on May 31, 2012. A total of 27 head masters and teachers in 4 districts participated in the activity at Bichi Kanti Primary School; 22 head masters and teachers in 6 districts participated in the activity at Tumfafi Primary School; and 24 head masters and teachers in 7 districts participated in the activity at Rano Dawaki Primary School.
c) Implementation of promotion workshop [17] at three model schools	Apart from b) above, the project intended to implement workshops at the model schools. They were to promote maintenance activities for the concerned schools around the model schools. However, because of security issues in Kano State, they were cancelled. It was thought that the project should minimize any activities in the suburbs and ones involving many people. However, the activities originally planned at the workshops, namely observation and practice of maintenance activities and the subsequent question and answer session, were implemented on the occasion of b) above.
d) Development of a monitoring manual on school facility maintenance	Similar to a) above, the JICA took a participatory approach when preparing the draft monitoring manual, so that the Nigerian side could take ownership of spontaneously maintaining the school facilities. Then, task force members of Kano SUBEB examined the draft monitoring manual and completed it. The monitoring manual was explained to 32 head masters and other personnel of 33 concerned schools, in addition to 17 staff of the UBEC and Kano SUBEB, at a workshop on May 24, 2012.

Source: Documents provided by the JICA and the executing agency

3.2.2 Project Inputs

3.2.2.1 Project Cost

The project was implemented using the procurement agent method. The G/A grant amount (1,132 million yen) was provided to the Nigerian side in full.[18] Therefore, both the planned and actual project costs on the Japanese side were 1,132 million yen, respectively, and same as planned.[19]

Meanwhile, the planned project cost on the Nigerian side for construction of land, rehabilitation of roads around the concerned schools, establishment and construction of gateways, and a banking fee for opening an account was NGN 4.4 million, the equivalent to

[16] Maintenance activity means daily cleaning of school buildings, classrooms, toilets, and others.
[17] The promotion workshop means observation and practice of maintenance activities and a subsequent question and answer session for the purpose of promoting maintenance activities.
[18] As mentioned above, the accrued residual funds allowed for the addition of Lot 5. Since they were completely spent on constructing school facilities at the newly added schools, no money was returned to the Japanese account.
[19] The addition of Lot 5 caused additional work for the executing agency, consultant, and procurement agent. However, they achieved more outputs than planned at the planned Japanese cost. Therefore, it is considered that the project cost has been used more efficiently.

approximately 2.8 million yen.[20] The actual cost was the same as planned.

3.2.2.2 Project Period

The planned project period was 20 months, from June 2010 (date of G/A) to January 2012 (date of the handover). However, the actual period was 26 months, from June 2010 (date of G/A) to July 2012 (date of the handover), and longer than planned, 130% of the planned priod. Major reasons for the delay were a construction delay due to the belated procurement of construction material (cement) and the effects of general strikes and other issues. Nevertheless, the external evaluator considers that 61 days, approximately 2 months, should be deducted because the delay was due to external factors.[21] Therefore, the actual period considering that factors was 24 months, or 120% of the planned period.[22] The external evaluator did not analyze the project period of Lot 5 because it was an addition which the original plan did not have.

According to the executing agency, the inputs, such as the project cost and period, were appropriate for achieving the outputs. There were slight changes in the volume of reinforcing bars and others between the outline design and the detailed design study. Otherwise, there were no particular changes.

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

3.3 Effectiveness[23] (Rating:③)

The objective of the project was to improve educational environment by constructing school facilities such as classrooms at primary schools in Kano State.

[20] The exchange rate at the time of the ex-ante evaluation in 2010 was JPY 96.53/USD.

[21] The events that the external evaluator considered as external factors and the breakdown of the 61 days are as follows: 1) Curfew orders were issued before and after the elections of the president, governors, and congressmen, all of which took place in April 2011. Consequently, the project members were virtually forced to be temporarily evacuated and could not continue their work for 21 days. 2) As a result of the Boko Haram associated terrorism that occurred in Kano State on January 20, 2012, the embassy of Japan requested that the consultant be temporarily evacuated from Kano State to the capital city of Abuja for 40 days.

[22] Documents provided by the JICA.

[23] Sub-rating for Effectiveness is to be put with consideration of Impact.

3.3.1 Quantitative Effects (Operation and Effect Indicators)

Operation and Effect Indicator① The number of appropriate classrooms[24] at the concerned schools.

Table 4: The number of appropriate classrooms at the concerned schools

(Unit: room)

	Baseline[25]	Target[26]	Actual achievement				
	2009	2012	2012	2013	2014	2015	2016
	Planned year	Completion year	Completion year	1 year after completion	2 years after completion	3 years after completion	4 years after completion
Lot 1: Western Kano	245 Exis	53 New	53 New	-	-	-	-
		52 Exis	52 Exis	105 Exis	105 Exis	105 Exis	105 Exis
Lot 2: Southern Kano		62 New	62 New	-	-	-	-
		39 Exis	39 Exis	101 Exis	101 Exis	101 Exis	101 Exis
Lot 3: Northern Kano		76 New	76 New	-	-	-	-
		74 Exis	74 Exis	150 Exis	150 Exis	150 Exis	150 Exis
Lot 4: Eastern Kano		96 New	96 New	-	-	-	-
		60 Exis	60 Exis	156 Exis	156 Exis	156 Exis	156 Exis
Lot 5: Central Kano		30 New	30 New	-	-	4 New	-
		20 Exis	20 Exis	50 Exis	50 Exis	50 Exis	54 Exis
Total	245 Exis	317 New	317 New	—	—	4 New	—
		245 Exis	245 Exis	562 Exis	562 Exis	562 Exis	566 Exis
		562 in total	562 in total	562 in total	562 in total	566 in total	566 in total

Source: Documents provided by the JICA and the executing agency
Note: "Exis" = existing classrooms, "New" = new classrooms.

Achievement rate of the planned target in 2012

317 classrooms were newly constructed at 33 schools as planned (100% of the plan).

Actual achievement from 2013 to 2014

There was no new construction of classrooms. The number remained unchanged after 2012. Since there was no plan after 2013, the achievement rate could not be calculated.

Actual achievement in 2015

Since the number of students at Shagogo Central Primary School of Lot 5 in 2014 was 2.5 times higher than that in 2009, 4 classrooms were newly constructed by the government of Nigeria, resulting in 566 classrooms in total.

Actual achievement in 2016

There was no new construction of classrooms. The number remained unchanged after 2015.

The number of appropriate classrooms in 2012 is assumed to have been 562. However, the number after 2013 is assumed to be lower than that given in the table above, because it is assumed that the current maintenance status of classrooms does not seem good, when one looks at pictures of the classrooms taken at the time of the ex-post evaluation, as explained later.

[24] "Appropriate classrooms" were not defined in any project document. Therefore, the external evaluator defined them as both classrooms where students can study subjects using a desk and a chair designed for 2 students with 2 students and teachers can teach subjects using a desk, a chair, a notice board, and a blackboard if required, and as classrooms that are actually used in this way.

[25] Originally, the baseline was 225 existing classrooms from Lots 1 to 4. However, since Lot 5 was added using the residual fund, the ex-post evaluation used as the baseline 245 classrooms, including the existing classrooms of Lot 5.

[26] The original target was 287 new classrooms and 225 existing classrooms from Lots 1 to 4. Since Lot 5 was added using the residual fund, the ex-post evaluation used as the target 317 new classrooms and 245 existing classrooms, including the plan of Lot 5, i.e., 30 new classrooms and 20 existing classrooms.

Operation and Effect Indicator② The number of students per classroom[27] at the concerned schools

Table 5: The number of students per classroom at the concerned schools

(Unit: person)

	Baseline[28]	Target[29]	Actual achievement				
	2009	2012	2012	2013	2014	2015	2016
	Planned year	Completion year	Completion Year	1 year after completion	2 years after completion	3 years after completion	4 years after completion
Lot 1: Western state	-	-	52.9	67.7	61.6	74.8	82.0
Lot 2: Southern state	-	-	41.3	62.8	69.1	76.4	77.8
Lot 3: Northern state	-	-	54.9	69.0	77.1	74.0	74.2
Lot 4: Eastern state	-	-	49.8	54.4	60.9	65.8	66.2
Lot 5: Central state	-	-	39.9	57.7	82.2	78.1	52.5
Average	95.5	41.6	49.3	62.6	68.7	72.7	72.0
Number of students	23,388	23,388	27,727	35,168	38,629	41,165	40,756
Number of classrooms	245	562	562	562	562	566	566

Source: Documents provided by the JICA and the executing agency

Achievement rate of the planned target in 2012

The average number of students per classroom at the concerned schools in 2012 was 49.3, which was higher than the planned target of 41.6. However, the actual number of students increased by approximately 4,300 in 2012, compared to 2009. Therefore, it is considered as rational that the planned target was mostly achieved. The planned number in the state of Kano in 2012/2013 was 60.

Actual achievements in 2013, 2014, 2015, and 2016

The average of the 33 schools was 62.6 in 2013, 68.7 in 2014, 72.7 in 2015, and 72.0 in 2016. Since there was no plan after 2012, the achievement rate could not be calculated.

The average number of students per classroom has been increasing each year since 2012. Considering the increased student growth ratio[30] at 33 schools, this cannot be helped.

3.3.2 Qualitative Effects (Other Effects)

The project was expected to have some qualitative effects. Therefore, the ex-post evaluation study conducted interviews[31] with 5 teachers at each of the 6 selected schools (see footnote 6) for a total of 30 regarding sections 3.3.2.1 and 3.3.2.2. and got responses through a questionnaire regarding 3.3.2.3. during the first field study.

[27] "The number of students per classroom" was not defined in any project document. Therefore, the external evaluator defined it as the average number of students studying in a classroom.

[28] Originally, the number of classrooms was 225 from Lots 1 to 4. Therefore, the original baseline was 96.0, calculated as 21,609 students at 225 classrooms divided by 225 classrooms. However, since the ex-post evaluation used 245 classrooms, including the existing classrooms of Lot 5, the baseline was changed to 95.5 and calculated as 23,388 students at 245 classrooms divided by 245 classrooms.

[29] Due to the lack of a population census since 2006 and official data on population growth, the number of students in 2012 was assumed to be the same as that in 2009—namely 23,388 students, calculated as 21,609 at the original 30 schools plus 1,779 students at the additional 3 schools. Therefore, the target was set as 41.6, calculated as 23,388 divided by 562 classrooms.

[30] According to the executing agency, the student growth ratio was 26.8% from 2012 to 2013, 9.8% from 2013 to 2014, 6.6% from 2014 to 2015, and -1% from 2015 to 2016.

[31] As described in "constraints during the evaluation study", the local consultant's visit to Kano State during the first field study was cancelled for security reasons. With the help of Kano SUBEB and the head masters of the 6 selected schools, the ex-post evaluator obtained the phone number of some teachers (5 teachers at each school) who knew about the situation before the project and consented to being interviewed, and the local consultant conducted interviews by calling them from Abuja afterwards.

3.3.2.1 Improvement in daily class management by means of constructing appropriate classrooms (daily teaching in classrooms)

All of the 30 teachers responded that their daily class management had gotten easier and improved (see Chart 1) because of the fact that the construction of the new classrooms made possible a decrease in the number of students per classroom, compared before the project, and that the installation of the desks, chairs, blackboards, and others helped them to teach classes. Therefore, it is judged that daily class management has improved at the 6 selected schools, and it is assumed that it has also improved at the other 27 schools.

Class scene in a new classroom at Bichi Kanti Primary School

Class scene in a new classroom at Tumfafi Primary School

3.3.2.2 Improvement in hygiene by means of installing the toilets

25 of 30 teachers responded that hygiene at school had improved (see Chart 2) because the installation of the toilets has decreased excretions at locations other than toilets, compared before the project. Meanwhile, students at Tumfafi Primary School, where there were no water facilities from the project planning phase until the ex-post evaluation phases, were expected to go and fetch water with a bucket from a water facility outside of the school and bring it to the toilet before using it, and then to flush the toilet with the water. However, excretions in the toilets remain unflushed in practice because it seems unrealistic to expect students to take this series of action ahead of time, while assuming work required before using the toilets.[32] Consequently, only 2 out of 5 teachers at the school responded that hygiene at school has improved. Therefore, it is judged that hygiene at school has improved to some extent at the 6 selected schools, and it is assumed that it has also improved to some extent at the other 27 schools.

[32] It is assumed to have been necessary to construct a water facility in or near the toilets.

Chart 1: Improvement in daily class management by means of constructing appropriate classrooms (daily teaching in classrooms)

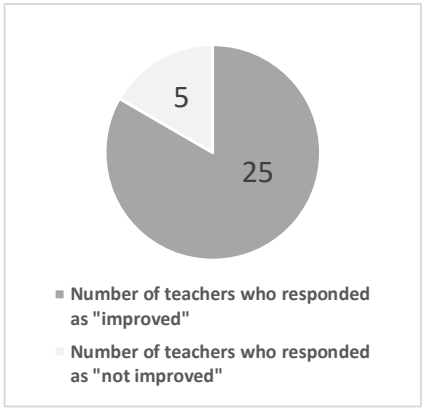

Chart 2: Improvement in hygiene by means of installing toilets

3.3.2.3 Building capabilities of operation and maintenance of school facilities by means of developing a manual on school facility maintenance

A manual on school facility maintenance was developed as a soft component of the project and provided to 122 participants at a lecture-style workshop held on May 24, 2012, followed by practical maintenance activities at the 3 model schools held on May 28, 30, and 31, 2012. According to a questionnaire presented upon completion of the lecture-style workshop and practical maintenance activities, almost all of the participants responded that they would spread what they had learned at their own schools.[33] However, as described later, it is assumed that the current status of operation and maintenance of the school facilities constructed by the project does not seem good. Therefore, it is difficult to say that the project has strengthened capabilities of operation and maintenance of school facilities. Nevertheless, it is considered that improvement of the educational environments, the objective of the project, has been achieved, as described in sections 3.3.2.1. and 3.3.2.2.

3.4 Impacts

The project was intended as impacts to contribute to improving access to and the quality of primary education.

[33] Documents provided by the JICA.

3.4.1 Intended Impacts

3.4.1.1 Quantitative effects (Improving access to primary education)

Table 6: Gross enrollment rate of primary schools[34] in Kano State

(Unit: %)

	Baseline	Actual achievement				
	2009 Planned year	2012 Completion year	2013 1 year after completion	2014 2 years after completion	2015 3 years after completion	2016 4 years after completion
Gross enrollment rate	104	122	131	128	130	130
Gross enrollment rate (male)	102	117	126	123	126	128
Gross enrollment rate (female)	106	127	137	134	133	132

Source: Documents provided by the executing agency

The gross enrollment rates for males and females have both been increasing since 2012 and are higher than the baseline values from 2009.[35]

3.4.1.2 Qualitative Effects (Improving the quality of primary education)

The project was intended to have some qualitative effects related to a) and b) below. Regarding a), the ex-post evaluation study conducted telephone interviews with 30 teachers from the 6 selected schools. Regarding b), it conducted face-to-face interviews with 15 female students from the 3 schools[36]. The interview results are as follows:

a) Improvement in class management by means of constructing appropriate classrooms (stable teaching in classrooms throughout the year)

All 30 teachers responded that their class management had improved because the construction of appropriate classrooms allowed for stable teaching in classrooms throughout the year as they are no longer affected by weather, such as sunlight during the dry season and storms during the rainy season. Therefore, it is judged that the 6 selected schools are able to provide stable teaching in classrooms throughout the year, and it is assumed that the other 27 schools are similar.

b) Increase in female students' motivation to go to school through the construction of gender-segregated toilets

All 15 female students who used and use the toilets responded that they had never lost motivation to go to school because of the toilets, and that was still the case after

[34] "Gross enrollment rate" means the ratio divided the number of people receiving primary education regardless of age by the total school age population for the primary school. The ex-post evaluation study obtained data on the "net enrollment rate" but did not find them credible. Therefore, it did not use them as an indicator.

[35] While the number of classrooms at primary schools in Kano State was 31,091, the number of classrooms at the concerned schools was 562, which was equivalent to approximately 1.8% of the total. Furthermore, the number of classrooms newly constructed by the project at the concerned schools was 317, which was equivalent to only approximately 1.0%. Therefore, it is judged that the impact of the project is limited.

[36] Since the local consultant's visit to Kano State was approved at the time of the second field visit, the external evaluator sent him to the 3 schools (see footnote 7). He then had face-to-face interviews with female students (5 from each school) who were at school by chance and consented to being interviewed, after getting approval for the interviews from the head masters of the 3 schools. The topic was so sensitive that he paid attention to their privacy and interviewed them one by one without any other person involved.

gender-segregated toilets were installed as part of the project. All of them went to school in the past and go to school at present simply because they like doing so. The interviews, therefore, did not observe any increase in female students' motivation to go to school as a result of the construction of gender-segregated toilets.

3.4.2 Other Positive and Negative Impacts

3.4.2.1 Impacts on the Natural Environment

The project was intended to avoid the use of any materials that contain substances such as asbestos and formaldehyde at school facilities constructed by the project, as they could affect human beings. Besides, it was intended to pay due attention to avoiding negative impacts such as air and water pollution and noise during and after the construction of school facilities. According to the executing agency, such materials were not used and such negative impacts were not caused during and after construction of the school facilities. An environmental impact assessment was not required.

3.4.2.2 Land Acquisition and Resettlement

According to the executing agency, there was neither land acquisition nor resettlement at the time of project implementation.

3.4.2.3 Unintended Positive/Negative Impact

4[37] of the 30 teachers responded that disabled students were now able to easily move around the classroom because the construction of new classrooms led to the number of students per classroom decreasing, compared before the project. It is therefore considered that the project has had impacts on disabled students to some extent at the 6 selected schools, and it is assumed that it has also done so at the other 27 schools.

In short, the operation and effect indicator ① (that is, the quantitative effect of effectiveness) has achieved the planned target and indicator ② has mostly achieved the planned target. There has also been an improvement in qualitative effects, as seen in sections 3.3.2.1. and 3.3.2.2. Therefore, it is considered that the "improvement of the educational environment," the objective of the project, has been achieved. As described later, it is assumed that the current status of operation and maintenance of the school facilities constructed by the project does not seem good at the time of the ex-post evaluation. Therefore, it is considered that the qualitative effects mentioned in section 3.3.2.3 have not been achieved. However, the "improvement of the educational environment," which was not only the objective of the project but also the criterion to judge its effectiveness, has been achieved, as explained in sections 3.3.2.1. and 3.3.2.2.

[37] 2 teachers at Bichi Kanti Primary School and 2 at Tumfafi Primary School.

Meanwhile, there has been an improvement in the qualitative effects of the impacts of a) but not b). Besides, there has been an unintended positive impact on disabled students to some extent as unintended positive impacts.

In conclusion, this project has largely achieved its objectives. Therefore effectiveness and impact of the project are high.

3.5 Sustainability (Rating:①)

3.5.1 Institutional Aspects of Operation and Maintenance

The project was expected in the project planning that 65 staff members from the department of planning, research, and statistics of Kano SUBEB would maintain the school facilities after their construction. It was also expected that the department of planning, research, and statistics of the Local Government Educational Authority (LGEA) in each district would monitor the maintenance situation of the school facilities and provide direction.

At the time of the ex-post evaluation, it is the newly created department of physical planning, (which used to be the physical planning unit under the department of planning, research, and statistics) that maintains the school facilities after their construction at Kano SUBEB. Maintenance is also the role of the office of officers and assistant officers for zonal physical planning that receives reports from LGEAs in 44 districts of the state and then inspects the maintenance situation of the reported schools as well as the unit of maintenance that receives reports from the aforementioned office and then plans and carries out maintenance under the guidance of the director general of the department of physical planning. Although there are 44 staff members in charge of LGEAs under the aforementioned office at the time of the ex-post evaluation, each staff member monitors on average 141 primary schools and 22 junior secondary schools.[38] Therefore, it is difficult to judge that they are surely sufficient. Similarly, there is only 1 staff member, the director, at the department of maintenance, and therefore it is again difficult to judge that they are surely sufficient.

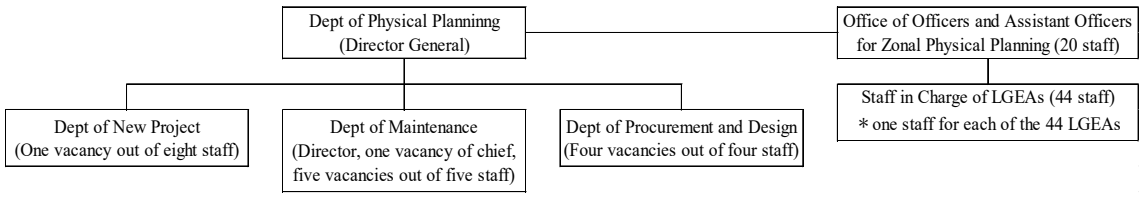

Chart 3: Organigram of the Department of Physical Planning of Kano SUBEB

Source: Documents provided by the executing agency

Meanwhile, the LGEAs in each district, which report on the maintenance situation of the school facilities to the officers and assistant officers for regional facility planning of Kano

[38] According to p. 1 and p. 69 of the Kano State Annual School Census Report 2015/2016, there are 6,208 primary schools and 947 junior secondary schools in the 44 districts of Kano State.

SUBEB, generally have more than 1 inspector under the unit of planning, research, and statistics. However, the LGEA inspector from Gwale District that the local consultant visited was not aware of his duties to monitor the maintenance of the concerned schools in the district based on the monitoring manual on school facility maintenance and report the results to Kano SUBEB once a year. Furthermore, when the local consultant visited the 3 schools, he questions their head masters about how the LGEA inspectors of the 3 districts in charge of the schools monitored the maintenance situation of the school facilities and provided direction. They responded that the inspectors irregularly monitored the maintenance situation of the school facilities without using the manual that the soft components of the project had developed and did not provide any direction.

At the concerned schools, all teachers from the 6 schools (namely 30 teachers) with whom the local consultant interviewed responded that the School Based Management Committee (SBMC) carrying out maintenance activities was established at the school. However, it did not secure personnel for maintenance due to a lack of funds. Besides, all 6 head masters and 27 out of 30 teachers from the 6 schools were not aware of the manual on school facility maintenance that the soft components of the project had developed and reported that they did not use it for daily maintenance activities. This state of affairs was only revealed at the 6 schools, but it is assumed that it is generally the same at the other 27 schools.

The project was expected in the project planning that each school would carry out the maintenance activities of its school facilities based on the manual on school facility maintenance, and that LGEA inspectors would monitor the maintenance situation of each school based on the monitoring manual on school facility maintenance and then report the results to Kano SUBEB once a year. Furthermore, Kano SUBEB would compile information on the concerned 33 schools and then report the results to the JICA Nigeria Office once a year. However, such a monitoring system was never established among the stakeholders during and after the project. Partly because of this, the ex-post evaluation study revealed that none of the stakeholders at the selected schools, LGEAs, Kano SUBEB, and the JICA Nigeria Office was aware of such a plan. Consequently, it was not possible to confirm any monitoring activities. In short, it is judged that the system for monitoring school facilities has not fully worked, though the manuals on school facility maintenance were developed by the project.

3.5.2 Technical Aspects of Operation and Maintenance

The project was expected in the project planning that the department of planning, research, and statistics of Kano SUBEB would be in charge of technical maintenance, and that it would have no problem with experience and abilities. It was also expected that the unit of planning,

research, and statistics of each LGEA would direct the daily maintenance of school facilities after the project.

As described above, the department of physical planning of Kano SUBEB is in charge of technical maintenance at the time of the ex-post evaluation. However, as described later, it is assumed that the current status of operation and maintenance of the school facilities developed by the project does not seem good on the whole, and therefore it is difficult to judge that it has sufficient technical skills in maintenance. Besides, it does not provide the LGEAs and schools with any training to improve their maintenance skills.

Considering that Kano SUBEB itself was not aware of the monitoring manual on school facility maintenance, it is assumed that the LGEAs that are supposed to report the monitoring results to Kano SUBEB are not aware of it either, and therefore are not carrying out the monitoring activities or providing direction based on the manual. Similarly, considering that 6 head masters and 27 out of 30 teachers from the 6 selected schools with whom the local consultant interviewed were not aware of the manual on school facility maintenance, it is assumed that the head masters and teachers at the other schools are not aware of it either, and therefore are not carrying out maintenance activities based on the manual.

3.5.3 Financial Aspects of Operation and Maintenance

The project was expected in the project planning that Kano SUBEB would mainly bear the cost of maintenance of school facilities constructed by the project. The annual cost was estimated at NGN 1,911,250, equivalent to approximately JPY 2.97 million,[39] for the maintenance of 317 classrooms in 33 schools.

Financial statements for Kano SUBEB for the past three years, which were obtained at the time of the ex-post evaluation, indicate that it has not allocated any budget on the maintenance of the 33 schools. Although SBMCs were established at the 33 schools, they cannot secure sufficient funds for maintenance because the incumbent governor of Kano State set the goal of free primary education which did not require any contributions from parents. Moreover, the state government prohibits SBMCs from collecting fees to maintain school facilities from students' parents.

Considering these circumstances, the department of physical planning of UBEC now has a plan to secure NGN 1 billion annually for the maintenance of school facilities at primary and junior secondary schools in all 36 states and allocate a budget through the SUBEB in each state to the SBMC at each school. According to the director of the department of physical planning of the UBEC, he will try to respond to the concerned 33 schools once a budget is allocated.

[39] The exchange rate at the time of the ex-ante evaluation (2010) was JPY 1.555/NGN.

However, it was unclear at the time of the ex-post evaluation if the plan would be approved because it requires the signature of (or approval from) the president of Nigeria.

Table 7: Financial Statements of Kano SUBEB

(Unit: NGN thousand)

	Actual figures		
	2014 2 years after completion	2015 3 years after completion	2016 4 years after completion
(1) Total revenue	**4,928,096**	**1,820,513**	**2,173,054**
(2) Total expenses ((3)〜(4))	**4,904,594**	**1,753,513**	**2,084,054**
(3) Primary education (a+c)	4,200,000	1,100,000	2,000,000
a. School facility maintenance	3,000,000	0	0
b. of the 33 schools	0	0	0
c. Others	1,200,000	1,100,000	2,000,000
(4) Junior secondary education	704,594	653,513	84,054
(5) Balance ((1)－(2))	**23,502**	**67,000**	**89,000**

Source: Documents provided by the executing agency

3.5.4 Current Status of Operation and Maintenance

When one looks at the pictures of the maintenance situation of the school facilities (see some examples below) that the UBEC took at the 6 schools and the local consultant additionally took at the 3 schools at the time of the ex-post evaluation, there are many damages to classrooms, school furniture, and toilets. For example, classroom doors are ripped, windows' glass is broken and left neglected, and many cracks are observed in the walls and floors. There are also damages to the walls caused by termites and lyctidae. Many desks and chairs are broken because students use them in inappropriate ways, and many of the blackboards cannot be properly used because they have damage to the surface of the plyboard. In general, there are more than 3 cases of damage per classroom. Toilet doors are also ripped off and left neglected, and excretions are left unflushed, creating an unhygienic environment. Due to the aforementioned constraints, the ex-post evaluation study has not been able to cover the current status of the other 27 schools. However, it is assumed that their status does not differ much from the 6 selected schools that were examined.

The major assumed reasons for this situation are as follows: 1) schools and LGEAs do not use the manuals on school facility maintenance, though the soft components of the project made them, 2) monitoring reports are not made because of the absence of a monitoring system for maintenance between each LGEA and Kano SUBEB, and 3) Nigeria is lack of culture or custom that public goods should be cherished and maintained.

Missing door at Danmadanho Primary School

Broken window glass at Tumfafi Primary School

Completely broken desks and chairs at Tudun Yola Primary School

Damaged blackboard at Bichi Kanti Primary School

In conclusion, major problems have been observed in terms of the institutional, technical, and financial aspects and the current status. Therefore sustainability of the project effects is low.

4. Conclusion, Lessons Learned and Recommendations

4.1 Conclusion

The objective of the project was to improve educational environment by constructing school facilities such as classrooms at primary schools in Kano State, contributing to expanding access to and improving the quality of primary education. The project has been highly relevant to Nigerian development plan and development needs, as well as Japan's ODA policy in terms of improving environments of and access to primary education. Therefore, its relevance is high. While the project cost was within the plan, the project period exceeded the planned period. Therefore, efficiency of the project is fair. The operation and effect indicators for the quantitative effects of effectiveness (such as the number of appropriate classrooms) show that the goals have been achieved. Moreover, the indicators for the qualitative effects (such as daily class management) have shown improvement to a certain extent. Since impacts have also been observed in stable class management, which is no longer affected by weather throughout the year, and on disabled students, effectiveness and impact of the project are high. Meanwhile, major problems have been observed in terms of the institutional, technical, and financial aspects of operation and maintenance, and the current status of the constructed school facilities does not

seem good. Therefore, sustainability of the project effects is low.

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

4.2 Recommendations

4.2.1 Recommendations to the Executing Agency

4.2.1.1 Kano SUBEB

① It is expected that Kano SUBEB should encourage the concerned LGEAs and schools to maintain school facilities based on the manuals that the soft components of the project developed.

② It is expected that Kano SUBEB should establish a monitoring system for the maintenance of school facilities with the concerned LGEAs and schools and then share the monitoring results with the JICA Nigeria Office through UBEC once a year. This should encourage the proper maintenance of school facilities.

4.2.1.2 UBEC and Kano SUBEB

It is expected that the UBEC and Kano SUBEB should launch a long-term awareness campaign for embedding a culture or custom of cherishing and maintaining public goods in Nigeria. In particular, considering the big roles that teachers play in terms of not only daily teaching but also maintenance of school facilities, it is desired to firstly change the awareness of teachers by training them at institutes such as the National Teachers' Institute, which trains incumbent teachers.

4.2.2 Recommendations to JICA

Recommendations to the JICA Nigeria Office

① It is expected that the JICA should monitor how Kano SUBEB's encourages the concerned LGEAs and schools to use the manuals.

② It is expected that the JICA should make a request for proper maintenance of the school facilities to Kano SUBEB in cases where it finds problems in the monitoring results that Kano SUBEB shares through the UBEC with the JICA Nigeria Office once a year.

③ It is expected that the JICA should encourage teachers at the concerned schools to undertake training in the maintenance of school facilities in Japan using the JICA's thematic training and the Japanese Government (MONBUKAGAKUSHO: MEXT) Scholarship (Teacher Training Students)[40] that the embassy of Japan in Nigeria stated calling for applications for in 2016, and to promote training outputs at the concerned schools after returning home.

[40] For this scholarship, applicants must be graduates of universities or teacher training schools and have worked as teachers at primary or secondary educational institutions or teacher training schools (excluding universities) in their home countries for five years in total. Scholars are to receive teacher training at universities and other institutions in Japan for maximum of a year and a half.

4.3 Lessons Learned

【Setting realistic target values based on population forecast】

Regarding operation and effect indicator ②, the number of students per classroom at the concerned schools (that is, the quantitative effect of effectiveness), was determined that the number of students in the target year of 2012 should be set as the same as that in 2009 due to the lack of a population census since 2006 and official data on population growth. However, a population increases and decreases by nature. Therefore, it is important that the project sets realistic target values based on even a rough, albeit precise, estimate of population changes at the time of project planning.

【Agreement among stakeholders regarding post-project monitoring system at the time of project planning】

When the JICA mission visited schools where assistance was requested at the time of project planning, it found that Nigeria lacked a culture or custom that public goods should be cherished and maintained and got strongly aware that there might be a high risk that the school facilities to be constructed under the project would be damaged over the years and quickly deteriorate if the importance of daily maintenance activities was not nurtured as a part of the project. Therefore, the project took a participatory approach when preparing the drafts of the manual on and the monitoring manual on school facility maintenance, so that the Nigerian side could take ownership of spontaneously maintaining school facilities. Besides, the project was expected in the project planning that the LGEA inspectors would monitor the maintenance situation at each school based on the monitoring manual on school facility maintenance and then report the results to Kano SUBEB once a year. Furthermore, Kano SUBEB would report the results to the JICA Nigeria Office once a year. However, such a monitoring system was never established among the stakeholders during and after the project. Partly because of this, the ex-post evaluation study was not able to confirm any use of the manuals or annual monitoring activities by the 3 stakeholders once a year. As a result, the anxiety at the time of project planning was actualized. When implementing a similar project in the future, it is important to obtain an agreement among the stakeholders regarding the post-project monitoring system at the time of project planning and then to regularly monitor school facilities under the system after implementation of the project, so that a monitoring manual on school facility maintenance and a monitoring using the manual will properly function.