Ex-Post Project Evaluation 2017
Package I-6 (Senegal, Guinea-Bissau, Mali)

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TAC International Inc.

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Republic of Senegal

FY2017 Ex-Post Evaluation of Japanese Grant Aid Project

"Project of Development of Health Infrastructure in the Regions of Tambacounda and Kedougou"

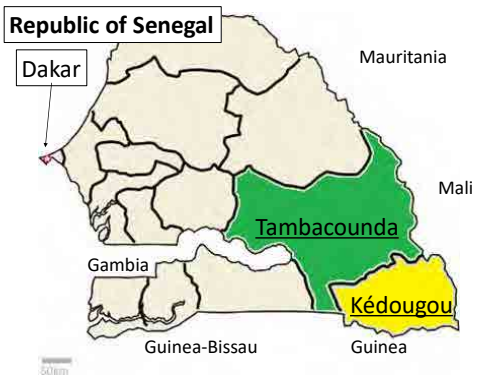
External Evaluator: Mari Nishino, TAC International Inc.

0. Summary

The objective of this project is to improve the residents' access to health facilities and to improve training environments for nurses and midwives by the construction of three health centers, procurement of medical equipment, provision of technical assistance for improving maintenance management capability, and expansion of the building of the Tambacounda Regional Health Training Center ("Centre Régional de Formation en Santé" in French, hereafter referred to as "CRFS") and procured educational equipment, thereby contributing to the improvement of healthcare services and health indicators in Tambacounda Region and Kedougou Region. The project is highly relevant to Senegal's development policy and development needs as well as Japan's ODA policy, therefore its relevance is high. The project was carried out mostly as planned. Although the project cost was within the plan, the project period exceeded the plan because it took a long time from the completion of construction to the opening of the health center, therefore, efficiency of the project is fair. With regard to the effectiveness, although the numbers of outpatients, childbirth deliveries, laboratory tests and X-ray examinations in all targeted health centers increased, no surgery operations could be performed including the caesarean section due to the absence of a surgeon and anaesthesiologist. Although the numbers of inpatients increased at two health centers, the number of inpatients decreased at one health center compared to before the project. Although the number of students at the CRFS did not change before and after the project, in-service training was also conducted. Therefore, the project made certain contributions to human resource development in the region. For impact, it was considered that the project made certain contributions because the maternal and child health indicators in both regions have improved after the project started. The project has achieved the quantitative expansion of healthcare services at the targeted health districts. Despite the fact that the project was aimed to improve the quality of healthcare services to accommodate secondary healthcare facilities, no surgeries have been carried out, and so the effect was limited. Therefore, effectiveness and impacts were fair. Sustainability is fair, based on the needs for strengthening institutional and technical aspects and concerns about maintenance management status of unoperated medical equipment.

Based on the above, this project is evaluated to be partially satisfactory.

1. Project Description



Project Location

Dianke-Maha Health Center, Tambacounda

1.1 Background

At the time of project planning, Tambacounda Region and Kedougou Region, which separated from Tambacounda in June 2008, were the target areas of this project. Both regions are located in the inland and they account for approximately one-third of the area of the country. Communication and transportation systems in these regions were underdeveloped and compared to the national average, health indicators[1] were very poor. To improve the poor indicators was an urgent problem. In Senegal, a region is divided into several health districts, and the health centers in each district are meant to provide secondary healthcare services. In 2007, the Ministry of Health and Social Action (Former Ministry of Health and Prevention, hereafter referred to as "Ministry of Health") reviewed each health district in the country in order to improve healthcare services. As a result, the number of health districts has increased from 6 to 9 in order to meet health and medical needs in Tambacounda Region which has large land area. However, in the three new health districts, the health posts were only temporarily used as health centers and were not equipped to provide secondary healthcare services. Therefore, quality and access of healthcare services was limited in those new districts.

In 2003, the CRFS was established to train assistant nurses in order to compensate for the shortage of human resources in rural areas due to a high concentration of health workers in urban areas. Based on the national policy concerning the training of medical professionals, since 2007 the center has gradually shifted their focus on training assistant nurses to become nurses and midwives. However, because the center was only equipped to train assistant nurses, they did not have the sufficient facilities and teaching materials to train nurses and midwives.

[1] The following are the nationwide averages in 2005 in Senegal; Under 5 mortality rate (per 1,000 live births) 136, infant mortality rate (per 1,000 live births) 77, neonatal mortality rate (per 1,000 live births) 31, maternal mortality ratio (per 100,000 live births) 690 (adjustment value) and 58% for delivery with the assistance of a skilled birth attendants (Source: UNICEF World Children's White Paper 2007, p 104, 132), while Tambacounda Region (before separation of Kedougou Region) had the data in the following order; 200, 100, 56, 785, 27%. (Source: Senegal Demographic Health Survey 2005, p 141, 142, 217)

1.2 Project Outline

The objective of this project is to improve the residents' access to health facilities and to improve training environments for nurses and midwives by the construction of three health centers, procurement of medical equipment, provision of technical assistance for improving maintenance management capability, and expansion of the building of the CRFS and procured educational equipment, thereby contributing to the improvement of healthcare services and health indicators in Tambacounda Region and Kedougou Region.

Grant Limit / Actual Grant Amount	Detailed Design: 63 million yen / 63 million yen Construction: 1,662 million yen / 1,540 million yen
Exchange of Notes Date /Grant Agreement Date	Detailed Design: January 2009 / January 2009 Construction: May 2009 / May 2009
Executing Agency	Ministry of Health and Social Action (Former Ministry of Health and Prevention)
Project Completion	May, 2014
Main Contractor(s)	Construction: Toda Corporation Equipment: Mitsubishi Corporation
Main Consultant	Daiken Sekkei. Inc.
Basic Design	February, 2008- September, 2009
Related Projects	【Technical Cooperation】 ・HIV/STI Project: Prevention and Education for Youth（2005-2007） ・Project for the Development of Human Health Resources（2001-2006） ・Technical Adviser at the Cabinet of Ministry of Health and Prevention (2008-2011） ・Health System Management Advisor（2009-2010） ・Project for Reinforcement of Maternal and Child Health Care in Tambacounda and Kedougou（2009-2011） ・Enforcement of Management of Health System in Tambacounda and Kedougou（2011-2014） 【Grant Aid】 ・Projet de construction d'un bloc scientifique polyvalent et de fourniture d'quipement l' Ecole nationale de developpement sanitaire et social

	(2001-2003） ・Project for Reinforcement of Maternal and Child Health Care and Malaria Control（2000） 【Other international organization】 ・African Development Bank：FAD/PNDS Health Project Phase 2（2005-2010） ・Islamic Development Bank：BID Project（2004-2007） ・UNFPA: Country programme for Senegal, the 6th cycle of assistance for 5 years (2007-2011)

2. Outline of the Evaluation Study

2.1 External Evaluator

Mari Nishino, TAC International Inc.

2.2 Duration of Evaluation Study

This ex-post evaluation study was conducted as follows:

Duration of the Study: August 2017 – July 2018

Duration of the Field Study: November 12, 2017 – December 5, 2017, and February 18, 2018 – February 28, 2018

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

3.1 Relevance (Rating: ③[3])

3.1.1 Consistency with the Development Plan of Senegal

During the planning phase of the project, the Invest Plan (*the Comprehensive Health Development Plan 1998-2002*) of the National Health Development Plan (*Plan National de Development Sanitaire 1997-2006*, hereafter referred to as "PNDS"), the comprehensive health policy of Senegal, prioritized 1) to construct health posts and strengthen obstetric emergency response (renovation and establishment of surgical buildings) in existing health centres[4] and 2) to create a health care map to correct the imbalance of health care infrastructure. According to *the 2nd National Health Development Plan (PNDS2 2004-2008)*, the central issue of health care was to lower high maternal mortality ratios, child mortality rates and birth rates. Another issue

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

[3] ③: High, ②: Fair, ①: Low

[4] The Senegalese health system consists of national hospitals as a top, regional hospitals that are responsible for tertiary healthcare services, health centers that provide secondary healthcare services, and health posts that are responsible for primary healthcare services. Regional hospitals are established in each region, and health centers are set up for each health district, which is a health administration unit. Each health district has about 15 to 20 health posts. Health centers are distinguished between referral health centers with operating rooms and health centers without them. The health centers in Maka-Colibantang and Saraya are the reference health centers, while health center in Dianke-Maha is a health center. (Source: documents provided by JICA)

was focused to resolve large regional disparities such as the low number of healthcare facilities per population and the large average distance from villages to health posts providing primary care in rural areas. In order to improve these health indicators, there are four areas that should be prioritized for the foreseeable future: (1) development of health human resources, (2) strengthening of health systems, (3) promotion of preventive measures, and (4) improvement of access to health services among the poor and socially vulnerable.

PNDS (2009-2018), the development plan of the time of ex-post evaluation, prioritized (1) reduction in maternal mortality ratio / infant and child mortality rate and disease prevalence rate, (2) disease prevention measures, (3) strengthening a sustainable health system and (4) governance reinforcement. Among the strategies for achieving them, human resource development and expansion of infrastructure and medical equipment are included. In addition, the "*Integrated National Strategic Plan for Improving the Quality of the Health Sector (Plan Stratégique National Intégrée de la Qualité en Santé 2018-2022)*" also includes improvements in health infrastructure. Hence, continued improvement of access to healthcare services for residents is a priority issue.

Therefore, at the time of planning and ex-post evaluation, the aim of the project was highly consistent with the health policies of Senegal that prioritises health infrastructure development and human resource development.

3.1.2 Consistency with the Development Needs of Senegal

At the time of project planning, Tambacounda Region and Kedougou Region, which separated from Tambacounda Region in June 2008, were the target areas of this project. Both regions are located in the inland and they account for approximately one-third of the area of the country. Communication and transportation systems in these regions were underdeveloped and compared to the national average, health indicators were very poor. Improvement of poor indicators was an urgent problem. The administrative division of healthcare in Senegal is a region which has Regional Medical Office. A region is divided into several health districts, and in each health district, health centers are meant to provide secondary healthcare services and to administer healthcare. In June 2007, the Ministry of Health issued a ministerial ordinance to review each health district in the country in order to improve healthcare services. As a result, the number of health districts has increased from 6 to 9 in Tambacounda Region which had large land area in order to meet health and medical needs. However, in the three new health districts, the health posts were only temporarily used as health centers and were not equipped to provide secondary healthcare services. Therefore, quality of healthcare services and access have not improved in those new districts.

At the time of project planning in 2008, *PNDS 2009-2018* pointed out a large shortage of health providers such as 3,433 nurses and 968 midwives. In 2003, the CRFS was established

for training assistant nurses in order to compensate for the shortage of human resources in rural areas due to the high concentration of health workers in urban areas. Based on the national policy concerning the training of medical professionals, the center has gradually shifted their target on training assistant nurses to nurses and midwives since 2007. In addition, the graduates are required to work in the regions where they studied for certain periods of time upon graduation. This would hopefully reduce the shortage of nurses and midwives in those regions in the future. However, because the existing center was only equipped to train assistant nurses in terms of facility and equipment, it lacked the necessary facilities and teaching equipment to train nurses and midwives.

Even at the time of the ex-post evaluation, health indicators in Tambacounda Region and Kedougou Region were worse than the national average. The under 5 mortality rate (per 1,000 live births) was 72 nationwide, while 100 in Tambacounda Region and 154 in Kedougou Region. The facility childbirth delivery rates were 72.8% nationwide, while 45.2% in Tambacounda Region and 32.4% in Kedougou Region[5]. In addition, the needs for construction and renovation of health facilities in both regions continue to be high, and the construction of health centers and health posts was still in progress through other donors such as a French NGO during the ex-post evaluation. In the interview with the principal of the CRFS, he mentioned that there was a high need for training because of the continuous shortage in the health workforce in Tambacounda Region and Kedougou Region. Especially because these regions are located in remote areas, health workers are likely to be transferred to other health facilities within a short period of time because infrastructure is undeveloped and educational institutions are limited for their children. However, it was heard that some students of the CRFS who have adapted to living in remote areas through the community practices want to work in those regions.

In conclusion, at the time of planning and ex-post evaluation, compared to the nationwide, the target area has poorer health indicators and has a higher need for health facilities and training of health workers. Therefore, this project is consistent with the development needs of Senegal.

3.1.3 Consistency with Japan's ODA Policy

The policy consultation meeting between Japan and Senegal held in February 1998 confirmed that basic human needs (water supply, education, healthcare), environment (prevention and control of desertification) and agriculture and fishery were priority areas, which was also consistent at the time of the project plan. Accordingly, the JICA Country Implementation Plan (revised in October 2005) declared "Improving Basic Living (water supply,

[5] Source: Demographic Health Survey, 2012

education, healthcare and human resources development,)" as its priority following this. The project contributes to the focus of cooperation in the health sector: “continuing cooperation on development of facilities and supply of equipment at the primary healthcare”, “improvement of reproductive health in primary healthcare facilities", and "strengthen health system management". Since 2005, the local ODA Task Force and the Ministry of Health have agreed that Tambacounda Region, one of the poorest regions, should be the priority area for Japan's cooperation in the health sector. The project was expected to be a component of "Tambacounda Health System Enhancement Program" which composed with Japanese experts, technical cooperation projects, grant aid, Japan Overseas Cooperation Volunteers (hereafter referred to as "JOCV"), and training in Japan. Therefore, the project is consistent with Japan’s ODA policy.

In conclusion, this project has been highly relevant to Senegal’s development policy and development needs, as well as Japan’s ODA policy. Therefore its relevance is high.

3.2 Efficiency (Rating: ②)

3.2.1 Project Outputs

1) Facility construction

<Health Center>

All heath centers were constructed as planned. A total of three health centers were constructed; Maka-Coribantan and Dianke-Maha in Tambacounda Region, and Saraya in Kedougou Region. Each health center is composed of nine departments: General Outpatient, Pharmacy, Obstetric Outpatient, Childbirth Delivery, Obstetric Hospitalizations, General Inpatient, Examination, Surgery, and Administration. Dianke-Maha has eight departments, all of the above except Surgery. These departments are all within six independent buildings (four buildings in Dianke-Maha) and divided into four separate sections - (1) General Outpatient and Administration (General Outpatient, Pharmacy and Administration), (2) Obstetrics (Obstetric Outpatient and Childbirth Delivery), (3) Examination and Surgery, and (4) Inpatient. The buildings are all single story. They are independent divisions according to each function (pavilion type), and are arranged around the courtyard.

Table 1: Laying areas of health centre (unit: m^2)

	Saraya	Maka-Colibantang	Dianke-Maha
Site Area	50,000	30,000	50,000
Total Facility Area	2,256.65	2,356.67	1,792.46

Source: *Basic Design Study Report*

< The Tambacounda Regional Health Training Center >

The center was constructed as planned. It is an extension of the existing CRFS. Four classrooms, two practical training rooms, four teaching staff rooms, toilets (four booths each for men and women) and two equipment storage rooms were built into a two-story building. On the first floor, practical training rooms, teaching staff rooms, toilets, and equipment storage rooms were installed and the entrance hall was set up with a message board for the students. On the second floor, classrooms, toilets and equipment storage rooms were installed. Among four classrooms, two were equipped with movable partitions, making it possible to convert a small classroom into a large one.

2) Main Equipment

<Health Center>

Equipment was procured as planned.

Table 2: Main procured equipment in health center (unit: number)

Group	Equipment	Usage	Number		
			Saraya	Maka-Colibantang	Dianke-Maha
Image diagnose	X-ray diagnose	Chest-abdominal general radiography	1	1	-
	Ultrasound diagnose	Obstetric measurement	1	1	-
Ward	Bed with mattress	General/Obstetric room, Labor room, Recovery room	22	30	20
Dental	Treatment chair	Dental treatment	1	1	1
Operation	Anaesthesia apparatus with artificial respirator	General anaesthesia at operation	1	1	-
	Patient monitor	Measuring vitals	1	1	-
Laboratory	Auto blood cell measurement	Measurement of blood component	1	1	1
Sterilize	Auto clave steriliser	Sterilization of equipment/ surgical gown	1	1	-

Source: *Basic Design Study Report*

<Tambacounda Regional Health Training Center >

Training equipment necessary for nursing and midwifery education was installed and procured as planned.

Table 3: Main procured equipment in Tambacounda Regional Health Training Center

(unit: number)

Class room	Desks and chairs for students	Chairs with wing table	30 set x 4rooms=120 set
	Desks and chairs for teachers	Steel made	1 set x 4 rooms=4 sets
	Black boards	Open close type	1 unit x 4 rooms=4 units
Teaching staff rooms	Desks and chairs for teachers	Steel made	1 set x 4 rooms =4 sets
	Cabinets	Steel made	1 unit x 4 rooms= 4 units
	Chairs for guests	Steel made	2 chairs x 4rooms= 8 chairs
Entrance hall	Signboard	Steel made	1 unit
Practical training room	Statoscope, blood pressure monitor, thermometer, ophthalmoscope, otoscope		4 each
	Weight scale（adult/ child）		1
	Wagon for medical round visit		1
	Bed with mattress		1
	Delivery table, obstetric examination table		1 each
	Aspirator, aspirator (foot step)		1 each
	Obstetric stethoscope		2
	Delivery tool set		4
	Gynaecologic examination equipment set		2
	Treatment instrumental set		1
	Laryngoscope with resuscitator (adult/ child, neonate)		1 each
	Timer		2
	Dry heat sterilizer		1
	Anatomical model		2
	Human skeleton model, intravenous arm model		1 each
	Delivery phantom		2
	New born infant model		2
	Anatomical chart		2

Source: *Basic Design Study Report*

Although the completion report said that the soft component was carried out as planned, the evaluator could not obtain information on the implementation status at that time from the Ministry of Health and each health center. According to the completion report, health centers in Maka-Colibantang and Saraya were not yet opened, and maintenance personnel were not allocated in Dianke-Maha and Saraya at the time of the soft component implementation.

The responsibilities of the partner country, such as acquisition of construction permits, necessary facilitation for the Japanese experts to stay, levelling ground of the planned construction site, and construction of housings for health center's workers excluded doctor were mostly carried out as planned. In addition, supplementary facility construction work, relocation of existing equipment and furniture, and procurement of furniture and fixtures for the new facilities were mostly carried out as planned. However, the construction of the access road for the construction site of health center in Dianke-Maha, and the infrastructure connection to the

health centers in Maka-Colibantang and Saraya (electricity, water supply and sewage) were delayed (see 3.2.2.2 Project period).

3.2.2 Project Inputs

3.2.2.1 Project Cost

The project cost on the Japanese side was planned 1,725 million yen (detailed design 63 million yen, construction 1,662 million yen), but the actual cost was 1,603 million yen (detailed design 63 million yen, construction 1,540 million yen). The project was implemented within the planned budget (89 percent of the planned amount). According to the Ministry of Health, all Senegalese responsibilities were implemented, but the cost information from Senegal's side was not available.

3.2.2.2 Project Period

In light of the project purpose of "improving health services", the evaluator concluded that it is reasonable to judge the project completion is the time of opening the new health centres and, to start utilizing the facilities. The project period was planned to be 36 months including detailed design, bidding and construction. The facilities were scheduled to open promptly after the completion of construction. Among the Senegalese side's responsibilities, the construction of the access road to the health center in Dianke-Maha was delayed, and the construction of the health center was discontinued for 1 year from September 2010 because construction materials could not be carried safely. The Ministry of Infrastructure, Land Transportation and Traffic Improvement was in charge of construction of the access road, and despite the coordination in order to be implemented surely by the Ministry of Health, it was not implemented as planned. After various arrangements, construction work restarted after the Japanese contractor constructed about 30 kilometres of road to withstand of construction work by using the counterpart fund. As a result, construction was completed in March 2012 which was 1 month behind the plan (total of 37 months, 103% of the plan). Afterwards, it took time for Senegal to follow through on their responsibilities to install the electricity and water supply for health centers in Maka-Colibantang and Saraya. Finally, the health center in Maka-Colibantang opened in August 2013 and the health center in Saraya opened in May 2014. The project period totalled 63 months (175% of the plan), which was significantly longer than planned.

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

Roles and Contributions
Since this project site was located in remote areas and was a challenging project to

begin with, there were several points that should be closely coordinated and determined from the time of planning in order to ensure the implementation of Senegal's responsibilities and contributions. Against delays of project proceeding, the person involved took several countermeasures during the implementation including, installation of power reception and water supply, levelling the ground of the planned construction site, construction of the access road for the construction site and allocation of health human resources, etc. The following are the roles taken by person involved.

Regarding the health center in Dianke-Maha, even during the preliminary survey, consideration was made repeatedly on whether or not to include it in the project target area because the access road was so poorly maintained. Because there are no core healthcare facilities in the area it became a priority to improve the situation, and Senegal offered to contribute of construction of the access road by their own efforts, the site was eventually included in the project. According to the consultant in charge, after starting the project a lot of time was spent on "supervision for construction and procurement of facility and equipment" and "request and consultation for the responsibilities of Senegal." Various meetings were conducted among stakeholders and requests were repeated to the Ministry of Health. Specifically, a bi-monthly comprehensive meeting was set up from the beginning of the project and periodic meetings were held to discuss the electricity, drawing water, and ground levelling of the sites and access roads. The meetings were also held in the two regions to discuss each of their responsibilities. The Ministry of Health has issued construction request letters to the concerned ministries and agencies regarding the road, water supply and electricity. In 2010, the intensive consultation meetings on access roads were conducted and Senegal began construction. However, part of the road construction had no budget, therefore the ordering time could not be decided. As a result, there was a high possibility that construction completion within the E/N deadline could not be expected, so the Japanese side examined the construction of a part of the access roads by itself. As a result of consultations among person involved, including the Embassy of Japan, the construction of the access roads using the counterpart funds of the Ministry of Health was confirmed in February 2011. Selection of contractors and construction ordering were scheduled for bidding through the Road Maintenance & Transportation Public Cooperation. However, due to the doubt that it takes time for bidding and contract signings, etc., and the Senegalese companies were in danger of not completing construction within the planned period, a special contract was signed with the Japanese contractor of the project in September 2011. Therefore, the project was completed 1 month behind the plan.

Alternatively, JICA Senegal Office also urged the executing agency to conduct works for the electricity receiving and water supply and to allocate the health staff in the health centers to open health centers as early as possible. After the openings of the health centers, the Senegalese side requested joint monitoring, which was then planned and implemented.

3.3 Effectiveness and Impacts[6] (Rating: ②)

3.3.1 Effectiveness

3.3.1.1 Quantitative Effects (Operation and Effect Indicators)

This project set operational indicators, namely the numbers of outpatients, inpatients, beds, childbirth deliveries, surgical operations, laboratory tests and X-ray examinations, and the project expected to increase those numbers from their baseline values in 2007. As for the indicators whose goals are simply "to increase" without specific numerical target numbers, there are descriptions for the assumed numbers that were calculated from the population ratio in the health districts, such as the ratios of patients and childbirth deliveries in the basic design study report. Hence, the ex-post evaluator used these values as target values and compared them with actual results to use as reference values. There were zero laboratory tests and X-ray examinations because the necessary equipment was not installed at the time of planning and the assumed numbers were not listed in the report, so the evaluator only confirmed the actual numbers. In addition, since all facilities started services in 2014, the evaluator conducted the evaluation based on actual values in 2015 (1 year after the completion of the project, which is right around the time we can see the effects of the initial plan), while monitoring the actual results for the target year (2013) which is expected to see the effects of the initial plan to the target values and secular changes during the project period.

The numbers of outpatient, childbirth delivery and laboratory tests (excluding Dianke-Maha) increased overall from the baseline values at all three facilities. Regarding the number of inpatients, Maka-Colibantang increased significantly after 2 years of opening, while Dianke-Maha remained at about 70% of the baseline values for 3 years after opening. Saraya exceeded the baseline values in the year of the opening and after 1 year of opening, but then achieved only 40% of the baseline values beyond that. The operation rooms of Maka-Colibantang and Saraya were still inactive at the time of the ex-post evaluation, no surgery has been performed. X-ray examinations increased after the introduction of a printer in Maka-Colibantang in 2016, but that is yet to be implemented in Saraya.

In actual value of 2015 with respect to the target value, the numbers of outpatient and childbirth delivery nearly reached the target values, the numbers of laboratory tests increased, and the numbers of X-ray examinations in Maka-Colibantang also increased in 2016 after a printer was installed. On the other hand, the numbers of inpatients remained at only about a half of the target values. Since the operation room was not working, the number of operations was zero. The number of X-ray examinations was also zero in Saraya.

According to the doctors of the health centers, the numbers of outpatient and childbirth deliveries increased because the residents gradually became aware that they could receive

[6] In rating, the evaluator adds Impact to the judgment of Effectiveness

medical consultation and can deliver babies safely at the health centers. It was also found that during the antenatal care at the health posts, the midwives encouraged mothers to deliver their babies at the health centers. The reason that the number of inpatients did not increase was considered because there are no surgeons or anaesthesiologists to conduct surgeries at the health centers. The number of X-ray examinations may increase in Saraya once a printer is installed.

Table 4: Operational indicator: Maka-Colibantang Health Centre (unit: number)

	Baseline	Target	Actual			
	2007	2013	2013	2014	2015	2016
		1 Year After Completion		Completion Year	1 Year After Completion	2 Years After Completion
Outpatient	7,918	Increase	11,982	7,654	11,664	12,593
(Achievement rate for baseline)			151%	97%	147%	159%
(Achievement rate for target)		13,226*	91%	58%	88%	95%
Inpatient	183	Increase	96	105	304	485
(Achievement rate for baseline)			52%	57%	166%	265%
(Achievement rate for target)		1,134*	8%	9%	27%	43%
Number of beds	7	26	25	25	25	21
(Achievement rate for baseline)			357%	357%	357%	300%
(Achievement rate for target)			96%	96%	96%	81%
Childbirth delivery	267	Increase	362	785	1,188	1,105
(Achievement rate for baseline)			136%	294%	445%	414%
(Achievement rate for target)		969*	37%	81%	123%	114%
Operation	0	30	0	0	0	0
Laboratory test	0	Increase	N/A	1,322	869	1,076
X-ray	0	Increase	0	30	0	197

Source: Documents provided by JICA and executing agency

Note: * For the indicators whose goals are "to increase" without specific numerical target numbers, the evaluator referred to each assumed number calculated at the time of planning. The same applies to the following Table 5 & 6.

Table 5: Operational indicator: Dianke-Maha Health Centre (unit: number)

	Baseline	Target	Actual			
	2007	2013	2013	2014	2015	2016
		1 Year After Completion		Completion Year	1 Year After Completion	2 Years After Completion
Outpatient	1,762	Increase	N/A	18,764**	5,315	9,118
(Achievement rate for baseline)				1065%	302%	517%
(Achievement rate for target)		11,159*		168%	48%	82%
Inpatient	478	Increase	N/A	273	416	319
(Achievement rate for baseline)				57%	87%	67%
(Achievement rate for target)		576*		47%	72%	55%
Number of beds	5	18	N/A	24	22	22
(Achievement rate for baseline)				480%	440%	440%
(Achievement rate for target)				133%	122%	122%
Childbirth delivery	150	Increase	N/A	344	163	147
(Achievement rate for baseline)				229%	109%	98%
(Achievement rate for target)		491*		70%	33%	30%
Laboratory test	0	Increase	N/A	2,629	790	1,011

Source: Documents provided by JICA and executing agency

Note: Operation room and equipment for X-ray examination are not installed in Dianke-Maha.

** Numbers of outpatients includes the health posts under jurisdiction throughout its health districts.

Table 6: Operational indicator: Saraya Health Centre (unit: number)

	Baseline	Target	Actual			
	2007	2013	2013	2014	2015	2016
		1 Year After Completion		Completion Year	1 Year After Completion	2 Years After Completion
Outpatient	1,845	Increase	7,029	10,527	11,996	8,008
(Achievement rate for baseline)			381%	571%	650%	434%
(Achievement rate for target)		10,632*	66%	99%	113%	75%
Inpatient	217	Increase	N/A	303	246	91
(Achievement rate for baseline)			-	140%	113%	42%
(Achievement rate for target)		508*	-	60%	48%	18%
Number of beds	9	18	8	18	18	18
(Achievement rate for baseline)			89%	200%	200%	200%
(Achievement rate for target)			44%	100%	100%	100%
Childbirth delivery	160	Increase	100	281	277	295
(Achievement rate for baseline)			63%	176%	173%	184%
(Achievement rate for target)		386*	26%	73%	72%	76%
Operation	0	13	0	0	0	0
Laboratory test	0	Increase	0	1,588	118	930
X-ray	0	Increase	0	0	0	0

Source: Documents provided by JICA and executing agency

Due to the expansion of the CRFS through this project, the goal for basic education was to increase the number which can be accepted of nursing and midwifery students from 90 students (2008) to 180 students (2011). Regarding the in-service training, the goal was to be increased to 30 participants by 2011, from the situation that there had been no specific classrooms for in-service training (2008) and they had to use vacant classrooms. Since these target values were automatically achieved when the facility scale expanded, the actual numbers of students was used as an additional indicator. At the time of planning, training of assistant nurses was completed by the 2008 fiscal year graduation, and the plan was to sequentially increase the number of nursing and midwifery students (capacity of 30 each).

However, only 10 students in each nursing and midwifery course were admitted every year, which is only about 30% of the target value of 30 students at the time of planning. According to the head of the Department of Human Resources at the Ministry of Health, the numbers of students is determined by the budget, and the budget was allocated to admit around 10 students recent year. A new curriculum based on the Competency Approach[7] was introduced in 2014. With this curriculum, all students need to take the practical training but the teachers feel that there is not enough training equipment for the numbers of students.[8] For example, when 10 students practice with only a single intravenous drip practice model, they cannot complete any sort of substantial training within an allocated period of time.

[7] The Competency Approach started at Ecole nationale de developpement sanitaire et social in 2010, and it was disseminated to training schools throughout the country sequentially. The old approach (Objective Approach) emphasizes memorization, tests and knowledge. The students learn the theory for 2 years and learn practical training in the final year. With the Competency Approach, the students learn theory and practical training continuously. Competency Approach puts emphasis on problem solving skills required to meet the needs of the target population (patients/residents) on site.

[8] According to the Department of Human Resources at the Ministry of Health, the introduction of the Competency Approach did not influence/limit the number of students.

Table 7: Number of students in basic training (Unit: Person)

		Nursing				Midwifery			
		1st	2nd	3rd	Total	1st	2nd	3rd	Total
2007	Estimation	14	-	-	14	-	-	-	-
	Actual	-	-	-	0	-	-	-	-
2008	Estimation	25	14	-	39	15	-	-	15
	Actual	13	-	-	13	0	-	-	0
2009	Estimation	25	25	14	64	20	15	-	35
	Actual	0	13	-	13	0	0	-	0
2010	Estimation	25	25	25	75	20	20	15	55
	Actual	13	0	13	26	0	0	0	0
2011	Estimation	30	25	25	80	25	20	20	65
	Actual	0	13	22	35	0	0	0	0
2012	Estimation	30	30	25	85	25	25	20	70
	Actual	12	0	8	20	8	-	-	8
2013	Estimation	30	30	30	90	25	25	25	75
	Actual	0	12	4	16	0	8	-	8
2014	Estimation	30	30	30	90	30	25	25	80
	Actual	11	0	12	23	6	0	8	14
2015	Estimation	30	30	30	90	30	30	25	85
	Actual	9	11	3	23	13	6	7	26
2016	Estimation	30	30	30	90	30	30	30	90
	Actual	9	9	11	29	9	13	6	28
2017	Actual	10*	9	9	28	10*	9	13	32

Source: Documents provided by executing agency
Note: * Number of prospective students

There were no classrooms for in-service training at the time of planning; so 803 people participated in 32 classes in a year using conference rooms and available classrooms (average number of participants: 25 people). At the time of planning, the increase rate of the numbers of in-service participants was assumed to be 1.24. The necessity of in-service education is expected to decrease in the future, so the project must remain versatile in order to reach a capacity of 30 participants after completion of the project. In order to evaluate the actual operational situation, an additional indicator was set for the number of in-service training participants: 995 participants (803 participants x 1.24).

The number of in-service training participants was 2 to 4 participants per year until 2014, 20 to 31 participants in 2015 and 2016. This is about 3% of the target value of 995 participants at the time of planning. According to the principal, the 4 types of in-service training that were expected at the time of planning were not realized. The in-service training room is used to train the current assistant nurses and midwives to become nurses and midwives. Most of the trainees in the last two years belong to health facilities nearby. Although the number of trainees of basic education and in-service education at the CRFS is significantly lower than the plan, the large classroom and other classrooms are used throughout the year. They are used for conferences of the Regional Medical Office and preparation of annual activity plans (Plan de Travail Annuel, PTA) etc. by the staff of the Regional Medical and District Health Offices.

Other donors and NGOs use the venue for various trainings and workshops.

Table8: Number of in-service trainees (Unit: Person)

	Nurse		Midwife	
	Trainee	Belong to 2 regions*	Trainee	Belong to 2 regions*
2008	1	0	1	0
2009	1	0	1	0
2010	1	0	1	0
2011	1	0	1	0
2012	1	0	1	0
2013	4	0	0	0
2014	1	0	3	0
2015	10	9	10	7
2016	14	14	17	15

Source: Documents provided by executing agency
Note: *2 regions indicate Tambacounda and Kedougou

3.3.1.2 Qualitative Effects (Other Effects)

Although no qualitative effect indicators were defined at the time of planning, two outcome values were set: improvement of residents' access to health facilities and improvement of learning environment for training of nurses and midwives. The interview survey by using a questionnaire was conducted to the users of health centres and students of the CRFS.

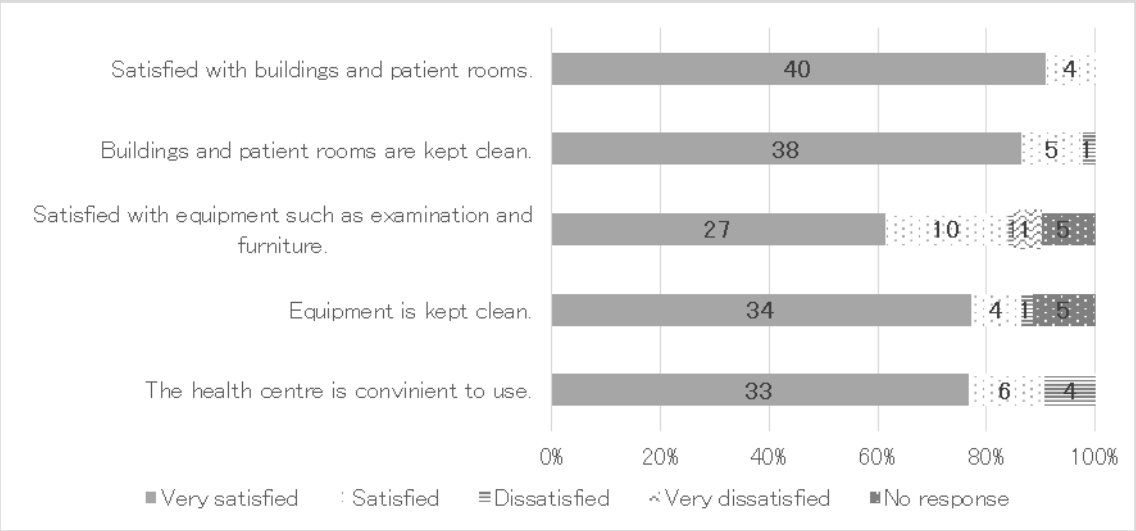
<User Survey>

The evaluator received a total of 44 responses (35 outpatients and 9 inpatients) from the three health centres.[9] In general, there was a high level of satisfaction (Fig. 1). For the buildings and inpatient rooms: very satisfied (91%) and satisfied (9%). Whether the buildings and inpatient rooms are maintained to be clean: very much agree (86%), agree (11%) and disagree (2%). For equipment of inspections and furniture: very satisfied (61%), satisfied (23%), dissatisfied (2%), very dissatisfied (2%), no response (11%). Whether equipment is kept clean: very much agree (77%), agree (9%), disagree (2%) and no response (11%). Regarding the number of health centre utilization per month, 28 people responded 1 to 7 times (average 2.5 times), 10 people responded that they utilized for the first time, 7 people responded that they did not utilize much. Whether the health centre is convenient to use: very much agree (75%), agree (14%) and disagree (9%). There was no significant difference between male and female among the health centres.

The survey shows that 80% and above of the respondents are satisfied with the facilities and equipment and 90% think that health centre is convenient to use. Based on the

[9] Attributes of the respondents are 20 residences in Maka-Colibantang, 11 residences in Dianke-Maha and 13 residences in Saraya. They are 34 women (77%) and 10 men (23%). A half of them are in their 20s and 30s and the average age was 27. For clinical department 80% of respondents are patients of the Department of Internal Medicine and the rest are patients of Obstetrics and Gynecology.

staff interviews, their satisfaction with the facility and equipment was high, and they responded that the number of users would increase if more residents knew about the health centers.



Note: The number shows the responses.

Figure 1: Result of user survey

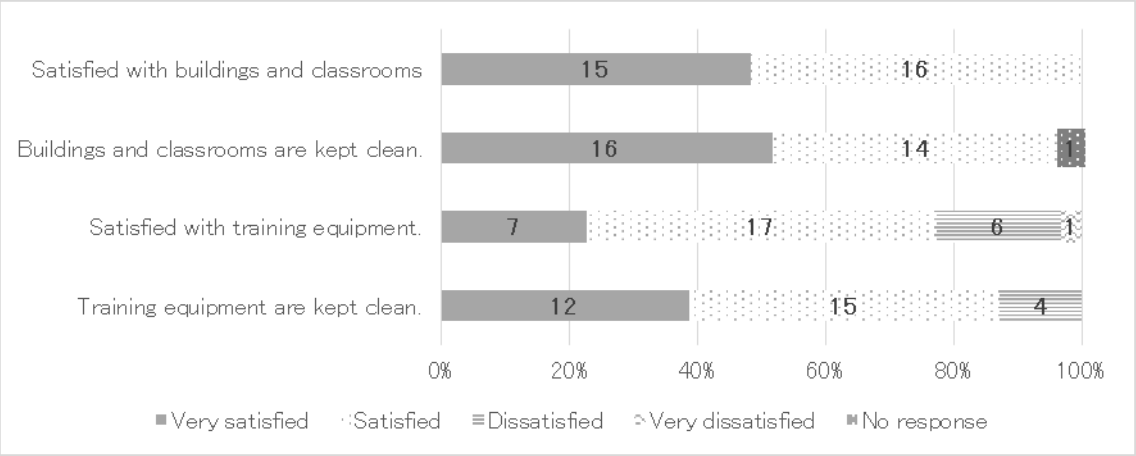
<Student Survey>

The evaluator received responses from 31 second and third year students of nursing and midwife courses (Fig. 2)[10]. Regarding the questions about the buildings and classroom, the responses are: very satisfied (48%) and satisfied (52%). Whether the buildings and classrooms are maintained to be clean: very much agree (53%), agree (47%). For training equipment: very satisfied (23%), satisfied (55%), dissatisfied (19%), and very dissatisfied (3%). Regarding training equipment is kept clean: very much agree (39%), agree (48%) and disagree (13%). The places of residency before enrolment at the center were: 21 students (68%) in Tambacounda Region, 0 student in Kedougou Region and 10 students (32%) in other regions. Therefore 70% of the respondents were from Tambacounda Region. The areas where respondents want to work immediately after graduation were Tambacounda Region (84%), Kedougou Region (3%), and other regions (13%). Therefore, 80% of the respondents were willing to work in Tambacounda Region.

Based on the student survey result, 90% and above of the respondents were satisfied with the buildings and classrooms, but only 70% were satisfied with the training equipment. One of the reasons for their dissatisfaction is considered that all 10 students cannot finish their practical training within the limited time because some of the equipment exist only one. On the

[10] At the time of the survey, the enrollment for first year students was delayed than normal. Thus, the second and third year students were surveyed. For the nursing course, there were 14 2nd year students and 17 3rd year students and for the midwifery courses, there were 18 2nd year students and 14 3rd year students. There were 9 male students and 22 female students. Age distribution was between ages 21 to 30, and the average age was 25.

other hand, 70% of the students are from Tambacounda Region and 80% of the student want to work in Tambacouda Region which would certainly considered to be a contribution towards health human resource development in the region.



Note: The number shows the responses.

Figure 2: Result of student survey

3.3.2 Impacts

3.3.2.1 Intended Impacts

Through the implementation of this project, the following indirect effects were expected:

(1) Improvement of health indicators in Tambacounda Region and Kedougou Region:

- Contribute to improve health indicators in both regions that are lower than the average values of the whole country, such as maternal mortality ratio and child mortality rate

(2) Qualitative improvement of health services:

- Improve quantity and quality of healthcare services provided to the beneficiaries in the target health districts (population of about 154,000 in 2008)
- Improve the quality of healthcare services in both regions by increasing the numbers of trained health workers at the CRFS, allocating them to the target areas, and expanding in-service training

Regarding (1), as shown in Table 9, maternal and child health indicators in both regions have improved since the project started. As mentioned earlier in the Effectiveness section, since the number of childbirth delivery at the target health centres have increased, the health centers are considered to contribute to decrease the number of home births. It also contributes to increase childbirth deliveries assisted by skilled birth attendants in the areas. In

addition, the number of outpatients also increased sharply compared to before the project because health consultations for infants and children under 5 years old are now free of charge. At the time of ex-post evaluation, the evaluator found that some infants and children consulted for infectious diseases or malnutrition at the health centres. Therefore, the project has considered to make certain contributions to the medical consultation and treatment for children.

Table 9: Trend of indicators for maternal and child health (unit: number)

Indicator	Region	2005[*1]	2016	2016 Reference
Maternal Mortality Ratio (per 100,000 live births)	Tambacounda	785[*2]	NA	-
	Kedougou		NA	-
Neonatal Mortality Rate[*3] (per 1,000 live births)	Tambacounda	56	28	31 (2 regions' average)
	Kedougou		34	
	Dakar	30	18	-
Infant Mortality Rate[*4] (per 1,000 live births)	Tambacounda	100	48	60 (2 regions' average)
	Kedougou		71	
	Dakar	44	31	-
Under 5 Mortality Rate (per 1,000 live births)	Tambacounda	200	105	123 (2 regions' average)
	Kedougou		140	
	Dakar	79	42	-
Childbirth delivery by skilled birth attendants[*5]	Tambacounda	27.2%	87.6%	
	Kedougou		84.2%	
	Dakar	92.1%	97.8%	
Rate of home births	Tambacounda	64.5%	54.7%	
	Kedougou		53.5%	
	Dakar	6.6%	5%	

*1 Kedougou Region was separated from Tambacounda Region in June 2008. Therefore, it was a part of Tambacounda Region in 2005.
*2 Source of Maternal Mortality Ratio: Documents provided by JICA
*3 Neonatal Mortality Rate: Mortality rate less than the first 28 days
*4 Infant Mortality Rate: Mortality rate less than one year of age
*5 Skilled birth attendants: Medical doctors, nurses, and midwives
Source: DHS2005 (p141, 142, 217), DHS2016 (p329, 335, 337)

With regard to (2), the quantity and quality of healthcare services in the target health districts were expected to improve through this project. As mentioned in the Effectiveness section, the healthcare services in the three health centers have achieved improvement of quantitatively compared to before the project. However, in terms of quality improvement, since the health centers only provided primary healthcare services at the health posts in the past, their effects are limited to consider the object of providing secondary healthcare services. Specifically, at the health centers in Saraya and Maka-Colibantang, the improvement of quality of healthcare service was expected through ultrasonic examination and caesarean section are available, which can reduce the maternal mortality ratio. Since X-ray examinations and general surgery are possible to conduct, quality improvement of healthcare services, such as diagnosis, operation and treatment was expected (source: document provided by JICA). Although ultrasound

examinations for pregnant women and X-ray examinations can be performed in both health centers, since their operation rooms are inactive, patients who need caesarean sections or surgery operations have to go to the regional hospital or the hospitals in Dakar. According to interviews with the staffs of Regional Medical Office and the health centers, they are confident that the residents' access to healthcare services has improved after the project, although some services are still limited under current circumstances. Furthermore, many mentioned that there would be further contributions once the operation rooms and dental clinics are available because there is need surely. Based on the user survey of the health centers, 85% of respondents are satisfied with the buildings and equipment, and 89% responded that the health centres are convenient to use. Therefore, user satisfaction is high.

CRFS was expected to contribute a stable supply of health workforce lacking constantly in the areas by increasing the number of students admitted. The quality of healthcare services was also expected to improve through the expansion of in-service training (source: documents provided by JICA). There has been no significant increase in the number of students even after the project, but the center still produced a stable health workforce. Although there is no obligation for graduates to work in the specific regions, the student survey shows that many students wish to work in Tambacounda Region upon graduation. In-service training is also conducted every year, and most participants from the last two years are belong to Tambacounda Region. Even though the number of participants of the in-service training is small, the evaluator finds that the center contributes towards improving local healthcare services.

3.3.2.2 Other Positive and Negative Impacts

(1) Impacts on the Natural Environment

Since the CRFS is an educational facility, at the time of planning it was expected that there would be very little impact on the environment. The health centers are secondary healthcare institutions, and although the possibility of discharging bacteria and other pathogens is low, the following were cited as possible damaging effects to the surrounding environment:

- Radiation from X-ray diagnostic devices and dental X-ray diagnostic devices
- Sewage and miscellaneous wastewater
- Waste treatment
- Vibration and noise from in-house generator facilities

At the time of ex-post evaluation, the evaluator examined the following items and found none of them to have little impact on the environment:

- Radiation from X-ray diagnostic device and dental X-ray diagnostic device - no problem was found since a structural wall shields the X-ray diagnostic room.

- Sewage and miscellaneous wastewater - after water is collected in the sedimentation tank and the solid has precipitated, water penetrates naturally from a penetration square. Because of the deep wells, it is determined that there is no impact on the environment. Contamination of supplied water has not been reported so far.
- Waste treatment - dangerous items such as scalpels and injection needles are placed in designated disposal boxes and dangerous items are regularly incinerated in an exclusive incinerator. The same types of disposal boxes are brought to the health centers from the health post about once a month and its contents are incinerated at the health centers. Regional Medical Offices plan to collect and process such incineration in the future. Any bloody fabric is also incinerated in halls dug on the premises. The postpartum placentas are brought home and buried by the family.
- Vibration and noise from in-house generator facilities - both permanent and emergency power generators are installed in the health centers in Saraya and Dianke-Maha. The health center in Maka-Colibantang has an emergency power generator. Since the health centers are located far from the city areas, there are no vibration or noise problems

(2) Resettlement and Land Acquisition

The land ownership of the CRFS has been attributed to the Ministry of Health and the land ownerships of the health centers have been attributed to the districts, thus no resettlement or land acquisitions have occurred due to the implementation of the project.

(3) Unintended Positive/ Negative Impacts: Coordination and synergistic effects within the program

Collaboration was expected among projects in the "Tambacounda Health System Strengthening Program". At the time of planning, the health centers developed by this project were expected to become the activity bases for "capacity building of the residents" by the JOCV. CRFS was expected to cooperate with the technical cooperation project "Project for Reinforcement of Maternal and Child Health Care in Tambacounda and Kedougou (Safe Delivery Project)".[11] For the collaborations within the "Tambacounda Health System Strengthening Program" that were expected at the time of planning, a JOCV member (2010-2012) who was in charge of medical equipment maintenance worked in the Regional Medical Office and the health center in Maka-Colibantang during this project. According to the

[11] "Tambacounda Health System Strengthening Program (2007 - 2011)" consists of the following projects: "Health Advisor (2003 - 2005, 2005 - 2007)", "Tambacounda Regional Health Administration Capacity Strengthening (2009 - 2010)", Project for Reinforcement of Maternal and Child Health Care in Tambacounda and Kedougou (2009 - 2011)", Enforcement of Management of Health System in Tambacounda and Kedougou（2011-2014） "Tambacounda Region and Kedougou Region Health System Management Strengthening Project (2011-2014)", and "JOCV (nurses, midwives and rural development extension workers)" and Training in Japan and other countries "(Source: information provided by JICA).

maintenance staff of the health center in Maka-Colibantang (currently he is a part of the maintenance staff of Tambacounda Regional Medical Office), who worked together with the JOCV at the time of the project, when medical equipment was provided to the health center in Maka-Colibantang, the instruction manuals of all equipment for the center were also supplied at the same time. They worked together on scanning those manuals and kept in an electronic file. In addition, the maintenance staff member summarized the contents of the manuals along with JOCV and with it he also made a user's manual, a maintenance check manual and a checklist. Those activities helped improve the maintenance technology.

According to the interview, "Project for Reinforcement of Maternal and Child Health Care in Tambacounda and Kedougou" conducted various training programs for the staffs of the health centers and health posts at the CRFS that was completed in February 2011.

The evaluator found that the collaborations within the "Tambacounda Health System Strengthening Program" that were expected at the time of planning were achieved to a certain extent. In the interviews, other donors and the Ministry of Health mentioned that Japanese cooperation was highly significant because it comprehensively supports the health infrastructure in remote areas, namely the Tambacouunda Region and Kedougou Region, and it focuses on strengthening the health system.

The project aimed not only at increasing the quantity of healthcare services but also improving the quality by development of the referral health centers with operating rooms in Maka-Colibantang and Saraya and the health center without operating room in Dianke-Maha. In other words, these health centers were expected to function as secondary healthcare facilities equipped to conduct ultrasonic examinations and caesarean section surgery, which would reduce the maternal mortality ratio. X-ray examinations and general surgery also make it possible to carry out the diagnosis, treatment and surgery. At the time of the ex-post evaluation, the numbers of outpatients and childbirth delivery had increased in all three health centres, and the numbers of clinical laboratory tests and X-ray examinations also increased. On the other hand, due to the absence of a surgeon and anaesthesiologist, no surgery operations, including the caesarean section, were able to be performed. Although the numbers of inpatients increased at two facilities, the number of inpatients decreased at one facility. Both health staffs and users are satisfied with the facilities and equipment, and staffs believe that the numbers of users will further increase if the facilities become well known to residents in the future.

CRFS trains 10 nursing students and 10 midwifery students every year. These numbers are lower than what was assumed at the time of planning. Students show high satisfaction with the facilities and the classrooms, but their satisfaction with the equipment is low because there is not enough training equipment for all the students to complete the practical training within the allocated time. Eighty percent and above of students wish to work in the regions after graduation and the center also conducts in-service training for health staffs in the regions. Thus

the evaluator concludes that the center does make certain contributions to human resource development in the areas.

Based on the above, although the quantitative expansion of healthcare services in the target health districts has been achieved, considered the purpose of providing secondary healthcare services, the qualitative effects are limited. As for impact, the project has been making certain contributions towards improving maternal and child health indicators in both regions.

As mentioned above, the project has achieved its objectives to some extent. Therefore effectiveness and impacts of the project are fair.

3.4 Sustainability (Rating: ②)

3.4.1 Institutional / Organizational Aspect of Operation and Maintenance

(1) Staff Allocation

Table 10 shows the staff allocation at the target health centers in compliance with the Ministry of Health's staffing regulations. Since opening the health centres, there has been no placement of a surgeon and anaesthesiologist. Because of no allocation of the necessary medical staff, restrictions are imposed on the implementation of diagnosis, treatment, surgery (including caesarean section) required for secondary healthcare facilities. According to an interview with the staffs at the health centers, even in other occupations there are many people who move to Dakar or other cities for work. It is difficult to retain staff members at the health centers in the regions. According to the doctors and other health staffs, staff housing on the premise of the health centers could be a strong incentive for staff to stay on to solve the lack of staff. In this project, the residence of the health center's doctor was built by the Japanese side, and the other lodging houses of the staff were built by the Senegalese side. There were problems in the layout of the lodging burden of the Senegalese side such as direct sunlight reached the interior and cracks were large on the walls due to the bad material. Thus the hope to include the staff quarters in the Japanese side burden was heard. In addition, as an incentive other than money, they proposed that the Ministry of Health should consider allowing more days for business trips to the Ministry of Health because their locations are farther. For instance, for 1 official working day in Dakar, it takes only a few hours for the staff members in Thies to commute to Dakar, while the staff members in the project sites need to take 4 days for a round trip between Dakar and Saraya. Despite this discrepancy, all staffs in all regions receive 5 business days including 1 official working day in Dakar.

According to the Department of Human Resources at the Ministry of Health, personnel placement in the remote areas has been difficult but the situation has been improving. For example, in the past few years, the Ministry have made efforts to allocate health personnel

to nationwide health posts and finally at least one nurse has been placed at a health post in the remote areas. Then, they are about to tackle to allocate personnel in health centers in the next step. According to "Report at the Difficult Places" (Rapport sur les Zones Difficiles) issued by Ministry of Health, there are some plans to set restrictions on the length of working hours at the healthcare facilities in the remote areas and to send staff members to overseas trainings preferentially.

Table10: Staff allocation in health center (Unit: person)

	MOH Regulation	Maka-Colibantang	Dianke-Maha	Saraya
Doctor	1	2	1	2
Surgeon	1	0	No facility	0
Assistant surgeon	1	0	No facility	0
Anesthesiologist	1	0	No facility	0
Dentist	1	0	0	0
Dental technician	1	0	0	0
Laboratory technician	1	1	0	0 (to be arranged)
Ophthalmology technician	1	0	0	0
Radiologist	1	1	No facility	0
Nurse	3	7	7	15 (including assistants)
Midwife	3	5	5	20 (including assistants)
Social assistant	1	0	1 (Assistant)	0
Maintenance technician	1	1	0	0
Hygiene technician	2	0	0	4
Hygiene assistant	1	0	0	0
Assistant nurse	1	0	11	0
Secretary	1	1	1	0
Total	22	18	26	41

Source: Provided by the Executing Agency

(2) Maintenance System

The maintenance control system of the Regional Medical and District Health Offices is implemented based on *the Policy of Maintenance for Infrastructures, Facilities and Equipment for Health Structure in Senegal (Politique de Maintenance des Infrastructures, des Installations et des Equipements des Structures de Santé du Sénégal)* issued by the Department of Infrastructure Equipment at the Ministry of Health.

- Tambacounda Regional Medical Office: A maintenance staff (1 person) and an assistant (1 person) are placed. They are in charge of maintenance at the regional level and supervision of 7 health districts.
- Maka-Colibantang District Health Office: Maintenance staff (1 person) is placed at the

health center and is in charge of the maintenance of the health center in Maka-Colibantan.

- Dianke-Maha District Health Office: There are no maintenance personnel placed. The regional maintenance personnel visit as necessary. Except for medical equipment repair, local personnel who have skills are hired as necessary for daily repair and replacement of electricity and water equipment.
- Kedougou Regional Medical Office: A maintenance staff (1 person) is placed and is in charge of maintenance at the regional level and supervision of 3 health districts.
- Saraya District Health Office: There are no maintenance personnel placed. The regional maintenance personnel visit as necessary. Except for medical equipment repair, local personnel are hired as necessary for daily repair and replacement of electricity and water equipment.

CRFS has 4 full-time teachers and 1 administrator. There is no change in the number of staff members to be placed after the project. The placement of maintenance personnel was not planed at the time of planning and there was no allocation at the time of the ex-post evaluation. According to the principal, they contact the Department of Human Resources at the Ministry of Health to deal with any problems with the facility or equipment.

Based on the above, the maintenance system seems to have no problem by mobilizing the locals and staff at the Regional Medical Office. However, since some health centers do not have specific personnel, some equipment is not working. Thus, there are some challenges to the system of operation and maintenance.

3.4.2 Technical Aspect of Operation and Maintenance

At the time of planning, health centers in Tambacounda Region had no record of malfunctions and/or repairs of the equipment, thus it was not possible to trace the causes of such malfunctions. In addition, the health centers at the time of planning had few equipment that required maintenance, because the health centers were tentatively upgraded from the health posts. The plan was that for relatively expensive equipment (radiological equipment, ultrasonic diagnostic equipment and auto clave sterilisers, etc.) the health centers would make maintenance contracts with external maintenance companies. For any problems with other equipment, they would contact agents for examinations and repairs and then report to the maintenance department of the Regional Medical Office if necessary.

Since the maintenance staff of the Tambacounda Regional Medical Office and Maka-Colibantang Health Centre graduated from the National Medical Equipment Maintenance Engineer Training School in Diourbel, there were no technical problems in daily maintenance at the time of the ex-post evaluation. Maintenance Trainings are carried out twice a year by the Department of Infrastructure and Equipment at the Ministry of Health. All three health centres did not make an equipment management ledger, a repair ledger and annual

maintenance plan, which they were instructed to prepare by the soft components of this project. The health centres also did not make maintenance contracts with any external maintenance companies.

As mentioned above, although the maintenance personnel have kept up some level of maintenance by their individual skills, because personnel changes are frequent, the capacity of preventive maintenance and the ability to prepare and implement the maintenance plan is not sufficient. Therefore, technical aspects of operation and maintenance have some problems.

3.4.3 Financial Aspect of Operation and Maintenance

The evaluator could confirm the financial information only for Saraya Health Center and the 2016 balance of payments of Maka-Colibantang Health Center. According to interviews with the directors of the health centers, it is difficult to grasp the financial situation prior to their assignments since the financial data during the period of their predecessors is not kept in the health centres.

Table11: Revenue and expenditure of Saraya Health Center (Unit: CFA)

Annual income	2012	2013	2014	2015	2016
Business income (health services etc.)	0	0	0	1,104,335	9,202,240
Government subsidies	16,200,000	16,200,000	11,400,000	16,200,000	16,200,000
Total	16,200,000	16,200,000	11,400,000	17,304,335	25,402,240
Annual expenditure	2012	2013	2014	2015	2016
Personnel expenses					8,344495
General & administrative expenses	16,200,000	16,200,000	11,400,000	16,200,000	16,200,000
Liquidity investment			4,000,000	9,000,000	0
Repayment			1,450,000	4,000,000	1,156,700
Total	16,200,000	16,200,000	16,850,000	29,200,000	25,701,195
Annual balance	0	0	-5,450,000	-11,895,665	-298,955

Source: Provided by the Executing Agency

As shown above, Salaya Health Centre has had a negative balance in the past three years. Many of the expenditures are for petrol costs for official businesses and fuel costs of generators. The countermeasures to compensate for the negative balance were not taken.

In Maca-Colibantang Health Centre, the financial balance of 2016, the only information which was available, was a surplus of about 8 million FCFA in 2016. Balance breakdown was not available.

All three health centres collect fees for medical consultation and drugs from users according to the unified rate table set by the government.[12]

According to interviews conducted at the CRFS, there was no particular difficulty in

[12] Children under the age of 5 and elderly people can receive healthcare services without self-payment and their fees are reimbursed by the government.

the financial situation.

With the information from above, we can conclude that there are some problems in the financial situation because Saraya Health Centre has shown a negative balance transition and has no plan to secure future funds. Also, we judged from the limited information.

3.4.4 Status of Operation and Maintenance

As results of the field survey of the three health centers show, the Health Center in Saraya was considered to be the cleanest health facility. According to the director of the health center, the members of a local women's group voluntarily clean the health facilities once a week, and the local football team mows their lawns free of charge. Health Centers in Dianke-Maha and Maka-Colibantan had dust and spider webs at the windows and the walls of the corridors. Their floors of inpatient rooms were not kept very clean. The director of Salaya Health Center and the director of Kedougou Regional Medical Office had successfully involved local stakeholders (a village head, religious leaders, local companies, and local organizations, etc.,) in facility maintenance. In specific, this project had been able to lead water and electricity for the health center from the village source with technical and financial support from the local mining companies and local engineers.

The maintenance of equipment under operation was generally good in all three health centers. However, some equipment was not in operation and was left as they were. Especially in the Maka-Colibantang and Saraya health centers, the main equipment such as surgery, dentistry and X-ray equipment (the X-ray in Maka-Colibantang is working) was not used because human resources were not allocated and the equipment was left unused as if it was untouched. According to the maintenance personnel, there was no problem with the operation because he checked the operation of these unused machines periodically. According to the interview with the maintenance personnel of Kedougou District Health Office in Kedougou Region who went for on-site repair at the Saraya Health Centre, he had to repair some of the cords in dental examination unit because mice had bitten through them. It was heard that despite being capable of repair, there was a possibility that equipment could be damaged due to the lack of use. Currently there is no maintenance staff assigned to the Saraya Health Center, but maintenance is kept as needed with help from the Regional Medical Office and other District Health Offices as mentioned above.

Since the project implementation, the Department of Infrastructure and Equipment and Department of Human Resources at the Ministry of Health and JICA Senegal office have jointly monitored for delays in items that Senegal is responsible for, and for delays of the opening of health centers. Even after the opening of the health centers, joint monitoring was carried out in August 2015 and May 2017 in order to grasp the allocation of personnel and the maintenance management situation. In this regard, the directors of the three health centers said

that since the central government understands the actual conditions in rural areas and stakeholders at the rural and central levels and JICA think together to improve the conditions, the joint monitoring is useful to increase sustainability.

Therefore, although the maintenance of equipment under operation is generally good, some inactive equipment exists, thus there are some problems in the situation of operation and maintenance.

Based on the above, some minor problems have been observed in terms of the institutional, technical and financial aspects and the situation of operation and maintenance. Therefore sustainability of the project effects is fair.

4. Conclusion, Lessons Learned and Recommendations

4.1 Conclusion

The objective of this project is to improve the residents' access to health facilities and to improve training environments for nurses and midwives by the construction of three health centers, procurement of medical equipment, provision of technical assistance for improving maintenance management capability, and expansion of the building of the CRFS and procured educational equipment, thereby contributing to the improvement of healthcare services and health indicators in Tambacounda Region and Kedougou Region. The project is highly relevant to Senegal's development policy and development needs as well as Japan's ODA policy, therefore its relevance is high. The project was carried out mostly as planned. Although the project cost was within the plan, the project period exceeded the plan because it took a long time from the completion of construction to the opening of the health center, therefore, efficiency of the project is fair. With regard to the effectiveness, although the numbers of outpatients, childbirth deliveries, laboratory tests and X-ray examinations in all targeted health centers increased, no surgery operations could be performed including the caesarean section due to the absence of a surgeon and anaesthesiologist. Although the numbers of inpatients increased at two health centers, the number of inpatients decreased at one health center compared to before the project. Although the number of students at the CRFS did not change before and after the project, in-service training was also conducted. Therefore, the project made certain contributions to human resource development in the region. For impact, it was considered that the project made certain contributions because the maternal and child health indicators in both regions have improved after the project started. The project has achieved the quantitative expansion of healthcare services at the targeted health districts. Despite the fact that the project was aimed to improve the quality of healthcare services to accommodate secondary healthcare facilities, no surgeries have been carried out, and so the effect was limited. Therefore, effectiveness and impacts were fair. Sustainability is fair, based on the needs for strengthening

institutional and technical aspects and concerns about maintenance management status of unoperated medical equipment.

Based on the above, this project is evaluated to be partially satisfactory.

4.2 Recommendations

4. 2. 1 Recommendations to the Executing Agency

(1) Department of Human Resources at the Ministry of Health should allocate a surgeon and an anaesthesiologist to the health center in Maka-Colibantang, an anaesthesiologist to the health center in Saraya, and dentists in all three health centers. This way, all three health centers could utilise the unused medical equipment and provide secondary healthcare services. The Department also should take some measures to improve the placement and retention of other human resources.

(2) Department of Infrastructure Equipment and Department of Human Resources at the Ministry of Health should regularly conduct joint monitoring (perhaps every 6 months) along with JICA at the three health centers and the CRFS in the future, too. They should make efforts to understand the conditions of operation and maintenance management of equipment and advise and provide support as necessary.

4. 2. 2 Recommendations to JICA

None.

4.3 Lessons Learned

<u>Setting up the Appropriate Project Scopes</u>

At the time of planning, if the allocation of necessary personnel is not certain, the project should consider to limit the project scopes. Even though the relevance was secured that there was a need for surgery in the target areas and for an operating room to be established at the Referral Health Centers, according to the policies and facility standards of the recipient governments. For example, the project should have made a plan without an operating room with the scope of Japanese fund and later they should have considered a step-by-step plan to establish an operating room, depending on the executing agencies. In this project, the operating rooms were constructed in the remote areas and no surgeon or anaesthesiologist was assigned, so the operating rooms and related equipment remained unused. It is important to confirm the prospect of the allocation of personnel based on information, such as the training situation of the personnel to be placed, the situation of work places, and the placement situation of other donors in similar cases. Furthermore, the project should set up appropriate project scopes and support.

Timely Implementation of Responsibilities of the Executing Agency

At the time of planning, it is vital to consider the appropriate share of work between both countries based on the assessment of project implementation capacity and financial availability of the executing agency. In addition, the Japanese side needs to explain the responsibilities of the executing agency both during the project formulation and planning stages and to clearly notate the agreed matters in the meeting minutes. In order to be able to supervise the agreed matters for the Japanese side, it is important to identify necessary consultation items and to coordinate and organize all necessary steps at the preliminary investigation stage. In addition, if it is difficult to fulfil the activities assigned to the executing agency, the stakeholders should closely communicate with one another and take any countermeasures beforehand, and devise countermeasures against delays in the project.

Importance of Involving Local Stakeholders in Project Planning and Implementation Processes

It is often difficult for healthcare facilities in remote areas to secure a sufficient budget and allocation of necessary personnel. They are far away from the capital and they may not be able to provide appropriate healthcare services continuously simply because they are waiting for a response from the central government. In particular, in countries that adopt a decentralization system, the local autonomy and independence affects the effect of the project. Regional Chief Medical Officers and directors at the healthcare facilities should establish a good relationship with local leaders and operate their facilities utilizing local and human resources. Therefore, from the stage of planning, the executing agency of the partner country should share the project plan with local stakeholders and start building a relationship of trust with them by discussing benefits to the areas, types of possible cooperation systems and possible support from the local people. It is important to continue building these relationships during and after the project completion.

Inclusion of Staff Housing in the Healthcare Facilities in Remote Areas in the Project Scope of the Japanese Side

Healthcare facilities in remote areas have difficulties in hiring and retaining the necessary personnel. It often takes long time to commute due to the inadequate transportation system, and due to the poor security, it is often difficult to find a safe residence in the rural areas. Though it is necessary to prioritize this in the overall budget, in order to secure necessary human resources and obtain the expected project effects, the project should include staff housing in the construction plan of healthcare facilities in remote areas, as a part of the project scope of the Japanese side.

Republic of Senegal

FY2017 Ex-Post Evaluation of Technical Cooperation Project

"Project for Reinforcement of Health System Management in Tambacounda and Kédougou Regions"

External Evaluator: Michiru Suda, TAC International Inc.

0. Summary

The project was implemented aiming to "reinforce the results-based management capacities[1]" of regional medical offices[2], district health offices, and health centers in Tambacounda and Kédougou regions, through "improving planning, monitoring and evaluation (M&E) capacities", "improving resource management capacities (organizational management such as human resource, accounting/finance, medicines and medical equipment and facility management)" and "sharing the project experiences within and outside of the target regions". The main counterparts (hereafter referred to as "C/P") are concerned personnel in the Ministry of Health and Social Action (hereafter referred to as "the Ministry") and the regional medical offices. Its overall goal was to "improve the health status of the population in the two regions".

The objective of the project was consistent with *National Health Development Plan 2009-2018* (*Plan National de Développement Sanitaire: PNDS) 2009-2018,* which emphasizes "promoting results-based management", and with the development needs to improve the health status of the population in the two regions where the health indicators were poor, both at the time of the project planning and its completion. It was also consistent with Japan's ODA policies and JICA's plan in the health sector, which proposed "Enhancement of Basic Social Services", "the development of policy-oriented

[1] In the project, the results-based management was defined as "managing and implementing aid (note by the evaluator: it is considered to indicate "work" to be accurate) in a way that focuses on the desired results and uses information to improve decision-making".
In the Senegal health sector, the budget and activity plan for each region have been developed according to the framework of the Annual Work Plans (Plan de Travail Annuel: PTA) since 2008. And the concept of results-based management was introduced, which decides the activities and the inputs focusing on the problems observed and targets to be achieved in the region, and the previous method of developing the plan with the inputs was replaced. (Source: Japan International Cooperation Agency, IC Net Limited (2014) *Project Completion Report on the Project for Reinforcement of Health System Management in Tambacounda and Kédougou Regions* (hereafter referred to as "Project Completion Report")

[2] The administrative divisions are subdivided into region (région), department (département), arrondissement (arrondissement), and communes/municipalities (commune) from the upper level in Senegal. The health administration system consists of the following; the Ministry of Health in the central level; 14 regional medical offices (régions médicale) and district health offices (districts sanitaire) are deployed as local branches of the Ministry, responsible for region and health district respectively. The regional medical office supervises the district health office, and the district health office supervises the health facilities such as health centers and the lower level facilities in the health district. Each health district has at least one to two health centers (centre de santé) and several health posts (poste de santé). The health center is equipped to accommodate inpatients and doctors, nurses, and midwives are assigned. A nurse and a midwife are assigned to a health post, and pre- and postnatal checkups and vaccinations are conducted. (Source: JICA documents)

human resources" "to formulate and implement evidence-based" health plans, and "strengthening administrative capacity" in health sector. Therefore, its relevance is high.

The following activities were conducted; improvement of health information system management for the regional medical and district health offices; strengthening the operational capacity for annual work plan (Plan de Travail Annuel, hereafter referred to as "PTA") establishing a sustainable mechanism for strengthening planning, and M&E capacities; strengthening supervision capacities; preparing to establish a sustainable training system (continuing training program); enhancement of 5S[3] approach and improvement of resource management capacities in the health districts and health centers; development of tools and guidelines that are the basis of these activities; and sharing project experience. With the project contribution, the mechanism for PTA operation is in place, and the PTA operation has continued at the time of the ex-post evaluation. Activities related to 5S and OGRIS (Outils de Gestion des Ressources et de l'Information Sanitaire: hereafter referred to as "OGRIS", which indicates "Tools for Management of Resources and Health Information") for resource management improvement, were implemented to some extent accordingly. Under an influence of external factors and a result of giving priority to strengthening C/Ps' training management capacity, all 5S and OGRIS trainings that were expected during the project period could not be completed by the end of the project. At the time of the ex-post evaluation, the 5S and OGRIS activities in the two target regions were partly continued. Therefore, effectiveness and impact of the project are fair. However, the PTA operation is continued nationwide, and 5S trainings have been conducted in other regions and the ripple effect is high.

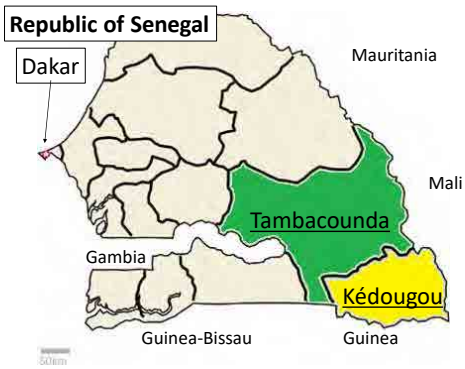
Although the project period was within the plan, the project cost exceeded the plan, so the efficiency of the project is fair.

For the prospect of sustainability of the project effects, no major problems have been observed in policy background, while some minor problems have been observed in terms of the technical and financial aspects. Therefore, sustainability of the project effects is fair as a whole.

In light of the above, although the project has achieved the project purpose to some extent, this project is evaluated to be partially satisfactory.

[3] 5S approach is a tool for improving the work environment, the quality of services, and service productivity, and is the five concepts (Sort, Set, Shine, Standardize, and Sustain) which begin with initial "S". (Source: Project Completion Report)

1. Project Description



Project Locations

5S Poster utilized
at Kédougou Health Center

Source: Taken by the evaluator

1.1 Background

Senegal's National policies, such as *Economic and Social Policy Document 2011-2015* and *National Health Development Plan 2009-2018*, emphasize the importance of achieving the Millennium Development Goals (MDGs) [4] and Senegal states strengthening results-based management as one of the strategies[5] to achieve them. Although the under-five mortality rate and the maternal mortality ratio are below the Sub-Saharan Africa average, they are still far from reaching the MDGs targets [the target values were 44 (per 1,000 live births) and 127 (per 100,000 live births)[6] respectively, while the actual values were 72, and 392[7] in 2010-2011 respectively].

The project's target areas, Tambacounda and Kédougou regions, are located in the southeastern part of the country. They occupy approximately 30% (approximately 60,000 km^2) of the country, and the poverty rate is high (at the time of the project

[4] The Millennium Development Goals (MDGs) are common goals in development of the international community and are based on the United Nations Millennium Declaration adopted at the United Nations Millennium Summit in 2000. The MDGs identified eight goals, such as eradication of extreme poverty and hunger, to be achieved by 2015. The targets were achieved to some extent and its contents have been taken over by the succeeding goals, the 2030 agenda for sustainable development. (Source: Ministry of Foreign Affairs of Japan http://www.mofa.go.jp/mofaj/gaiko/oda/doukou/mdgs.html) (Accessed on April 22, 2018)

[5] *PNDS* consists of four sector objectives; "Reduce the burden of maternal and child morbidity and mortality", "improve prevention and disease control performance of the health sector", "sustainably strengthen the health system", and "improve the governance". It indicates "Promoting results-based management" as one of the strategy to improve the governance. (Source: JICA Senegal Office, Japan International Cooperation Agency (2011) *Study on Detailed Plan for Project for Reinforcement of Health System Management in Tambacounda and Kédougou Regions in Senegal* (hereafter referred to as "Project Detailed Planning Survey Report")

[6] Ministère de l'Economie et des Finances [Senegal], and Programme des Nations Unies pour le Développement. (2012). *Rapport de Suive des OMD 2000-2012 République du Sénégal*. http://www.undp.org/content/dam/senegal/docs/OMD/undp-sn-Rapport%20de%20Suivi%20des%20OMD%20SEN%20%202000-2012.pdf (Accessed on March 25, 2018)

[7] Agence Nationale de la Statistique et de la Démographie (ANSD) [Senegal], and ICF International. (2012). *Senegal Demographic and Health and Multiple Indicator Cluster Survey (EDS-MICS) 2010-2011*. Maryland: ANSD and ICF International. (hereafter referred to as "EDS-MICS 2010-2011")

planning, 49% for the national average, 56% for the two regions)[8]. As described in "3.1.2. Consistency with the Development Needs of Senegal", the health indicators were poor compared to the national average. In order to improve healthcare services continuously by utilizing the regions' limited funds and human resources efficiently, there was a need to operate health facilities effectively and efficiently and to strengthen health system management[9].

In 2005, together with the Senegalese side, Japan identified these two regions as priority areas for Japan's cooperation in health development. Since 2007, together with the Ministry of Health and Prevention[10], "Health System Strengthening Program in Tambacounda and Kédougou Regions" (2007-2011) was implemented, which included grant aid, technical cooperation projects, follow-up cooperation program, dispatch of Japanese experts, provision of equipment, a training program in Japan, and a third-country training program. As part of this cooperation program, this technical cooperation project was requested by the Senegalese government, to strengthen the capacity of health administration and health facility management at the regional and district levels, especially planning, M&E in health administration, and resource management in health facilities. It was implemented from March 2011 for the planned duration of three years. In addition, this project was made as a component of the "Health System Strengthening Program (2012-2016)"; a succeeding program that aimed to scale up the results of the above program nationwide.

1.2 Project Outline

Overall Goal		The health status of the population of Tambacounda and Kédougou regions is improved.
Project Purpose		"Managing for results" capacities of the regional medical offices and district health offices are reinforced in Tambacounda and Kédougou regions.
Output(s)	Output 1	The capacities of planning and monitoring & evaluation (M&E) of the regional medical offices and district health offices are improved.
	Output 2	The capacity to manage resources (organizational management such as human resources, accounting/finance, medicines and medical equipment and facility management) in the medical regions and the health districts are enhanced.
	Output 3	Lessons learned from the project are shared within and outside Tambacounda and Kédougou regions.

[8] JICA Senegal Office, Japan International Cooperation Agency (2014) *Terminal Evaluation Report on Project for Reinforcement of Health System Management in Tambacounda and Kédougou Regions in Senegal*. (hereafter referred to as "Terminal Evaluation Report"), Project Detailed Planning Survey Report

[9] Project Detailed Planning Survey Report

[10] It became the Ministry of Health and Social Action after the organizational restructuring in 2012.

Total cost (Japanese Side)	513 million yen
Period of Cooperation	March 2011– February 2014
Implementing Agency	Ministry of Health and Social Action (Ministry of Health and Prevention at the time of the planning), the Medical Region of Tambacounda, the Medical Region of Kédougou
Other Relevant Agencies / Organizations	10 District Health Offices and 10 Health Centers in the two regions, the Regional Health Training Center[11] (Centre Régional de Formation en Santé: CRFS) of Tambacounda
Supporting Agency/ Organization in Japan	IC Net Limited
Related Projects	【Health System Strengthening Program in Tambacounda and Kédougou Regions (2007 - 2011) 】 ・Training in Japan "Asia Africa Knowledge Co-creation Program (AAKCP) -Total Quality Management for better hospital Services" the first group (2007-2013) ・Grant Aid "The project for the development of health facilities in Tambacounda and Kédougou Regions" (May, 2009) ・Technical Cooperation "Project for Reinforcement of Maternal and Child Health Care in Tambacounda and Kédougou Regions" (Projet de Renforcement des Soins de Santé Maternelle et Néonatale dans les Régions de Tambacounda et de Kédougou: PRESSMN1) (2009-2011) ・Expert "Technical Advisor for Ministry of Health and Prevention" (2008-2010) ・Expert "Health System Management Advisor in Tambacounda" (2009-2010) 【Health System Strengthening Program Phase 2 (2012-2016)】 ・Technical Cooperation "Project for Reinforcement for Maternal and New Born Health Care Phase 2" (Projet de Renforcement des Soins de Santé Maternelle et Néonatale au Sénégal Phase II: PRESSMN2) (2012-2018) 【The succeeding project】 ・Technical Cooperation "Project for Reinforcement of Health System Management Phase 2" (Projet d'Appui au Renforcement du Système de Santé au Sénégal-Phase 2: PARSS 2) (2016 - 2021)

1.3 Outline of the Terminal Evaluation

1.3.1 Achievement Status of Project Purpose at the Terminal Evaluation

As for the project purpose, Indicator 1 (PTA development) and 2 (monitoring of

[11] CRFS is a training institution for health professionals under the Ministry of Health, and they have seven locations throughout the country. CRFS of Tambacounda provides basic education to become a nurse or a midwife (3 years each), and advancement education for assistant nurses and assistant midwives.

activities according to the PTA operation guidelines) have been achieved. The prospect for the achievement of Indicator 3 (evaluation of activities according to the PTA operation guidelines) was considered to be high. Indicator 4 (Monitoring 5S activities) was achieved because monitoring standards and tools were standardized and integrated into 5S manuals and supervision was implemented at some health centers. The prospect for the achievement was high for Indicator 5 (Improvement of resource management) because the activities had been appropriately planned and implemented using OGRIS in the two health districts where the OGRIS trainings were already conducted. The OGRIS trainings were scheduled for the remaining eight health districts.

Therefore, the project purpose was considered almost achieved at the time of the terminal evaluation, and the prospect of its achievement was considered to be high by the project completion.

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

It was considered to be too premature to evaluate the prospects for achievement of the overall goal at that time. As an impact of the project implementation, synergies between the projects in the "Health System Strengthening Program" and the positive impact of collaboration with other donors were confirmed, and no negative impact was observed.

1.3.3 Recommendations from the Terminal Evaluation

Recommendations at the time of the terminal evaluation are shown in Table 1 and Table 2.

Table 1 Recommendations from the terminal evaluation; by the project completion

	Recommendations	Responsible body
1	Monitoring of 5S and OGRIS shall be integrated into regular supervision of the management team at regional medical and district health offices.	Regional medical offices, district health offices
2	Trainings developed by the project shall be conducted certainly in Tambacounda and Kédougou regions with United Nations Children's Fund (UNICEF) financial support, which has been committed and allocated.	Regional medical offices, district health offices
3	The three newly constructed health centers (Saraya, Koumpentoum and Kidira) shall be quickly opened and 5S training shall be conducted. If the shifts to the new buildings are not completed by the end of December 2013, the project will not support the training.	Ministry

Source: Terminal Evaluation Report

Table 2 Recommendations from the terminal evaluation; after the project completion

	Recommendations	Responsible body
1	The integration of the project's training package in the continuing education at the Regional Health Training Center of Tambacounda shall be ensured. It is desirable that the management system shall be established and the necessary budget is to be secured as agreed on in the operational plan.	Directorate of Human Resources, Ministry
2	Cascade trainings[12] shall be provided after a training of trainers in order to ensure knowledge transfer to all concerned personnel.	Regional medical offices, district health offices
3	Dissemination of the project activity shall be done to other regions. The financial support is already committed to by Belgium, France, Luxembourg, etc. but needs to be effectively invested and implemented under the appropriate coordination.	General Directorate of Health, Ministry
4	PTA shall have more practical effect by sustainably coordinating with various partners such as donors, local governments and enterprises, etc.	Regional medical offices, district health offices

Source: Terminal Evaluation Report

2. Outline of the Evaluation Study

2.1 External Evaluator

Michiru Suda, TAC International Inc.

2.2 Duration of Evaluation Study

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

Duration of the Study: August, 2017 – September, 2018

Duration of the Field Study:

November 12, 2017 – December 5, 2017, February 18, 2018 – February 28, 2018

2.3 Constraints during the Evaluation Study

Among the indicators in the Project Design Matrix[13] (hereafter referred to as "PDM"), there was data that was not available at the time of the project completion or the ex-post evaluation. The project was complemented and evaluated using qualitative data obtained through interviews and other information.

Due to time and other constraints in the field survey, the district health offices and health centers in eight health districts were selected for data collection by a purposive sampling method (selection criteria are the same as the qualitative survey described in Table 3 below). Therefore, selection bias may have occurred and collected data may not

[12] The OGRIS training takes a cascade training method to provide trainings from the Ministry to the regional medical offices, from the regional medical offices to the district health offices, then from the district health offices to the staffs in the health centers and the health posts. (Source: Project Completion Report)

[13] It is a project plan summary table indicating the elements of project purpose, activities, inputs, external factors, indicators, etc. and their logical framework.

necessarily represent the entire target area. The evaluator obtained available information on health districts that were not visited from the regional medical offices as much as possible. We reviewed sustainability mainly based on PTA operation, 5S, and OGRIS activities, which were the main components of the project. Table 3 shows the outline of the qualitative survey conducted to collect the data for achievement, based on the PDM indicators, and to examine the effect of the strengthening results-based management.

At the time of the field survey, the national vaccination campaign by the Ministry of Health was ongoing. The project's implementing organizations and the survey targets that were the beneficiaries in the project were extremely busy, and time for interviews was limited. By utilizing responses from the questionnaires requested beforehand, data was efficiently and comprehensively collected to understand the overall picture of the project

Table 3 Outline of the qualitative survey

Purpose of survey	Collect required data for PDM indicators, in order to evaluate effectiveness and impact of the project. Namely, data for indicators of overall goal and project purpose, data for some output indicators, and data for supplementary intermediate outcomes indicators that are observed between the project purpose and the overall goal (e.g. the number of outpatients at the health center etc.) In addition, examine the project effect in the strengthening results-based management.
Survey method	Interviews using questionnaires, documents review
Survey area Study target Sampling method	

Ministry of Health	General Directorate of Health, Directorate of Planning, Research and Statistics, National Quality Program, Directorate of Human Resources
Regional Medical Office	Survey area: two regions (Tambacounda and Kédougou) Regional Chief Medical Officer, Regional Planning Officer, Primary Health Care Supervisor, etc.
District Health Office	Survey area: eight areas (Tambacounda, Maka Colibantang, Koumpentoum, Goudiry, Dianké Makha, Bakel, Kédougou and Saraya) Sampling method: purposive sampling[14]; eight areas were selected from ten health districts in two regions. Interview targets: District Chief Medical Officer and others (those involved in PTA development and monitoring, or supervision)
Health Center	Survey area: eight areas (same as the district health offices) Interview targets: Chief Medical Officer and others (those responsible for 5S activities)
CRFS	Director, a person responsible for the continuing training program

[14] Eight areas were selected from the 10 health districts in two regions, including the six health districts where the status of preparing the annual work plan (PTA) was observed in the Project Detailed Planning Survey Report, as well as Dianké Makha, which was one of the target health centers in the grant aid "the project for the development of health facilities in Tambacounda and Kédougou Regions".

3. Results of the Evaluation (Overall Rating: C[15])

3.1 Relevance (Rating: ③[16])

3.1.1 Consistency with the Development Plan of Senegal

The second Poverty Reduction Strategy Paper at the time of the project planning, and *National Strategy for Economic and Social Development 2013-2017* at the time of the project completion were set as poverty reduction strategies in Senegal, and achievement of MDGs and support to the poor were regarded as important issues. At the time of both the project planning and its completion, Senegal had the *National Health Development Plan 2009-2018* (*PNDS 2009-2018*), which stated the improvement of governance and strengthening results-based management in health sector. The project aimed to strengthen the results-based management capacities, improve the quality of healthcare service provision, and improve the health status of the population. Therefore, the project is in line with development policies in Senegal (see "1.1 Background").

3.1.2 Consistency with the Development Needs of Senegal

In the two target regions, the health indicators of the population were worse than the national average and the development needs to improve their health status were observed, at the time of both the project planning and its completion (Table 4). In order to provide high-quality healthcare services in a sustainable manner to improve the health status of the population, a necessity for effective and efficient health administration was recognized, in addition to improving access (facility construction) and improving quality of care (health and medical technology). At the time of project planning, there were issues such as "human resource shortage", "insufficient knowledge in management" and "unrealistic annual work plan, not based on health information data" in the two regions, and there was a need to strengthen management capacities to utilize the limited funds and human resources efficiently in order to improve healthcare service provision in a sustainable manner. At the time of the project completion, the PTA operation had been continued nationwide and effective management in health administration continued to be important. Therefore, the project is in line with the development needs as observed to improve the health status of the population and to strengthen management capacity in the health administration.

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

Table 4 Trends of health indicators (at the time of the project planning and its completion)

Health indicators	Region	2010-2011	2012-2014
Under-five Mortality Rate (per 1,000 live births)	Tambacounda	100	108
	Kédougou	154	114
	Senegal	72	54*
Maternal Mortality Ratio (per 100,000 live births)	Tambacounda	N/A	N/A
	Kédougou	N/A	N/A
	Senegal	392	N/A
Institutional delivery rates[17]	Tambacounda	45.2%	41.8%
	Kédougou	32.4%	45.1%
	Senegal	72.8%	77.0%*

Source: *EDS-MICS 2010-2011*, *EDS-Continue*[18] *2012-2014*, **EDS-Continue 2014*

3.1.3 Consistency with Japan's ODA Policy

At the time of the project planning, *Japan's Global Health Policy 2011-2015* (2010), states that "Japan will support the development of policy-oriented human resources" "to formulate and implement evidence-based" health plans. The Japanese Government's *Country Assistance Policy for Senegal* (2009) mentioned that the government supports the "Enhancement of Basic Social Services" as Minor Goal II in "Major Goal I: Improvement in the Quality of Life of the Poor Population in Rural Areas". In *JICA's Operation in Health Sector* (2010), "Strengthening administrative capacity" is an issue that is raised. Therefore, the project objective is consistent with Japan's ODA Policies.

3.1.4 Appropriateness of the Project Plan and Approach

The project's PDM was revised twice; the overall goal and the project purpose remained the same, while the activities and indicators changed. The project budget on the Japanese side increased three times[19].

According to the "Project Detailed Planning Survey Report", the "Project Completion Report" and the JICA document, the project aimed to improve the health status of the population in two regions, by reinforcing the "managing for results" capacities of the regional medical and district health offices in two regions (the project purpose). Furthermore, the expectation is also observed that the project outputs will be disseminated to other regions after the project completion. This is indicated by Output 3; "Lessons learned from the project are shared both in and outside of Tambacounda and Kédougou regions". Besides, during the project planning, there was discussion about determining another goal of "dissemination to other regions" along with the overall goal stated in the PDM, but the Senegalese side had the opinion that "there

[17] Percentage of childbirths conducted in the health facilities in the total number of deliveries
[18] The official name is "Enquête Démographique et de Santé Continue" and is one kind of "Demographic Health Survey" (DHS).
[19] JICA document

should only be one overall goal". Respecting the Senegalese view, the fore mentioned goal was not adopted. The JICA document mentioned that the reasons for the increasing the project budget was "to conduct project activities considering the nationwide scale-up after the project completion, together with maintaining active cooperation with other donors" and dissemination to other regions was recognized as important. At the time of the project planning, the project planned to implement Output 1 and 2 and to share the lessons learned from the project both in and outside of the two regions in Output 3[20]. The consultant team that engaged in the project implementation took a different approach, which established a mechanism including the Ministry in order to enhance the sustainability of the project activities[21]. By raising the degree of participation from the Ministry, coordination with the Ministry went smoothly and the Ministry's ownership over the project increased. It was also effective in obtaining official endorsement from the Ministry for the project deliverables, such as PTA operation guidelines.

As mentioned above, there was a more active approach to get more involvement from the Ministry, and the project's aim was further clarified based on the baseline survey results and other information. In addition, PDM activities and indicators have been modified to match the ongoing situation, and necessary inputs have been added (setting another project office in the Ministry besides the one in Tambacounda Region, increase of duration of experts dispatch, and activities' budget). Revisions of PDM have been made and the project budget (on the Japanese side) has been increased based on the agreement with the JICA office and C/Ps. From the above, the revisions of PDM and their process were considered to be appropriate.

This project was highly relevant to the Senegal's development plan and development needs, as well as Japan's ODA policy, and PDM was revised appropriately. Therefore, its relevance is high.

3.2 Effectiveness and Impacts[22] (Rating: ②)

3.2.1 Effectiveness

3.2.1.1 Project Output

Output 1's aim is to establish a mechanism to implement the PTA operation, and to

[20] According to a stakeholder at the time of the project planning, it was common for the development partners to have a demarcation area-wise and support the target area (such as region) at that time.

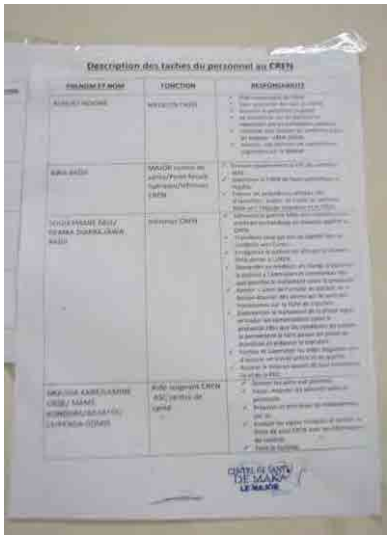
[21] In the project, as the approach to emphasize establishing the administrative mechanism, Japanese experts developed the National guidelines together with the central Ministry and C/Ps in the target regions. Trainings and activities in the target regions were conducted, according to the guidelines, by the Ministry with the technical support of the Japanese experts. It was said that this approach was effective in scaling up of the project activities outside of the target regions. (Source: Project Completion Report)

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

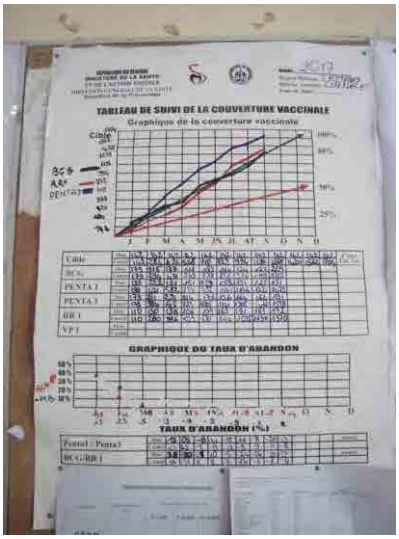
strengthen supervision.

At the time of the project completion, Output 1 was largely achieved as a whole[23].

By the time the project ended, the PTA operation mechanism from planning to M&E (including appropriate supervision) was established along with the required training system, and the guidelines were developed. Although some activities began just before the project completion, the PTA operation guidelines, which were jointly developed with other development partners, have been utilized nationwide since 2013. At the time of the project completion, PTA operation activities were conducted mostly according to the guidelines. Therefore, it can be said that the goal of Output 1 to improve "the capacity of planning and M&E of the regional medical and district health offices" is almost achieved.



Job Description
(An OGRIS tool for human resource management)
Source: Taken by the evaluator



Line Graph
(An OGRIS tool for health information management, a monitoring chart on routine immunization program for children)
Source: Taken by the evaluator

In Output 2, mechanisms related to OGRIS and 5S were established and capacity building was carried out through trainings of trainers for OGRIS, various trainings for 5S[24], finance, and human resources management to improve the capacity of resource management. Therefore, it can be said that the goal of Output 2 to enhance "the capacity

[23] For the achievement of the outputs indicators, see "Appendix 1 Achievement of Outputs at the time of the project completion".

[24] The 5S trainings were conducted at seven health centers excluding three health centers where the transfers to the new buildings had not completed. The electricity and waterworks required for relocation to the new facilities were beyond the project control (the external factor). The 5S training contains 5S practical exercises at each unit in the health center, so conduct of the training in the old facilities indicated training inputs would result in waste of resources. Therefore it was agreed with C/Ps not to conduct the training at the health center before relocation.

to manage resources (organizational management such as human resource, accounting/finance, medicines and medical equipment and facility management) in the medical regions and health districts" is almost achieved.

By the time of the project completion, Output 3's goal, "lessons learned from the project are shared in both in and outside of Tambacounda and Kédougou regions," was achieved remarkably as follows.

In Output 3, the project initiatives were shared both inside and outside the target regions. The PTA operation guidelines were beginning to be used nationwide, along with the 5S-training package in other regions. The PTA operation guidelines, training materials and tools for 5S practice, and the OGRIS training package developed by the project were endorsed by the Ministry as official documents and shared with other regions. The following columns show the reasons why the project activities were spread to other regions.

Column: Contributing Factors That Helped Spread the Project Deliverables to Other Regions

The contributing factors for the nationwide scale-up of the PTA operation guidelines and the spread of the 5S-training package to other regions are as follows:

· Matching with high priority needs in Senegal, such as PTA operation and quality improvement of health services
· Approach to establish mechanisms in the administrative system, such as drafting of manuals and guidelines, piloting, finalization of the documents, and endorsement by the Ministry
· Development of manuals and guidelines with a great regard for fostering a strong sense of C/Ps ownership
· Project management system that enabled the above approach (establishment of project offices not only in the target area but also in the Ministry)
· Involvement of other development partners at the developing stage of manuals and guidelines, and active donor coordination
· Explicit information about the contents and expenses of the trainings in project publicity to the Ministry and other development partners, which made planning on their part easier

Source: Project Completion Report, Questionnaire responses

3.2.1.2 Achievement of Project Purpose

Table 5 Achievement of Project Purpose

Project Purpose	
"Managing for results" capacity of the regional medical and district health offices are reinforced in Tambacounda and Kédougou regions.	
Indicators	Actual

1. Annual Work Plan (PTA) for 2013 is developed following the eight steps outlined in the PTA operation guidelines.	< Mostly achieved > · According to the regional medical offices that supervise health districts, PTAs for 2014 were developed in accordance with the guidelines in all the health districts and two regions. · According to the district health offices and CRFS, there were "unknown[25]" responses (four out of eight district health offices and CRFS), but all the rest developed PTA for 2014 in accordance with the guidelines. · PTA for 2012 and PTA for 2013 were developed in accordance with the guidelines in ten health districts and two regions.
2. The activities for 2013 was monitored according to the seven steps mentioned in the PTA operation guidelines.	< Mostly achieved > · According to the regional medical offices, PTAs for 2013 were monitored in all the health districts and Tambacounda Region according to the guidelines. It was unknown in Kédougou. · According to the district health offices and CRFS, there were "unknown" responses (four out of eight district health offices, and CRFS), but all the rest monitored PTA for 2013 according to the guidelines. · Activities for 2012 and 2013 were monitored according to the guidelines in the ten health districts and the two regions.
3. The activity achievements in 2013 are evaluated according to the three steps mentioned in the PTA operation guidelines.	<Mostly achieved > · According to the regional medical offices, PTAs for 2013 were evaluated in accordance with the guidelines in all the health districts and two regions. · According to the district health offices and CRFS, there were "unknown" responses (five out of eight district health offices, and CRFS), but all the rest evaluated PTA for 2013 in accordance with the guidelines. · PTAs for 2012 were evaluated in accordance with the guidelines in the ten health districts and two regions. Note: Evaluation of PTA for 2014 was to be done in 2015 after the project completion; therefore it is not included in this survey.
4. The activities of 5S-KAIZEN-TQM (Total Quality Management) are monitored in each health center according to the established standards and tools before the end of 2013.	<Achieved to some extent> Supervision was carried out at six out of the seven health centers[26] where the 5S training was conducted.
5. Activities to improve resource management (organizational management such as human resource,	< Partially achieved> The activities were implemented in only the four health districts where the OGRIS trainings were conducted.

[25] The reasons for unknown responses are mainly because the project activities were the events before office appointment of Regional Chief Medical Officers and District Chief Medical Officers who were interviewed in the ex-post evaluation survey, and have little knowledge about the situation during the project. Among those, two Regional Chief Medical Officers and seven District Chief Medical Officers have joined the current post after the project completion. Many of them were working in other offices or health facilities in the two regions during the project, and participated in some project activities. The other two did not know much about the project activities. In addition, because the content of the questionnaire was broad, the questionnaires were answered in consultation with other management team members in some cases.

[26] In the JICA's ex-post evaluation, in principle, the influence of external factors is not considered for evaluation judgment. However, as mentioned before, in case the transfers to the newly constructed health centers were not completed by the end of December 2013, it was agreed in the project's Joint Coordinating Committee that the project would not support the 5S training. Therefore, achievement in the seven health centers where the trainings were conducted, were analyzed.

accounting/finance, medicines and medical equipment and facility management) are planned and implemented in each health district by the end of 2013 according to the guidelines and tools, in line with the laws and regulations.	Note: OGRIS trainings were conducted as a pilot in the two health districts. The trainings for the remaining eight health districts were managed mainly by C/Ps with the financial support of UNICEF, in order to enhance the capacity of C/Ps to conduct training. At the time of the project completion, the trainings were conducted in four out of ten health districts. Due to the circumstances of C/Ps, the trainings in the remaining six health districts were completed after the project. Although the conduct of trainings was delayed, it is considered that it was appropriate to have prioritized strengthening C/Ps' capacity.

Source: questionnaire responses by regional medical offices, district health offices, and CRFS; interviews; Terminal Evaluation Report; Project Completion Report
Note: It was asked to the regional medical offices to confirm the situations for the regional medical offices and all the health districts in the regions.

Table 5 shows the degree of achievement for the project purpose. Indicators 1 to 3 on PTA operation were achieved. In the two target regions, the capacities to utilize health information data and to conduct PTA operation activities in accordance with the guidelines have been strengthened, and PTA development and M&E are being conducted.

Indicators 4 and 5 are related to Output 2 "improvement of resource management capacity in the medical regions and the health districts". Indicator 4 (5S monitoring) was achieved to some extent. Indicator 5 was achieved partly, and OGRIS was used in four health districts where the trainings were conducted. In addition, the project prioritized conducting trainings mainly by the C/Ps initiative, and the trainings were completed in all the ten health districts after the project completion.

Because the project prioritized strengthening the capacity of C/Ps to conduct training, the project achieved to some extent its project purpose because some activities were not completed by the time of the project completion.

3.2.2 Impacts

3.2.2.1 Achievement of Overall Goal

Although it is not a direct relationship, there is a causal chain between the project purpose and the overall goal, and the intermediate outcome is assumed in between. Considering the causal relationship, when the project purpose "Managing for results capacities of the regional medical and district health offices are reinforced" in the two target regions is achieved, the intermediate outcome to improve the quality of healthcare services in health facilities would be achieved. Then the overall goal; "improvement of the health status of the population" in the two regions would be achieved. Thus the intermediate outcome indicators[27] were included for evaluation. The time frame for

[27] As intermediate outcome indicators, several indicators from *Continuous Service Provision Assessment*

target achievement and target values of the overall goal has not been set; therefore, the changes from the time of the project completion to the ex-post evaluation were analyzed. Trends of improvement were observed in both the overall goal (Table 6) and the intermediate outcome indicators (Table 7) as a whole, though it is necessary to consider the possibility that other factors other than the project have influenced the achievement[28].

Table 6 Achievement of the Overall Goal

<table>
<tr><th colspan="2">Overall Goal</th></tr>
<tr><td colspan="2">The health status of the population of Tambacounda and Kédougou regions is improved.</td></tr>
<tr><th>Indicator</th><th>Actual</th></tr>
<tr><td>Indicators adopted in health related Millennium Development Goals (reduction of child mortality; improvement of maternal health; combat of HIV/AIDS, malaria, and other diseases) have improved in Tambacounda and Kédougou Regions.</td><td>< Achieved to some extent: Among 21 indicators for each target region, 10 indicators improved, 1 indicator remained the same, 5 indicators deteriorated, 26 indicators unknown >
The changes from the time of the project completion to the ex-post evaluation were analyzed based on twenty indicators confirmed at the time of the terminal evaluation, and one similar indicator, “a percentage of children under age 5 who took the malaria test tested positive”, taken from the Demographic and Health Surveys[29].
The changes over years in each region were analyzed; ranking A indicates improvement, B indicates the same degree, C indicates deterioration and N/A indicates unknown due to lack of data.

Degree of changes in overall goal indicators
(from the time of the project completion to the ex-post evaluation)
<table>
<tr><th rowspan="2">Rank</th><th colspan="2">Tambacounda</th><th colspan="2">Kédougou</th><th colspan="2">Total of 2 regions</th></tr>
<tr><th>Number of indicators</th><th>%</th><th>Number of indicators</th><th>%</th><th>Number of indicators</th><th>%</th></tr>
<tr><td>A</td><td>6</td><td>28.6%</td><td>4</td><td>19.0%</td><td>10</td><td>23.8%</td></tr>
<tr><td>B</td><td>1</td><td>4.8%</td><td>0</td><td>0.0%</td><td>1</td><td>2.4%</td></tr>
<tr><td>C</td><td>1</td><td>4.8%</td><td>4</td><td>19.0%</td><td>5</td><td>11.9%</td></tr>
<tr><td>N/A</td><td>13</td><td>61.9%</td><td>13</td><td>61.9%</td><td>26</td><td>61.9%</td></tr>
<tr><td>Total</td><td>21</td><td>100.0%</td><td>21</td><td>100.0%</td><td>42</td><td>100.0%</td></tr>
</table>
Reference: Appendix 2 Changes over the years in Overall Goal Indicators Value</td></tr>
</table>

Survey [SPA: a survey conducted to evaluate the status of service provision of health facilities and the quality of health care services, conducted by ICF International which conducts DHS survey. This survey has been conducted in several countries including Senegal and Kenya with the support of the United States Agency for International Development (USAID)], were added as reference indicators. Though these indicators would not be improved only by achieving the project purpose, the evaluator used these as a reference for impact judgment. The survey is called *Enquête Continue sur la Prestation des Services de Soins de Santé (ECPSS)* in French.

[28] As factors affecting the achievement of the overall goal, the number and quality of health personnel, the logistics of medicines, the facilities and medical equipment of health facilities, etc., may be considered. The World Bank and USAID launched Result Based Financing (RBF, bonus paid based on outcome) in four regions including the project’s two target regions in 2014. At the time of the project completion, the RBF was in the pilot phase, and it was not implemented yet in the two regions. At the time of the ex-post evaluation, RBF was conducted in two health districts in the eight health districts visited.

[29] Other documents that were mentioned as information sources in PDM could not be obtained.

Table 7 Comparison of degree of changes in intermediate outcome indicators, between the two target regions and the national average

<table>
<tr><th>Indicator</th><th>Actual</th></tr>
<tr><td>The indicators related to status and quality of service provision in health facilities, and performance management have improved.</td><td>< Achieved to some extent
Comparison between the two target regions and the national average in fifteen indicators: nine indicators found better improvement; one indicator found to be the same; five indicators found to be less improvement. >

Applicable indicators[30] from the SPA survey were analyzed.
Average of the two target regions and the national average were compared to the changes from the time of the project completion to the ex-post evaluation; ranking A indicates better improvement, B indicates the same degree, C indicates less improvement.

Comparison of degree of changes in intermediate outcome indicators (between the two target regions and the national average)
<table>
<tr><th>Rank</th><th>Number of indicators</th><th>%</th></tr>
<tr><td>A</td><td>9</td><td>60.0%</td></tr>
<tr><td>B</td><td>1</td><td>6.7%</td></tr>
<tr><td>C</td><td>5</td><td>33.3%</td></tr>
<tr><td>Total</td><td>15</td><td>100.0%</td></tr>
</table>
Reference Appendix 3 Changes over the years in intermediate outcome indicators value</td></tr>
</table>

The project is considered to have achieved its overall goal to some extent; some indicators have deteriorated, such as the under-five mortality rate and immunization coverage rate for children, but there have also been improvement trends to some extent in the overall goal indicators, and better improvement trends than the national average in the intermediate outcome indicators are observed as a whole. However, as mentioned before, the influence of other factors other than the project needs to be considered.

3.2.2.2 Continuity of the Project Purpose and the Project Outputs at the time of the ex-post evaluation

Continuity of the project Outputs are shown in Table 8; the PTA operation mechanism of Output 1 is continued, the other activities in Output 1 and Output 2 are continued partly, in Output 3, the PTA operation is continued nationwide, and the 5S trainings are conducted in other regions.

Continuity of the project purpose is shown in Table 9; PTA operation is mostly continued; 5S and OGRIS activities are continued partly; monitoring of 5S activity is continued at a limited level.

[30] The evaluator selected 15 indicators from the SPA survey that are considered relevant to outputs and the overall goal of the project.

We can deduce that the project purpose is continued to some extent as a whole.

Table 8 Continuity of the Project Outputs at the time of the ex-post evaluation

<table>
<tr><th>Output</th><th>Continuity of the Project Outputs</th></tr>
<tr><td>Output 1</td><td>< PTA operation is continued; others are partly continued >
· PTA operation is continued.
· Tools and packages are partly utilized as shown below[31].

Utilization of tools and training packages (Medical Regions)
<table>
<tr><th>Name of Tools</th><th>Number of response “in use”</th></tr>
<tr><td>PTA operation guidelines</td><td>2/2</td></tr>
<tr><td>Handbook for the effective management of quarterly coordination meetings at the regional level</td><td>1/2</td></tr>
<tr><td>Supervision sheet for M&E activities in a health district[1]</td><td>1/2</td></tr>
<tr><td>Supervision tools for the health management information system[1]</td><td>1/2</td></tr>
<tr><td>5S training package[1, 2]</td><td>1/2</td></tr>
<tr><td>OGRIS training package[2]</td><td>0/2</td></tr>
</table>
Source: questionnaire responses by the regional medical offices
Note 1: It is a supervision tool, or contains a supervision tool.
Note 2: Utilization is asked for a whole package which includes a supervision tool for 5S.

Utilization of tools and training packages (Health Districts)
<table>
<tr><th>Name of Tools</th><th>Number of response “in use”</th></tr>
<tr><td>PTA operation guidelines</td><td>6/8</td></tr>
<tr><td>Manual for effective management of monthly coordination meetings at the district level</td><td>5/7</td></tr>
<tr><td>Supervision tools for the health management information system[1]</td><td>4/8</td></tr>
<tr><td>5S training package[1, 2]</td><td>4/8</td></tr>
<tr><td>OGRIS training package[1, 2]</td><td>5/8</td></tr>
</table>
Source: questionnaire responses by the district health offices
Note 1: It is a supervision tool, or contains a supervision tool.
Note 2: Utilization is asked for a whole package that includes a supervision tool for 5S and OGRIS, and the interpretation on this requires attention.</td></tr>
<tr><td>Output 2</td><td>< Continued partly >
· The mechanism of OGRIS (OGRIS trainers, training package, M&E method) is continued partly. Some of the trainers that were trained through the project have been transferred.
· The continuing training program on management at CRFS has not been established.
· 5S trainings were not conducted at three health centers because of lack of funds.
· 5S and OGRIS training packages are in the process of revision.
· Some personnel who were trained in the project continue to work as management team members, partly because of the transfers of those trained.</td></tr>
</table>

[31] The reason why the PTA operation guideline is not used is because the instruction is written in the PTA development tool itself and is sufficient to understand how to develop the plan. Some OGRIS tools are not used because some tools are not in line with the current system, such as the health information system and others that have been changed since the project completion. The other major reasons why the use of the tool is partial are; the insufficient supervision budget (fuel cost for vehicles, daily allowance for supervisors, etc.), transfer of the trained managers, and insufficient understanding and knowledge on activities of newly joined personnel without training. (Source: questionnaire responses from regional medical and district health offices and interviews)

Output 3	< Continued partly> · PTA operation is continued nationwide using the revised PTA operation guidelines. · 5S trainings were conducted at 40% of health centers throughout the country (including the project achievement) using the 5S training package developed in the project. · The 5S training package is in the process of revision with support from PARSS 2.

Source: questionnaire responses, interviews

Table 9 Continuity of the Project Purpose at the time of the ex-post evaluation

Indicators	Continuity of the Project Purpose
1–3. PTA operation (development, monitoring and evaluation)	< Continued mostly > · Development, monitoring and evaluation of PTA are continued mostly. While CRFS develops the PTA, but does not monitor and evaluate it according to the guidelines, as the indicators do not match with their activities.
4. The activities of 5S-KAIZEN-TQM are monitored in each health center according to the established standards and tools	< Continued partly > · Systematic 5S activities are continued partly due to the transfers of those trained[32]. Furthermore, the rate of supervision conduct is low, due to insufficient human and financial resources, etc.
5. Activities to improve resource management are planned and implemented in each health district according to the guidelines and tools, in line with the laws and regulations	< Continued partly > Confirmed the situation of OGRIS trainings conduct and the use of OGRIS tool. OGRIS training: After the project completion, all the planned trainings in the health districts were conducted. Utilization of OGRIS: ·Regional medical offices responded that they were used partly or no response. · Partial use of OGRIS is continued in health districts. · Among eight health districts surveyed; the usage rate was as follows; 56.3% for medicine management tool, 59.4% for health information management tool, 40% for human resources management tool. According to the evaluation survey mission on the OGRIS use conducted by PARSS 2 in June 2017 (survey target area: four health centers and eleven health posts in the two regions), all health facilities use one or more OGRIS tools. Supervision scores were 20.2% for health centers, 63.0% for health posts, on average. (Higher score indicates higher OGRIS utilization.) Reasons for the partial usage of OGRIS are; insufficient

[32] According to the Ministry, it is common practice in a project for field staffs in the region or lower level to conduct activities with financial incentives from the development partners, which may spoil ownership and sustainability of the activities after the project completion. Therefore, it is very important that the Ministry takes initiative in the project implementation. Furthermore, the Ministry is conducting activities to foster the non-monetary incentives (e.g. equipment procurement to the health facility with excellent work, offering foreign training opportunities to the health staffs with excellent performance). The survey conducted by this project in 2012 also indicates the expectation of financial incentive by staffs in the field.
(Source: Kanamori, S., Sow, S., Castro, M. C., Matsuno, R., Tsuru, A., & Jimba, M. (2015). Implementation of 5S management method for lean healthcare at a health center in Senegal: a qualitative study of staff perception. *Global Health Action, 8*. https://doi.org/10.3402/gha.v8.27256)

	understanding and knowledge of personnel on the activities and tools, due to transfers of the trained personnel, and no trainings conducted for newly assigned personnel; insufficient supervision from the upper level organization[33], some outdated OGRIS tools[34]; and excessive workload in health posts.

Source: questionnaire responses, interviews, JICA documents

3.2.2.3 Other Positive and Negative Impacts

The project implementation made the impacts described below. Negative impacts on the natural environments and unexpected negative impacts were not observed.

Synergy with other projects in the "Health System Strengthening Program" was observed, such as PRESSMN 2 utilized the contents of the project's 5S training package for its own training package. Furthermore, as a result of the project's effort to involve other development partners (UNICEF, USAID, Belgium, Luxembourg, and France) in the process of developing and revising the various guidelines, collaboration was realized toward the dissemination of the project activities to non-target regions[35]. In addition, the knowledge and experience acquired by implementing the project have been shared through academic journals after the project completion[36].

Since this project has to some extent achieved the project purpose and overall goal, effectiveness and impact of the project are fair.

For the project purpose, some activities were not completed by the time of the project completion, because the project had prioritized strengthening the capacity of C/Ps and it is assessed that the project has to some extent achieved the project purpose.

For the continuity of the project purpose and the project outputs, the PTA operation is mostly continued, while 5S and OGRIS activities are continued partly, because of the transfers of those trained, insufficient understanding and knowledge on activities of the newly assigned personnel, and insufficient funds for conducting trainings and supervision.

[33] According to the interview with a district health office, OGRIS utilization has improved after the aforementioned evaluation survey mission on OGRIS, and this is a good case that monitoring contributed to improve the activity implementation.

[34] After the project completion, transition to District Health Information System 2, introduction of software on Human Resource Information System in health sector, and launching of a new initiative in medicine supply were executed in the OGRIS associated area. At the time of the ex-post evaluation, revision on OGRIS training package was under process with the support of PARSS 2. (Source: JICA document)

[35] PTA operation guidelines were developed in cooperation with other development partners who supported the same issues. The guidelines were printed jointly by JICA, USAID and Belgian Technical Cooperation and were distributed nationwide. Since 2013, the guidelines have been utilized for PTA operations in the regional medical and district health offices in all 14 regions and departments in the Ministry. Luxemburg and France have also supported its use. (Source: Project Cooperation Report)

[36] Together with the aforementioned academic paper, two papers have been published.
Kanamori, S., Castro, M. C., Sow, S., Matsuno, R., Cissokho, A., & Jimba, M. (2016). Impact of the Japanese 5S management method on patients' and caretakers' satisfaction: a quasi-experimental study in Senegal. *Global Health Action, 9*. https://doi.org/10.3402/gha.v9.32852

As mentioned above, the PTA operation guidelines are utilized nationwide, and the 5S trainings have been conducted at 40% of health centers in Senegal, therefore the PTA and 5S had a remarkable ripple effect.

Although some indicators deteriorated for overall goal, improvement trends in the two target regions were observed, and intermediate outcome indicators showed better improvement trends than the national average as a whole. However, as mentioned before, the influence of other factors other than the project needs to be considered.

3.3 Efficiency (Rating: ②)

3.3.1 Inputs

Table 10 Inputs of the Project

Inputs	Plan	Actual
(1) Experts	0 Long-Term 5 Short-Term (no description of MM*) Chief Advisor / Management for Results / Health Planning, Financial Management, 5S-KAIZEN-TQM, M&E, Health Information System, Other Experts based on necessity	0 Long-Term 13 Short-Term (cumulative) Chief Advisor / Management for Results / Health Planning / Financial Management, 5S-KAIZEN-TQM, M&E, Health Information System
(2) Trainees received	No description of numbers of trainees	0 person
(3) Equipment	No description of budget amount Necessary equipment and materials for project activities such as printer(s), computer(s), photocopier(s), projector(s), vehicle(s)	Approximately 10 million yen 2 vehicles, a printer, computers, photocopies, projectors, etc.
(4) Local Operation Expenses	No description of budget a mount	Approximately 133 million yen at the time of the terminal evaluation (amount not mentioned at the time of the project completion)

Japanese Side Total Project Cost	total 330 million yen	total 513 million yen
Senegal Side Total Project Cost	1. Assignment of Counterparts 2. Provision of project office spaces (the Ministry, Regional Medical Offices of Tambacounda and Kédougou) 3. Utility costs for the project offices 4. Other necessary material, equipment, and information for the project activities	1. cumulatively 24 Counterparts[37] 2. Project offices (the Ministry, and the Regional Health Training Center of Tambacounda) 3. Utility costs for the project offices

Source: Terminal Evaluation Report, Project Completion Report, questionnaire responses
* MM stands for man-month.

3.3.1.1 Elements of Inputs

It was not possible to compare the actual inputs with the plan, for man-months of experts, numbers of trainees, and budget for equipment were not described with figures and amount in the Project Detailed Planning Survey Report. For dispatch of experts, as described in "3.1.4 Appropriateness of the Project Plan and Approach", it was confirmed that the man-months of persons have increased based on necessity according to the PDM revisions and equipment was mostly provided as planned.

3.3.1.2 Project Cost

The project cost was 513 million yen, which was significantly higher than the 330 million yen planned (155% of planned). The increase was due to the change of the project implementation approach [the approach to establish mechanisms including the Ministry, as well as strengthening the capacities of the two target regions (see "3.1.4 Appropriateness of the Project Plan and Approach")], and the increase of activities based on the revised PDM. Therefore, the increase in project cost is considered as

[37] Breakdown of the counterparts is as follows: 5 counterparts who led the project (cumulative, Director of General Directorate of Health in the Ministry, Regional Chief Medical Officers in Tambacounda and Kédougou regions), and 19 counterparts at the executive level (cumulative, the Ministry: cumulative total 6, Medical Region Office Tambacounda: 4, Medical Region Office Kédougou: 2 , District Chief Medical Officers: cumulative total 4, Health Center: 1, Regional Health Training Center of Tambacounda: 1

appropriate[38]. Three project offices at the time of the project planning, and one office (in Tambacounda) at the time of the project inception were planned, but eventually the offices were set up, one in the Ministry of Health and one in Tambacounda[39]. By establishing offices in two places, it contributed to the effective and efficient project operation[40].

3.3.1.3 Project Period

The project period lasted three years from March 2011 to February 2014, as planned (100% of planned).

Although the project period was within the plan, the project cost exceeded the plan. Therefore, efficiency of the project is fair.

3.4 Sustainability (Rating: ②)

The sustainability of results-based management capacities of the regional medical and district health offices in the two target regions, reinforced by the project, was analyzed at the time of the ex-post evaluation. The policy and political commitment, the organizational, technical, and financial aspects of the Ministry, the regional medical and the district health offices were examined. PTA operation, 5S activities and OGRIS were mainly analyzed as the results-based management capacities in this evaluation.

3.4.1 Policy and Political Commitment for the Sustainability of Project Effects

At the time of the ex-post evaluation, the *National Health Development Plan 2009-2018* is continued, and "Promoting results-based management" is continuously regarded as important.

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[38] The C/Ps commented favorably that the project cost on the Japanese side increased and their office was set up in the central Ministry, they facilitated better coordination with the Ministry, and they produced many project deliverables. According to a Japanese expert, many deliverables were produced based on the C/Ps' requests (source: questionnaires responses). In the project, 53 deliverables in the 10 areas were produced including the various guidelines, training packages, supervision tools, etc., and the Ministry approved documents on PTA, 5S, and OGRIS as official documents. At the time of the ex-post evaluation, some deliverables have been continuously utilized and the activities on PTA and 5S were expanded outside of the two target regions.

[39] Project Detailed Planning Survey Report, JICA document, Project Completion Report

[40] The following effects were observed by having two project offices.
Information collection from the Ministry and other Dakar based organizations (such as development partners) became easy, and after the project started, it was possible to develop project strategies timely at an early stage. This made it possible to have frequent communication with Ministry officials, who participated in developing the guidelines and tools reflecting their opinions, and fostered a strong sense of ownership for the materials produced. It also made it possible to have frequent communication and obtain better cooperation with the Project Director, the Director of the General Directorate of Health in the Ministry. It also increased the efficiency in administrative tasks, such as obtaining signatures for the project document, and helped to coordinate the activity schedule efficiently as it made easy access to both the Ministry and the field. (Source: Project Completion Report)

PTA[41] and 5S[42] activities are supported by policy documents and systems are stipulated. Although there is no policy document on OGRIS, OGRIS is a supplementary tool for improving the management of current work (management on medicine, health information, and human resources) in health centers and health posts, so there are no major hindrances to OGRIS utilization in the health facilities without particular policy document. In addition, documents on PTA operation, 5S, and OGRIS training packages have been approved nationally and are officially recognized by the Ministry.

Therefore, the sustainability of the project effects is high as a whole in policy and political commitment.

3.4.2 Institutional / Organizational Aspects for the Sustainability of Project Effects

The various departments in the Ministry engage in the development of national guidelines, M&E on their implementation, collaboration and coordination with development partners, acquisition of training budget (including trainings in region and lower level), etc. The PTA operation is managed by Directorate of Planning, Research and Statistics, and is conducted nationwide. PTA development starts in January of the previous year, and after the endorsement from the upper office, it is forwarded and consolidated into the Ministry of Health. The budget is then requested from the Ministry of Health to the Ministry of Economy, Finance and Planning, which is in charge of finance[43]. 5S activities are managed by the National Quality Program. Two personnel in the National Quality Program and one personnel in Directorate of Health Establishments are mainly involved in coordinating to conduct 5S trainings to other regions. For OGRIS, General Directorate of Health, Directorate of Human Resources, Directorate of Planning, Research and Statistics, Directorate of Pharmacy and Medicine, and regional medical offices are involved. Coordination is important as various directorates are involved, although no major issue was observed[44].

The form of decentralization in Senegal is deconcentration (déconcentration), and the central ministry takes most authorities and responsibilities, while the regional

[41] The PTA operation guidelines in which PTA operation system was stipulated were revised in 2015 and 2017, for the transition from the Mid-Term Sector Expenditures Framework to the Multi-year Expenditures Programming Document in the budgeting framework and integration of the gender approach in the health sector, and have been utilized nationwide. (Source: questionnaire response by the Ministry)

[42] Plan Stratégique National Intégrée de la Qualité en Santé 2018-2022 (provisional translation: National Strategic Plan for Improving Integrated Quality in Health) was developed and 5S activities are positioned as one of the initiatives for the quality improvement of health services. In the document, conduct of 5S training was planned and the budget amount was accounted for.

[43] JICA document

[44] At the time of the ex-post evaluation, PARSS 2 has been engaged in technical cooperation, including OGRIS activities. Because the Secretary-General of the Ministry is the Project Director, a project stakeholder mentioned that it made easier the OGRIS related departments to be cooperative in project implementation. (Source: interview with the Ministry)

medical offices are positioned as a branch of the Ministry[45]. Involvement from local government in operations in the health sector is low in the form of deconcentration[46]. Under these circumstances, the Ministry plays a role to revise the guidelines if necessary, and to provide guidance and monitor the activities in the regions. Therefore, it is important to establish a mechanism with involvement from the central ministry and its ownership, when considering the sustainability of the project effects and scale-up of the project activities in other regions. In this project, various guidelines were developed with stakeholders' participation including the Ministry, and as a result, C/Ps' sense of ownership was fostered[47]. With such contribution, nationwide PTA operations and deployment of 5S training to other regions by the Ministry are continued after the project completion.

At the time of the ex-post evaluation, although the management team members for the Regional Medical Office of Tambacounda seems somewhat small in number[48], there are organizational structures to conduct PTA operations, 5S, OGRIS and supervision activities both in the medical regions and the health districts. Although transfers of health personnel such as in the regional medical and the district health offices are observed anywhere in Senegal, six regions including the two target regions are recognized particularly as difficult areas to retain health personnel[49]. According to the project stakeholders, some prefer to transfer to a more convenient area within three months to a year, as the area is far from the Capital Dakar, and the living and the educational environment for children are severe. In the two target regions, transfer of personnel is observed in health personnel including management team members in the regional medical and district health offices, health centers, and health posts (approximately 20% transfer rate per year[50]). In addition, low motivation seems to be one of the main reasons for reduced continuity for some project activities in medical regions and health districts (see "3.2.2.2 Continuity of the Project Purpose and the Project Output, at the time of the ex-post evaluation").

In CRFS, the "continuing training program" on resource management, improvement

[45] Project Detailed Planning Survey Report
[46] Japan International Cooperation Agency (2009) *Thematic Guideline, Local Administration*
[47] Terminal Evaluation Report
[48] The numbers of management team members has declined from nine (2013) to three (at the time of the ex-post evaluation) in the Regional Medical Office of Tambacounda. On the other hand, its numbers in Kédougou Region was five (at the time of the ex-post evaluation) and its number was unknown for 2013. The numbers of management team members in health districts of Tambacounda Region was 49 members in total, both in 2013 and at the time of the ex-post evaluation. Its number was unknown for 2013, and there were 15 members in total in Kédougou Region at the time of the ex-post evaluation. In addition, many responded that insufficiency in human resources and technical aspects in PTA operation, 5S, and OGRIS activities, but the former issue was regarded more serious than the latter. (Source: questionnaires responses).
[49] Ministère de la Sante et de la Prévention Sénégal. (2010). *Plan National de Developpement des Ressources Humaines en Sante*.
[50] Project Completion Report. In addition, the transfer rate is 20% or more, according to a stakeholder in the Ministry who participated in the project as a counterpart in the target region.

of service quality and health system governance, which the project supported to establish, has not been realized and there is no implementation system of the said training program.

From the above, no problem is observed in the organizational aspect of the Ministry. Institutional structure is there to conduct activities in the medical regions and health districts, while the number of management team members who were trained and have sufficient technical capacities in implementing the project activities is insufficient (see "3.4.3 Technical Aspects for the Sustainability of Project Effects").

3.4.3 Technical Aspects for the Sustainability of Project Effects

For the Ministry, the technical aspects for revising various guidelines, and managing a training of trainers, and for the regional or lower level, the technical aspects for conducting activities on PTA operations in accordance with the guidelines, 5S and OGRIS were analyzed.

The Ministry needs to update or revise the guidelines, aligning them with policy changes and the program implementation situation in the field. The Ministry has revised the PTA guidelines with technical support from other development partners. Nine personnel in Directorate of Planning, Research and Statistics are mainly in charge of trainings and orientations for the PTA operation. As for 5S, with technical support from PARSS 2, the 5S training package was under revision. Regarding 5S training, a sufficient number of 140 personnel have been trained in Senegal as "Experienced Trainers" as of 2017[51]. Regarding OGRIS, the members of the OGRIS review committee[52] established by PARSS 2 will be the core trainers in the training of trainers for the regional level. Therefore, no particular problem is observed at the Ministry level.

In the regional and district levels, PTA is developed and operated largely according to the guidelines. However, a few mentioned that the degree of understanding of PTA development was insufficient in the two target regions[53]. As for 5S and OGRIS trainings,

[51] The 5S training program, established by the project, is designed to train 5S trainers through each training conduct. The trainer team consists of 10 members total; two Supervisors who oversee the entire training, four Experienced Trainers who have experience as 5S trainers, and four Apprentice Trainers who make their debut as 5S trainers in the training. In every training, the Apprentice Trainers take part and become candidates for becoming Experienced Trainers in future trainings. Management team members of regional medical and district health offices, and the staff of the Regional Health Training Center take part as trainers. (Source: Project Completion Report, questionnaire response, JICA document)

[52] The OGRIS review committee consists of six members for medicine supply management, five members for health information management, six members for human resource management, five members for coordination and supervision of OGRIS, excluding the PARSS 2 members, and they are from the Ministry, regional medical offices, and development partners. (Source: JICA document). In addition to its members, personnel in the related departments in the Ministry are cooperating as trainers in the OGRIS training of trainers at the regional level. (Source: interview with the Ministry).

[53] According to the JICA document, the quality of PTA monitoring in the country has not yet reached a

since the management teams of the medical regions and health districts have managed trainings during the project, their technical capacities on conduct of training and supervision to health facilities (health center and health post) are adequate. However, the numbers of personnel trained have decreased due to transfers of such personnel[54], and technology transfer other than trainings, such as briefings or on-the-job training (OJT) to newly assigned personnel are limited. It was observed that in health districts where there are no trainers, or where the District Chief Medical Officer has not attended the 5S or OGRIS training, understanding and knowledge about 5S and OGRIS in the District Management Team was not sufficient and it was difficult to conduct supervision adequately from the district health office to health facilities. According to the questionnaire responses and interviews, the utilization of tools and packages such as PTA, 5S, and OGRIS developed by the project in respective activities are; average 50% in the medical regions[55]; average 65% in the health districts (see "3.2.2.2 Continuity of the Project Purpose and the Project Output, at the time of the ex-post evaluation"). The reasons for limited utilization of tools are insufficient understanding of 5S and OGRIS activities in the management teams, and insufficient budget for trainings and supervision.

Regarding 5S activities at the health center level, based on questionnaire responses and on-site visits, it was observed that some centers conduct regular clean-up and some units in the health center voluntarily perform 5S activities, but active involvement from the 5S committee[56] in the health centers was not observed in most places. OGRIS is used in some health facilities[57] as a supplementary tool for the current work, and some staffs in health facilities are considered to have technical capacities to some extent. For 5S and OGRIS, the numbers of those trained have also been decreasing on the regional and health district level. Training and information related to 5S and OGRIS are not sufficiently relayed to newly assigned staff, and there is concern that the activities' implementation may become inadequate due to insufficient understanding of 5S and OGRIS activities. At the time of the ex-post evaluation, utilization of tools and training packages in health facilities only partially remained due to insufficient financial resources to train newly assigned staff, insufficient knowledge of new staff, and

satisfactory level. In this survey, its quality was not analyzed beyond the research questions, and not included in the evaluation judgment.

[54] The total numbers of trainers in the two regions were; 26 for 5S training, 20 for OGRIS training, which are equivalent to 67% and 43% of those trained by the time of the project completion. The average numbers of trainers in each health district were 1.8 trainers for 5S (range: 0-3) and 1.3 trainers for OGRIS (range: 0-3).

[55] The utilization in the region including the health districts was asked to the regional medical offices.

[56] The 5S committee is composed of the representative of each unit in the health center, and leads the internal supervision.

[57] At the time of the project planning, health posts were positioned as indirect beneficiaries of the project. OGRIS training was developed to introduce OGRIS to health centers and health posts. The training is led by the District Management Team as trainers, and the chief of each unit (unit chiefs) in the health center and the chief nurse in health post are trainees. (Source: Project Completion Report).

infrequent supervision to health centers by the district health offices (5S, and OGRIS), and by the regional medical offices (5S). The infrequent supervision is mainly due to the shortage of supervisors with sufficient knowledge, and the shortage of financial resources necessary for supervision implementation, as shown in the next section.

Therefore, technical sustainability problems are not observed with the Ministry, but are considered to be fair at the regional and lower levels.

3.4.4 Financial Aspects for the Sustainability of Project Effects

Decentralization is in process in Senegal and the local governments have state subsidies in the health sector. However, the budget amount coming through the Ministry of Health to implement their activities[58] is the largest in the regional and lower levels. In addition, opportunities to obtain funds from local sources are limited.

The PTA operations were established as official activities. Although the budget information could not be obtained, budget allocation and support from the government and development partners (World Bank and USAID) are expected for several years. According to interviews with the Ministry and the two regional medical offices, USAID's Neema project is supporting the PTA operation in the region and lower level in the two regions[59].

Regarding the 5S activities, in the policy document of the National Quality Program, the *National Integrated Strategic Plan for Quality in Health 2018-2022*, the budget amount for 5S trainings conducted in the regional or lower levels by the Ministry is stated as 51,840,000 FCFA (Franc CFA) (approximately 10 million yen[60], for 4 years) in the budgeted action plan[61]. In Senegal, it is common for the conduct of trainings and supervision to be supported by development partners in the region and lower level, but at the time of the ex-post evaluation, there was no partner support in the two regions on 5S, and there was no budget for 5S trainings and supervision. However, since PARSS 2 has components of "trainings on PTA, OGRIS, and 5S-KAIZEN-TQM", some training might be conducted in the two regions, and at least two health centers in Tambacounda Region are listed as candidate sites for 5S training[62]. Regarding 5S supervision, one of the issues is infrequent supervision due to insufficient financial resource in the two

[58] Source of health funding in Senegal are comprised of following; 64% by national budget, 19% by the out-of-pocket payment by the patient, 12% by the development partners and 5% by the local government, and the national budget accounts for a large proportion. [Source: Ministère de la Sante et de la Prévention Sénégal. (2009). *Plan National de Developpement Sanitaire (PNDS) 2009-2018*.]

[59] The Neema project aims to improve maternal and child health through strengthening health services, and will provide financial support of US $69 million for five years (2016 - 2021). (Source: Neema project https://www.intrahealth.org/projects/neema) (Accessed on April 22, 2018)

[60] For conversion of foreign currency, the rate as of April 3, 2018 was used.

[61] According to stakeholders in the Ministry, it was also mentioned that 5S related budget in the Ministry was not sufficient.

[62] JICA document

regions. As a countermeasure to that, we may consider integrating 5S supervision into the regular supervision that the regional medical and the district health offices are responsible for, in subordinate organizations.

The budget specifically for OGRIS (training conduct, supervision, etc.) is not yet secured by the Ministry, the regional medical, and the district health offices. However, since OGRIS is strongly related to the current work, it might be possible to conduct ORGIS activities to some extent without this budget by doing the following: by engaging activities as part of its original work in the relevant departments in the Ministry; by integrating monitoring of OGRIS activities into regular supervision to the health districts by the regional medical offices; by integrating OGRIS supervision into regular supervision to health facilities by the district health offices; and by enhancing the mind of health facility staffs through OGRIS activities as part of their regular work in health facilities.

As mentioned above, the Ministry has prospects of financing for PTA and 5S, while financial issues on conduct of trainings and supervision for 5S and OGRIS are observed in the regional and lower level. Therefore, the financial sustainability is considered to be fair as a whole.

From the above, no major problems have been observed in policy background, while some minor problems have been observed in terms of the organizational, technical, and financial aspects in implementing agency and concerned organizations. Therefore, sustainability of the project effects is fair.

4. Conclusion, Lessons Learned and Recommendations

4.1 Conclusion

The project was implemented aiming to “reinforce the results-based management capacities” of regional medical offices, district health offices, and health centers in Tambacounda and Kédougou regions, through “improving planning, M&E capacities”, “improving resource management capacities (organizational management such as human resource, accounting/finance, medicines and medical equipment and facility management)” and “sharing the project experiences within and outside of the target regions”. The main C/Ps are concerned personnel in the Ministry and the regional medical offices. Its overall goal was to “improve the health status of the population in the two regions”.

The objective of the project was consistent with *National Health Development Plan 2009-2018,* which emphasizes “promoting results-based management”, and with the development needs to improve the health status of the population in the two regions

where the health indicators were poor, both at the time of the project planning and its completion. It was also consistent with Japan's ODA policies and JICA's plan in the health sector, which proposed "Enhancement of Basic Social Services", "the development of policy-oriented human resources" "to formulate and implement evidence-based" health plans, and "strengthening administrative capacity" in health sector. Therefore, its relevance is high.

The following activities were conducted; improvement of health information system management for the regional medical and district health offices; strengthening the operational capacity for PTA establishing a sustainable mechanism for strengthening planning, and M&E capacities; strengthening supervision capacities; preparing to establish a sustainable training system (continuing training program); enhancement of 5S approach and improvement of resource management capacities in the health districts and health centers; development of tools and guidelines that are the basis of these activities; and sharing project experience. With the project contribution, the mechanism for PTA operation is in place, and the PTA operation has continued at the time of the ex-post evaluation. Activities related to 5S and OGRIS for resource management improvement, were implemented to some extent accordingly. Under an influence of external factors and a result of giving priority to strengthening C/Ps' training management capacity, all 5S and OGRIS trainings that were expected during the project period could not be completed by the end of the project. At the time of the ex-post evaluation, the 5S and OGRIS activities in the two target regions were partly continued. Therefore, effectiveness and impact of the project are fair. However, the PTA operation is continued nationwide, and 5S trainings have been conducted in other regions and the ripple effect is high.

Although the project period was within the plan, the project cost exceeded the plan, so the efficiency of the project is fair.

For the prospect of sustainability of the project effects, no major problems have been observed in policy background, while some minor problems have been observed in terms of the technical and financial aspects. Therefore, sustainability of the project effects is fair as a whole.

In light of the above, although the project has achieved the project purpose to some extent, this project is evaluated to be partially satisfactory.

4.2 Recommendations

4.2.1 Recommendations to the Implementing Agency

Integration of 5S and OGRIS supervision into regular supervision

[Organizations concerned: (Central level) Planning and Monitoring-Evaluation

Supporting Unit[63] in General Directorate of Health, National Quality Program, and departments related to OGRIS; regional medical offices; district health offices]

In the two target regions, supervision of 5S and OGRIS activities is limited due to insufficient funds. It is desirable to integrate carefully selected important supervision check points into the regular supervision conducted by the regional medical and district health offices, while the current monitoring tools for 5S and OGRIS may be utilized where necessary. For example, the National Quality Program, the OGRIS related departments, and the Planning and Monitoring-Evaluation Support Unit in the Ministry may encourage and monitor the regional medical and district health offices to integrate the 5S and OGRIS check points into their regular supervision checklists.

Strengthening the sustainability of 5S and OGRIS activities

[Organizations concerned: (Central level) National Quality Program and departments related to OGRIS; regional medical offices; district health offices]

After the project completion, 5S and OGRIS activities are continued only partially in some offices and facilities in the two target regions. The reasons are insufficient understanding and knowledge of the activities of newly assigned in region and health districts and infrequent conduct of supervision. It is desirable for the regional medical and district health offices to make efforts to increase the learning opportunities for the newly assigned through briefings and OJT, and the regional medical offices may strive to seek possible financial support through consultation with the department concerned (e.g. the National Quality Program) to conduct training to the newly assigned. Where possible, the regional medical and district health offices may coordinate with health committees[64], local governments, or local enterprises to conduct trainings and to have their financial support.

In addition, as shown in "3.2.2.2 Continuity of the Project Purpose and the Project Output at the time of the ex-post evaluation", it is presumed that staffs' incentives (including non-monetary incentives) are low as the reasons that some project activities were not continued at the field level. It would be desirable for the National Quality Program and the departments related to OGRIS to take the initiative and continue to promote activity implementation at the field level (e.g. raising motivation of personnel who are engaged in 5S and OGRIS activities in the health facilities, and management

[63] The unit developed the *National Supervision Plan* with the support of JICA in 2017, and is strengthening supervision in the health sector.

[64] A health committee is organized for each health center and health post with local residents, and is responsible for; financial management of medical fees and medicine sales; employment and placement of assistant personnel such as community health workers, medical assistants, dispensary clerk, accountants etc.; management of the budget. (Source: Japan International Cooperation Agency (2008) *Preliminary Survey Report on the project for the development of health facility infrastructure in Tambacounda Region in the Republic of Senegal.*)

team members of medical regions and health districts through sharing of good practices at the central and lower levels; publicity to increase the activity recognition; awarding personnel or health facilities with good practices, etc.)

Strengthening financial sustainability

[Organizations concerned: (Central level) National Quality Program and departments related to OGRIS; regional medical offices; and district health offices]

The Ministry is expected to strengthen the financial sustainability for conducting 5S and OGRIS trainings for untrained personnel in the two regions. It is desirable for the regional medical and district health offices to keep in mind the responsibility of obtaining a training budget, and to seek local financial resources if possible.

Continuing discussion on establishing continuing training program

[Organizations concerned: (Central level) Directorate of Human Resources; regional medical offices; Regional Health Training Center]

The project started the preparations for the continuing training program to strengthen the capacities on the health system governance, resource management and quality improvement in service provision. But it is far from being established, and there is no secured budget and no mechanism for implementation at the time of the ex-post evaluation. It is desirable for the concerned parties, including PARSS 2, to continue discussions on the training program and to realize it in a manner aligning with the current circumstances. Furthermore, if the effectiveness of 5S and OGRIS activities is widely recognized in Senegal, and they are implemented as usual practices in the health sector, it is desirable to consider the integration of 5S and OGRIS training components into the basic education[65] of health professionals.

4.2.2 Recommendations to JICA

None

4.3 Lessons Learned

Approach aimed at establishing a sustainable mechanism with a nationwide scale up in consideration

Under the circumstances of deconcentration in decentralization like Senegal, the central Ministry plays an important role in establishing mechanisms to reinforce the health system (e.g. development of guidelines and training packages) and in implementing a scale-up of activities to the entire nation (e.g. technical and financial

[65] Education to become health professionals (doctors, nurses, midwives, etc.)

inputs in conducting trainings). In a country with a similar decentralization situation, when the project aims to strengthen the administrative capacities of health personnel in the regional and lower levels, it would contribute to the sustainability of project effects, to give importance to establishing a mechanism to strengthen capacities involving the central Ministry, and to foster their ownership (see "3.4 Sustainability").

Project management setting two project offices in the central Ministry and region

In addition to strengthening the capacities in the target area, when the project aims to establish a national mechanism for health system strengthening through the pilot activities in the target area, and aims to strengthen the capacities in the regions and lower levels nationwide, it would be effective and efficient to have the project office not only in the target area, but also in the central Ministry. This would enable the project to have better involvement from the central Ministry and would also get the project administrative to work more efficiently (see "3.3.1.2 Project Cost").

Collaboration with other development partners

When the project aims to scale-up the activities nationwide with support from the development partners in a country where the other partners are conducting similar activities, the following may contribute towards obtaining their support more easily and expanding the activities to other regions: involvement of development partners from the development stage of manuals and guidelines (joint development of guidelines, their printing, and nationwide distribution), active promotion with clear indication of total activity cost, and explicit publicity of the project activities (e.g. indication of deployment model for the training program in the region) in a project brochure to the Ministry and other development partners, which make planning on their part easier.

Setting appropriate overall goal and indicators in PDM

By setting the overall goal and indicators appropriately, the effect of the project may be evaluated more accurately.

Regarding the overall goal and its indicators in the project, some indicators were difficult to achieve because of external factors. Furthermore, 20 indicators were set for the overall goal and some data was not available at the time of the ex-post evaluation. The overall goal is a long-term effect of which targeted value is expected to be achieved three to five years after the project completion. However, it is desirable to monitor the indicators throughout the project implementation. Therefore it is necessary to consider its cost (cost for time and effort) for data collection and analysis, and for example, setting

two to four indicators for the project purpose is generally desirable[66]. Considering the data availability, it is desirable to select appropriate indicators for monitoring and evaluation, and to set the adequate number of indicators.

End

Appendix 1 Achievement of Outputs at the time of the project completion
Appendix 2 Changes over the years in Overall Goal Indicators Value
Appendix 3 Changes over the years in Intermediate Outcome Indicators Value

[66] Evaluation Department, Japan International Cooperation Agency (2016) *JICA' Operations Evaluation Handbook ver 1.1*.

Appendix 1 Achievement of Outputs at the time of the project completion

Output 1	
Indicators	Actual
(1) At least one health information officer in each regional medical and district health office receive training on information system by the end of 2013.	<Achieved> Information system training was conducted for the target personnel in 2013.
(2) A system for the improvement of planning, monitoring and evaluation capacities (team of trainers, training modules, implementation guidelines, training frameworks, M&E mechanism and funding mechanism) is put in place by the end of 2013.	< Achieved > Training of trainers in PTA training, development of training modules and PTA operation guidelines, development of "the Effective Management Manual for coordination meetings" for each regional medical office and district health office as a method of monitoring and evaluation of PTA has been completed. It is assessed that a mechanism necessary for improving the planning, monitoring and evaluation capacities has been established.
(3) In 2011, the initial version of the PTA operation guidelines is to be developed.	< Achieved > The initial version of the PTA operation guideline was developed in 2011.
(4) Before the end of 2013, the final version of the PTA operation guidelines is developed.	< Achieved > The final version of the PTA operation guideline was developed in 2012. In addition, the guideline has been approved as the official document of the Ministry in September 2012, and it has been used throughout the country since 2013.
(5) By the end of 2012, more than 80% of the management team members of the medical regions, regional services[67], and the health districts in Tambacounda and Kédougou regions receive training on PTA trainings.	< Achieved > At the time of the project completion (2014), the situation in Kédougou Region is unknown, but the training attendance rate in Tambacounda Region, and CRFS is 100% each. Since PTA operation is being implemented nationwide, it is assumed that training is being carried out in Kédougou region as well. In 2011 and 2012, nearly all management team members took training in the two target regions and CRFS.
(6) By the end of 2012, improved supervisory tools are put in place.	< Achieved > Although they were not achieved by 2012, four supervision tools were completed by December 2013.
(7) By the end of 2012, more than 80% of the management team members of the medical regions, regional services, and health districts are trained on supervision[68].	< Achieved to a great extent > There has been a high degree of achievement of three among four trainings (5S training for health center, training of trainers for OGRIS, health management information system training, and M&E training to monitor health districts).

[67] "Regional services" in the project indicates the "Regional Health Training Center (CRFS)".

[68] It was confirmed by a project stakeholder that there is no "supervision training" in the training package, but when the supervisors received the training (e.g. training of trainers for OGRIS) to learn how to use the supervision tool for "OGRIS", "5S", "health management information system", or "activities to monitor and evaluate health districts", which were developed in Indicator 6 of Output 1, it was considered that the supervisor received the training. Although various trainings were conducted in the project, the evaluator followed the analysis in the terminal evaluation, and only the aforementioned four kinds of supervision tools were analyzed.

	The achievement is described below, for the regional and district levels, and the regional services. Although some indicators were not achieved by 2012, the achievement at the time of the project completion was as follows: <u>Regional Management Team</u> · M&E training to monitor health districts: 100% (estimate) (Actual target was 14 personnel. Approximately 38 people from the regional medical and district health offices participated in a session on supervision tools to monitor and evaluate health districts, and breakdown of participants is unknown.) · For 5S, the degree of achievement of the related training is unknown. It was confirmed by a project stakeholder that members who were responsible for 5S supervision, have acquired relevant knowledge and skills through the use of supervision tools in the field activities. · The OGRIS training is conducted in a cascade manner and the Regional Management Team is to attend the training of trainers at the regional level. It was at the development stage of the training package in the two regions, and the formal trainings for the Regional Management Team were not implemented. However, some members have engaged in the development of OGRIS training package, and it is considered that they have related knowledge and skills equivalent or higher than what would be gained in the training. <u>District Management Team</u> · 5S: 85.7% (6/7 health districts) · OGRIS (the training of trainers at the District level): 100% (10/10 health districts) <u>Regional and District Management Team</u> · Health management information system: 48.7% (estimate) (38/78 persons, accurate degree of achievement is unknown) Note: Health management information system has an estimated value of less than 50%, but there is a possibility of underestimation. The exact number in attendance is unknown, and the number of participants was estimated based on the number of people who filled in the questionnaires in the session. It may be presumed that some may have not filled in the questionnaires, or some may have left earlier during the session. Therefore, there is a possibility that the degree of achievement was estimated low. <u>Regional Services</u> Although the exact figures of the number of the target and the participants are unknown, according to the project stakeholder, targeted personnel were trained in the trainings in the relevant field.

Output 2	
Indicators	Actual
(1) A system for improving resource management capabilities (team of trainers, training modules, implementation guidelines, training frameworks, M&E mechanism and funding mechanism) is in place by the end of 2013.	< Achieved > · OGRIS training By 2013, conduct of training of trainers, development of training modules, development of "OGRIS supervision sheet" as OGRIS M&E method (duplicated with "OGRIS supervision tool" of indicator 6 in Output 1) have been completed. Therefore, it is assessed that a mechanism for improving the capacity of resource management was established. · Trainings other than OGRIS training Training Materials for Improving Financial Management Capabilities (teaching materials / exercise notebook, guide for facilitators) was developed in 2013. Human Resources Management Training Materials and its Regulatory and Legal Aspects (teaching materials, reference documents) was developed in 2014. (It was officially added to the project activities in 2013 to complement the strengthening of human resources management capacity by OGRIS.) · Training framework "Operational plan for the implementation of the continuing training program on health system governance and resource management at the CRFS of Tambacounda" was developed in 2014. (It was added to the project activity in 2013, to promote the sustainability of the training implementation mechanism developed in the project.
(2) Before the end of 2012, the initial version of a Practical Guideline for 5S-KAIZEN-TQM is developed.	< Achieved > The initial version of 5S-KAIZEN-TQM guideline was developed and achieved in 2012.
(3) By the end of 2012, 5S-KAIZEN-TQM trainings will be conducted in the ten health centers.	< Achieved to some extent > The degree of achievement at the project completion was 70% (trainings conducted at seven health centers). The reason for non-achievement in the three health centers: The centers had not transferred to the newly built facilities. The electricity and water works required for relocation to the new facilities were beyond the control of the project. The 5S training contains 5S practical exercises at each unit in the health center, so conduct of the training in the old facilities indicated training inputs would result in a waste of resources. Therefore it was agreed upon with C/Ps not to conduct the training at the health center before relocation. The degree of achievement in 2012 was 50% (conducted in five health centers). Trainings were conducted at two health centers from November to December 2013.
(4) By the end of 2013, the final version of a Practical Guideline for 5S-KAIZEN-TQM is developed.	< Achieved > This was achieved in 2013; "5S practical guide" and "facilitators' guidelines" were approved as official documents of the Ministry in 2013.

(5) By the end of 2013, the Guideline on Resource Management is developed.	< Achieved > At the time of the project completion, it is assessed that the development of the resource management guidelines was achieved. <u>Developed by 2013:</u> · OGRIS training package (management tools for three areas such as medicine management, health information utilization, and human resource management were approved as official documents by the Ministry in September 2013) · Financial and accounting training package <u>Developed in 2014:</u> · Human Resources Management Training Materials and its Regulatory and Legal Aspects (supplementary contents to strengthening human resources management capacity of OGRIS) (Added as activities in July 2013)
(6) By the end of 2013, more than 80% of the Management Team members of the medical regions and health districts participate in trainings on various resource management guides / tools (organizational management such as human resource, accounting / finance, medicines and medical equipment and facility management).	< Achieved > Training on regulations on human resource management is a supplementary to the OGRIS training. Therefore, the degree of achievement on OGRIS training and "financial and accounting training" are considered to be more essential to this indicator. Therefore, it is assessed that this indicator is achieved as a whole. · OGRIS training Regional Management Team: Because the OGRIS training package was in the development stage, the training of trainers at the regional level was not conducted[69]. However, some members have engaged in the development of the OGRIS training package, and it is considered that they have related knowledge and skills equivalent or higher than what would be gained in the training. District Management Team: 90.6% (58/64 personnel) · Financial and accounting training Almost 100% (Almost covered all the targeted personnel, 26 persons received the training.) · Training on regulations on human resources management This was added to the project activities in 2013 as mentioned above (see "Output 2-5"). Although it was not achieved by 2013, it was conducted by the time of the project completion.

[69] The main activities of the OGRIS training package are shown as follows chronologically: the development of the training package draft version, the OGRIS pilot trainings at the health centers (two health districts), the finalization of the package and its approval by the Ministry, the training of trainers for eight health districts, and the trainings in two health districts. In order to facilitate the OGRIS trainings outside of the target regions, the mechanism was developed that the Ministry trains the Regional Management Team as "regional level trainers", and the regional trainers train the District Management Team as "district level trainers". The training of trainers was conducted for the three Regional Management Teams in Saint-Louis, Louga, and Matam regions in November 2013. (Source: Project Completion Report)

Output 3	
Indicators	Actual
(1) By the end of the project, lessons learned from the implementation of planning / monitoring and evaluation and resource management systems is recognized and shared with other regions.	< Achieved > The degree of achievement is assessed to be high. Scale-up of the project activities to other regions · PTA operation has been conducted nationwide. · The developing local government's Annual Health Action Plan was supported in the other five regions. · The 5S trainings were conducted at five health centers in other regions. In addition, at the time of the project completion, 5S trainings were being planned in 11 regions, and a discussion on the training conduct was in process in four regions. There was a plan for OGRIS to be introduced in eight regions.
(2) The guidelines / manuals to improve management capacity are approved as national documents and also shared with others	< Achieved > It is assessed that the indicator was achieved. · PTA operation guidelines, POCL-Santé development guideline operation manual, health management information system evaluation sheet for health districts, training materials and tools for 5S practice, and OGRIS training package were approved as official documents. · Sharing of PTA, 5S and OGRIS documents were conducted on a nationwide basis, and a project outcome sharing seminar was held nationwide and with French-speaking African countries.

Source: Terminal Evaluation Report, Project Completion Report, questionnaire responses, interviews

Appendix 2 Changes over the years in Overall Goal Indicators Value

	Indicator	Region	C-DHS 2012-2014	C-DHS 2016	Change over the years from【2012-14】to【2016】	Ranking (Region wise)
1	Infant mortality rate (under 1) (per 1,000 live births)	Tambacounda	56	48	86%	A
		Kédougou	58	71	122%	C
		Total[1]	N/A	N/A		
2	Under-five mortality rate (per 1,000 live births)	Tambacounda	108	105	97%	A
		Kédougou	114	140	123%	C
		Total	N/A	N/A		
3	Full immunization coverage among children 1-year-old	Tambacounda	54.3	41	76%	C
		Kédougou	56.7	47.3	83%	C
		Total	N/A	68.9		
4	Maternal mortality ratio (per 100,000 live births)	Tambacounda	N/A	N/A		N/A
		Kédougou	N/A	N/A		N/A
		Total	N/A	N/A		
5	Percentage delivered by a skilled provider (doctor, nurse, midwife, and auxiliary nurse/midwife) (%)	Tambacounda	35.6	N/A		N/A
		Kédougou	37.1	N/A		N/A
		Total	N/A	58.6		
6	Current use of contraception (%)	Tambacounda	11	11	100%	B
		Kédougou	9.6	11.5	120%	A
		Total	N/A	24.3		
7	Percentage of women aged 15-19 who have begun childbearing (%)	Tambacounda	31.9	N/A		N/A
		Kédougou	44.3	N/A		N/A
		Total	N/A	N/A		
8	Percentage receiving antenatal care from a skilled provider (%)	Tambacounda	84.1	87.7	104%	A
		Kédougou	89	84.2	95%	C
		Total	N/A	95.4		
9	Unmet need for family planning among currently married women (%)	Tambacounda	29.3	23.4	80%	A
		Kédougou	30.4	26.5	87%	A
		Total	N/A	24.4		
10	Adult HIV prevalence (aged 15-49, women) (%)	Tambacounda	N/A	N/A		N/A
		Kédougou	N/A	N/A		N/A
		Total	N/A	N/A		
11	Adult HIV prevalence (aged 15-49, men) (%)	Tambacounda	N/A	N/A		N/A
		Kédougou	N/A	N/A		N/A
		Total	N/A	N/A		

12	Condom use with multiple partners (%)	Tambacounda	N/A	N/A		N/A
		Kédougou	N/A	N/A		N/A
		Total	N/A	N/A		
13	Knowledge of AIDS (aged 15-24)	Tambacounda	N/A	N/A		N/A
		Kédougou	N/A	N/A		N/A
		Total	N/A	N/A		
14	Orphan school attendance ratio	Tambacounda	N/A	N/A		N/A
		Kédougou	N/A	N/A		N/A
		Total	N/A	N/A		
15	Proportion of population with advanced HIV infection with access to antiretroviral drugs	Tambacounda	N/A	N/A		N/A
		Kédougou	N/A	N/A		N/A
		Total	N/A	N/A		
16	Malaria mortality rate	Tambacounda	N/A	N/A		N/A
		Kédougou	N/A	N/A		N/A
		Total	N/A	N/A		
17	Percentage who slept under an insecticide-treated net last night (children under age 5)	Tambacounda	37	55.4	150%	A
		Kédougou	41.3	52.1	126%	A
		Total	N/A	61		
18	Percentage who took antimalarial drugs (among children under age 5 with fever) [2] (%)	Tambacounda	3.3	2.9	88%	N/A
		Kédougou	4.6	12.4	270%	N/A
		Total	N/A	4.1		
18a	Percentage of children 6-59 months old with a positive test result for malaria rapid diagnostic test	Tambacounda	8.1	2.4	30%	A
		Kédougou	12.4	8.9	72%	A
		Total	N/A	0.8		
19	TB Case detection rate, TB incidence rate, TB mortality rate	Tambacounda	N/A	N/A		N/A
		Kédougou	N/A	N/A		N/A
		Total	N/A	N/A		
20	Proportion of TB cases detected and cured under directly observed treatment short course	Tambacounda	N/A	N/A		N/A
		Kédougou	N/A	N/A		N/A
		Total	N/A	N/A		

Ranking (by region)
Indicator values were analyzed over years for each region. Indicators were ranked as follows: A when improvement was observed; B when the values remained the same; C when deterioration was observed. N/A when the judgment cannot be done due to no availability of data or other reasons.

A	**10**
B	**1**
C	**5**
N/A	**26**

Source:
Agence Nationale de la Statistique et de la Démographie (ANSD) [Sénégal], et ICF International. (2015). *Sénégal : Enquête Démographique et de Santé Continue (EDS-Continue 2012-14), Rapport Régional.* Maryland: ANSD et ICF International.
Agence Nationale de la Statistique et de la Démographie (ANSD) [Sénégal], et ICF International. (2017). *Sénégal : Enquête Démographique et de Santé Continue (EDS-Continue 2016)*. Maryland: ANSD et ICF International.
JICA Senegal Office, Japan International Cooperation Agency (2014) *Terminal Evaluation Report on Project for Reinforcement of Health System Management in Tambacounda and Kédougou Regions in Senegal.*

Note:
1: Total indicates the national average.
2: It is recommended to treat malaria after the malaria test. It is ambiguous to judge the improvement only with this indicator and was ranked as N/A.

Appendix 3 Changes over the years in Intermediate Outcome Indicators Value

Indicator	Region	2014	2016	【2016】/【2014】	Average of two regions	Comparison : average of two regions over the national average	Rank
1 Percentage of health facilities, providing all basic health services[1]	Kédougou	80%	82%	103%			
	Tambacounda	80%	85%	106%	104%		
	Total [2]	74%	78%	105%		99%	C
2 Percentage of health facilities, regular electricity available	Kédougou	73%	75%	103%			
	Tambacounda	73%	75%	103%	103%		
	Total	53%	57%	108%		96%	C
3 Percentage of health facilities, improved water source[3] available	Kédougou	89%	100%	112%			
	Tambacounda	83%	76%	92%	102%		
	Total	94%	95%	101%		101%	A
4 Percentage of health facilities, implementing safe final disposal of needle waste	Kédougou	100%	100%	100%			
	Tambacounda	97%	88%	91%	95%		
	Total	94%	92%	98%		97%	C
5 Percentage of health facilities, conducting malaria diagnostic test	Kédougou	95%	100%	105%			
	Tambacounda	100%	100%	100%	103%		
	Total	94%	94%	100%		103%	A
6 Percentage of health facilities, conducting HIV diagnostic test	Kédougou	95%	93%	98%			
	Tambacounda	91%	86%	95%	96%		
	Total	89%	84%	94%		102%	A
7 Percentage of health facilities, providing outpatient curative care for sick children	Kédougou	100%	93%	93%			
	Tambacounda	100%	100%	100%	97%		
	Total	96%	96%	100%		97%	C
8 Percentage of health facilities, conducting growth monitoring for children	Kédougou	90%	88%	98%			
	Tambacounda	80%	90%	113%	105%		
	Total	84%	86%	102%		103%	A
9 Percentage of health facilities, all basic child vaccines available	Kédougou	87%	87%	100%			
	Tambacounda	67%	62%	93%	96%		
	Total	86%	80%	93%		103%	A

10	Percentage of health facilities, offering any family planning service	Kédougou	85%	87%	102%			
		Tambacounda	86%	86%	100%	101%		
		Total	87%	86%	99%		102%	A
11	Percentage of health facilities, family planning commodities for every method provided by the facility was available on day of survey	Kédougou	82%	100%	122%			
		Tambacounda	84%	100%	119%	120%		
		Total	84%	98%	117%		103%	A
12	Percentage of health facilities, providing antenatal care	Kédougou	91%	87%	96%			
		Tambacounda	86%	86%	100%	98%		
		Total	91%	88%	97%		101%	A
13	Percentage of health facilities, conducting normal delivery service	Kédougou	85%	82%	96%			
		Tambacounda	86%	86%	100%	98%		
		Total	77%	81%	105%		93%	C
14	Percentage of health facilities, providing HIV testing service	Kédougou	95%	93%	98%			
		Tambacounda	91%	86%	95%	96%		
		Total	89%	84%	94%		102%	A
15	Percentage of health facilities, offering malaria diagnosis and/or treatment services	Kédougou	100%	100%	100%			
		Tambacounda	100%	100%	100%	100%		
		Total	99%	99%	100%		100%	B

Ranking

Compared the average value of the improvement rates in the two regions with the value of national average. Indicators were ranked as follows: A when improvement was better than the national average; B when the values were the same; C when improvement was less than the national average.

A	**9**
B	**1**
C	**5**

Source:
Agence Nationale de la Statistique et de la Démographie (ANSD) [Sénégal] et ICF International. (2015). *Sénégal : Enquête Continue sur la Prestation des Services de Soins de Santé (ECPSS) 2014.* Maryland: ANSD et ICF International.
Agence Nationale de la Statistique et de la Démographie (ANSD) [Sénégal] et ICF International. (2016). *Sénégal : Enquête Continue sur la Prestation des Services de Soins de Santé (ECPSS) 2016*. Maryland: ANSD et ICF International.

Note:
1: Basic health services include outpatient curative care services for sick children, child growth monitoring, childhood immunization services, family planning, antenatal care services, and sexually transmitted infections (STIs) services.
2: Total indicates the national average.
3: Safe piped water, borehole or a tube well, a protected dug well, protected spring, or rain water.

Republic of Senegal

FY2017 Ex-Post Evaluation of Japanese Grant Aid Project

"Project for construction of classrooms for primary and secondary schools in Dakar and Thiès Regions"

External Evaluator: Akemi Serizawa, TAC International, Inc.

0. Summary

The objective of this project was to improve learning environment of the target primary and secondary schools in Dakar and Thiès Regions and to strengthen stakeholders' motivation to participate in maintenance of school facilities by construction of schools, provision of furniture and implementation of soft component to strengthen capacity in maintenance, thereby contributing to the improvement of pupils' motivation to attend schools, school attendance situation, and consciousness of hygiene.

Relevance of the project is high as it has been highly relevant to the country's development plan and development needs, as well as Japan's ODA policy. Efficiency of the project is fair because, although the project cost was within the plan, the project period exceeded the plan. Effectiveness and impacts of the project are high because it has largely achieved its objectives. The main objective, improvement of learning environment, was achieved. Other intended effects such as improvement of stakeholders' motivation to participate in maintenance of school facilities and pupils' motivation to attend school, school attendance situation as well as consciousness of hygiene were achieved to a certain extent, while the causality with this project was not very clear. No serious problems were observed in the institutional and financial aspects of operation and maintenance. There is a minor problem in the technical aspects because they do not prepare annual maintenance plans while the target schools perform daily cleaning and small repair as necessary and the have minimum maintenance skills. Since some schools do not fix minor malfunctions or break downs of facilities, there are some problems in the status of operation and maintenance. Sustainability of the project effects is fair because there are minor problems in technical aspect and status of operation and maintenance as stated above.

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

1. Project Description

Project locations

Classrooms constructed by the project (Cheikh Awa Balla Mbacké Secondary School, Dakar Region)

1.1 Background

The gross enrolment ratio[1] for primary education[2] in Senegal improved from 75.8% (2003) to 94.4% (2010) and that for lower secondary education[3] improved from 27.2% (2004) to 45.0% (2010). With the improvement of enrolment ratio, primary and secondary schools needed more classrooms. In the school year 2008/09, 17% of the utilized classrooms of primary schools and 13% of those of secondary schools were temporary structure or deteriorated. Since 1991, Japan's five Grant Aid Projects constructed about 1,800 classrooms and contributed to the increase of classrooms in Senegal. However, the shortage of classrooms was still serious, and some schools had congested classrooms and double-shift system. Under these circumstances, this project constructed classrooms and toilets of 31 primary and secondary schools in Dakar and Thiès Regions at the request of the Government of Senegal.

1.2 Project Outline

The objective of this project is to improve learning environment of the target primary and secondary schools in Dakar and Thiès Regions and to strengthen stakeholders' motivation to participate in maintenance of school facilities by construction of school facilities, provision of furniture and implementation of soft component to strengthen capacity in maintenance, thereby contributing to the improvement of pupils' motivation to attend schools, school attendance situation and consciousness of hygiene.

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[1] Gross enrolment ratio is number of students enrolled in a given level of education, regardless of age, expressed as a percentage of the official school-age population corresponding to the same level of education.

[2] Primary education in Senegal is for six years. The grades are CI (cours initial: introduction), CP (cours primaire: primary), CE1 & CE2 (cours élémentaire: elementary), and CM1 & CM2 (cours moyen: intermediate).

[3] Lower secondary education in Senegal is for four years. The grades are from 6ème (6th) to 3ème (3rd).

Grant Limit / Actual Grant Amount	1,213 million yen / 1,213 million yen
Exchange of Notes Date (/Grant Agreement Date)	March 2011 / March 2011
Executing Agency	Ministry of National Education
Project Completion	July 2014
Main Contractor(s)	Civil engineering: Générale d'Entreprises Equipment: SISMAR
Main Consultant(s)	Mohri, Architect & Associates, Inc.
Procurement Agency	Japan International Cooperation System (JICS)
Outline Design	July 2010 – March 2011
Related Projects	Technical cooperation "Project for the improvement of school environment" (2007-2010) (Louga Region) "Project for the improvement of school environment Phase 2" (2010-2015)" (whole country) Grant aid "Project for construction of classrooms of primary schools I" (1991) (Dakar Region) "Project for construction of classrooms of primary schools II" (1994) (Dakar and Thiès Regions) "Project for construction of classrooms of primary schools III" (1997) (Dakar and Thiès Regions) "Project for construction of classrooms of primary schools IV"(2001) (five regions including Dakar and Thiès) "Project for provision of school materials for primary schools" (2002) (provision of materials for the target schools in the previous grant aid projects) "Project for the construction of classrooms for secondary schools in the suburbs of Dakar" (2013) "Project for the construction of classrooms for secondary schools in Kaolack, Thiès and Fatick Regions (2015) Other development organizations French Development Agency (Agence Française de Développement: AFD) "Project to support development of secondary education in Dakar Region" (2014-2018) Italy: Project for support basic education system (2016-2019)

2. Outline of the Evaluation Study

2.1 External Evaluator

Akemi Serizawa, TAC International, Inc.

2.2 Duration of Evaluation Study

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

Duration of the Study: August 2017 – September 2018

Duration of the Field Study: November 19-29, 2017 and February 18-28, 2018

3. Results of the Evaluation (Overall Rating: B[4])

3.1 Relevance (Rating: ③[5])

3.1.1 Consistency with the Development Plan of Senegal

The national education policy at the project design, *The National Education and Training Development Plan* (*Plan national de développement de l'éducation et de la formation: PNDEF*) *Phase 3 (2009-2011*), aimed to improve gross enrolment for primary education to 96%, that for lower secondary education to 47%, and the transition rate from primary to lower secondary education to 68%. This project was to contribute to the achievement of these goals (source: project ex-ante evaluation sheet).

The national education policy at the time of ex-post evaluation, *The Programme for the improvement of quality, equity and transparency of the education and training sector* (*Programme d'Amélioration de la Qualité, de l'Equité et de la Transparence (PAQUET) Secteur Education Formation*) *(2013-2025*), aims at the improvement of access to education responding to individual needs. In 2017, gross enrolment for primary education was 87%, that for lower secondary education was 51%, and the transition rate from primary to lower secondary education was 65%. Further improvement is required to achieve the targets set by *PAQUET* by 2025, which are 98%, 67% and 84% respectively[6] .

The project is in line with the national education policy of Senegal to improve school attendance both at the project design and at the ex-post evaluation.

3.1.2 Consistency with the Development Needs of Senegal

At the project design, the demand for construction of classrooms was high in the project target areas due to the improved enrolment ratio, increased number of pupils and deterioration of classrooms (source: project ex-ante evaluation sheet).

The situation at the ex-post evaluation is shown in Table 1. Primary and secondary enrolment ratio and transition rate to the secondary education in Dakar and Thiès Regions were considerably higher than the national average. Number of pupils per classroom in the two regions was also higher than the national average. Some schools visited during the ex-post evaluation had congested classrooms accommodating 60 pupils or more, or had double shift system. At the time of ex-post evaluation, number of classrooms was not sufficient compared to the number of pupils, and the needs to construct classrooms still existed. The selection of the

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

[5] ③: High, ②: Fair, ①: Low

[6] Source: *PAQUET, National report of educational situation* (*Rapport national sur la situation de l'Education: RNSE) 2017*, information provided by the Ministry of National Education

project target areas and schools was appropriate.

From the above, the project responded to the needs of the project target areas both at the project design and at the ex-post evaluation.

Table 1. School attendance in the project target regions, primary and secondary education

	2000-2003 Actual	2007-2009 Actual	2009/10 Actual			2017 Actual		
			National	Dakar Region	Thiès Region	National	Dakar Region	Thiès Region
Gross enrolment, primary education	75.8% (2003)	92.5% (2009)	84.7% M 80.7% F 89.1%	100.3% M 98.6% F 102.0%	92.8% M 88.4% F 97.6%	87.3% M 81.1% F 93.9%	104.5% M 100.3% F 108.7%	104.4% M 98.1% F 111.2%
Gross enrolment, lower secondary education	27.2% (2004)	41.4% (2009)	45.6% M 46.9% F44.3%	65.7% M 65.6% F 65.9%	49.6% M 48.6% F 50.7%	51.2% M 47.2% F 55.4%	73.4% M 68.6% F 78.1%	64.4% M 57.3% F 72.1%
Transition rate from primary to lower secondary education	-	-	68.8% M 71.2% F 66.4%	76.8% M 77.8% F 76.0%	71.6% M 74.3% F 69.1%	66.4% M 67.5% F 65.4%	89.7% M 89.5% F 89.9%	71.3% M 72.5% F 70.2%
			Number of pupils enrolled in CI (first grade of primary education)					
Number of pupils enrolled, primary	Dakar Region 303,294 Thiès Region 155,514 (2000)	Dakar Region 356,435 Thiès Region 231,721 (2007)	359,295 M 176,429 F 182,866	65,721 M 32,761 F 32,960	52,498 M 26,073 F 26,425	376,170 M 178,338 F 194,569	47,297 M 23,325 F 23,972	57,205 M 28,149 F 28,808
			Number of pupils enrolled in 6ème (first grade of lower secondary education)					
Number of pupils enrolled, lower secondary	Dakar Region 94,685 Thiès Region 33,550 (2003)	Dakar Region 124,745 Thiès Region 61,299 (2008)	123,303 M 64,914 F 58,389	38,432 M 18,953 F 19,479	22,486 M11,154 F11,332	165,318 M 63,537 F 71,429	29,573 M 13,567 F 16,006	22,941 M 10,678 F 12,263
Retention rate, primary	-	-	6.4% M 6.4% F 6.4%	8.1% M 8.3% F 8.0%	6.0% M 6.1% F 6.0%	3.7% M 3.9% F 3.5%	3.1% M 2.9% F 3.2%	3.3% M 3.4% F 3.2%
Dropout rate, primary	-	-	10.3% M 10.4% F 10.2%	6.1% M 7.0% F 5.3%	8.6% M 8.6% F 8.7%	10.3% M 11.0% F 9.6%	3.9% M 5.1% F 2.3%	8.1% M 9.3% F 7.0%
Retention rate, secondary	-	-	17.1% M 16.8% F 17.5%	14.4% M 14.6% F 14.2%	16.9% M 16.3% F 17.5%	19.1% M 16.8% F 17.5%	12.0% M 14.6% F 14.2%	19.2% M 16.3% F 17.5%
Success rate of primary education completion exam (CFEE)*1)	-	-	68.6% M 66.5% F 70.8%	73.5% M 74.8% F 72.3%	71.6% M 75.0% F 68.6%	56.7% M 59.4% F 54.5%	74.1% M 73.4% F 74.8%	56.7% M 60.1% F 54.1%
Number of pupils in primary schools	-	-	-	-	-	1,741,082	250,347	276,369

Number of classrooms, primary schools	-	-	-	-	-	46,532	4,724	6,093
Number of pupils per classroom, primary schools	-	76.7 (school year 2008/09)	-	-	-	37.4 (national standard: 47.8)	53.0	45.0
Number of pupils in secondary schools	-	-	-	-	-	826,521	161,420	144,014
Number of classrooms, secondary schools	-	-	-	-	-	17,975	2,586	2,510
Number of pupils per classroom, secondary schools	-	161.7 (school year 2008/09)	-	-	-	46.0 (national standard: 80.2)	62.4	57.4

Source: Data for 2000-2003 and 2007-2009: project ex-ante evaluation sheet; data for 2009-2010 and 2017: questionnaire response from the Ministry of National Education
1*) Certificat de Fin d'Etude Elémentaire: Certificate of primary education completion
Note: "-"means "no data".

3.1.3 Consistency with Japan's ODA Policy

The project was expected to contribute to the improvement of access to basic education and its quality, which was one of the goals set by the 4th Tokyo International Conference on African Development (TICAD IV) in 2008. It was also expected to contribute to the achievement of universal primary education as one of the Millennium Development Goals (MDGs) as well as to the improvement of access to education, quality and management, which was included in Japan's country assistance policy for Senegal in April 2009. The project was in line with the Japan's assistance policies at the time of project design.

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

3.2 Efficiency (Rating: ③)

3.2.1 Project Outputs

1) Construction of facilities

Outputs by the Japanese side

The project constructed classrooms, toilets and administrative blocks of 31 primary and secondary schools in Dakar and Thiès Regions. The number of classrooms and toilet booths was calculated as follows (source: documents provided by JICA):

・For each target school, anticipated number of pupils of school year 2012/13 was divided by the appropriate number of pupils per classroom (48 for primary school and 45 for secondary school)

to calculate appropriate number of classrooms. The minimum number of classrooms was six for primary school and four for secondary school in order that there was at least one classroom per grade. After deducting the number of existing classrooms in good condition from the appropriate number of classrooms, the project decided the number of classrooms to be constructed. In some schools which could not accommodate the calculated number of classrooms on the site, it was reduced to a realistic number.

・In principle, the project was to construct the same number of toilet booths as that of classrooms to be constructed. The minimum number of the toilet booths was six from the perspective of cost effectiveness. The project constructed equal number of booths for boys and girls. Two multipurpose booths for disabled persons and teachers, one for men and one for women, were included[7].

The number of facilities was fixed after two detail designs as shown in Table 2 and they were constructed as planned. There were minor modifications of design such as layout in the compound, building materials and floor finish according to the actual situation of the project sites (source: documents provided by JICA). The Ministry of National Education and the procurement agency explained that these changes were appropriate with approval by JICA each time.

Table 2. Number of facilities constructed, plan (after two detailed designs) and actual

	Number of sites			Number of classrooms			Number of administrative blocks			Number of toilet booths		
	P	S	T	P	S	T	P	S	T	P	S	T
Dakar	3	13	16	16	113	129	2	4	6	14	108	112
Thiès	9	6	15	62	75	137	8	6	14	0	46	46
Total	12	19	31	78	188	266	10	10	20	14	154	158

Note: P: primary schools; S: secondary schools; T: total
Source: documents provided by JICA

Outputs by the Senegalese side

The Senegalese side was responsible for land acquisition, land preparation work, removal of obstacles from the project sites, provision of temporary storage of building materials in the project sites, connection of electricity, water and sewage pipes, and construction of fences. The Ministry of National Education explained that all works were complete by the time of ex-post evaluation. However, information about the date of completion or cost of these works was not available because there were personnel changes after the project completion and records were lost in the ministry.

2) Equipment

[7] According to the interview of the Ministry of National Education, multipurpose toilets are obliged by the Ministry.

The equipment was procured as planned as shown in Table 3 below.

Table 3. Procured equipment, plan and actual

			Furniture (figure inside bracket is number)
Primary schools	Classroom block	Classrooms	Bench tables for two pupils (large) (8); bench tables for two pupils (small) (16); desk for teacher (1) and chair (1)
	Administrative block	Principal's office	Desk (1); chair (1), shelves type B (1)
		Storage room	Shelves type A (4)
		Teachers' room	Desk (12); chair (24); shelves type B (4)
Secondary schools	Classroom block	Classrooms	Bench tables for two pupils (large) (24); desk for teacher (1) and chair (1)
	Administrative block	Principal's office	Desk (1); chair (1), shelves type B (1)
		Storage room	Shelves type A (4)
		Teachers' room	Desk (12); chair (24); shelves type B (4)
		Surveillants' room	Desk (7); chair (7); shelves type A (6); shelves type B (4)

Source: documents provided by JICA

3) Soft component

In the soft component, the project trained stakeholders of the target schools including teachers and staff, community, School Inspectors' Offices at the regional level (Inspections d'Académie: IA) and School Inspectors' Offices at the department level (Inspection de l'Education et de la Formation: IEF)[8]. The purpose was to make the stakeholders understand the importance of maintenance and to strengthen their capacity in awareness raising activities for resource mobilization for maintenance as well as in development and implementation of financial plans. The project revised the existing manual titled "*Manual for maintenance of school infrastructure and hygiene status*" *(Manuel de maintenance des infrastructures scolaires et d'amélioration des conditions d'hygiène*) used by the former grant aid projects, and held trial training sessions for six schools. It included a half-day workshop at each school featuring maintenance of facilities using the manual, development of medium to long-term maintenance plans as well as resource mobilization, and a visit to the school construction site to deepen participants' understanding about the facilities. The local NGO and local consultant held same training sessions for the remaining 25 target schools. After the workshop, each school implemented regular maintenance activities, and the project followed up the schools about six months after the workshop (source: documents provided by JICA).

The project consultant confirmed that the soft component was implemented as planned in every aspect including activities, their timing, staffing and products. To ensure the participation of stakeholders, the project requested the IAs and IEFs to nominate focal points and ask them to

[8] IA is responsible for the implementation of education policy at the regional level and supervises lycée (high school) and regional training centers. IEF supervises schools of compulsory education (ten years) at the department level.

regularly attend the activities, and posted photos in the community to show construction process to increase interest among school staff and community. The project liaised with the JICA technical cooperation project titled "Project for the improvement of school environment (*Projet d'Amélioration de l'Environnement Scolaire*) Phase 2" (PAES 2) [9], which was implemented from September 2010 to August 2015, and exchanged information on how to conduct workshops, shared the manuals developed by PAES 2 and employed the same NGO who conducted workshops in PAES 2.

3.2.2 Project Inputs

3.2.2.1 Project Cost

Project cost by the Japanese side

As shown in Table 4, the grant amount agreed by the Exchange of Notes was 1,213 million yen, and the final project cost was 1,204 million yen. From the balance, 80,848,32 euros (approximately 9.4 million yen) were reimbursed to the Government of Senegal for another project to construct secondary schools, and the granted amount was totally used also covering bank commission. As the reimbursed amount was also a part of grant to Senegal, the total project cost was 1,213 million yen, same as the Exchange of Notes amount.

Table 4. Project cost by the Japanese side, plan and actual

(unit: million yen)

	Plan (after second detail design)	Actual
Construction (contract in FCFA)	809.9	806.8
Equipment (contract in FCFA)	48.6	48.6
Japanese flag stickers (contract in JPY)	0.1	0.1
Procurement agency (contract in JPY)	137.0	137.0
Design and supervision (including soft component) (contract in JPY)	203.2	203.2
Attorney's fee (contract in JPY)	1.2	1.2
Procurement advisor (contract in FCFA)	0.7	0.7
Public inspection agency (contract in JPY)	6.5	6.5
Total	*1) 1,207.1	1,204.0

Source: Documents provided by JICA
Fixed exchange rate: 1EUR=655.957FCFA
JPY June 16, 2011. Transfer from the government account to the procurement account in euro:
1EUR= 116.32JPY
Note *1) There is a discrepancy between it and the grant amount in the Exchange of Notes (1,213 million JPY) due to exchange rate.

Project cost by the Senegalese side

[9] The project purpose of PAES 2 was to improve the educational environment and school management systems through the improvement of school management by the school management committee (Comité de Gestion d'Ecole: CGE) of the primary schools and to contribute to the improvement of access to and quality of primary education. The target area of Phase 1 of the project (PAES) (2007-2010) was Louga Region. PAES 2 started in Fatick and Kaffrine Regions as pilot regions and aimed at scaling up of CGE management method in the whole country (source: Terminal evaluation report of PAES 2).

The planned project cost by the Senegalese side was 258,174 thousand FCFA (equivalent to 48 million yen) as shown in Table 5. According to the Ministry of National Education, all works were complete by the time of ex-post evaluation. However, information of actual cost was not available from the Ministry.

Table 5. Project cost by the Senegalese side, plan and actual

(unit: thousand FCFA)

	Plan	Actual
Land preparation work of the project sites (such as removal of trees)	3,416	No information
Construction of gates and surrounding fences	219,501	
Construction of temporary classrooms and toilets	18,896	
Electricity connection	2,300	
Water supply connection	2,500	
Expenses for soft component (transportation expenses to attend workshops)	1,100	
Expenses for construction of facilities (transportation cost)	3,545	
Bank commissions	6,916	
Total	258,174	

Source: documents provided by JICA

As information of the actual project cost by the Senegalese side was not available, the comparison between the plan and actual cost is possible only for the Japanese side and the actual project cost was as planned (100%).

3.2.2.2 Project Period

The planned project period was 37 months from March 2011 (Grant Agreement) to March 2014 (installation and handing over of furniture). The actual project period was 41 months from March 2011 to July 22, 2014 (the latest date of completion of construction, and installation and handing over of furniture) and it was longer than planned (111%). The procurement agency and the project consultant explained that there was delay in some construction work because this project was the second community development assistance grant aid project in the education sector in Senegal and the local contractors were not accustomed to the procedures of Japan's grant aid projects or to the strict observance of construction period as in Japan.

The Ministry of National Education reported that all works by the Senegalese side were complete by the time of ex-post evaluation, but information of actual completion date was not available.

Table 6. Project period, planned and actual

	Plan	Actual
Exchange of Notes and Grant Agreement	March 2011	March 2011
Contract with the procurement agency	April 2011	April 2011
Contract with the consultant	May 2011	June 2011
For Dakar Region		
Preparation and approval of tender documents for facility construction	May-July 2011	May-July 2011
Tender and contract	July-October 2011	July-September 2011
Construction	October 2011-February 2013	October 2011-May 2013
Tender and contract for equipment	March-June 2012	March-May 2012
Procurement and handing over of equipment	June 2012-March 2013	May 2012-May 2013
For Thiès Region		
Preparation and approval of tender documents for facility construction	May-June 2012	May-June 2012
Tender and contract	June-September 2012	July-October 2012
Construction	October 2012-January 2014	November 2012-July 2014
Tender and contract for equipment	June-August 2013	March-May 2013
Procurement and handing over of equipment	September 2013-February 2014	May 2013-July 2014
Soft component		
Preparation	February-March 2012	April 2012
Visits to the construction sites and training	March-May 2012 (Dakar) March-May 2013 (Thiès)	April-June 2012 (Dakar) April-June 2013 (Thiès)
Activities at the target schools	March-Dec. 2012 (Dakar) March-Dec. 2013 (Thiès)	June 2012-Feb. 2013 (Dakar) April 2013-Jan. 2014 (Thiès)
Follow up	October-Dec. 2012 (Dakar) October-Dec. 2013 (Thiès)	Nov. 2012-Jan. 2013 (Dakar) Nov. 2013-Jan. 2014 (Thiès)

Source: documents provided by JICA

Although the project cost was within the plan, the project period exceeded the plan. Therefore, efficiency of the project is fair.

3.3 Effectiveness and Impacts[10] (Rating: ③)

3.3.1 Effectiveness

3.3.1.1 Quantitative Effects (Operation and Effect Indicators)

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

Table 7. Actual data of the operation indicators of the project

	Baseline	Target	Actual	
	2009/10	2012/13	2017	
		3 Years After Completion	3 Years After Completion	
Indicator 1. Number of pupils per classroom, primary, average	76.7 (Below is reference information: data of the Ministry of National Education 2009, project target schools) Target regions 73.6 Dakar Region 64.6 Thiès Region 91.8	47.8 (Standard of the Ministry of National Education: 48)	Senegal 37.4 Dakar Region 53 Thiès Region 45	Target schools: Two regions 56.4 Dakar Region 68.1 Thiès Region 49.8
Indicator 2. Number of pupils per classroom, lower secondary, average	161.7 (Below is reference information: data of the Ministry of National Education 2009, project target schools) Target regions 154.9 Dakar Region 141.5 Thiès Region 233.9	80.2 (Standard of the Ministry of National Education: 45)	Lower secondary schools Senegal 48.7 Dakar Region 73 Thiès Region 61	Target schools: Two regions 61.7 Dakar Region 62.6 Thiès Region 59.9
Indicator 3. Number of classrooms in the project target primary schools	51	129 (baseline 51 + to be constructed by the project: 78)	133 in total Dakar Region 49 Thiès Region 84	Constructed by the project: 78 in total Dakar Region 16 Thiès Region 62
Indicator 4. Number of classrooms in the project target secondary schools	96	287 (baseline 96 + to be constructed by the project at the original design: 191)	295 in total Dakar Region 198 Thiès Region 97	Constructed by the project: 188 in total Dakar Region 113 Thiès Region 75

Source: Project ex-ante evaluation sheet, documents provided by JICA, questionnaire response and information from the Ministry of National Education
Note: Classrooms not to be utilized due to reasons such as deterioration are excluded from the calculation.

The operation indicators in Table 7 were set at the project design. The number of pupils per classroom for the project target schools as a whole largely improved from the baseline of 2009. However, that of primary schools did not achieve the target, and it was worse than the national or regional average. Seven primary schools (out of 12 target schools) and two secondary schools (out of 19 target schools) had larger number of pupils per classroom than the global target of all schools and each school's target at the project design. Among these nine schools, seven had more pupils than anticipated and four had one or two fewer classrooms than expected at the project design, all of which were large schools with 14 classrooms or more.

The number of classrooms in the project target schools achieved the target. The classrooms

constructed by the project had substantial proportion among all classrooms, and they have contributed to the increase of classrooms of the target schools.

While "number of pupils per classroom in primary schools" did not achieve the target, it is acceptable because some schools had larger number of pupils than anticipated and that some old classrooms which were available at the project design were no longer utilized at the time of ex-post evaluation. Since this indicator largely improved from the baseline and other indicators achieved the targets, it was concluded that the "improvement of learning environment" was quantitatively achieved.

3.3.1.2 Qualitative Effects (Other Effects)

The expected project effects were the improvement of learning environment and strengthening of stakeholders' motivation to participate in maintenance of school facilities. Due to the time constraints of the ex-post evaluation, eight schools in Table 8 were selected from 31 project target schools for the qualitative survey and site visits. They were selected based on the discussion with the Ministry of National Education considering balanced representation of primary and secondary schools, Dakar and Thiès Regions, and urban and rural areas, with consideration of access to the schools.

Table 8. Schools selected for the qualitative survey

Region	School	Type	Location	Toilets constructed by the project
Dakar	EE[11] Castors-Sotrac	Primary	Suburban	Yes
Dakar	EE Pikine 23/A	Primary	Rural	Yes
Thiès	EE Abdoulaye Sene	Primary	Rural	No
Thiès	EE Pout 5	Primary	Rural	No
Dakar	CEM[12] Cheikh Awa Balla Mbacké	Lower secondary	Urban	Yes
Dakar	Lycée Pikine Est/A	Lower and upper secondary[13]	Urban	Yes
Thiès	CEM Darou Salam	Lower secondary	Urban	Yes
Thiès	CEM Diack Bodokhane	Lower secondary	Rural	Yes

Qualitative survey was conducted for 160 pupils of eight schools (10 boys and 10 girls at each school) and 142 gave responses. The composition of respondents is shown in Table 9. From each school, school principal, three teachers and three board members of school management committees (Comité de Gestion d'Ecole for primary schools and Comité de Gestion d'établissement for secondary schools: CGE) were also surveyed.

[11] Ecole élémentaire: primary school
[12] Collège d'Enseignement Moyen: lower secondary school
[13] Pikine Est A Secondary School became lycée with both lower and upper secondary education after the completion of this project. In principle, lycée is upper secondary school.

Table 9. Pupils participated in the qualitative survey

	Boys	Girls	Total
Primary schools	39	42	81
Secondary schools	23	38	61
Total	62	80	142

For better understanding of the results of the qualitative survey, it would be useful to note the following observations from the pupils' responses and the site visit:

・The project target schools in the rural areas are close to the village and most pupils walk to school only for several minutes to a half an hour. As primary and lower secondary education seems universal in these areas, construction of new classrooms does not lead to increase of new pupils.

・Girls occupy substantial proportion among pupils[14]. Girls are the majority in eight out of 12 project target primary schools and in 16 out of 19 project target secondary schools. While most Senegalese are Muslims, there is no separation by sex in the classroom and girls and boys share the same table in many cases.

1) Improvement of learning environment

Classrooms: The result of the qualitative survey shows that the percentage of pupils satisfied with the conditions of the classrooms was nearly 90% for the space and brightness of the classrooms, about 75% for the number of pupils per classroom, and about 75% for the condition of the tables and chairs. There was no difference between boys and girls in the responses. Most school principals, teachers and CGE board members were satisfied with the classrooms' spaciousness and brightness.

[14] In Senegal, considerable number of boys attend Islamic schools for Koran education and do not attend ordinary schools. It is considered as one of the reasons for lower enrolment of boys than girls. (Source: *National report of educational situation (Rapport national sur la situation de l'Education: RNSE) 2016*)

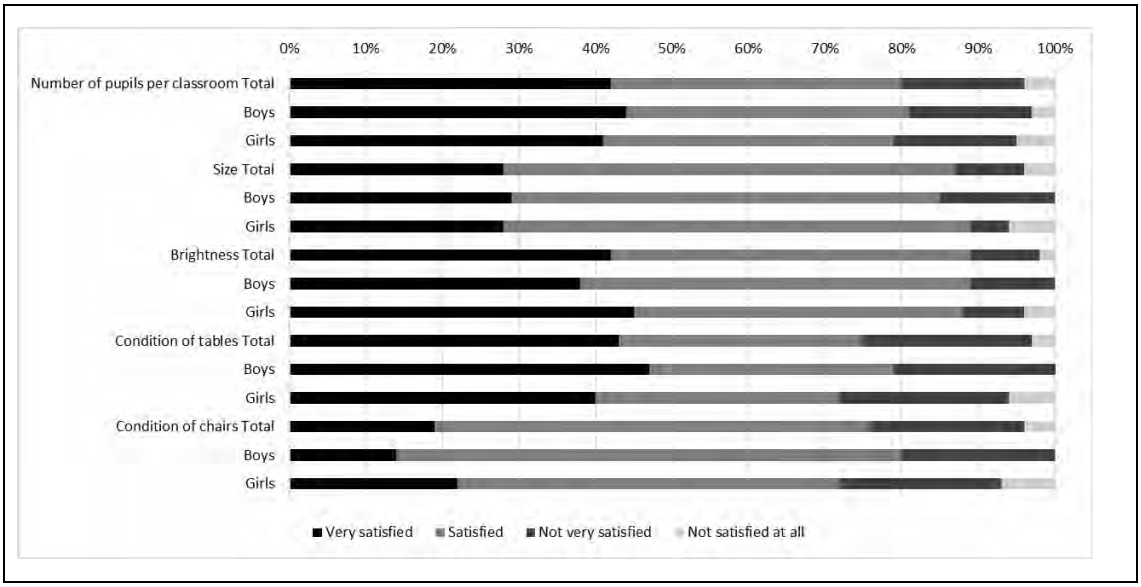


Figure 1. Pupils' satisfaction with the classrooms

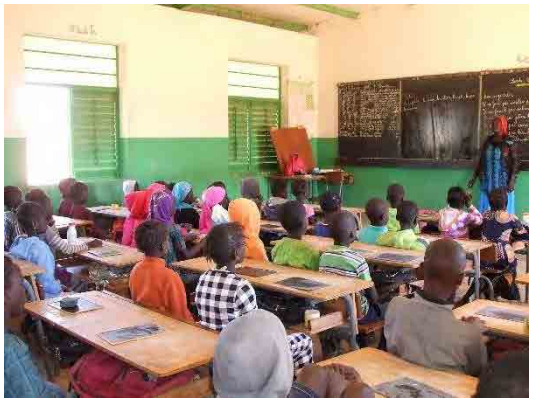
Source: results of qualitative survey

Table 10. Satisfaction of school principals, teachers and CGE board members with the classrooms

	Principal	Teachers	CGE
Number of pupils per classroom	6	4	5
Size	8	7	7
Brightness	8	7	4
Condition of tables	7	6	6
Condition of chairs	6	6	5

Source: results of qualitative survey
Note: number of schools who marked "very satisfied" (first among four ranks) or "satisfied" (second among four ranks) among eight schools.
Some schools gave consolidated opinions of three teachers or three CGE board members, and others gave individual responses. For the latter, majority opinions are counted in the table above.

As observed in the site visits, some schools (Pikine 23/A Primary School, Darou Salam Secondary School and Castor-Sotrac Primary School) had congested classrooms accommodating 60 pupils or more. Three pupils shared the same table intended for two, the platform where the teacher stands and the wall behind were too close to the pupils, and the tables were lined up without enough gaps in between. The tables and chair had normal wear and tear but did not have serious problems.



Abdoulaye Sene Primary School, Thiès Region
(Some tables are shared by three pupils instead of two)

Class composition of Castors-Sotrac Primary School, Dakar Region
(Eight classrooms in five grades are double shift. "CDF" in the table means Classe de Double Flux = double shift)

Toilets: Among eight schools visited during the qualitative survey, six had toilets constructed by this project.

In the six schools, while the pupils were generally satisfied with the toilets, many complained about the filthiness. More girls had negative feedback for the toilets than boys in each aspect of toilets. Satisfaction with the toilets of the principals, teachers and CGE board members was generally high, but in many schools, they were not happy with the frequency of breakdown such as clogging.

As observed in the site visits, the toilets constructed by the project were flush toilets and there was no odour. If the toilet blocks did not have water pipe connection, toilets were flushed with water collected from other sources. Some schools had problems such as closed booths because of frequent breakdown caused by large number of users (Cheikh Awa Balla Mbacké Secondary School), closed multipurpose toilets as there were no disabled persons (several schools) or due to loss of keys several years ago (Castors-Sotrac Primary School), closed main plug of hand wash basin (Cheikh Awa Balla Mbacké Secondary School) because the faucets had come off (several schools), and clogging of the toilets (several schools).

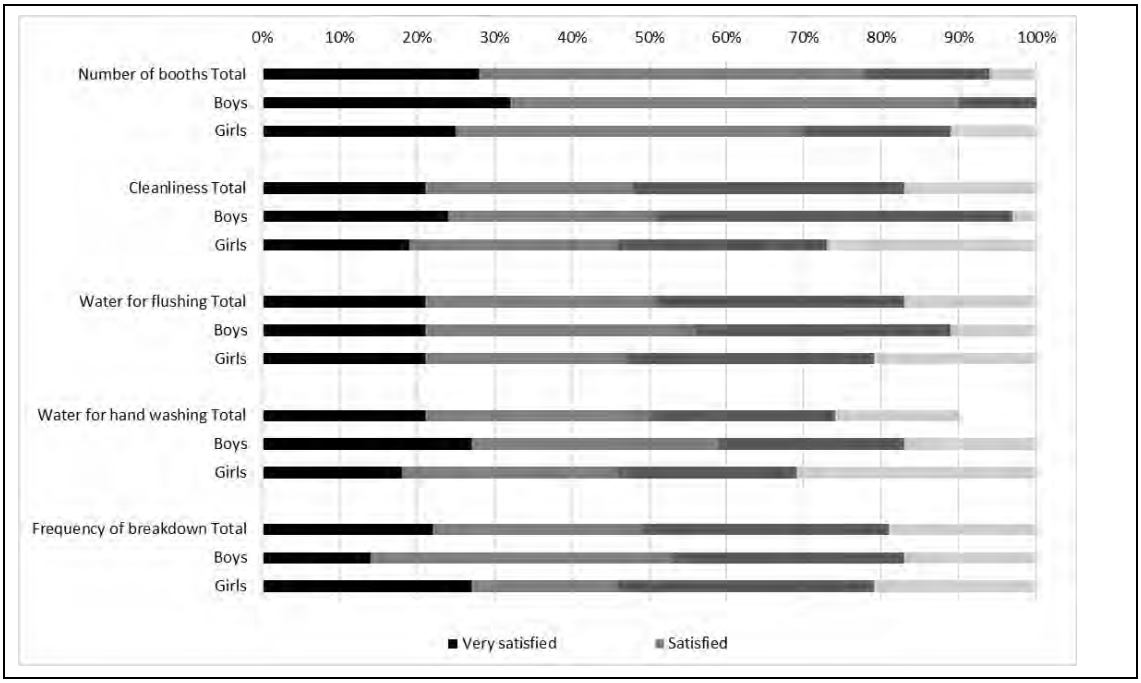


Figure 2. Pupils' satisfaction with the toilets (6 schools with toilets constructed by the project)
Source: results of qualitative survey

Table 11. Satisfaction of school principals, teachers and CGE board members with the toilets (6 schools)

	Principal	Teachers	CGE
Number of booths	3	3	2
Cleanliness	4	3	6
Availability of water for flushing	5	1	5
Availability of water for hand washing	5	1	6
Frequency of breakdown	2	0	2

Source: results of qualitative survey
Note: number of schools who marked "very satisfied" (first among four ranks) or "satisfied" (second among four ranks) among six schools
Some schools gave consolidated opinions of three teachers or three CGE board members, and others gave individual responses. For the latter, majority opinions are counted in the table above.

Inside of toilet booth, Darou Salam Secondary School, Thiès Region

Hand washing basin, Diack Bodokhane Secondary School, Thiès Region

Administrative blocks: The principals and teachers were satisfied with the administrative blocks in general according to the interviews. Some schools had very small principal's office.

From the above, the satisfaction level with the classrooms and toilets was generally high except that some schools had congested classrooms and toilets with problems in cleanliness and breakdown mainly due to clogging. The learning environment has improved.

2) Strengthened stakeholders' motivation to participate in maintenance of school facilities

In the eight schools surveyed, facilities and equipment were repaired as necessary and regularly cleaned. Therefore, the schools and CGEs were motivated to conduct maintenance of school facilities to a certain extent. Principals of two schools participated in training workshop conducted by the soft component of this project and they stated that they developed maintenance plans and kept *the "Manual for maintenance of school infrastructure and hygiene status*" *(Manuel de maintenance des infrastructures scolaires et d'amélioration des conditions d'hygiène*) provided by the project. Other schools experienced personnel changes after the project and did not have institutional memory of the training workshop, nor developed maintenance plans or kept the manual. Still, they conducted repair as necessary and daily cleaning. Therefore, the soft component contributed to the strengthening of stakeholders' motivation to participate in maintenance of school facilities to a certain extent.

3.3.2 Impacts

3.3.2.1 Intended Impacts

The project was expected to create impacts such as improvement of pupils' motivation to attend schools, improvement of school attendance situation and improvement of pupils' awareness of hygiene.

1) Improvement of motivation to attend school

The percentage of surveyed pupils who answered that the good condition of school facilities improved their motivation to attend school was more than 80% for classrooms (eight schools) and more than 50% for toilets (six schools). More girls than boys responded that bad condition of classrooms and toilets could discourage them from attending school. This is likely to be because girls demand higher standard for the facilities, especially for the toilets, than boys. As girls' school attendance in the two target regions was the same or better than that of boys both at the project design and at the ex-post evaluation, the project did not particularly contribute to the improvement of girls' school attendance.

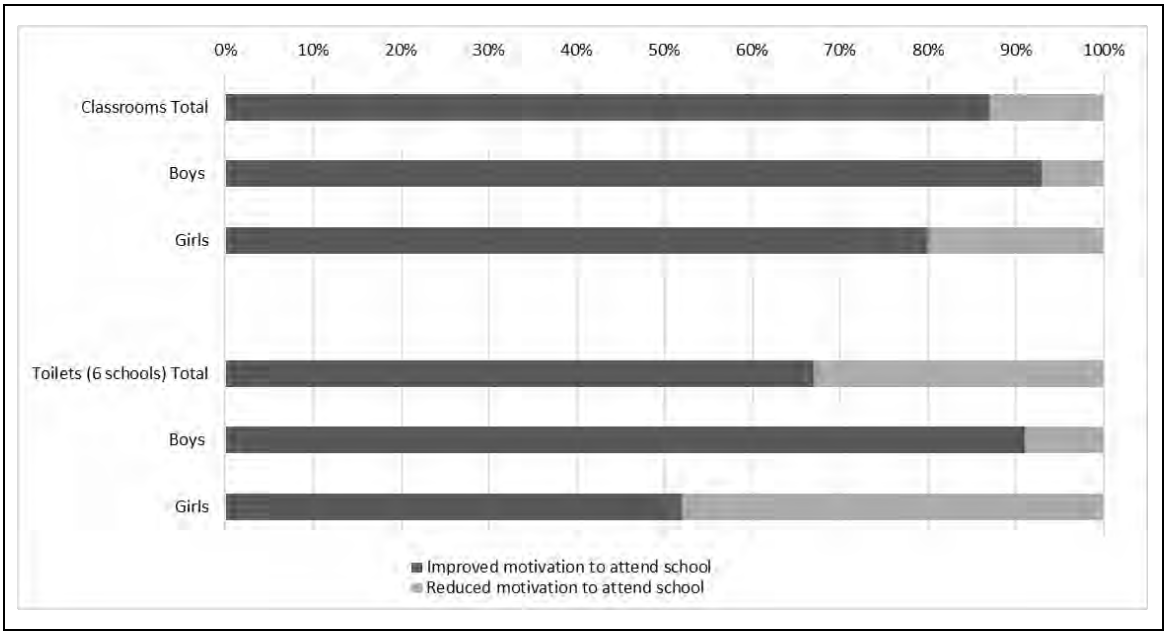


Figure 3. Impact of classrooms and toilets on motivation to attend school

Source: results of qualitative survey
Note: The graph shows the percentage of pupils who answered that "the good condition of classrooms or toilets improve their motivation to attend school" and that who answered that "the bad condition of classrooms or toilets reduce their motivation to attend school.

Six among eight principals were positive about the impact of good condition of classrooms on pupils' motivation to attend schools, and three among six principals of the schools with toilets constructed by the project were positive about the impact of toilets. Most teachers were positive about the impact of the good condition of classrooms and toilets on pupils' motivation to attend school. Other schools commented that filthy toilets or insufficient number of booths discouraged pupils from attending school.

2) Improvement of school attendance

Out of eight schools surveyed, two provided data of school attendance and performance. At Pikine 23/A Primary School, data improved between the school year 2009/10 and 2016/17. The retention rate improved from 4% for boys and 5% for girls to less than 1% for both sexes. The dropout rate declined from 10% for boys and 12% for girls to 2% for boys and 1% for girls. Success rate of completion exam improved from 78% for boys and 63% for girls to 81% for boys and 76% for girls. At Pout 5 Primary School, current success rate of completion was 72%, which was double of that before the project. Principals of other three schools commented that performance of pupils improved thanks to the comfortable classrooms.

3) Pupils' consciousness of hygiene

The results of the survey show that the hand washing was habitual among pupils of the six schools with the toilets constructed by the project. Majority of pupils replied that they "always"

or “often” performed proper use toilets and garbage disposal. There was no visible difference between boys and girls, and no impacts were observed by the provision of separate toilets by sex.

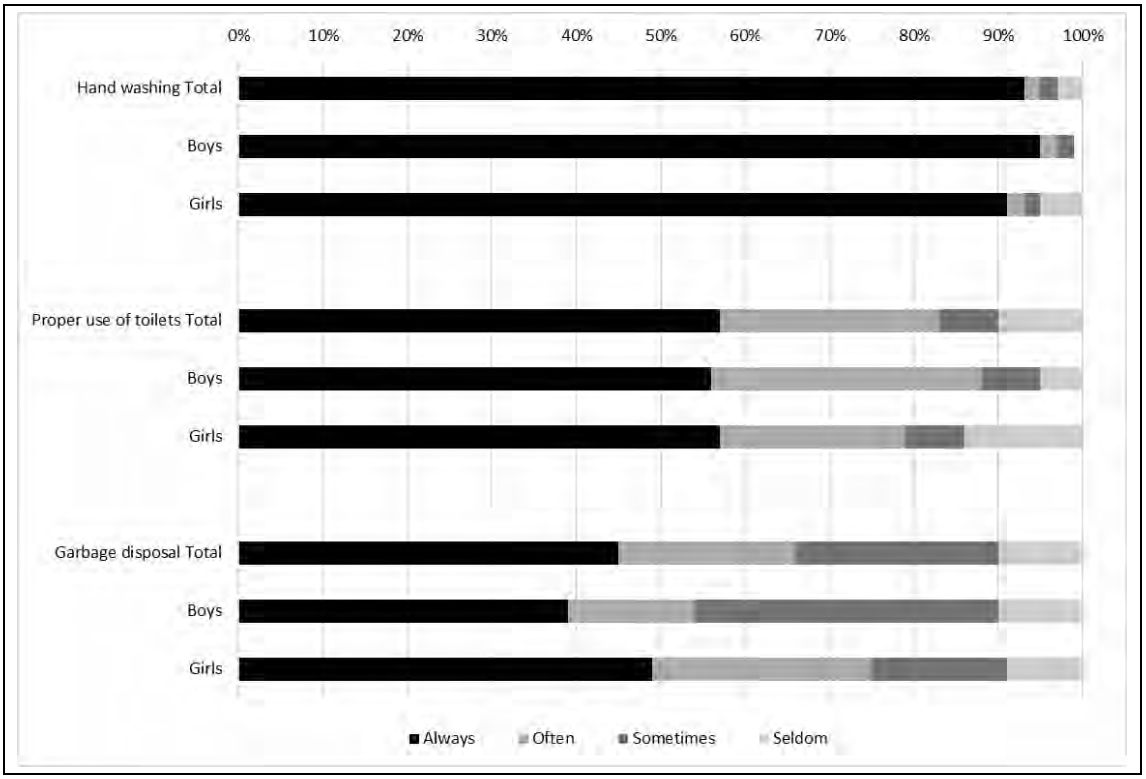


Figure 4. Pupils’ consciousness of hygiene

Source: results of qualitative survey

Most principals and teachers confirmed that pupils’ consciousness of hygiene was high. Pupils clean the classrooms in some schools.

3.3.2.2 Other Positive and Negative Impacts

1) Impacts on the Natural Environment

According to the Ministry of National Education, no impacts on the natural environment were observed except for the noises and wastes during the construction.

2) Resettlement and Land Acquisition

According to the Ministry of National Education, it acquired lands for the new schools with the consent of local authorities. There was no resettlement.

3) Unintended Positive/Negative Impacts

According to the Ministry of National Education, the CGE management method developed by JICA technical cooperation project PAES 2 was standardized in Senegal through the

governmental approval of CGE management manuals[15] in January 2015 by the interministerial order No. 226 of January 8, 2015. In 2015, in the second half of the project period, PAES 2 implemented training for CGE representatives of primary schools for scaling up the model of functioning CGE in the whole country, and 96% of target people participated[16]. While this was the impact of PAES 2 and not of this grant aid project, this project also contributed indirectly to the scaling up of CGE management method through the information exchange on how to conduct workshops and sharing manuals with PAES 2. The "*Manual for maintenance of school infrastructure and hygiene status*" *(Manuel de maintenance des infrastructures scolaires et d'amélioration des conditions d'hygiène*) developed by the grant aid project was not duplication of CGE management manuals for primary schools developed by PAES 2, and it was not intended for scaling up.

Improvement of learning environment, the main project objective, was achieved. Other intended effects such as improvement of motivation of stakeholders to participate in maintenance of school facilities, improvement of pupils' motivation to attend school, improvement of school attendance situation, and improvement of pupils' consciousness of hygiene were observed to a certain extent, while the causality with this project was not clear. From the above, this project has largely achieved its objectives. Therefore effectiveness and impacts of the project are high.

3.4 Sustainability (Rating: ②)

3.4.1 Institutional / Organizational Aspect of Operation and Maintenance

In 2012, the Decree No. 2012-1276 legalized establishment of school inspectors' offices at the regional level (Inspections d'Académie: IA) and at the department level (Inspection de l'Education et de la Formation: IEF). IA is responsible for the implementation of education policies at the regional level and supervises upper secondary schools (lycées) and regional training centers. IEF supervises schools of ten-year compulsory education at the department level. All project target schools are under IEFs because they provide compulsory primary and lower secondary level education.

Establishment and management of CGE of primary schools were legalized by the Decree No. 2002-652 in 2002 and reorganized in the Decree No. 2014-904 in 2014 through the activities of PAES 2. Its implementation was stipulated by the order of the Ministry of National Education

[15] Manuals developed by PAES 2 are as follows: *Training guide for establishment of School Management Committee (Guide de formation à la mise en place des Comité de gestion d'école: CGE); Training guide for preparation of voluntary action plan (Guide de formation à l'élaboration d'un Plan d'action volontariste: PAV); Training guide for resource management of CGE (Guide de formation à la gestion des ressources des CGE); Training guide for establishment of CGE unions (Guide de formation à la mise en place des Unions de CGE: UCGE); Monitoring guide of CGE (Guide de suivi des CGE et des UCGE)* (Source: PAES 2 project completion report)

[16] Source: PAES 2 completion report. PAES 2 was for primary schools.

No. 1383 of January 30, 2015[17]. The Decree No. 2000-337 of May 16, 2000 stipulated CGEs of secondary schools. CGE consists of teachers, school staff, pupils, parents and community. The board members (president, secretary, treasurer, etc.) are elected. The mission of CGE is to improve the quality of education, to contribute to the equitable access to education, and to manage schools in participatory, effective, efficient and transparent manner. CGE's particular roles are to plan, implement and monitor school management activities.

According to the principals and CGE members of eight surveyed schools, CGE board members were elected for the term of office basically of two years, and number of board members were between six and 18 in the five schools where information of the CGE composition was available. The assembly takes place at least twice a year. CGE's sources of funding are inscription fees from the pupils and parents as well as CGE membership fees. The funds are used for the implementation of maintenance activities, such as repair and rehabilitation, employment of cleaners, and purchase of cleaning tools. Two CGEs among eight reported that they prepared annual action plans. The eight schools had the standard CGEs in terms of composition and activities, and CGEs were functioning to a certain extent. Therefore, no problem was observed in the institutional aspects of operation and maintenance.

3.4.2 Technical Aspect of Operation and Maintenance

The principals of two out of eight surveyed schools (Pout 5 Primary School and Castors-Sotrac Primary School) were there during the project implementation and participated in the training workshop about maintenance of school facilities. They reported that they kept the manual of maintenance and hygiene provided by the project and developed annual action plans at the time of ex-post evaluation. However, they could not provide annual action plan documents or reports, therefore it was not possible to confirm the content. No information was available as to attendance of the project target schools in the CGE management training by PAES 2. According to the principals and CGE board members, the fund of CGE is managed by the treasurer and is kept in its bank account. IEFs explained that CGEs were supposed to have self-audits twice a year and to go through audit and site visit by IEF once a year. According to them, audits of the IEF tend to be just formalities as submission of documents is considered sufficient and and they seldom perform detailed investigation or guidance.

All surveyed schools employ cleaners, clean the facilities and perform minor repair when necessary. Some schools have not repaired or replaced worn-off electric bulbs or fallen-apart faucets of hand washing basin of the toilets. They explained that they did not replace bulbs because the classrooms were not very dark and there were other working bulbs, and that faucets were easily broken due to large number of users and there were other water taps to wash hands. They do not repair immediately because they do not recognize imminent needs, and not because

[17] Source: PAES 2 Terminal evaluation report, PAES 2 Project completion report.

they lack skills or funding. They reported that clogged toilets were fixed within several days.

The schools have minimum technical skills of daily and preventive maintenance. As they did not have financial problems as mentioned in the section below, they have the capacity to secure necessary funding. However, there is a room to strengthen their capacity to develop medium to long-term maintenance plans which was trained in the soft component of the project. To strengthen that capacity and make medium to long-term maintenance their regular activity, it would be necessary to train the schools in development of annual plans, securing budget, implementation of the plan and reporting throughout the cycle of at least one year. The half-day training workshop at each school and follow-up after six months were not sufficient. The outcomes of the training were not retained after personnel changes of principals, teachers and CGE board members. Therefore, it would be an excessive expectation for the schools to do medium to long-term maintenance. Still, considering the training workshops of the project in medium to long-term maintenance and insufficient examination and supervision in the audits by IEF, it can be concluded that there is a slight problem in technical aspects of operation and maintenance.

3.4.3 Financial Aspect of Operation and Maintenance

Four out of eight surveyed schools provided financial information of the school year 2017/18. They could not provide information of past three years at the request of evaluator. These four schools did not have financial problems in the school year 2017/18, and there was no problem in collection method and collection rate of fees from the pupils and parents. As the funds are used when necessary, there is no problem in the sustainability of financial aspects of operation and maintenance at the time of ex-post evaluation.

Table 12. Financial status of school year 2017/18

(Unit: FCFA)

	CEM Cheikh Awa Balla Mbacké	EE Pout 5	EE Abdoulaye Sene	EE Castors-Sotrac
Number of pupils (as reference)	310	656	358	1,321
Subsidy from the state	699,000	450,000	803,400	1,200,000
Contribution from pupils and parents	3,050,000	150,000	175,000	1,471,000
Income total	3,749,000	600,000	978,400	2,671,000
Personnel expenses	50,000	0	0	50,000
Tools and consumables	100,000	50,000	31,400	12,000
Repair	130,000	0	143,600	10,000
Replacement	200,000	0	262,000	10,000
Expenditure total	480,000	50,000	437,000	82,000
Balance	3,269,000	550,000	541,400	2,589,000

Source: Information provided by the schools

3.4.4 Status of Operation and Maintenance

The classrooms and furniture of the eight schools visited for the qualitative survey were generally in good condition except for ordinary wear and tear. At the time of ex-post evaluation, one classroom of Abdoulaya Sene Primary School was not utilized because of the shortage of teacher. The school already submitted a request of a teacher to the IEF, but the principal explained that it was difficult to find a teacher who was willing to settle in the rural areas in Thiès Region.

The toilets are properly used in general. One school installed wire mesh above the hand washing basins without ceiling on its initiative to prevent intrusion. Some schools had problems such as fallen out faucets without replacement and frequent clogging of toilets. Classrooms and toilets are cleaned three to five times a week either by pupils in about half of surveyed schools and or by cleaners in other schools.

While the condition of operation and maintenance is good in general, there is a slight problem as some schools do not fix malfunctions or break downs of facilities.

There are no serious problems in the institutional and financial aspects of operation and maintenance of school facilities. Regarding technical aspects, the schools perform daily cleaning and small repair as necessary without difficulties and they have minimum maintenance skills. However, most schools do not prepare annual maintenance plans. Therefore, there is a small problem in technical aspects. Some schools do not fix minor malfunctions or break downs of facilities and it is a slight problem in the status of operation and maintenance. As minor problems have been observed in terms of the technical aspect and current status, sustainability of the project effects is fair.

4. Conclusion, Lessons Learned and Recommendations

4.1 Conclusion.

The objective of this project was to improve learning environment of the target primary and secondary schools in Dakar and Thiès Regions and to strengthen stakeholders' motivation to participate in maintenance of school facilities by construction of schools, provision of furniture and implementation of soft component to strengthen capacity in maintenance, thereby contributing to the improvement of pupils' motivation to attend schools, school attendance situation, and consciousness of hygiene.

Relevance of the project is high as it has been highly relevant to the country's development plan and development needs, as well as Japan's ODA policy. Efficiency of the project is fair because, although the project cost was within the plan, the project period exceeded the plan. Effectiveness and impacts of the project are high because it has largely achieved its objectives.

The main objective, improvement of learning environment, was achieved. Other intended effects such as improvement of stakeholders' motivation to participate in maintenance of school facilities and pupils' motivation to attend school, school attendance situation as well as consciousness of hygiene were achieved to a certain extent, while the causality with this project was not very clear. Sustainability of the project effects is fair. No serious problems were observed in the institutional and financial aspects of operation and maintenance. There is a minor problem in the technical aspects because they do not prepare annual maintenance plans while the target schools perform daily cleaning and small repair as necessary and the have minimum maintenance skills. Since some schools do not fix minor malfunctions or break downs of facilities, there are some problems in the status of operation and maintenance. Sustainability of the project effects is fair because there are minor problems in technical aspect and status of operation and maintenance as stated above.

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

4.2 Recommendations

4.2.1 Recommendations to the Executing Agency

Only after the half day workshop for stakeholders of each target school in facility maintenance in the soft component of this project, it is difficult for the schools to fully follow the maintenance method or develop medium to long-term maintenance plans taught in the workshop. School staff and CGE board members have changed since the end of the project. These are the reasons why the schools perform only daily cleaning and minor repairs as necessary. Although there are no serious problems in operation and maintenance of the target schools, it is recommended that the IEFs should discuss with the schools in the regular visits about the facilities with the possible needs of repair and about resource mobilization to prepare for large scale rehabilitation in the future

4.2.2 Recommendations to JICA

None.

4.3 Lessons Learned

<u>Toilets in school construction projects</u>

This project constructed same number of toilet booths for boys and girls. However, as girls were majority of pupils in many target schools and girls need toilets more than boys, many girls were not very satisfied with the number of toilet booths according to the results of the qualitative survey. Staff of the Ministry of National Education as well as IAs and IEFs made similar comments. According to the latest *Annual Education Statistics* (*Annuaire statistique de l'éducation*) of Senegal in 2016, girls are majority of pupils of primary and lower secondary

schools in the whole country. As girls need toilets more than boys even if there are equal number of boys and girls, it is recommended that similar projects to construct school facilities also in other countries should consider providing more toilet booths, either per classrooms or per number of pupils, for girls than for boys.

End

Republic of Guinea-Bissau

FY2017 Ex-Post Evaluation of Japanese Grant Aid Project

"The Project for Construction of Schools in Bissau"

External Evaluator: Hitomi Inagaki, TAC International Inc.

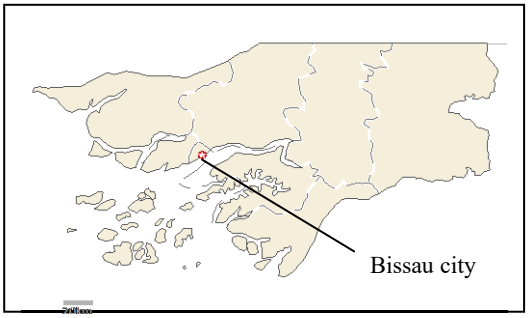
0. Summary

The object of this project was to improve student's learning environment in Bissau city by constructing classrooms and improving educational furniture, thereby contributing to improvement of universal primary education, a policy goal of Guinea-Bissau.

This project was highly relevant to the Guinea-Bissau's development policy that aimed at improving access to basic education and its development needs as well as Japan's aid policy. The number of classrooms and pupils achieves the quantitative index It also contributes to the quality improvement of education, the sanitation awareness of the pupils, and the desire to attend school. Thus the effectiveness and impact are high. Although the project cost was lower than the plan, the project period exceeded the plan. Therefore, efficiency of the project is fair. Regarding the sustainability of operation and maintenance (O&M), there are no major problems with regard to technical aspects and financial aspects, but there are some problems regarding the structure of the Ministry of Education, the continuity of the school management committees (comités de gestão escolar, hereafter referred to as COGEs) and the status of O&M such as for the breakage of door handles and the use of toilets. Therefore, the sustainability of O&M is fair.

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

1. Project Description



Project location

A

1.1 Background

Due to the civil war which continued from June 1998 to May 1999 after independence in 1974 and the coup d'état in September 2003, 80% of the economic and social infrastructure including educational institutions in Guinea-Bissau were destroyed. 18% of the population consisted of children aged 7 to 12 years old, which created the urgent need for reconstruction of education system to respond to increasing number of children. As of 2009, net enrolment rate[1] was about as low as 55% and poor learning environment such as schools operating three-shifts and use of many impromptu classrooms was also a problem.

Although Japan started grant aid cooperation to construct primary schools in Bissau city in 1997, it was disrupted due to the civil war in 1998. Pupils learned at barracks (a building with a straw wall and plastic roof), so there was an urgent need to improve leaning facilities. Under these circumstances, in response to the request from the Government of Guinea-Bissau, the Government of Japan implemented the project through grant aid by building primary school classrooms including a soft component for school management.

1.2 Project Outline

The object of this project was to improve the learning environment in Bissau city by constructing classrooms and improving educational furniture, thereby contributing to improvement of universal primary education, a policy objective of Guinea-Bissau.

Grant Limit /Actual Grant Amount	998 million yen / 832 million yen
Exchange of Notes Date /Grant Agreement Date	February 2012 / February 2012
Executing Agencies	Ministry of National Education, Culture, Science, Youth and Sports(the name was changed to Ministry of National Education)
Project Completion	April 2014
Main Contractor(s)	Dai Nippon Construction Inc.

[1] The net enrollment rate is the number of enrolled pupils in the school-age group divided by the relevant age population. Source: https://www.jica.go.jp/jica-ri/IFIC_and_JBICI-Studies/jica-ri/publication/archives/jica/kenkyu/95_22/02_02.html (2018/04/24)

Main Consultant(s)	Sekkei Keikaku Inc.
Basic Design	February – December 2011
Related Projects	"Basic Education Support Project" (World Bank: 2005) "Project of rehabilitation of social facilities including primary schools" (European Union: 2004-2008) (Interruption) "Basic education Support project" (UNICEF: 2004-2008) "EDUCATION III" (Africa development Bank: 2007-2012)

2. Outline of the Evaluation Study

2.1 External Evaluator

Hitomi Inagaki, TAC International, Inc.[2]

2.2 Duration of Evaluation Study

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

Duration of the Study: August 2017 – September 2018

Duration of the Field Study: November 18 – December 8, 2017, February 17-28, 2018

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

3.1 Relevance (Rating: ③[4])

3.1.1 Consistency with the Development Plan of Guinea-Bissau

Education was considered the most important sector in *the Guinea-Bissau Poverty Reduction Strategy Paper* (PRSP[5]) revised in 2008, notably emphasizing the improvement of access to basic education. It was also mentioned that the net enrolment rate should be increased to 98% by 2015. The complete dissemination of primary education was also set to be a goal in *the Education Sector Development 10-Year Plan (2007-2017)*, formulated in line with the PRSP,

[2] Affiliation: Koei Research & Consulting, Inc.
[3] A: Highly satisfactory, B: Satisfactory, C: Partially satisfactory, D: Unsatisfactory
[4] ③: High, ②: Fair, ①: Low
[5] Formulated in 2006, Revised in 2008

and its medium-term plan, *Education Development 3-Year Plan (2011-2013)*.

Likewise, at the time of the ex-post evaluation, education is one of the priority areas in the national high-level development plan (*Terra Ranka*: adopted by 2015, target period: 2015-2020), aiming at strengthening the quality and capacity of primary education (including the construction of primary schools). In addition, although the latest PRSP (adopted in 2011) showed a certain improvement in the net enrolment rate, the improvement is said to be inadequate in view of situation where one-third of children (32.6%) have no access to primary education. In this document, it is confirmed that classroom construction and training for teachers are required for the goal of improvement of access to primary education.

Therefore, there is still a high need for improving access to primary education. This project is still highly consistent with the development policy of Guinea-Bissau at the time of ex-post evaluation.

3.1.2 Consistency with the Development Needs of Guinea-Bissau.

The classroom shortage was serious both quantitatively and qualitatively in primary education in Guinea-Bissau at the time of preparatory survey for construction plan of elementary schools in Bissau city in 2011 (hereinafter referred to as "preparatory survey"); the two or three-shift system was forced to be conducted due to the lack of facilities and classrooms for the number of children attending. The temporary and old buildings were remarkably damaged and deteriorated, which resulted in the necessity to urgently improve the learning environment.

According to the latest data of enrolment rate and retention rate from 2014-2015 at the time of ex-post evaluation, the enrolment ratio of EB2[6] (5^{th} to 6^{th} grades) in particular remain less than 90% although the data show gradual improvement compared to 2010 to 2011. (See Table 1). The retention rate of EB1 (1^{st} to 4^{th} grades) is about 20% which shows that there is still room for improvement.

[6] EB1: The first cycles of basic education (1st – 4th grades). EB2: The second cycles of basic education (5th – 6th grades). EB3: the third cycle of basic education (7th – 9th grades)

Table 1: Gross enrolment rate and retention rate in Guinea-Bissau

	2009-2011	2012-2013	2014-2015
Gross enrolment rate			
EB1+EB2 (1st grade– 6th grades)	120%	122%	-
EB1 (1st grade- 4th grades)	142%	143%	167.7%
EB2 (5th – 6th grades)	73%	76%	87.5%
EB3 (Secondary)	55%	61%	62.5%
Retention rate			
EB1+EB2 (1st grade– 6th grades)	15.8%	20.4%	-
EB1 (1st grade- 4th grades)	16.8%	21.1%	19.42%
EB2 (5th – 6th grades)	11.9%	17.8%	17.1%
EB3 (Secondary)	17.2%	16.8%	20.1%

Source : Rapport du Resen Guinee Bissau 2015: p.27, 35. Interview survey for Ministry of Education for the data of 2014-2015.

In addition, it is confirmed that the situation is far from achieving universal primary education at the time of the ex-post evaluation because 23% of the total children in Guinea-Bissau do not go to school and 18% of children enrolled in school drop out before 6th grade[7]. The reason for the high dropout rate is that there are few schools with 5th and 6th grade courses; only 25% of the total schools have from the 1st to 6th grades in Guinea-Bissau country as a whole[8]. Moreover, a number of children outside Bissau city tend to transfer to Bissau city because the city has more schools with 5th to 6th grade courses than other regions. This increases the number of waiting children and overcrowded classrooms in the city. Therefore, the need was greatest for classroom construction to improve access to primary education.

Furthermore, the data of classrooms in 2014 to 2015 showed that 20% of the classrooms (272 out of 1,465 classrooms in the city) were categorized as "bad"[9]. Thus the need for improvement of the educational environment continues to be high[10].

Therefore, this project is regarded to be highly consistent with the development needs in view of the educational environment in Guinea-Bissau, where there are overcrowded classrooms and

[7] *Guinea Bissau Education sector program*(Programme Sectoriel de l'Education de la Guinée Bissau): 2017, pp.10.
[8] *Guinea Bissau Education sector program*(Programme Sectoriel de l'Education de la Guinée Bissau):2017, pp.10.
[9] The status of classroom is evaluated as "good", "normal", and "bad". "Good": it is robust and no need to repair furniture and equipment. "Normal": Repair is necessary but a little. "Bad": Repair is largely necessary (Source: "*Quality of classroom 2012-2013*" from the data of Ministry of Education).
[10] Source: Results of the questionnaire from Ministry of Education.

the learning environment should be improved more.

3.1.3 Consistency with Japan's ODA Policy

"Basic education - Improvement of access and quality" is one of the priority issues in the TICAD Ⅳ[11] Yokohama Action Plan adopted in 2008, including "support for the construction and repair of school buildings and related infrastructure" which is consistent with the project. In addition, at the time of the preparatory survey, the project was regarded to contribute to "achievement of complete penetration of primary education", one of the Millennium Development Goals. Furthermore, since Guinea-Bissau is one of the poorest countries and in the process of recovery from a civil war in 1998, this project is consistent with issues such as reducing poverty, peace building, and social development from the viewpoint of human security of Japan's ODA medium-term policy. In addition, the project is also positioned in "Poverty Reduction Program" for the country.

Based on these facts, the validity of cooperation for the primary education sector of Guinea-Bissau as Japan was recognized and it can be judged that consistency with this project's aid policy was high.

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

3.2 Efficiency (Rating: ②)

3.2.1 Project Outputs

In the preparatory survey, 16 schools were selected as project sites in Bissau city. The table below shows a comparison between the plan and actual output of this project.

Table 2: School facilities and school furniture: comparison of plan and actual

①School facilities（Classrooms・Principal room・Toilets）

Site No.	Type		Classrooms		Principal room		Toilets	
	Existing	New	Plan	Actual	Plan	Actual	Plan	Actual
1	●		6	6	-	-	1	1
3	●		2	2	-	-	1	1
4	●		4	4	-	-	1	1
5	●		4	4	-	-	1	1

[11] Tokyo International Conference on African Development.

Site No.	Type		Classrooms		Principal room		Toilets	
	Existing	New	Plan	Actual	Plan	Actual	Plan	Actual
6*		●	12	0	1	0	1	0
7	●		10	10	-	-	1	1
8		●	12	12	1	1	1	1
9	●		3	3	-	-	1	1
10		●	9	9	1	1	1	1
11		●	12	12	1	1	1	1
12	●		12	12	1	1	1	1
14		●	4	4	1	1	1	1
15	●		9	9	-	-	1	1
16		●	12	12	1	1	1	1
17		●	10	10	1	1	1	1
20		●	9	9	1	1	1	1
Total			130	118 (12▼)	9	8 (1▼)	16	15 (1▼)

Source: Preparatory survey report P.32, documents provided by JICA.

*Site No.6 was deleted because a landowner who had occupied the land at No.6 did not agree to construct a school building.

②School furniture

	Item	Plan		Actual
		Units (per room)	Total	Total
Classroom	Desk & Chair for two pupils	20	2,600	2,360
	Desk for teachers	1	130	118
	Chair for teachers	1	130	118
Principal room	Desk	1	9	8
	Chair	1	9	8
	Chair for visitor	1	9	8
	Locker	1	9	-

Source: Documents provided by JICA.

Inside a classroom (Site No.11)

Principal room (Site No.10)

One of the major changes from the plan was that school construction at site No. 6 was cancelled because the government of Guinea-Bissau was not able to secure its construction site. As a result, the number of schools decreased from 16 to 15 and the number of classrooms from 130 to 118[12]. The reason why the site No. 6 was not secured was because a traditional landowner who had occupied the land at site No.6 did not agree to construct a school building. Although the Ministry of Education repeatedly negotiated with the landowner to obtain consent, as well as tried to find an alternative site, they were unable to finalize the appropriate site[13]. This deletion of the site corresponds to the project policy in the preliminary survey, where the selection condition of the target site requires "Land ownership or use right can be confirmed in writing and there is no dispute over the land".

Regarding other changes, although several changes such as the position, specifications and standards of the building have been made due to technical reasons, there were no major problems for the following reasons: none of the changes had major influence on the output (change in placement); the changes were reasonable from technical aspect (they were made to improve workability, cost and function based on the results of the structural calculation study and the ground tolerance test); changes were made for the convenience of neighbouring residents (to secure access). These changes were also made with proper procedures with the approval of JICA.

Moreover, Guinea-Bissau government was required to remove existing temporary toilets and to fill in garbage within the site, and to install boundary signs (piles, etc.) and boundary walls. The defect inspection report conducted in 2015 indicates that construction of the outer fence, out of the load construction work on the side of Guinea-Bissau side, planned to be conducted[14] after the project, was partially implemented and thus the urgent installation was required. It is confirmed in ex-post evaluation that the government started to construct the outer fence in October 2017 and it was completed in February 2018.

■ Soft components

The following activities were carried out as planned[15], with the aim of properly maintaining and managing the facilities and furniture, and of strengthening the maintenance and

[12] Due to this, direct construction cost reduced 49 million yen.
[13] Source: Documents provided by JICA and results of the questionnaire for Ministry of Education.
[14] At the time of defect inspection, three schools of sites No. 7, 10, and 12 were targeted for construction of the outer wall, none of which was installed. At the time of the ex-post evaluation, in addition to the above three schools, the outer walls were also installed at sites No. 11, 14, 15, 16, and 17 as well.
[15] Source: Interview survey for each school.

management capacity at the school level through the introduction and guidance of concrete methods related to maintenance and school beautification, a way of collecting expenses for maintenance and management expenses, procurement and management method of funds, etc.

(1) Strengthen capacity of parents associations, school staff, and local residents

· Preparation and distribution of school operation maintenance guidebooks.

·Establishment of Parents Association[16] at 7 new schools and reselection of Parents Association members at 8 existing schools.

· Establishment of "school management committees"[17] to promote maintenance activities at 15 target schools and establishment of "School Eco Club" with pupils as a leader, instructed by parents and school staff.

· Implementation of training on water and sanitation for members of "Water Sanitation Management Activity Group" at 15 target schools and training related to school hygiene and beautification for "School Eco Club" members.

· Representatives of the parents association in all 15 target schools attended a bookkeeping course for fund management and opened a bank account for managing funds of the activities. In addition, they completed the registration of the Ministry of Justice, which is a qualification necessary for funds for maintenance and maintenance, to establish the foundation for future fundraising activities, and devised a plan for fundraising activities for school management.

2) Strengthen capacity of Ministry of Education staff

· Conducted consultations on the necessity and role of school maintenance management for Ministry of Education's Education System Research, Planning and Evaluation General Administration.

· Promoted staff of the Ministry of Education to participate in training of "transparency of fund management" and "maintenance and school beatification"[18].

[16] Parents of children attending school participants in the Parents association and it is operated by the representatives of the parents association. Parent association consists of chairperson, vice president, secretary general, and two other officers, and these officers are elected (source: documents provided by JICA).

[17] The school management committee consists of school officials (principal, teachers, faculty and staff) and representatives of the parents association. It is a mechanism for planning and systematic repairing of facility equipment which had been carried out ad hoc by Parents Association (source: documents provided by JICA). Although some schools had a parents association, such school management committee did not exist in Bissau city (source: the preparatory survey report).

[18] 2 staff from Ministry of Education and 1 from Education office of Bissau city participated in training of

Although one school has been deleted from the initial plan, the rest are largely as planned.

3.2.2 Project Inputs

3.2.2.1 Project Cost

Although the project cost to Japan in the project was initially planned to be 998 million yen, it was reduced to be 929 million yen as the cancellation of No.6 was estimated to reduce the project cost of 69 million yen as mentioned in 3.2.1 Output[19]. In fact, the actual amount was 832 million yen, which was within the plan.

Regarding the project cost to the Guinea-Bissau side, 2 million yen was initially planned, while 6 million yen was actually used. The increase of the amount was due to additional arrangement since the ground at site was weaker than expected at the time of preparing and constructing the outer walls, and also due to raising the height of the wall higher than planned[20].

In total, the actual amount was 838 million yen against the planned 931 million yen (90% of the plan). Thus the project cost was lower than planned.

Table 3：Total project cost (million yen)

Item	Plan	Actual
Japan	929	832
Guinea-Bissau	2	6
Total	931	838

Source: Documents provided by JICA. Preparatory survey report P.62, Questionnaire for Ministry of Education.

3.2.2.2 Project Period

The project period of this project was scheduled from February 2012 to January 2014 (a total of 24 months) including the detailed design and bidding period at the time of planning. However, the actual project period is from February 2012 to April 2014, which took 27 months to complete and handover. Thus the actual total project period exceeded the plan (113% of the

transparency of fund, while 2 from Ministry of Education and 2 from Education office of Bissau city participated in "the training of maintenance and school beautification". (source: documents provided by JICA)

[19] As the budget amount per school was not stated in the preparatory survey report and related documents, "construction cost per school", "overhead cost per square meter" in the documents provided by JICA and a way of calculating general administrative expenses which is normally used when estimating construction work were used to estimate the budget. According to the estimate, the amount for cancelling site No. 6 is in total 69 million yen (Breakdown: 48.3 million yen in construction cost, 14.3 million yen in overhead cost (common temporary construction cost and on-site management fee), 6.4 million yen in general administrative cost).

[20] Source: Interview survey for Ministry of Education.

plan).

Although the project cost was within the plan, the project period exceeded the plan. Therefore, efficiency of the project is fair.

3.3 Effectiveness and Impacts (Rating: ③)

3.3.1 Effectiveness

3.3.1.1 Quantitative Effects (Operation and Effect Indicators)

With regard to two index set to measure the project effectiveness at the time of preparatory survey, the baseline values, the target values, and the actual values were compared as shown below in Table 4. Index 1 is the number of classrooms in the target schools, and index 2 is the number of pupils that can learn in a good environment.

Table 4： Effectiveness Operation and effect indicators

Index	Baseline (2011-2012)	Target (2017)	Actual (2016-2017)	Accomplishment rate
		3 years after completion	3 years after completion	
1: Number of classrooms in the target schools	27(*1)	145(*2)	187	129%
2: Number of pupils that can learn in a good environment	2,160(*3) (40pupils×2shifts ×27classrooms)	11,600(*4) (40pupils×2 shifts ×145classrooms)	9,388(*5)	81%

Source: Documents provided by JICA.

*1: In the preparatory evaluation table, the number of classrooms at the target schools was 41, but this number includes existing schools that had been existed in the same village (which is not the project's target). If the classrooms of the target school only are counted, the standard value is 27.

*2: The target value of the indicator 1 was originally 171 (the baseline value 41 + 130 planned classrooms), but the baseline value is 27 as already mentioned in *1, and as site no. 6 (12 classrooms) has been deleted, the target value is 145 (baseline value 27 + 118 planned classrooms).

*3: Although the standard value of index 2 was initially 3,200 (40 pupils × 2 shifts × 41 classrooms), because site No. 6 was deleted, it became 40 person × 2 shifts × 27 classrooms, the target value was 2,160 pupils.

*4: The target value of indicator 2 was initially 13,680 pupils (40 pupils × 2 shifts × 171 classrooms), but as No. 6 was deleted, the target value was changed to be 11,600 (40 pupils × 2 shifts × 145 classrooms).

*5: The basis for calculating the actual value of indicator 2 shall be the real number of the pupils (1st grade to 6th grades) using the classrooms of each school.

① Indicator 1: Number of classrooms at the target school

In preparatory survey, the number of accommodated pupils per classroom was 40 pupils, based on the number of enrolled pupils at target school at the time of survey, assuming implementation of a two-shift schedule. The number of required classrooms was calculated from the estimated number of enrolled pupils at the scheduled completion of the classroom. The actual number of

classrooms at the time of the post-survey was 187, which exceeds the given target value. The reason for exceeding the target value is that new classrooms were built at 4 schools by parents' donations to the schools and by government subsidies[21]. Moreover, the 187 classrooms include classrooms that secondary pupils (7th to 9th grades) use.

② Indicator 2: Number of pupils who can learn in a good environment

The baseline value and the target value at the time of the pre-evaluation are calculated as 40 pupils per class × 2 shifts × number of classrooms. At the time of ex-post evaluation, the actual number of pupils using the new classrooms at each school was calculated from data of each school. At the time of ex-post evaluation, the degree of achievement of number of pupils is 81% compared with the target value, and it can be said that the target has been largely achieved. According to interviews with the Ministry of Education and the target schools regarding the factors that the number of pupils is not achieving the goal, parents were more likely to transfer their children to private schools where there is no strike because many public school teachers went on a strike and it was common that classes were not conducted[22]. However, in December 2017, the government of Guinea-Bissau agreed with the labour union on payment for teacher salary. For this reason the Ministry of Education expect that the strike will be reduced[23]. Another reason for the decrease of pupils is that the introduction of secondary education (7th to 9th grades) among secondary schools has been underway since 2015. Some schools have fewer pupils in primary education where tuition fee[24] is free of charge in order to increase pupils in secondary education as parents pay tuition fee to schools. 6 schools introduced a secondary school (site No. 3, 4, 7, 8, 12 and 6). The number of pupils including secondary pupils is 12,360 at 15 target schools（In this case, the accomplishment rate for the standard value for index 2 is 107%）.

3.3.1.2 Qualitative Effects (Other Effects)

The following four points were expected as qualitative effects at the time of project

[21] 4 classrooms at site No.3, 7 classrooms at site No.4, 20 classrooms at site No.9, and 11 classrooms at site No.14 increased. (Barack type is not included in the number)

[22] One-third of the school days was cancelled due to strikes in 2016 and 2017（UNCIEF Annual Report 2016: pp 1 and the interview of Ministry of Education）. The reason for the strikes is due to unpaid teacher salary and delay in payment.

[23] Source: Interview survey for Ministry of Education

[24] Parents pay 9,000CFA per child a year from 7th to 9th grades. 60% of the tuition fee goes to Ministry of Education and 40% is revenue for the school.

planning[25].

(1) Building a principal office room and warehouse will enable to properly store and utilize teaching materials and management documents.

(2) Awareness of pupils' health and hygiene will be improved by gender-segregated toilets with hygienic environment. Environment for female pupils to use the toilet will also be improved.

(3) Improvement of facilities with suitable school environments will enable to manage effective lectures, contributing to the provision of higher quality education.

(4) Implementation of soft components will strengthen the maintenance and management system for facilities and furniture by school officials at the target schools.

For each point, the results of the investigation are described below.

(1) Building a principal office room and warehouse will enable to properly store and utilize teaching materials and management documents.

It was confirmed from the interview with the principals that building of a principal office room and warehouse is helpful to manage the teaching materials and documents. However, some indicated that “The room is too small and the storage space is insufficient”. As a countermeasure, some schools have newly constructed a statistics library room to secure a storage place (site No.15).

(2) Awareness of pupils' health and hygiene will be improved by gender-segregated toilets with hygienic environment. Environment for female pupils to use the toilet will also be improved.

The interview and the survey for parents and teachers show that most pupils are conscious of health and hygiene. To be specific, some mentioned the following: “Pupils mostly throw away garbage in the garbage can”; “Pupils wash their hands before and after meals or after toilet”, "Teachers explain the importance of cleanliness to pupils”. The pupil survey also shows that hygiene consciousness of the pupils is high, for more than 70% answered "always" or “almost always" for washing hands, and more than 80% answered for properly throwing garbage away (see Table 5 below).

[25] Group interview was conducted to teachers, parents (or members of the committee) and a questionnaire survey was conducted to pupils in order to measure the qualitative effects. Teachers : 5 people×3 schools + 6 people × 1 school＝21 respondents. Parents: 4 people×3 schools + 3 people × 1 school＝15 respondents. Pupils: 25people×4 schools＝100respondants（Male: 48, Female 52. 5th grades: 53, 6th grades: 47）.

Table 5：Student's hygiene awareness (by sex) (Total 100, male 48, female 52)

	Always	Often	Sometimes	Seldom	Never	Always+Often TOTAL
I wash hands after use.	**67.5%**	**10.8%**	**4.8%**	**2.4%**	**14.5%**	**78.3%**
Male	71.8%	12.8%	5.1%	2.6%	7.7%	84.6%
Female	63.6%	9.1%	4.5%	2.3%	20.5%	72.7%
I make sure to use the toilet cleanly.	**51.3%**	**15.8%**	**15.8%**	**1.3%**	**15.8%**	**67.1%**
Male	59.5%	13.5%	21.6%	0.0%	5.4%	73.0%
Female	43.6%	17.9%	10.3%	2.6%	25.6%	61.5%
I make sure to dispose of wastes properly.	**67.1%**	**19.2%**	**5.5%**	**2.7%**	**5.5%**	**86.3%**
Male	69.4%	19.4%	5.6%	2.8%	2.8%	88.9%
Female	64.9%	18.9%	5.4%	2.7%	8.1%	83.8%

Source：Survey for pupils

(3) Improvement of facilities with suitable school environments will enable to manage effective lecture, contributing to the provision of higher quality education.

Classrooms constructed by the project are regarded with high esteem by teachers. Survey for pupils also shows a high satisfaction level for classrooms, where 90% or more of the pupils are satisfied with the number of pupils per classroom and the size of classroom (very satisfied + satisfied ratio) (see Table 6 below) .

Table 6：Satisfaction for classroom among pupils by gender (Total 100, male 48, female52)

	Very satisfied	Satisfied	Dissatisfied	Very dissatisfied	Unknown	Very satisfied+satisfied
Number of pupils in the classroom	**80.0%**	**16.0%**	**2.0%**	**1.0%**	**1.0%**	**96.0%**
Male	77.1%	18.8%	0.0%	2.1%	2.1%	95.8%
Female	82.7%	13.5%	3.8%	0.0%	0.0%	96.2%
Size of the classroom	**62.0%**	**33.0%**	**2.0%**	**1.0%**	**2.0%**	**95.0%**
Male	56.3%	39.6%	2.1%	0.0%	2.1%	95.8%
Female	67.3%	26.9%	1.9%	1.9%	1.9%	94.2%
Brightness in the classroom	**45.0%**	**16.0%**	**19.0%**	**17.0%**	**3.0%**	**61.0%**
Male	45.8%	12.5%	16.7%	25.0%	0.0%	58.3%
Female	44.2%	19.2%	21.2%	9.6%	5.8%	63.5%
Condition of desks	**61.0%**	**21.0%**	**7.0%**	**4.0%**	**7.0%**	**82.0%**
Male	72.9%	22.9%	2.1%	2.1%	0.0%	95.8%
Female	50.0%	19.2%	11.5%	5.8%	13.5%	69.2%
Condition of chairs	**48.0%**	**21.0%**	**10.0%**	**4.0%**	**17.0%**	**69.0%**
Male	45.8%	22.9%	8.3%	8.3%	14.6%	68.8%
Female	50.0%	19.2%	11.5%	0.0%	19.2%	69.2%
Overall satisfaction for classroom	**54.0%**	**20.0%**	**16.0%**	**3.0%**	**7.0%**	**74.0%**
Male	56.3%	22.9%	12.5%	6.3%	2.1%	79.2%
Female	51.9%	17.3%	19.2%	0.0%	11.5%	69.2%

Source：Survey for pupils

Moreover, the development of the classrooms seems to contribute to quality education. According to an interview with teachers, the quality of lecture was improved because the voices from the next classroom are hard to hear so that pupils can focus on their lecture. It also enables the teacher's voice to be heard at the back of the classroom. Also, there was an opinion that a spacious classroom enables teachers to walk around in the classroom and observe each pupil more carefully. The pupils survey also shows that more than 80% of the pupils answered "it is easy to understand teacher's explanation" or "I can concentrate in the classroom" as "always" or "mostly", indicating that the learning environment for pupils is relatively good (see Table 7 below).

Table 7：Satisfaction for lectures (Total100, male 48, female52)

	Always	Often	Sometimes	Seldom	Never	Always+Often TOTAL
Teacher's explanation is easy to understand	70.0%	18.0%	6.0%	3.0%	1.0%	88.0%
Material that teachers use is easy to understand	66.0%	17.0%	11.0%	0.0%	0.0%	83.0%
I can focus on lectures in my classroom	64.0%	18.0%	8.0%	1.0%	1.0%	82.0%

Source：Survey for pupils

(4) Implementation of soft components will strengthen the maintenance and management system for facilities and furniture by school officials at the target schools.

8 out of 15 target schools continue the activities of COGEs. It is considered that introduction

of the COGEs contribute to the maintenance and management system among these schools. (For details see section 3.4 sustainability).

3.3.2 Impacts

3.3.2.1 Intended Impacts

At the time of project planning, the project was supposed to contribute to improvement of access to primary education and improvement of quality of education.

(1) Quantitative effects (Improve access to primary education)

① Improvement of gross enrolment rate in primary education in Bissau city

At the time of preparatory survey, the gross enrolment rate from the 1st to 6th grades in Bissau city was 74.8%, while it increased to 117.5% according to the data from 2015 to 2016, by an increase of 42.7 points (see Table 8 below).

Table 8：Gross enrolment rate[26] by region

State	A: Preparatory survey (2009-2010)	B: At the time of 1st field study (2015-2016)	Difference of point(B-A)
Bissau(SAB)	74.8%	117.5%	42.7
Bafatá	96.8%	129.4%	32.6
Biombo	144.1%	243.0%	98.9
Bolama (Bijagos)	123.3%	147.9%	24.6
Cacheu	109.0%	172.0%	63.0
Gabú	76.6%	112.9%	36.3
Oio	76.4%	135.1%	58.7
Quinara	113.1%	169.7%	56.6
Tombali	116.2%	157.6%	41.4

Source : Preparatory survey report for the data in 2009-2010 and the data “Evolução TBS” from Ministry of Education for the data in 2015-2016.

(2) Qualitative effects (Improvement of quality of primary education)

① Improve student motivation to go to school

According to the group interview for teachers and parents and the questionnaire for principals, this project contributes to pupils' motivation to go to school at all 15 target schools. Concrete opinions are the following: "This beautiful and robust classroom, not barracks, motivates

[26] The total enrollment rate is the number of enrolled pupils divided by the corresponding school-age population, and may exceed 100% if the enrollment student has spread beyond the official school age.
Source:https://www.jica.go.jp/jica-ri/IFIC_and_JBICI-Studies/jica-ri/publication/archives/jica/kenkyu/95_22/02_02.html (2018/04/24)

children to go to school"; "Construction of the school reduced the distance from home to school"; “It seems that especially younger children enjoy going to upstairs”.; “Some pupils want to go to a Japanese school, which motivates them to study more”. In addition, 90% of the pupils agreed with the statement “I am motivated to go to school by the classroom” in the questionnaire (percentage of “I really think so” + “I fairly think so”). Therefore, it is confirmed that the classrooms contribute to attendance of pupils in target schools (see Table 9 below).

Table 9：Motivation to go to school by classrooms by gender (Total100, male 48, female52)

	I really think so	I fairly think so	I don't really think so	I don't think so at all	Really think so＋ fairly think so total
Total	**67.0%**	**29.0%**	**3.0%**	**1.0%**	**96.0%**
Male	70.8%	25.0%	2.1%	2.1%	95.8%
Female	63.5%	32.7%	3.8%	0.0%	96.2%

Source: Results of the questionnaire for pupils

3.3.2.2 Other Positive and Negative Impacts

① Impacts on the Natural Environment

None.

②Resettlement and Land Acquisition

No land acquisitions or resettlements took place as a result of the project implementation[27].

③Unintended Positive/Negative Impacts

At the time of the ex-post evaluation, the Ministry of Education promotes the dissemination of COGEs, which were introduced in this project, to other schools in Bissau city. In addition, it is considered that there has been a certain ripple effect, since it considers multiple manuals prepared by donors, including manuals relating to school administration management created in this project, and the striving for unified manual creation.（Details are described below in section 3.4.1 Sustainability “Institutional / Organizational Aspect of Operation and Maintenance”.）

From the above, this project has largely achieved its objectives. Therefore effectiveness and impacts of the project are high.

[27] Results of the questionnaire for Ministry of Education

3.4 Sustainability (Rating: ②)

3.4.1 Institutional / Organizational Aspect of Operation and Maintenance

(1) Operation and Maintenance System in Ministry of Education

At the time of the ex-post evaluation, the Ministry of Education is trying to establish COGEs in collaboration with other donors[28] with the aim of promoting participatory management through the COGEs[29]. To be specific, the Ministry is attempting to manage to raise a budget for operation and maintenance in cooperation with the Treasury Department as well as create and disseminate uniformed manuals on school operation and maintenance. In 2014-2015, about 60% of all Guinea-Bissau adopt a COGE system (see Table 10 below).

Table 10：Ratio of school with COGE by region

State	Number of school	Number of school with COGE	Ratio of school with COGE
SAB	172	31	18.0%[30]
Bolama(Bijagos)	71	35	49.3%
Bafatá	262	218	83.2%
Biombo	102	15	14.7%
Cacheu	299	190	63.5%
Gabú	233	176	75.5%
Oio	299	183	61.2%
Quinara	109	70	64.2%
Tombali	128	92	71.9%
Total	1675	1010	60.3%

Source：Results of the questionnaire for Ministry of Education

In the soft component, training guidance on maintenance management to the staff of the Ministry of Education was implemented, thus it was expected to operate a system where these staff who attended the training can give advice and guidance on repair of facility equipment in cooperation with the COGEs. However, in-service training for teachers or guidance such as training for newly hired teachers or principal were not implemented at the time of ex-post

[28] World Bank, United Nations Children's Fund (UNICEF), World Food Programme (WFP) etc.
[29] Source: a questionnaire and an interview for Ministry of Education.
[30] The reason that Bissau City has less schools with the COGEs is that there are much more private schools than other states, where there is no committee system (source: interview survey for Ministry of Education).

evaluation[31].

(2) Operation and maintenance system at 15 target schools: School management committees

1. Status of School Management Committee System

At the time of ex-post evaluation, it was confirmed that 8 schools had continued the activities of COGE among the 15 target schools, so the continuation rate of the activity is moderate (see Table 11). The post for the COGEs is chairpersons, vice-chairpersons, accountants and secretaries. The members consist of the principal, the vice principal, and the representative of the parents association.

Table 11：Current situation of COGE at target schools

No.	Status	Current situation of activity
1	○	Meetings are held about once a month to 3 months. It is well operated.
3	○	A monthly meeting is held and the operation is good. They want to enrich student's teaching materials and to repair toilets, but they find it difficult to raise the amount of the donation from parents. The donation amount is 600,000 CFA (2017).
4	×	The committee does not function well. There is no donation from parents, but maintenance fees are covered by secondary education tuition fees
5	×	The committee has not worked since 2016. Now a newly arrived principal is appointed and is about to resume activities.
7	×	The committee has not functioned since 2015, but there are donations from parents. The donation amount is 2,220,000 CFA (2017).
8	×	Although the committee does not function, there are donations from parents.
9	○	They constructed a reservoir tank, using surplus surpassing payment of maintenance fee for salaries to cleaners and purchasing expenses for cleaning tools etc.
10	○	There is committee activity.
11	○	They installed electricity by donation from parents. Purchase of troubleshooting, cleaning tools, salaries of cleaners, etc. are covered by secondary school tuition fees. The donation amount is 1,440,000 CFA (2017).
12	○	They conduct meetings every three months. They purchased generators by donation, construct staff rooms and statistics materials rooms by donation. They will raise the amount of donation this year.
14	○	They conduct a monthly meeting. In addition to the funds paid by parents every month, they also collect temporary donations to prevent teacher’s strikes. The donation amount is 300,000 CFA (2017)
15	○	They held a meeting irregularly. They bought chairs and electricity with donation from parents.
16	×	The income is covered by the tuition fee for secondary school, but the budget for maintaining and operation is insufficient.
17	×	Although the committee does not function, there are donations from parents.
20	×	The committee has not functioned since last year and there is no donation from parents.

Source: Interview survey for each school

Note: Regarding the amount of donation, only the schools where the answer was given are stated.

2. Reason for suspension of committee activities

[31] Although the Ministry of Education understand the importance of training for newly hired teachers, they have difficulty in conducting it due to the shortage of human resources and transportation.

Expiration of the COGEs members' term and the peculation of the COGEs' funds are mentioned as an immediate trigger for suspension of the activities. The following opinions are also presented: "I thought that we could receive more money from donors and the government at the time of the establishment, which was not the case[32], so our motivation decreased"; "the members were busy"; "The amount of donation from the parents had been reduced, so there was low motivation among us". Thus the motivation and continuing intention of the members had declined in the first place. Figure 1 shows the reasons for the suspension of the activities.

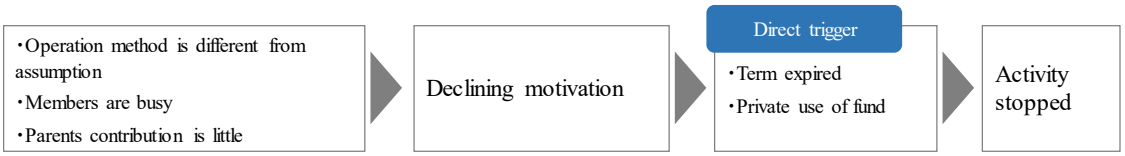


Figure1: Flow in which COGEs stop activity

Source: Created by author

3. Elements affecting the continuation of the school management committee

Regarding the eight items considered to be factors that affect the continuation of the COGEs[33], Table 12 shows the comparison of the accomplishment rate between the continuing group and the discontinuing group.

Table 12: Achievement rate (by continuing group / discontinuing group)

Q no.	Item	Continuing(n=8)	Discontinuing(n=6)	Difference of points
Q4	Appropriate fund management	0.88	0.17	0.71
Q6	Understanding from the community	1.00	0.33	0.67
Q3	Maintain members' motivation	0.75	0.17	0.58
Q5	Third party feedback and auditing	0.50	0.00	0.50
Q2	Understand the importance of maintenance by members	1.00	0.83	0.17
Q8	Communication with other school committees	0.00	0.17	-0.17
Q1	Choose competent members	0.88	0.83	0.04
Q7	Sufficient donation from parents	0.00	0.00	0.00

Source: Interview in the 2nd field survey

※Sorted by descending order of difference of points.

[32] In fact, it was parents' contribution, not the fund from donors or Ministry of Education.

[33] Q1. Choose a competent member, Q2. Understand the importance of maintenance by members, Q3. Maintain member's motivation, Q4. Appropriate fund management, Q5. Third-party feedback and auditing, Q6. Understanding from the community, Q7. Sufficient donation from parents, Q8. Communication with other school committees. It is evaluated "1"(Conducted/Exist) or "0" (Not conducted/Not exist). Respondents are principals or deputy principals. Although the discontinuing group is originally 7 schools, respondents are 6 schools because there were no persons to know about the COGE at the time of the activity.

Factors with a larger difference between the continuing group and the discontinuing group are "appropriate fund management", "understanding[34] from the community"[35], and "maintenance of motivation for members"[36]. Regarding these three points, the remarks in the continuing / discontinuing group are summarized as follows.

① Appropriate fund management

Although the recognition that "donations from parents are inadequate" is common to both groups, the continuing group secures the transparency of funds and periodically checks bank accounts. Also, members of this group discuss and decide within members how to use funds (sites No.3 and No. 8). Meanwhile, the fund management in discontinuing group was not appropriate because members of the COGEs were often unable to agree on the use of funds; there was a private use of funds, and they did not know how to use the funds (sites No. 8, 17 and 20).

② Understanding /support from the community

In the continuing group, schools are more likely to obtain community understanding, partly because teachers live in the community. Moreover, they ensure transparency and foster trust and satisfaction by regular briefing session to the parents (sites No. 10, 12 and 15). Meanwhile, it is difficult for discontinuing group to gain understanding from the community. One reason is that many parents send their children go to private school, and thus few parents went to briefing sessions even if the school held them (site No. 4).

③ Maintenance of motivation for members

There was no difference between the continuing and the discontinuing groups in the degree of members comprehension on the importance of COGEs and ability. However, the discontinuing group had a higher expectation for obtaining management funds from the donors (e.g. JICA) and the government at the time of establishment of the COGEs, which was not the case. In fact,

[34] It means the members of the community have a sense of "school is ours" and that they actively participate in school activities.

[35] The community here means the local residents within the same bairo including the parents of the school.

[36] A logistic regression analysis was conducted with Q1 to Q8 as dependent variables, and "continuing/discontinuing" as an independent variable. The coefficients were stated in the following in In descending order of coefficients; Q6 (0.50), Q4 (0.43), Q3 (0.36) , Q8 (0.21), and Q2 (0.14). (Q1 and Q5 were removed for internal correlation. Determination coefficient was 0.73 and p-value was 0.00562). It can be seen that the coefficients of "understanding from the community, appropriate fund management, member motivation" are higher than others and affect the maintenance of the COGEs.

it was the parents who were supposed to donate to the COGEs, not the donors nor government, which resulted in the reduction of motivation for school management among the members (sites No. 5, 7, 8 and 20). There is no such excessive expectation in the continuing group on the other hand. Regularly conducted meetings enable creation of a trust relationships among the members, and motivation is maintained by discussion on the current situation and points to be improved (sites no.1, 3, 10 and11).

As mentioned above, while the direct reason for the suspension of the committee activities is that the members' expiry of service term, there are declines in the motivation of the members in the background. It was also found that the important factors for continuing the COGEs are the appropriate management of funds, understanding/support from the community, maintenance of motivation by members.

(3) Operation and maintenance system at 15 target schools: School Eco Club

Four schools (sites No. 1, 3, 14 and 16) among 15 schools confirm the activities of the school Eco Club (hereafter referred to as Eco Club), which means there are more schools without activities. The schools with Eco Club have activities such as cleaning by pupils, watering in the garden, educational activities calling for prohibiting littering. In addition, teachers advised them on events and cleaning. Even where there is no Eco Club, there have been places where class representatives and student councils have taken the place of cleaning.

For items (1) to (3) above, although it can be evaluated that the Ministry of Education promote the establishment of the COGEs throughout Guinea-Bissau, it can be said that there are some problems in institutional / organizational aspect of the operation and maintenance as the following reasons: the committee's activity continuation rate at 15 target schools is about 50% and the school eco club's continuation rate is less than 30%.

3.4.2 Technical Aspect of Operation and Maintenance

According to an interview survey to each school, sweepers employed at schools for full time clean a school on a daily basis. Schools call carpenters and technicians to repair in the need of repair learning facilities, or in the construction of water entrainment work and the water washing construction of toilets.

Regarding the school maintenance manual that was introduced by the project, among the responding schools, half of the schools utilize it (sites No. 1, 3, 7, 11 and 16)[37], while the other half do not utilize it（site No.5, 8, 10, 12, and 20), so the utilization rate for manual is moderate. The manual is referred by mainly members of the COGEs when there is a breakdown and defects, and to confirm the method for cleaning the roof and the ceiling. They find the manual comprehensive and easy to understand.

Therefore, there is no major technological difficulty as daily cleaning is done every day, and repair and construction work is carried out as necessary by calling carpenters and engineers in the need of repair learning facilities. Therefore, there is no particular problem in the technology of operation and maintenance.

3.4.3 Financial Aspect of Operation and Maintenance

(1) Budget of Ministry of Education

The budget data of the Ministry of Education shows that the Ministry of Education's budget percentage of national budget from 2015 to 2017 is around 9%, and there is no big change compared with the proportion at the time of preparatory survey (2009 to 2011) (see Table 13 below).

Table 13　Percentage of Budget of Ministry of Education　（Unit：1,000CFA）

	At the time of pre evaluation			At the time of post evaluation		
Section/Year	2009	2010	2011	2015	2016	2017 (First half)
State budget	146,020	121,114	101,998	169,394	141,147	68,405
Budget of MoE	10,503	11,379	10,504	15,200	12,473	6,594
Percentage of MoE budget (%)	7.2%	9.4%	10.3%	9.0%	8.8%	9.6%

Source: Preparatory survey report: P. 21 and the data provided by Ministry of Education “Exec geral 2015-2017”.

(2) School budget

Table 14 shows the information on latest financial situation of 4 schools. In each school, income is only contribution from parents. In schools with secondary education, 60% of the secondary education tuition go to income of the school[38], which is devoted to cover the shortfall

[37] Other schools were unanswered.
[38] The remaining 40% goes to the income for Ministry of Education.

of the budget. In expenditure, it is used for personnel expenses of teachers and cleaners, and repair expenses of cleaning tools and facilities. They manage the fund well overall as expenditures are positive, except for one school (site No. 7).

Table 14　Budget of target school

(Unit：1,000CFA)

School	site No.7	site No.11		site No.14			site No.20
Year	2017	2016	2017	2015	2016	2017	2016
Income from Ministry of Education	0	0	0	0	0	0	0
Contribution from parents	2,220	603	1,440	318	311	300	8
Total revenue	**2,220**	**603**	**1,440**	**318**	**311**	**300**	**8**
Personnel expenditure for Teachers	0	0	0	0	0	25	0
Personnel expenditure for other employees	0	360	100	0	0	0	0
Personnel expenditure for sweepers	540	90	90	0	0	15	0
expenses with cleaning materials	20	15	20	40	30	0	0
Repairs expenses	2,894	46	1,150	45	60	0	0
Total of expenditure	**3,454**	**511**	**1,360**	**85**	**90**	**40**	**0**
Balance	**1,234▼**	**93**	**80**	**233**	**221**	**260**	**8**

Source: Results of the questionnaire from each school.

For items (1) to (2) above, there are no major problems in the financial affairs of operation and maintenance.

3.4.4 Status of operation and maintenance

There was an odour problem at two schools (sites No. 3 and 16) at the time of defect inspection. No measures were taken to solve the problem at the time of the post-survey and those toilets have not been utilized. In addition to the above two schools, toilets were not used at the other three schools (sites No. 9, 12 and 14). According to the interview for teachers, reasons for not using the toilet are the

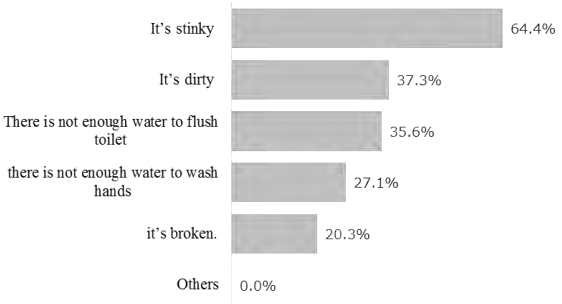


Figure 2　Reasons for not using toilets

(Respondents: those pupils who rarely use toilets or do not use at all. Multiple answer , n=59）.
Source:　survey for pupils

follows: “odour is strong because it is a direct pumping type” “it is dangerous as gas may be generated”; “it is hot”. Some schools receive advice from the Ministry of Health not to use the toilets because it might generate methane gas (site No.15). In the survey for pupils, more than half of the pupils stated smell as reason for not using toilets (see Fig. 2 below).

To encourage use of the toilets, several schools devised measures such as establishing covers, making toilet seats, making it a flush toilet, putting in a water pipe, and continuing to use by funds of the COGEs (sites No. 4, 8, 10, 15 and 20).

The toilet building developed by this project (Site No.17)

Toilet developed by this project （site No.20）

Besides the above, there were problems of the door handle being disengaged and the key being damaged in almost all school classrooms as pupils handle the doorknob roughly or play with it. Many schools where the keys of the doors were broken correspond to the installation of padlocks. Therefore, it can be said that there are some problems in the situation of operation and maintenance.

Some problems have been observed in terms of the institutional aspect and current status. Therefore sustainability of the project effects is rated as fair.

4. Conclusion, Lessons Learned and Recommendations

4.1 Conclusion

The object of this project was to improve student’s learning environment in Bissau city by constructing classrooms and improving educational furniture, thereby contributing to improvement of universal primary education, a policy goal of Guinea-Bissau.

This project was highly relevant to the Guinea-Bissau’s development policy that aimed at improving access to basic education and its development needs as well as Japan's aid policy. The number of classrooms and pupils achieves the quantitative index It also contributes to the quality improvement of education, the sanitation awareness of the pupils, and the desire to

attend school. Thus the effectiveness and impact are high. Although the project cost was lower than the plan, the project period exceeded the plan. Therefore, efficiency of the project is fair. Regarding the sustainability of operation and maintenance (O&M), there are no major problems with regard to technical aspects and financial aspects, but there are some problems regarding the structure of the Ministry of Education, the continuity of the school management committees and the status of O&M such as for the breakage of door handles and the use of toilets. Therefore, the sustainability of O&M is fair.

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

4.2 Recommendations

4.2.1 Recommendations to the Executing Agency

(1) Approach to continue activities of the COGEs

Support at the timing when the term of membership expires

According to the interview, members of the COGEs are likely to stop their activity when the term of membership expires. Also, the COGEs installation manual does not have a statement on the procedure for the selection of successor members of the COGEs. As an effort to prevent the suspension of activity due to this, the staff of the Ministry of Education need to support the COGEs just before the end of the term of membership and urge to hold a meeting for a new personnel selection. Also, staff of the Ministry of Education need to ask the members of the COGEs (principal etc) to see how the activities proceed or if any problems occur, and check on how to use the funds to prevent the COGEs from being suspended.

(2) Management Committee Initiatives to improve the quality of activities

Implementation of fund management training for members of COGEs

The Ministry of Education is currently attempting to acquire budget for COGEs dissemination and unifying school management guidelines. In order to maintain the COGEs, it is important to strengthen knowledge and management of funds as well as financial aspects and institutional aspects. For this reason, a training on bookkeeping and use of excel, and an example of fund use to the staff of the COGEs periodically or at the beginning of school year is hoped to be conducted mainly by the staff of the Directorate General of research, planning and evaluation of education system.

Construct and strengthen school audit system

As an effort to prevent illegal problems such as private use of school funds by COGEs members, the idea of social audit would be effective, where thorough sharing of information on school administration funds, all the stakeholders know all information on operation management concerning donations and subsidies[39]. For this reason, a briefing session on investment management between school administration officials should be held to inform the auditing matters such as donations from parents and subsidies from the government in advance, and then, on a regular basis, it is hoped that a meeting to explain the status for fund operation will be held. By doing this, it is possible to create pressure such as “It is audited by the residents (all concerned parties)”, and it will be possible to prevent fraud by the individual members of the COGEs in advance.

Create opportunities to interact with school management committees of other schools

As one of the measures to motivate the members of the COGEs, which influence the continuity of the activities, COGEs meet each other for each bairo (village) where there is a school in addition to existing regular meetings within members of a school[40]. According to the survey, it is confirmed that each school hopes for exchanging information with other school’s members such as improvement of toilets, and for discussing countermeasure to student's problem behaviour and method of funds management etc as a reference of examples or good practices of other schools. The COGEs members of 15 target schools mainly can serve as the chairperson school and have an opportunity to meet with members in the same barrio regularly (e.g. once every 2 to 3 months).

4.2.2 Recommendations to JICA

None

[39] This is called “community audit” or “social audit”, which is introduced by school project in Niger. Source: https://www.jica.go.jp/project/niger/002/materials/ku57pq00002akd3s-att/commentary_02.pdf (2018/4/20). The World Bank defines School Social Audit as ”a process of measuring and appraising various aspects of school management through the direct participation of and interaction between school stakeholders“. Source: http://siteresources.worldbank.org/EXTSOCIALDEVELOPMENT/Resources/244362-1193949504055/4348035-1352736698664/Nepal-School_Social_Audits-FAQ.pdf(2018/4/20).

[40] In case of those schools without COGEs in a bairro, the school administrators such as the principal of the school and the executive of the parents' association can participate in the joint meeting, which can promote establishing the COGEs in the school in the future .

4.3 Lessons Learned

Enhancement of school involvement by the community since inception

The understanding and support from the community have a great influence on the maintenance of the COGEs. For this reason, when introducing the COGEs by soft component at the time of school construction, a briefing session to the community should be held in a community where there is a school since inception of COGEs with cooperation of Japanese side and the Ministry of Education in order to establish the COGEs smoothly, and it is also important to show the importance of school management, which can result in pupils' learning in a good environment. In doing so, the project can obtain understanding and support from the community, laying the foundation for future school management. In addition, briefing sessions on the use of funds periodically (once every three months, once every half year, etc.) for the parents can be conducted by the members of COGEs in a community after its establishment. One idea is to make opportunities where schools clean the school with local residents periodically. By strengthening cooperation between the school and the local residents including parents in this way may contribute to, improvement of motivation of the members and sustainability of the activities where they recognize to obtain understanding and support from the community as well as facility improvement by mobilizing community resources.

End

Republic of Mali

FY2017 Ex-Post Evaluation of Japanese Grant Aid Project

"Project for construction of Bamako Central Fish Market"

Akemi Serizawa, TAC International Inc.

0. Summary

In Mali, consumption of fish per capita was larger than that of meat, and sales of fresh fish in the cities was an important source of income for rural population. In Bamako, the infrastructure of fish markets was not good enough to accommodate the increasing volume of fish for the growing population. The objective of this project was to develop a new distribution center of fish in Bamako by the construction of Bamako Central Fish Market (Marché Central à Poisson de Bamako: MCPB), thereby contributing to the stable supply of quality fresh fish in the city.

While this project was highly relevant to the country's development plan and development needs as well as Japan's ODA policy, its relevance is fair because it is not clear whether the project fully examined measures to proceed relocation of wholesalers at the project design. Efficiency of the project is high because both project cost and project period were within the plan. Ice is produced as planned by the icemaking machine in MCPB and contributes to the freshness of fish distributed in Bamako. However, as MCPB does not sell fresh fish yet, the project has not realized creation of new distribution center of fresh fish, as expected as the project effect. It has not produced expected qualitative effects such as hygienic environment and hygienic handling of fresh fish, or impacts such as stable supply and price of fresh fish, or consolidated distribution function of fresh fish. As the project has achieved its objectives only to a limited level compared to the plan, effectiveness and impacts of the project are low. There are no serious problems in the institutional, technical, financial aspects or status of operation and maintenance of the Bamako Central Fish Market Agency (Agence de Gestion du Marché Central à Poisson de Bamako: AGMCPB)[1] and it is likely to function as expected after the sales of fish begins. However, it cannot be concluded at this stage that there is no problem in its sustainability because MCPB is not operating its intended business yet as wholesalers have not relocated and fish are not sold. The expected effects of the project are not realized and their sustainability are not measurable. Therefore, sustainability of the project is fair.

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

[1] The management agency of this project became Bamako Central Fish Market Agency (Agence de Gestion du Marché Central à Poisson de Bamako: AGMCPB) in August 2010, a public benefit corporation.

1. Project Description

Project location

Space intended for fresh fish wholesalers in MCPB

1.1 Background

At the project design, fishery was one of the important sectors in Mali with large inland water surface. The fishery sector produced 4.3% of its Gross National Income (GNI) and the workers in the sector were 7.2% of its total labour force. Consumption of fish per capita was larger than that of meat, and sales of fresh fish in the cities was an important source of income for rural population. In Bamako, the infrastructure of fish markets was not good enough to accommodate the increasing volume of fish sold for the growing population. A new distribution center of fresh fish was highly sought after for the stable supply of quality fresh fish.

1.2 Project Outline

The objective of this project was to develop a new distribution center of fish in Bamako by the construction of Bamako Central Fish Market (MCPB), thereby contributing to the stable supply of quality fresh fish in the city.

Grant Limit / Actual Grant Amount	1,027 million yen / 734 million yen
Exchange of Notes Date (/Grant Agreement Date)	June 2010 / June 2010
Executing Agency	Ministère de l'Elevage et de la Pêche
Project Completion	December 2011
Main Contractor	Toda Corporation
Main Consultant	Overseas Agri-Fisheries Consultants Co. Ltd.
Outline Design	January 2009-March 2010
Related Projects	African Development Bank: "Project to support inner water surface fishery development" (2005-2012)

2. Outline of the Evaluation Study

2.1 External Evaluator

Akemi Serizawa, TAC International, Inc.

2.2 Duration of Evaluation Study

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

Duration of the Study: August 2017-September 2018

Duration of the Field Study: November 14-17, 2017, February 20-23, 2018

2.3 Constraints during the Evaluation Study

Fresh fish wholesalers had not relocated to MCPB by the time of ex-post evaluation and fish were not sold there. The qualitative survey[2] in November 2017 was conducted with fresh fish wholesalers who were going to relocate to MCPB to ask them for their opinion about the existing fish markets where they were working and about their expectations for MCPB. In February 2018, however, the negotiation between MCPB and the cooperative of the fish wholesalers who were going to relocate finally broke, and these fresh fish wholesalers would no longer relocate to MCPB. Therefore, the result of the qualitative survey reflects the situation before the negotiation broke.

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

3.1 Relevance (Rating: ②[4])

3.1.1 Consistency with the Development Plan of Mali

At the time of project design, the policy document of the fishery sector (2008) by the Ministry of Livestock and Fisheries identified food security, employment creation and poverty reduction as the key roles of the sector. Its priority areas were development of fishery industry, improvement of quality and hygiene of marine products, and development of processing technology (source: project ex-ante evaluation sheet).

The current *National Policy of Fishery and Aquaculture (Politique Nationale de la Pêche et de l'Aquaculture) (2012)* prioritizes development of fishery industry, operation and management of fishery facilities, construction of infrastructure for adding value to marine products, and marketing (source: questionnaire response from the Ministry of Livestock and Fisheries).

From the above, both at the project design and at the ex-post evaluation, this project was in line with the fishery sector policies of Mali which prioritized construction of fishery infrastructure and marketing.

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[2] In the qualitative survey, 20 fresh fish wholesalers were selected and interviewed from 60 who were to relocate to MCPB. Almost equal number of wholesalers were selected from Medina Coura market and BCEAO market.

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

[4] ③: High, ②: Fair, ①: Low

3.1.2 Consistency with the Development Needs of Mali

Mali has a large inland water surface and many people work in the fishery sector. Consumption of fish is also high. For the fishers, sales of fresh fish are an important source of income. While the quantity of fish sold in Bamako increased along with its population growth, existing fish markets had poor infrastructure. At the project design, fish distribution in Bamako was estimated to be 20,000 tons per year (30 tons per day), consisting of about 10,000 tons of fresh fish (about 6,000 tons of local fresh fish and about 4,000 tons of import fresh fish) and 10,000 tons of import frozen fish. There were 34 fish markets of different sizes in Bamako in 2008, among which Medina Coura Market (Marché de Médine, Médina Coura) in the second arrondissement at the north bank of Niger River and BCEAO Market[5] in the third arrondissement also at the north bank were major fresh fish markets. There was large post-harvest loss during handling of fresh fish and the environment was not very hygienic. The objectives of this project were to construct MCPB as a distribution center of fresh fish and to contribute to the distribution of quality, fresh fish. As the north bank where Medina Coura Market and BCEAO Market located was developed urban area, MCPB was constructed in a state-owned land of the south bank of the river (sixth arrondissement) which had experienced population growth and had about 50% of the population of Bamako but was less developed than the north bank. Relocation of fresh fish wholesalers in the Medina Coura Market and BCEAO Market to MCPB was the prerequisite of the project (source: documents provided by JICA).

At the time of ex-post evaluation, volume of fresh fish distribution had decreased in Bamako due to decline of catch by the climate change in Mali, and the portion of frozen fish had increased. According to the estimate by the JICA expert (Fish market management and distribution advisor) who was working in MCPB, the quantity of fish distributed in Bamako was 25,000 tons per year[6] (approximately 70 tons per day) in 2017, among which fresh fish was 5,000 tons per year (14 tons per day) because the import frozen fish was estimated to be 80% of the total quantity. The cramped and unhygienic status of the existing fish markets remained same. As of February 2018, wholesalers had not relocated to MCPB and fresh fish were never sold there. According to the fresh fish wholesalers who were going to relocate to MCPB, while they liked its spacious and hygienic condition, they were reluctant to move because it was far from the existing fish markets and they had to make new arrangements of work and life balance and because there was a risk of losing clients if some move and other stay (source: result of qualitative survey of ex-post evaluation). Since 2017, in these circumstances and following the recommendations of the JICA expert, Bamako Central Fish Market Agency (Agence de Gestion du Marché Central à Poisson de Bamako: AGMCPB decided to handle frozen fish as well and

[5] It is called BCEAO because it is near Central Bank of West African States (Banque Centrale des Etats de l'Afrique de l'Ouest: BCEAO).

[6] 25,000 tons per year = 12,000 tons in Medina Coura Market + 3,000 tons in BCEAO Market + 10,000 tons (mostly frozen fish) in Halles de Bamako.

include retailers as users of the market, not limiting to fresh fish wholesalers as originally planned. AGMCPB accommodated other small businesses such as vegetable vendors in the compound as one of the measures to attract general customers to MCPB.

At the time of project design, there was a need to construct MCPB as a new fresh fish distribution center as the existing fish markets did not have enough space and were not very hygienic. At the time of ex-post evaluation, the situation of existing fish markets remained same, and MCPB can play the role of modern fish distribution center. Although the fresh fish wholesalers have not relocated, AGMCPB has decided to handle frozen fish and accommodate retailers as a response to the change of fish distribution situation in these years. Therefore, the project is also in line with the needs at the time of ex-post evaluation.

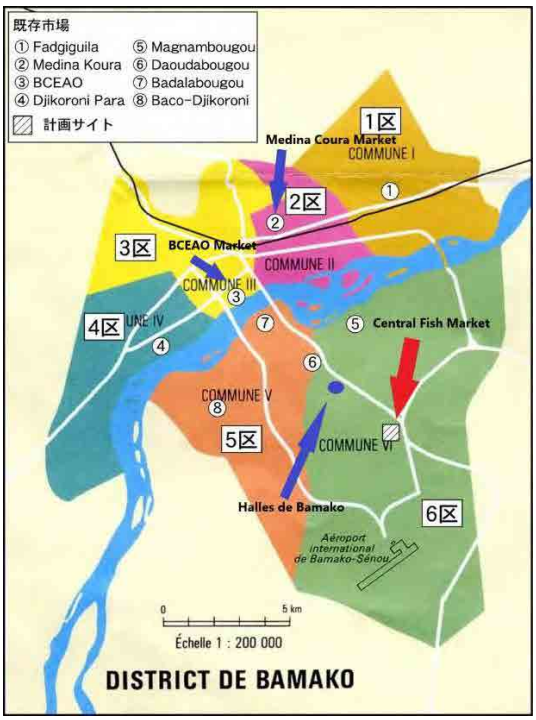

Figure 1. Location of MCPB and other fish markets in Bamako
Source: documents provided by JICA

3.1.3 Consistency with Japan's ODA Policy

At the project design, Japan's country assistance rolling plan for Mali listed up "integrated rural development by sustainable natural resource management" including the fishery sector as one of the development issues to support (source: ex-ante evaluation sheet). Japan was to support Mali in poverty reduction, economic reform and peacebuilding through assistance in the areas including basic education, basic life infrastructure especially water supply, agriculture and food security through food aid and support for poor farmers, and economic infrastructure for the development of Mali and the neighbouring countries (source: ODA country databook 2010, the Ministry of Foreign Affairs). The project was to support agriculture and food security as well as

basic economic infrastructure and was therefore in line with Japan's development assistance policy for Mali at the time of project design.

3.1.4 Appropriateness of the Project Plan and Approach

At the time of ex-post evaluation, MCPB had not started selling fresh fish. The actual situation of the market was different from the original plan as follows:

・Due to the political unrest in Mali in 2012, the management of MCPB was stagnated in 2012 and 2013.

・Fresh fish wholesalers had not relocated to MCPB. According to documents provided by JICA and the result of qualitative survey of ex-post evaluation conducted in November 2017, the wholesalers appreciated the facilities of MCPB and were willing to relocate. However, they had challenges for relocation such as its location, which is far from the existing fish markets[7], lack of means of transport, and fear of losing clients.

・Portion of import frozen fish had increased among fish distributed in Bamako.

According to the Ministry of Livestock and Fisheries and AGMCPB, at the time of ex-post evaluation at least, they were not planning to close the existing fish markets nor to force relocation of fresh fish wholesalers, and they wanted to encourage voluntary relocation by the promotion of advantages of MCPB. AGMCPB has taken following measures to activate MCPB (source: interviews of AGMCPB and JICA expert):

・JICA expert conducted training of fresh fish wholesalers in smoking and hygiene (2017).

・While MCPB was originally intended only for fresh fish wholesalers, AGMCPB decided to include retailers as its users and to handle frozen fish as well. Three hangars to accommodate fresh fish retailers were constructed by February 2018.

・AGMCPB bought import frozen fish and sold them to the fresh fish wholesalers who were going to relocate to MCPB.

・AGMCPB promoted MCPB by media (newspapers, TV, radio) to increases its recognition among fish retailers and citizens as potential customers.

・MCPB accommodated other small businesses such as vegetable vendors in the compound the to increase customers to the market.

The negotiation for relocation of wholesalers proceeded as follows (source: documents provided by JICA):

[7] MCPB is in the south bank of Niger River crossing Bamako and is about 10km from the river. It is next to the airport compound and there are no commercial or residential areas around it. Medina Coura Market and BCEAO Market are in the north bank. Medina Coura is about 3km from the river and BCEAO Market is near the river, and both are in the commercial area. There are only three bridges across the river and it takes time to go to the north bank from the south bank and vice versa.

・2005: During JICA's preliminary study, the location of MCPB was determined according to the proposal from the Mali side. Representatives of wholesalers' unions and retailers in the existing fish markets were interviewed during the study, and most of them were positive about relocation to MCPB. The preliminary study report did not mention specific measures to support relocation as voluntary relocation was expected (source: Preliminary study report of the Project for construction of Bamako Central Fish Market in Mali, 2005).

・2010: In the stakeholders meetings during the project preparation study, 60 or more wholesalers in Medina Coura Market and BCEAO Market expressed wish to relocate to MCPB. The preparation study report (2010) recommended that the Ministry of Livestock and Fishery should give sufficient information to the stakeholders in advance and select the wholesalers to relocate with stakeholders' consent, and that it should take measures to promote relocation of wholesalers and attract retailers to MCPB in the new fish distribution system created by its construction. However, the report did not mention specific measures to take such as provision of mode of transport to the wholesalers and retailers.

・2011: Due to the shortage of rainfall in the source of Niger River, the catch of river fish decreased. As the income of fish wholesalers was poor, they requested AGMCPB to give them some grace period for the payment of user fees of the individual plots in MCPB. AGMCPB counteroffered that it would import sea fish and distribute them to the wholesalers so that they could sell them and increase their income. Both parties agreed on the relocation of wholesalers based on this condition.

・October 2011: The list of 60 wholesalers to relocate to MCPB was prepared.

・Early April 2012: MCPB was almost ready to open. However, due to the political unrest toward the end of March, AGMCPB could not secure business start-up fund of the market. The catch of river fish did not recover. The opening of the market was postponed to 2013 at the earliest.

・March 2013: AGMCPB obtained business start-up fund of the market from the government and it was ready to open in April. The relocation ceremony took place on 8th March. However, the presidential election was held in July 2013 and there was delay of the budget execution. Major wholesalers requested AGMCPB for favourable arrangements and the both parties continued negotiation. Eventually, wholesalers did not relocate in 2013.

・Until February 2018, the Cooperative of Fish Vendors in Mali (Coopérative des Marchands de Poissons du Mali: CMPM), which was established in 1999 and was representing the fresh fish wholesalers to relocate to MCPB, continued negotiations with AGMCPB. In the extraordinary board meeting of AGMCPB in February 2018, the negotiation finally broke and the relocation plan of these wholesalers from the Medina Coura Market and BCEAO Market was cancelled. A

new plan to invite other wholesalers in Halles de Bamako[8] emerged. According to AGMCPB, the fresh fish wholesalers had been explained well about MCPB since the very beginning of the project and they expressed their willingness to relocate there knowing well about its location. Still, they did not make any effort to proceed relocation since 2012 and they just cited its location to win advantages in the negotiation (source: interviews of AGMCPB and the JICA expert).

This project is in line with Mali's country policy and responds to its needs of modern and hygienic fish market as the current fish markets are small and not hygienic. As the percentage of frozen fish increased in Bamako after the project design and the percentage of fresh fish decreased, AGMCPB also responded to the changing needs by expanding its target to retailers and frozen fish, not only fresh fish wholesalers as originally planned. However, at the time of ex-post evaluation, MCPB had never sold fish. The political unrest hindered its operation and fresh fish wholesalers had not relocated citing the disadvantaged location of MCPB. The negotiation for relocation broke in early 2018 as AGMCPB complained that the wholesalers had not made serious efforts to proceed relocation.

Although this project was highly relevant to the country's development plan and development needs as well as Japan's ODA policy, its relevance is fair because it is not clear whether the project fully examined measures to proceed relocation of wholesalers at the time of project design, while it was true that the political unrest in 2012 hindered relocation.

3.2 Efficiency (Rating: ③)

3.2.1 Project Outputs

1) Outputs by the Japanese side

Construction of the facilities and procurement of equipment were implemented mostly as planned (source: documents provided by JICA). There were minor changes in the specifications after the Basic Design according to the actual situation of the project site, and they were appropriate.

Civil engineering and procurement of equipment

・Construction of fish market for wholesalers (including space for vendors, space for loading and unloading, management office, hygiene examination room, first processing room, icemaking machine and freezer). Locker rooms for wholesalers were provided for changing and

[8] Les Halles de Bamako. It is in the south bank of Niger River and between MCPB and the river (sixth arrondissement). It was constructed more than ten years earlier to relocate Bamako Central Market (general market, not fish market), but there are many unoccupied plots. After the preparation study of this project in 2010, frozen fish importers settled in the compound. According to the research of JICA expert, there were estimated to be at least about 18 companies in 2017 (source: documents provided by JICA).

luggage storage, considering that most of them were women.

・Construction of public toilets, elevated water tank, receiving and transforming room, waste collection area, rainwater infiltration facility, wastewater treatment facility and concrete paving work in the compound

・Procurement of fresh fish handling equipment such as cool boxes, palettes, platform scales, flat carts, ice cracking machine, and fish processing table

・Procurement of equipment for maintenance of icemaking machine and hygiene control equipment such as radiation-type thermometer and chest freezer

Soft component

The project trained seven selected technicians who were going to be employed by MCPB in operation and maintenance of the icemaking machine. Six of them remained there as of February 2018. According to them, the training was conducted as planned.

2) Outputs by the Mali side

Construction work and procurement of equipment by the Mali side were all complete by the time of ex-post evaluation (source: documents provided by JICA and questionnaire response from AGMCPB).

・Construction of the fence surrounding the project site and the gate: completed in 2010

・Connection of electricity, water and telephone: completed in 2011 (electricity and water) and in 2013 (telephone)

・Construction of access road from the main road to the entrance of the project site and roads in the compound: completed by 2012 (access road) and sometime after 2013 (roads in the compound; exact date of completion was unknown)

・Preparation of working capital and procurement of equipment such as office machines and furniture: completed in 2013

Wholesalers have not relocated to MCPB. As of January 2018, 90 wholesalers were on the relocation list. As shown in Table 1, it included 60 fresh fish wholesalers from the two fish markets as originally planned, and 30 import frozen fish wholesalers from Halles de Bamako added later. However, as explained in the section "3.1.4 Appropriateness of the project plan and approach", the relocation plan from the two original markets was cancelled in February 2018.

Table 1. Number of wholesalers to relocate to MCPB, as of January 2018

Current market	Number	Men	Women
Medina Coura	30	3	27
BCEAO	30	5	25
Halles de Bamako	30	30	0
Total	90	38	52

Source: Questionnaire response from AGMCPB

3.2.2 Project Inputs

3.2.2.1 Project Cost

The planned total project cost was 1,120 million yen (1,040 million yen from the Japanese side and 392 million FCFA, equal to approximately 80 million yen from the Mali side) (source: project ex-ante evaluation sheet). The actual project cost of the Japanese side was 730 million yen, and that of the Mali side was not available because AGMCPB did not consolidate information. The actual cost of the Japanese side was lower than planned (70%). According to the project consultant, the bid price was much lower than the planned, but the reason for the lower price such as exchange rate, human resources or price of materials was not available because the person in charge of this project already left the office and information was lost. As no defects of the facilities and equipment constructed or procured by the Japanese side were reported, the lower price than the plan did not compromise the quality of the outputs.

Table 2. Project cost of the Japanese side

(unit: million yen)

	Plan	Actual
1. Construction	894	616
1） Direct construction cost	(749)	(543)
2） Expenses on the site	(82)	(73)
3） Common Temporary facilities	(63)	
2. Equipment	50	23
3. Design and supervision	96	96
(soft component)	(5)	(5)
Total	1,040	730

Source: Documents provided by JICA

Table 3. Project cost of the Mali side

(unit: million FCFA)

	Plan	Actual
1. Exterior wall	203	No information
2. Electricity connection	8	
3. Water pipe connection	33	
4. Telephone line connection	20	
5. Pavement of access road	15	
6. Roads in the compound	33	
7. Purchase of furniture	20	
8. Working capital for start-up of facilities	60	
Total	392	

Source: Documents provided by JICA and questionnaire response of AGMCPB

3.2.2.2 Project Period

The planned project period was 19 months from June 2010 (agreement of grant contract) to January 2012 (handing over) (source: project ex-ante evaluation sheet). The actual project

period was 18 months from June 2010 (agreement of grant contract) to December 2011 (handing over), and it was shorter than planned (95%). The work of the Mali side was complete by the time of ex-post evaluation, but information was not available from AGMCPB as to when the work completed.

Table 4. Project period

Work items	Plan	Actual
Final design in Mali	1st month	Detail design July 2010 - September 2010
Final design in Japan	2nd-3rd months	
Tender and contract	5th-6th months	September – December 2010 Revised contract: July 2011
Construction of facilities	8th-19th months	February – November 2011
Procurement of equipment	15th-18th months	August-November 2011
Soft component	18th month	September-November 2011
Handing over	19th month	Completion ceremony and handing over ceremony: 8 December 2011

Source: Documents provided by JICA

Both the project cost and project period were within the plan. Therefore, efficiency of the project is high.

3.3 Effectiveness and Impacts[9] (Rating: ①)

3.3.1 Effectiveness

3.3.1.1 Quantitative Effects (Operation and Effect Indicators)

The project objective was to improve the infrastructure of fish distribution. Three indicators were set at the project design as Operation and Effect indictors as shown in Table 5.

[9] Sub-rating for Effectiveness is to be put with consideration of Impacts.

Table 5. Quantitative Indicators

	Baseline	Target	Actual		
	2009	2013	2012	2013	2017
		1 Year After Completion	Completion Year	1 Year After Completion	5 Year After Completion
Operation indicators					
Indicator 1. Quantity of ice supplied for transport of fish from neighbouring provinces to Bamako (per day) *1)[10]	30 tons	38 tons	15 tons	30 tons	60 tons
Indicator 2. Ice/fish ratio (per day) during storage of fresh fish by wholesalers *2)[11]	Approx. 10%	20-30%	No data (MCPB does not sell fresh fish)		
Effect indicators					
Indicator 3. Post-harvest loss of fresh fish handled in the market 1)[12]	15%	7.5%	No data (MCPB does not sell fresh fish)		

Source: Documents provided by JICA and questionnaire response from AGMCPB
Note 1) The data of ice quantity were supposed to be collected from the management record of the market.
2) The data of ice/fish ratio were supposed to be collected from the ice sales records of the market.
3) Post-harvest loss was to be calculated by post-harvest loss examination.

Regarding the Indicator 1 (supply of ice), at the project design, it was estimated that 38 tons of ice would be required for the same quantity of fresh fish per day distributed in Bamako. At the time of ex-post evaluation, 14 tons of ice would be required for the same amount of fresh fish according to the estimate of JICA expert. Although quantity of ice produced by other ice manufacturers was unknown, 60 tons of ice supplied by MCPB were sufficient for 14 tons of fresh fish. According to the documents provided by JICA, the icemaking machine started operation in March 2012 and sales of ice started at the same time.

Regarding the Indicator 2 (ice/fish ratio) and Indicator 3 (post-harvest loss), no data were

[10] At the project design, ice production in the fresh fish production areas or fish landing ports was negligible. Ice blocks produced in private factories in Bamako were utilized for collection of fresh fish from the fish production areas and transport to Bamako. In 2009, ice production in Bamako was 30 tons per day.
For the transportation of 10,000 tons of fresh fish per year (=30 tons per day) distributed in Bamako, at least 30 tons of ice per day (same weight as fish) are required. In addition, for 17 tons of fresh fish per day delivered to Medina Coura Market, at least 8.5 tons of ice (=fish weight 17 tons x ice/fish ratio 0.5) per day are required (the minimum ice/fish ratio in the market is 0.5= 0.2 to reduce temperature + 0.3 for storage). In total, 38 tons of ice per day are necessary. Ice produced in MCPB was to cover these needs. (source: documents provided by JICA)

[11] Ice/fish ratio is weight of ice compared to weight of fish. At the project design, as the supply of ice blocks was not sufficient, wholesalers economized use of ice by reducing ice/fish ratio. The ice produced in MCPB was to allow wholesalers to use more ice and ice/fish ratio was to improve. (source: documents provided by JICA)

[12] Post-harvest loss is supposed to be reduced if use of ice increases in the market. Other factors such as shortage of demand could also cause post-harvest loss. At the project design, the Fisheries Department of the Ministry of Livestock and Fisheries calculated post-harvest loss from the rate of reduced prices and quantity lost due to loss of fish compared to the usual price of fish in the existing fish markets. (source: documents provided by JICA and interviews of project consultants)

available at the time of ex-post evaluation as MCPB did not sell fresh fish.

From the above, “improvement of the infrastructure for fish distribution”, the expected effect of the project, was only partially realized because MCPB did not sell fish yet while ice was produced as planned.

3.3.1.2 Qualitative Effects (Other Effects)

At the project design, following qualitative effects such as hygienic environment of the fish market, hygienic handling of fresh fish, improvement of working environment, efficient wholesale activities in any weather, efficient loading and unloading of fresh fish, improved storage of fresh fish, supply of quality fresh fish and reduction of wasted fish were expected (source: documents provided by JICA).

1) Survey of wholesalers who were to relocate to MCPB

At the qualitative survey of ex-post evaluation conducted in November 2017, as wholesalers had not relocated to MCPB, those who were on the list of prospective wholesalers to work there were asked about their satisfaction with the current fish markets and their expectations for MCPB. Since the relocation plan was cancelled in February 2018 after the survey, the result of qualitative survey reflected the situation before the cancellation. Twenty fresh fish wholesalers were randomly selected for the survey from the list of 60 people, 30 of which were working in Medina Coura Market and 30 in BCEAO Market, ensuring equal representation of two markets. As most fresh fish wholesalers were women, 19 of the surveyed people were women.

Table 6. Surveyed wholesalers who were to relocate to MCPB

Current market	Men	Women	Total
Medina Coura	1	8	9
BCEAO	0	11	11
Total	1	19	20

The wholesalers were highly satisfied with the current markets about the physical aspects such as the condition of market building and land, equipment to keep fish fresh, and tables and chairs. With other physical aspects, half were satisfied, and half were unsatisfied. Even though the existing markets were not very hygienic, they were satisfied with the cleanliness of the current markets because the markets were cleaned regularly. They were satisfied with access to clients, location, commuting and work-life balance in the current markets. The responses were same between the two markets and between sexes, while there was only one male respondent.

All 20 respondents replied that they wanted to relocate to MCPB. The reasons were that it was spacious and hygienic. They wanted to keep the same level or make their business better after

relocation in terms of quantity and quality of fish as well as income. They gave high marks to the location of MCPB, but since it was on the other side of the river and more than 10km away from the city center with the current fish markets, they considered that commuting, work-life balance and access to clients would be more difficult after relocation. Eighteen of them participated in the training of fish smoking and hygiene conducted by the JICA expert in 2017[13] and they considered it useful.

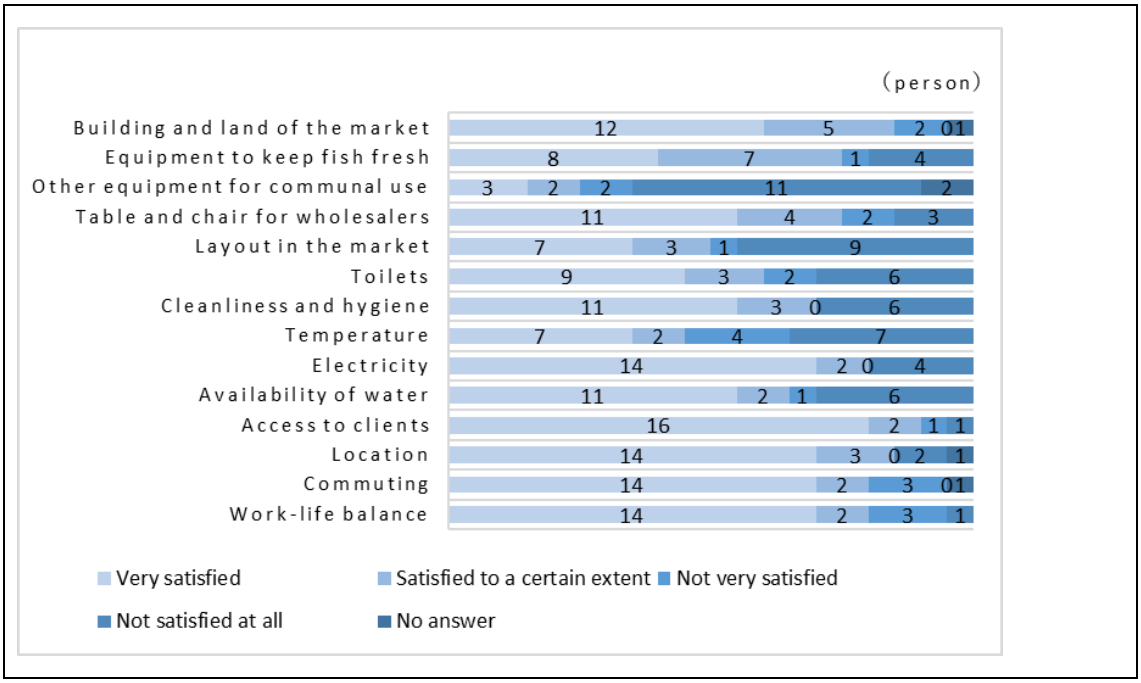

Figure 2. Satisfaction with the current markets: wholesalers to relocate

Source: Result of qualitative survey

[13] The contents of training were as follows (source: information from the JICA expert)
"Handling of fish and hygiene education", 3 sessions in March-April 2017. 51 fresh fish wholesalers who were going to relocate to MCPB participated.
"Smoking and hygiene education", 3 sessions in March-April 2017. 29 fresh fish wholesalers who were going to relocate to MCPB, 11 fish smokers and 10 frozen fish importers participated.

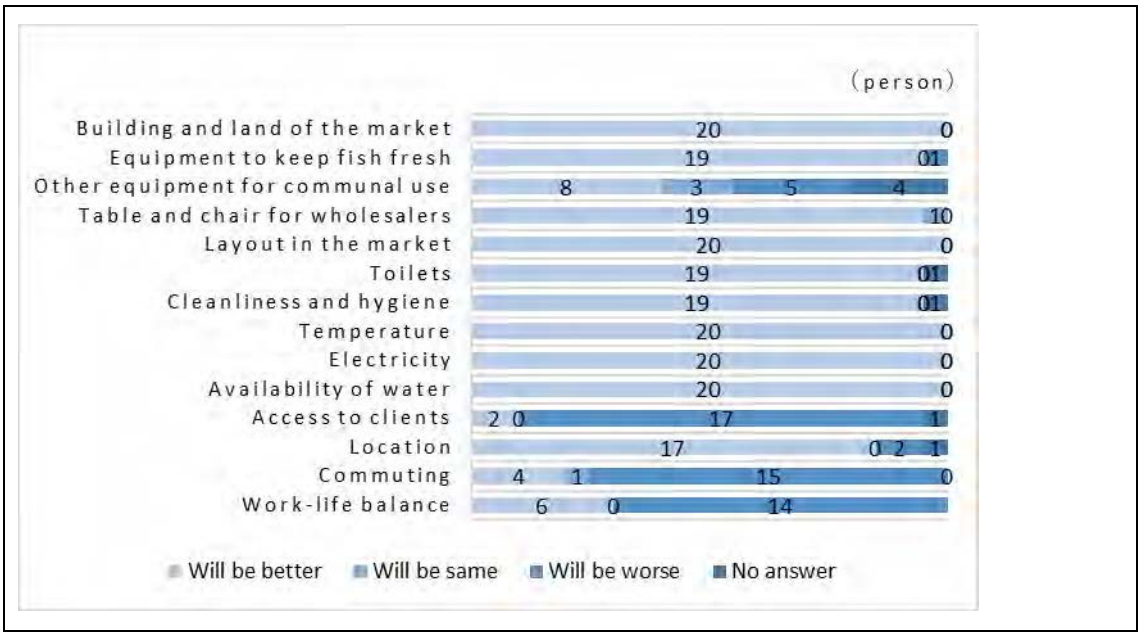

Figure 3. Expectations for MCPB: wholesalers to relocate

Source: Result of qualitative survey

2) Survey of clients of existing markets

According to the result of the survey of 20 fresh fish buyers (retailers)[14] in the current fresh fish markets, their satisfaction with the current markets was relatively high. Despite the reduced quantity of fish and raised price these years, they were able to make their business as the current markets had regular customers. They thought that it was difficult to go to MCPB as it was far from the city center.

Table 7. Surveyed clients in the current markets

Current market	Men	Women	Total
Medina Coura	2	10	12
BCEAO	0	8	8
Total	2	18	20

[14] Fresh fish buyers (retailers) in the existing fish markets were randomly approached and interviewed. Most fresh fish retailers are women (source: interview of JICA expert)

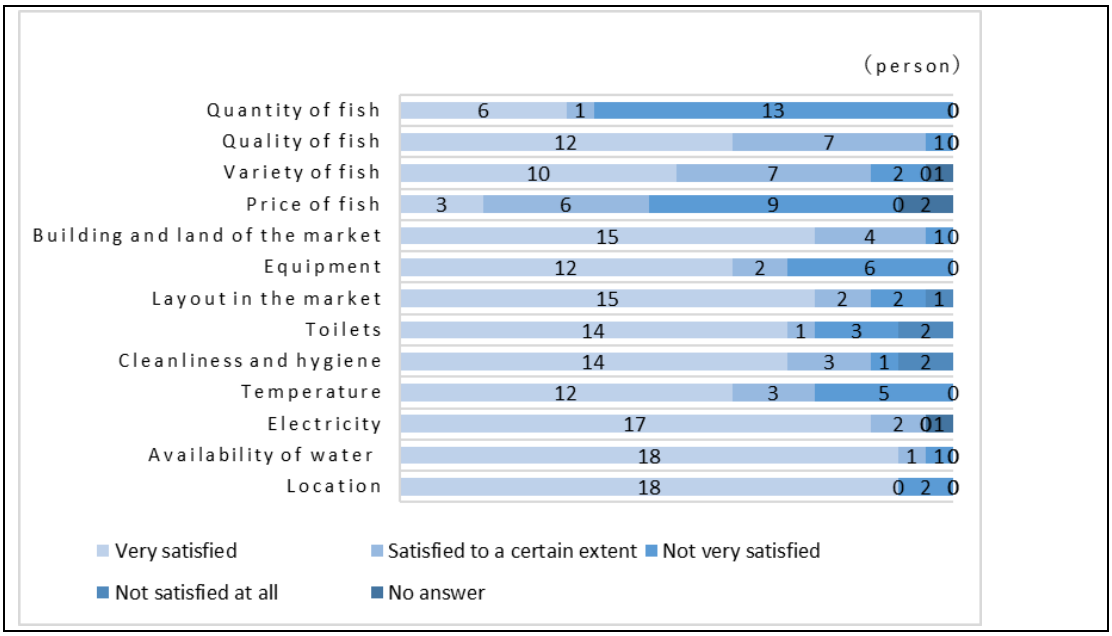

Figure 4. Satisfaction with the current markets: fresh fish buyers

Source: Result of qualitative survey

3) Survey of ice buyers of MCPB

Ten ice buyers of MCPB (3 men and 7 women)[15] were surveyed about their satisfaction with the ice. One of them comes to MCPB almost every day; four come there more or less regularly (twice-four times per month); and others come when necessary. Most of them buy about one ton of ice every time at 500,000FCFA, and some buy small quantity in plastic bags (150 FCFA per bag). They were highly satisfied with the ice of MCPB. They were also satisfied with its facilities but were not happy with its location as it was far from the city center.

[15] Ice buyers of MCPB were randomly selected and interviewed.

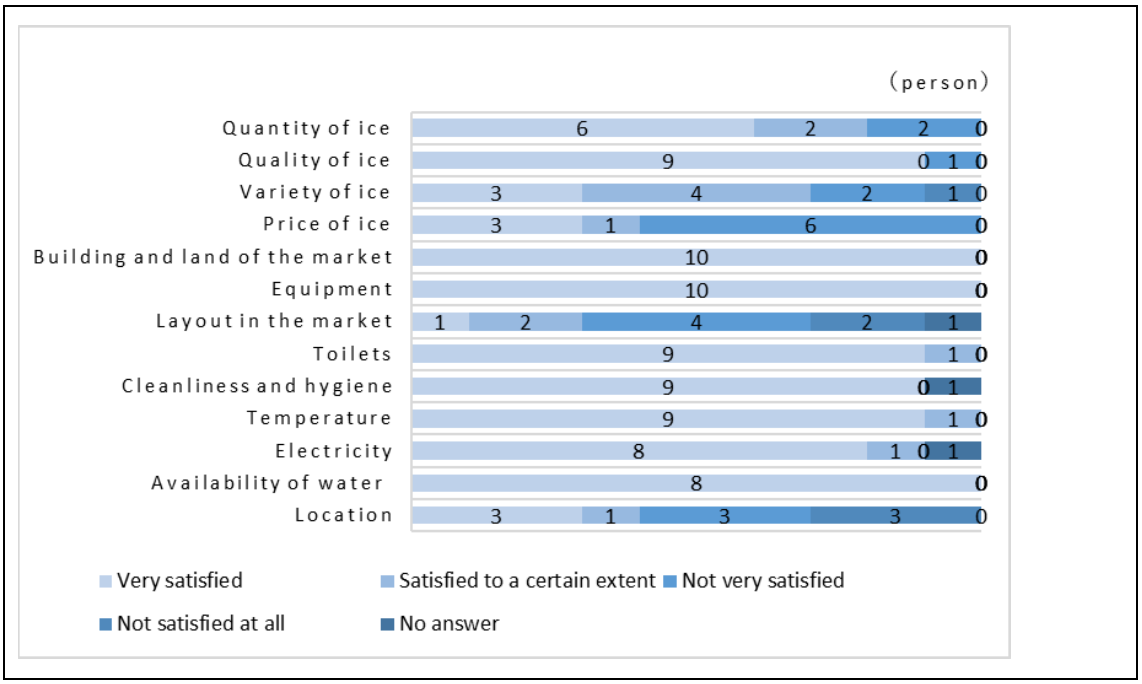

Figure 5. Satisfaction of ice buyers with the ice of MCPB

Source: Result of qualitative survey

The expected qualitative effects such as hygienic environment of the fish market, hygienic handling of fresh fish, improvement of working environment, efficient wholesale activities in any weather, efficient loading and unloading of fresh fish, improved storage of fresh fish, supply of quality fresh fish and reduction of wasted fish, were not realized because MCPB had never sold fresh fish. Since the physical aspects of the market are of high quality, these qualitative effects would be realized once it starts selling fish.

3.3.2 Impacts

3.3.2.1 Intended Impacts

"Stable supply of quality fresh fish in Bamako" was expected as the impact of this project. It was also expected that MCPB would contribute to the centralization of fish distribution system in the south bank of the Niger River in Bamako and to the access to safe food by market users and consumers (source: documents provided by JICA). At the time of ex-post evaluation, the ice produced in MCPB contributed to the freshness of fish. However, as the market had never sold fish, most of the expected impacts were not realized.

3.3.2.2 Other Positive and Negative Impacts

1) Impacts on the Natural Environment

At the project design, the project was classified as Category C of the "JICA Guidelines for Environmental and Social consideration" (2010) as its undesirable impacts on environment were

considered minimal (source: project ex-ante evaluation sheet). The Ministry of Environment and Wastewater (Ministère de l'Environnement et de l'Assainissement: MEA) was to conduct environmental impact assessment (EIA) of this project. Monitoring during the construction was the role of Bamako Branch, Department of Fisheries, Ministry of Livestock and Fisheries and MEA. After the opening of MCPB, the Committee of Environmental Control and Monitoring (Comité de Contrôle et de Suivi Environnemental: CCSE) was to be established to monitor hygiene status and waste treatment in the market, and the CCSE and MEA would conduct monthly monitoring to ensure hygienic condition of the market such as carriers of infectious diseases, health condition of employees, waste management and installation of equipment to ensure safety. At the preparation study, "Environmental Checklist" was developed by the Japanese and Mali sides for monitoring during construction and operation of the market. According to the questionnaire response from AGMCPB, EIA was authorized after the completion of construction of the market (specific date and the reason why EIA was after construction were unknown), and the project took measures for environmental protection related to water pollution, waste management and others, according to the checklist. After the completion of construction, AGMCPB employed environment expert and monitoring has been conducted, and there has been no environmental problem. No information was available about specific monitored items or the results of monitoring.

2) Resettlement and Land Acquisition

MCPB is in the industrial area in the airport zone managed by Bamako International Airport under Mali Airports (Aéroports du Mali), a public corporation under the Ministry of Equipment and Transport. As the land was owned by the state, the Ministry of Housing, Urbanism and Land Affairs and the Ministry of Livestock and Fisheries closed a lease contract for 50 years, which would be automatically renewed afterwards. There was no resettlement (source: documents provided by JICA and questionnaire response from AGMCPB).

3) Unintended Positive/Negative Impacts

There was no difference between sex of the wholesalers in the qualitative survey results. If the relocation takes place, however, women wholesalers would be more affected because work-life balance would be difficult as MCPB is far from the city center. This project provided locker rooms for changing and luggage storage to give sense of security to women wholesalers based on the fact that most fresh fish wholesalers were women. While the locker rooms were not utilized as wholesalers had not relocated, the facility would contribute to the improvement of their working conditions as the existing fish markets do not have such arrangement.

Ice was produced as planned in MCPB and contributed to the freshness of fish distributed in

Bamako. However, as MCPB had never sold fish by the time of ex-post evaluation, expected qualitative effects such as hygienic environment and hygienic handling of fresh fish or impacts such as stable quantity and price of fresh fish and concentration of fresh fish distribution system were not realized. The project has achieved its objectives at a limited level. Therefore effectiveness and impacts of the project are low.

3.4 Sustainability (Rating: ②)

3.4.1 Institutional / Organizational Aspect of Operation and Maintenance

At the project design, MCPB of Bamako was an affiliated organization of the Ministry of Livestock and Fisheries. For its mission to create added value and develop market of marine products as well as to train human resources in the sector, AGMCPB was approved as a public benefit corporation by the government on August 4, 2010 (source: documents provided by JICA). The Ministry of Livestock and Fisheries supervises AGMCPB in its policy aspect. The staff composition of AGMCPB was as follows at the time of ex-post evaluation.

Table 8. Staff composition of AGMCPB

Function	Number
President-General Director	1
Vice General Director	1
Secretary	1
Administration and accounting	14
Ice making technicians	7
Workers	14
Drivers	4
Warehouse management	1
Electric technician	1
Maintenance	3
Assistant	1
Security guard	1
Total	50

Source: Questionnaire response from AGMCPB

With the leadership of the President-General Director, AGMCPB developed plans to activate the market. It acquired funding for capital investment from the state in 2016 and constructed facilities for frozen fish and retailers expanding the products handled in the market (source: interviews of AGMCPB and JICA expert). In 2017, just before the broke of the six-year negotiation between AGMCPB and the Cooperative of Fish Vendors in Mali (Coopérative des Marchands de Poissons du Mali: CMPM) since 2012, AGMCPB drafted three-year tripartite contract among itself, CMPM and the state (2018-2020). It defined the roles of MCPB as follows:

・Supply of fish to the citizens of Mali, especially in Bamako

・Storage, preservation and distribution of fish
・Increase of income of the workers in the fishery sector
・Partial industrialization of fish processing
・Employment creation and value chain development
・Capacity development of workers in the fishery sector and provision of modern methods
・Improvement of infrastructure and equipment, ensuring sustainability
・Improvement of hygiene of marine products
・Extension and training of new technology

AGMCPB will prepare a new tripartite three-year plan when other group of wholesalers agrees to relocate. AGMCPB's roles will remain same. A new plan to invite the customs of import fish to MCPB had emerged by February 2018, and it might take place in 2018 at the earliest. Import fish will have to pass MCPB and it will encourage the wholesalers of Halles de Bamako to relocate to there (source: interview with AGMCPB and JICA Expert).

Although MCPB does not sell fish yet, AGMCPB is already an established organization and there is no institutional problem.

3.4.2 Technical Aspect of Operation and Maintenance

The soft component of the project trained seven technicians (4 for freezing and 3 for electric) in freezing and refrigerating technology, operation and maintenance of icemaking machine and measures to take in case of break down. The project also provided operating manual of the icemaking machine and freezers (source: documents provided by JICA). Among seven ice making technicians who were working at the time of ex-post evaluation, six were trained by the project. In 2017, one technician participated in JICA training in Japan for two months and other two participated in training course in Mali to obtain certificate of ice making skills. The technicians understand the content of training well and perform what they learned, and utilize the manuals provided by the project. Therefore, there is no problem in operation and maintenance of icemaking machine (source: interviews with the ice making technicians). The wholesalers of Halles de Bamako will perform the same work after relocation and they would not have technical issues. From the above, there are no technical problems.

Ice making
(MCPB)

Freezer
(MCPB)

3.4.3 Financial Aspect of Operation and Maintenance

Financial status of AGMCPB of the past three years is shown in Table 9 below.

Table 9. Financial status of AGMCPB

(unit: million FCFA)

	2014	2015	2016
Sales of ice	94.2	101.2	98.8
From the state			300.0
Revenue total	94.2	101.2	398.8
Human resources	52.7	47.2	54.2
Management	3.5	3.7	4.3
Maintenance	25.5	40.9	36.9
Capital investment	11.6	8.0	300.9
Expenditure total	93.4	99.8	396.3
Balance	0.9	1.4	2.4

Source: Questionnaire response from AGMCPB

Sales of ice was the only source of income of AGMCPB at the time of ex-post evaluation. According to AGMCPB, until 2016, it sold 30 tons of ice and earned 300 thousand FCFA (approximately 460 euros) per day, which was equivalent to 100 million FCFA (approximately 150 thousand euros) per year. In 2017, the ice sales doubled to 60 tons and it earned 600 thousand FCFA per day, which was equivalent to 200 million FCFA (approximately 300 thousand euros) per year. AGMCPB obtained 300 million FCFA from the state in 2016 and used it for business expansion, including construction of buildings for fresh fish retailers, rehabilitation of facilities and strengthening of public relations. AGMCPB does not collect user fees of individual plots for vendors or of equipment because vendors have not relocated. AGMCPB started putting aside a part of ice sales in the bank account in 2016 and uses the fund for the renewal and maintenance of equipment. The fund put aside in the bank account was about 10% of ice sales in 2016 and 2017.

Table 10. Fund from ice sales in bank account

(unit: million FCFA)

	2016	2017
Deposit	11.1	17.5
Withdrawal	9.9	13.3
Balance	1.2	4.2

Source: Questionnaire response from AGMCPB

As the negotiation with CMPM, a cooperative of wholesalers who were going to relocate to MCPB, broke in February 2018, AGMCPB will modify the three-year tripartite plan with another group of wholesalers and the state. Therefore, at the time of ex-post evaluation, AGMCPB did not have concrete financial plan for the forthcoming years. Ice sales was its only source of income and it covered operation cost of the market. AGMCPB obtained funding for capital investment from the state. After wholesalers relocate to MCPB, AGMCPB will collect user fees of individual plots. From the above, there would be no financial problem.

3.4.4 Status of Operation and Maintenance

At the time of ex-post evaluation, the building and equipment of MCPB were in good condition. The open space for the fresh fish wholesalers in the middle of the building was not occupied. According to AGMCPB's self-evaluation, the building was in very good condition (1st in four ranking), icemaking machine and other equipment for communal use, tables and chairs for fish vendors and toilets were in good condition (2nd), wastewater pipelines, hygiene, temperature and electricity were not in very good condition (3rd). The transformer and compressor broke down so far, and the former was replaced by a new unit, and the latter was repaired with new parts (source: questionnaire response from AGMCPB).

AGMCPB constructed following facilities in the compound for business expansion of the market:

- Three hangars for fresh fish retailers (104 plots) (completed in January 2018)
- Kiosks for retailers of other businesses (completed. Most spaces are not occupied.)

When wholesalers of frozen fish relocate to MCPB, AGMCPB will allow them to bring and install their own freezers and reefer containers (source: interview with JICA expert). After fish vendors settle down, there would be no problem in the condition of the facilities and equipment such as tables, storage rooms and freezers under normal handling. From the above, there is no serious problem in the status of operation and maintenance.

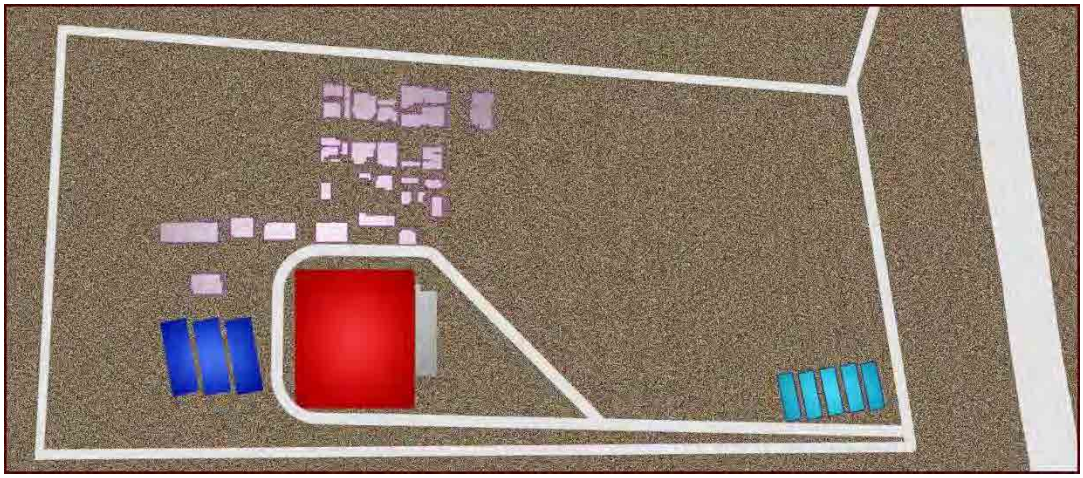

Figure 6. Layout of major buildings of MCPB

Source: Drawn by the evaluator
The large building in center-lower left: main building of fish market constructed by the project
Three buildings in lower-left: hangars for fresh fish retailers constructed by AGMCPB
Five buildings in lower right: kiosks constructed by AGMCPB
Huts in upper left: small businesses such as vegetable vendors
Note: It is rough layout of the major buildings. It does not show exact size of the buildings or exact position.

There are no serious problems in the institutional, technical, financial aspects or status of operation and maintenance of AGMCPB, and it will continue functioning after starting sales of fish. However, since the wholesalers have not relocated yet and fish are not sold, which means AGMCPB is not functioning as planned, it cannot be concluded that there is no problem in its sustainability. The expected effects of the project are not realized, and it is not possible to measure the sustainability of the effects. Therefore, sustainability of the project is fair.

Space for reefer containers of frozen fish wholesalers
(MCPB)

Hangar for fresh fish retailers
(MCPB)

4. Conclusion, Lessons Learned and Recommendations

4.1 Conclusion

In Mali, consumption of fish per capita was larger than that of meat, and sales of fresh fish in

the cities was an important source of income for rural population. In Bamako, the infrastructure of fish markets was not good enough to accommodate the increasing volume of fish for the growing population. The objective of this project was to develop a new distribution center of fish in Bamako by the construction of MCPB, thereby contributing to the stable supply of quality fresh fish in the city.

While this project was highly relevant to the country's development plan and development needs as well as Japan's ODA policy, its relevance is fair because it is not clear whether the project fully examined measures to proceed relocation of wholesalers at the project design. Efficiency of the project is high because both project cost and project period were within the plan. Ice is produced by the icemaking machine as planned in MCPB and contributes to the freshness of fish distributed in Bamako. However, as MCPB does not sell fresh fish yet, the project has not realized creation of new distribution center of fresh fish, as expected as the project effect. It has not produced expected qualitative effects such as hygienic environment and hygienic handling of fresh fish, or impacts such as stable supply and price of fresh fish, or consolidated distribution function of fresh fish. As the project has achieved its objectives only to a limited level compared to the plan, effectiveness and impacts of the project are low. There are no serious problems in the institutional, technical, financial aspects or status of operation and maintenance of AGMCPB and it is likely to function as expected after the sales of fish begins. However, it cannot be concluded at this stage that there is no problem in its sustainability because MCPB is not operating its intended business yet as wholesalers have not relocated and fish are not sold. The expected effects of the project are not realized and their sustainability are not measurable. Therefore, sustainability of the project is fair.

4.2 Recommendations

4.2.1 Recommendations to the Executing Agency

As a strategy to promote relocation of wholesalers, AGMCPB's does not force them but wants to encourage voluntary relocation by making MCPB an attractive place for fish vendors by expanding its business covering frozen fish and retailers and attracting general customers. It has made efforts such as construction of hangars for retailers. To start fish sales and the make the business run, it is recommended that AGMCPB should continue preparation of facilities for fresh and frozen fish vendors and retailers and negotiation with vendors to relocate.

With the leadership of President-General Director, MCPB decided to expand its business items and constructed necessary facilities by securing funding from the state. To prepare for personnel changes in the future, it is recommended that AGMCPB should consider regular employment or training of staff with expertise in market management and activation.

4.2.2 Recommendations to JICA

JICA despatched an expert for market activation. He made recommendations to AGMCPB on what kind of fish to sell (to increase frozen fish) and on the facilities to prepare, and conducted technical training for wholesalers to relocate. The fact that MCPB was constructed by Japanese assistance can be an attraction for the customers to the market. Therefore, it is recommended that JICA should continue assistance for market management by Japanese expert to the extent possible.

4.3 Lessons Learned

Identification of problems caused by market relocation and preparation for countermeasures

Wholesalers of the existing fish markets have not relocated to MCPB. The wholesalers insist that the location of the new market is the main reason for their reluctance. On the other hand, AGMCPB states that the project has well explained to the wholesalers from the very first stage and that the list of wholesalers was made after they were fully informed of the conditions of the new market including its location. The project preparatory study report at the project design did not mention disadvantages for wholesalers caused by relocation and preparation for measures to take. In general, in projects involving relocation of market, vendors can be reluctant to relocate when they have worries about commuting, work-life balance and access to clients. JICA and executing agencies should identify such problems and formulation of countermeasures at the project design.

End