

Tuvalu

FY2016 Ex-Post Evaluation of Japanese Grant Aid Project

“The Project for Improvement of Education Facilities at Motufoua Secondary School”

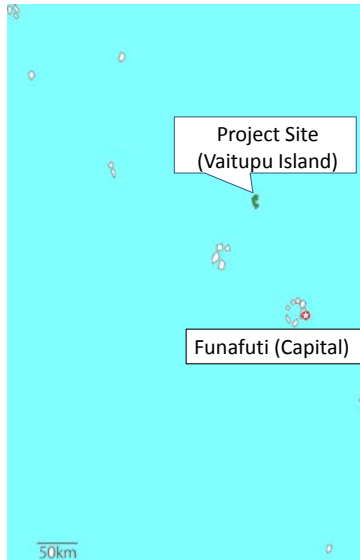
External Evaluator: Keisuke Nishikawa, Japan Economic Research Institute Inc.

0. Summary

In this project, facilities were rehabilitated and upgraded and equipment was procured to improve the safe and adequate learning environment at Motufoua Secondary School (hereinafter referred to as ‘MSS’), the only public secondary school in Tuvalu. The relevance of this project is high as it was consistent with the development plan and sector plan as well as the development needs of Tuvalu at the time of both planning and ex-post evaluation in terms of Tuvalu’s education policy, a plan which aims to achieve high-quality education, and the importance of secondary education, and as it was consistent with Japan’s ODA policy at the time of planning. As for the implementation of the project, it was judged that the project cost exceeded the plan in reality since the actual project cost was almost the same as the plan while the project components contracted from the original plan. Also, the project period significantly exceeded the plan. Therefore, the efficiency is low. With regard to project effects, while the target including the number of students per classroom was achieved, the improved capacity of student dormitories and the better efficiency in operation of school affairs were not achieved as the student dormitories and the administration building were not constructed. Regarding the impact, it is considered that a certain degree of positive impact was generated as the students became able to concentrate on their studies and had profound understandings of their class contents, although little improvement in test results was observed. Therefore, the effectiveness and impact of this project are fair. It was confirmed that there were no institutional issues in operation and maintenance and that they had the technical capacity to conduct routine maintenance. No financial problems were found as a certain level of the operation and maintenance budget had been allocated, and the facilities and equipment developed in this project were in good condition as a whole. Therefore, sustainability is judged to be high.

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

1. Project Description



Project Location (Vaitupu Island)¹

General classroom building constructed in this project

1.1 Background

MSS is the only public secondary school and is a full boarding school, providing four-year education to pupils who have completed an eight-year primary education and who have passed the national examination. However, at the time of planning of this project, usable facilities had decreased due to a fire incident and dilapidation, forcing MSS to operate the school using temporary classrooms and buildings with safety concerns. In addition, no other education opportunities were provided to pupils who failed the examination after enrollment and left the school, causing an increase in the youths living in the society without having acquired any necessary skills for employment or social life. The Government of Tuvalu recognized the need to provide new education opportunities to this increasing number of out-of-school children as an urgent issue and started to introduce Technical Vocational Education and Training (hereinafter referred to as 'TVET') at MSS. However, the facilities of MSS had much damage due to the harsh natural environment and were not offering sufficient functionality as education facilities. At that time, the school facilities had a risk of the main structure becoming compromised due to heavy damage to the edges of its eaves from strong winds. Student dormitories also had damage to their apertures (doors and windows) throughout the buildings; half of showers and toilets were not usable due to damage; and, security mesh fences were also damaged. In this way, the learning environment was not sufficient in terms of safety, sanitary, and functional aspects.

¹ Tuvalu consists of 9 island groups and all of the islands in the map are part of Tuvalu.

1.2 Project Outline

The objective of this project is to provide a safe and adequate learning environment through rehabilitating and upgrading the facilities and through procuring necessary equipment for Motufoua Secondary School, thereby contributing to the provision of higher-quality education.

E/N Grant Limit or G/A Grant Amount / Actual Grant Amount	692 million yen / 692 million yen
Exchange of Notes Date / Grant Agreement Date	August 2011 / August 2011
Executing Agency	Department of Education, Ministry of Education, Youth and Sports
Project Completion	March 2014
Main Contractors	(Construction) Kitano Construction Corp. (Equipment) Ogawa Seiki Co., Ltd.
Main Consultants	Joint Venture of Matsuda Consultants International Co., Ltd. and INTEM Consulting, Inc.
Basic Design	January 2010 – February 2011
Related Projects	[Grant Aid] Upgrading and Expansion of Educational Facilities at Motufoua Secondary School (1996) [Other International and Aid Organizations] EU: Outer Island Social Development Support Program (1997-2007) UNESCO : Support for connection to the Internet at the Motufoua Secondary School (2006) Taiwan: Provision of computers to the Motufoua Secondary School (2008), Development of PC Laboratory at the Motufoua Secondary School and Support for Farm Development (2010) Italy: Solar Power Generation Network Integration Project (introduced a solar power generation system into the Motufoua Secondary School) (completed in 2010)

2. Outline of the Evaluation Study

2.1 External Evaluator

Keisuke Nishikawa, Japan Economic Research Institute Inc.

2.2 Duration of Evaluation Study

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

Duration of the Study: August, 2016 – October, 2017

Duration of the Field Study: October 25 – November 1, 2016, and March 14 – 16, 2017

3. Results of the Evaluation (Overall Rating: C²)

3.1 Relevance (Rating: ③³)

3.1.1 Consistency with the Development Plan of Tuvalu

In the development plan of Tuvalu, ‘National Strategy for Sustainable Development: Te Kakeega II’ (2005-2015), effective at the time of planning of this project, ‘Education and Human Resource Development’ was one of the strategic areas. Also, in 2006, ‘Tuvalu Education Strategic Plan 2006-2010’ was formulated with a plan to engage in education reform which would provide quality education. In the plan, strengthening of TVET and the improvement of the environments of education facilities was positioned as an urgent issue in relation to high school level education.

The ‘National Strategy for Sustainable Development: Te Kakeega III’ (2016-2020), the national development plan effective at the time of ex-post evaluation, has ‘Education and Human Resources’ as one of its 12 strategic areas, with a focus on providing high-quality education. Additionally, in the education sector, ‘Tuvalu Education Sector Plan III’ (2016-2020) was formulated, having an area of focus on the importance of securing access to education and continuous maintenance of infrastructure at MSS.

Therefore, the importance of education was indicated in the national development plan both at the time of planning and ex-post evaluation. In the plans of the education sector, the importance of access to education and the maintenance of MSS are described, showing that this project, which developed the facilities of Tuvalu’s only public secondary school, was in line with these policy directions.

3.1.2 Consistency with the Development Needs of Tuvalu

At the time of planning, MSS was Tuvalu’s only public educational institute providing four-year education to pupils who passed the national examination upon completing their

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

³ ③: High, ②: Fair, ①: Low

eight-year primary education. However, MSS was not adequate as an educational facility in terms of safety, sanitation, and functions since the facilities had a fire, had become dilapidated, and were damaged by the harsh natural environment in its location along the coast. In addition, the TVET courses, established in 2009 had to be operated with two separate grades of students studying together while using temporary buildings due to the shortage of facilities.

MSS at the time of ex-post evaluation was the only public secondary school⁴ with four courses which included science, commerce, literature and technology, targeting students from Year 9 to Year 13⁵. The school also had TVET separately, which was operated as a preparatory course for enrollment into a degree program at Fiji National University. The Certificate Level 4 (CERT IV) Education (a level which qualifies pupils for entry into an undergraduate diploma program) was provided under three programs including Carpentry and Joinery, Fabrication and Welding, and Horticulture.

The number of students taking and passing national examinations and the number of students at MSS during the period from project planning to ex-post evaluation (2011-2016) are shown in Tables 1 and 2.

Table 1: Number of Students Taking and Passing National Examinations and Enrolled at MSS

	2011	2012	2013	2014	2015	2016
Number of Students taking the National Examination	283	250	239	235	181	189
Number of Students passing the National Examination	152	174	146	148	147	149
Number of Students enrolled at MSS	114	126	125	100	106	0

Source: Data provided by the Executing Agency

⁴ There was a private secondary school (Fetuvalu High School) operated by a church in the capital of Funafuti, but the only public school was MSS.

⁵ Education for Year 13 was added in 2015 with a view to going on to universities outside the country. As the small satellite campus of the University of the South Pacific (headquartered in Fiji) is the only higher education institute in Tuvalu, fully-fledged degree programs are generally taken outside the country.

Table 2: Number of Students at MSS

	2011		2012		2013		2014		2015		2016	
	Male	Female	Male	Female	Male	Female	Male	Female	Male	Female	Male	Female
Year 9	46	68	56	70	58	67	48	52	39	67	0	0
Year 10	40	78	44	72	46	66	65	62	52	60	48	73
Year 11	41	73	25	57	41	72	33	56	36	55	48	47
Year 12	60	70	37	75	33	64	44	67	29	62	31	45
Year 13	0	0	0	0	0	0	0	0	8	20	13	30
TVET	18	8	24	22	10	15	0	0	17	20	12	9
Total	205	297	186	296	188	284	190	237	181	284	152	204

Source: Data provided by MSS

In recent years, except for 2016, more than two-thirds of the students who passed the national examination moved on to MSS⁶, indicating that the school had been an important education facility for a total of 400 – 500 students.

Therefore, MSS had played a significantly important role in providing access to education as the only public secondary school in Tuvalu both at the time of planning and ex-post evaluation. Moreover, it had also played an important role not only in providing secondary education but also through TVET and as a bridge to tertiary education outside the country as such tertiary education couldn't be received inside Tuvalu.

3.1.3 Consistency with Japan's ODA Policy

Japan set 'Overcoming Vulnerabilities and Promoting Human Security' as one of the key assistance areas at the 5th Pacific Islands Leaders Meeting⁷ held in 2009, and indicated 'the improvement of educational infrastructure in isolated islands and rural areas' as a concrete action plan. Assistance through this project was consistent with this assistance policy.

In response to this regional policy, the assistance policy for Tuvalu at the time of its planning had four priority areas, one of which was the 'Improvement of Social Services' (assistance for the improvement of water and sanitation, education, and health).

Therefore, this project was consistent with these policy directions of Japan.

⁶ The reason for the number of Year 9 students in 2016 being zero is that a decision was made by the Parliament to suspend the admission of Year 9 students to MSS in response to the occurrence of a fatal incident involving a Year 9 student in a student dormitory in 2014 (the same measure has been taken for the year 2017). Furthermore, the 'Tuvalu Education Sector Plan III' (2016-2020) lays out a policy to have Year 9 and Year 10 students be hosted at local primary schools. It implies that the total number of students will be smaller to a certain degree in the future. However, the needs for MSS as the only public secondary school continue to be high.

⁷ A summit-level meeting held every three years since 1997 to establish closer cooperative relationships and to enhance ties between Japan and Pacific island nations through exchanging opinions at the leadership level regarding various issues both the Pacific island countries and the region have been facing

It was confirmed that this project was consistent with the development and sector plans as well as the development needs of Tuvalu at the time of planning and ex-post evaluation and with Japan's ODA policy at the time of planning.

Therefore, the relevance of this project is high.

3.2 Efficiency (Rating:①)

3.2.1 Project Outputs

In this project, it was planned that a) general classrooms and student dormitories would be newly constructed, b) general classrooms, special classrooms, student dormitories, and so forth would be rehabilitated, and c) educational and administrative equipment would be procured. Table 3 summarizes planned and actual outputs captured at the time of ex-post evaluation.

Table 3: Planned and Actual Outputs of this Project

		Plan		Actual	
		Facility contents	Area size	Facility contents	Area size
New construction	General classroom block 1	8 classrooms + 2 preparation rooms	664.3m ²	8 classrooms + 2 preparation rooms	664.3m ²
	General classroom block 2	4 classrooms	299.5m ²	4 classrooms	299.5m ²
	Boys dormitory 1	50 students x 2 rooms	468.0 m ²	Cancelled	—
	Boys dormitory 2	50 students + bathroom area, etc.	412.2m ²	50 students + bathroom area, etc.	412.2m ²
	Girls dormitory 1	50 students x 2 rooms	468.0 m ²	Cancelled	—
	Girls dormitory 2	50 students + bathroom area, etc.	412.2m ²	50 students + bathroom area, etc.	412.2m ²
	Administration Block	Principal / Deputy Principal's room, Teachers' room, Printing room, First-aid room, etc.	276.5m ²	Cancelled	—
		Total	3,000.7m ²	Total	1,788.24m ²
Rehabilitation	General classroom block	8 classrooms + 4 preparation rooms	699.8m ²	8 classrooms + 4 preparation rooms	699.8m ²
	Special classroom block	6 classrooms + 3 preparation rooms	648.0m ²	6 classrooms + 3 preparation rooms	648.0m ²
	Boys dormitory	54 students x 3 rooms + ablution area, etc.	715.6m ²	54 students x 3 rooms + ablution area, etc.	715.6m ²
	Girls dormitory	54 students x 3 rooms + bathroom area, etc.	813.6m ²	54 students x 3 rooms + bathroom area, etc.	813.6m ²
	Dining hall & kitchen	Dining hall, Kitchen, Storage	622.1m ²	Dining hall, Kitchen, Storage	622.1m ²
	Water reservoir facilities for dormitories	Buried reservoir tank + Elevated tank	—	Buried reservoir tank + Elevated tank	—
		Total	3,535.1m ²	Total	3,535.1m ²

Equipment	Educational equipment, Administrative equipment, Furniture, etc. (102 items in total)	Educational equipment, Administrative equipment, Medical equipment, etc. (92 items in total)
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Source: Information provided by JICA



Rehabilitated Special Classroom Block



Rehabilitated Cooking Practice Room

Major changes in outputs were the cancellations of one boys' dormitory, one girls' dormitory, and the administration block. As a consequence of these cancellations, furniture and other items for the new administration block were also excluded from the project scope. Tender cancellation and tender failures occurred as the project cost calculated was not sufficient for the contractor, resulting in the scaling-down of the project scope.

At the time of the site visit during the ex-post evaluation, effects from the cancellation of these facilities were checked, as shown in the following paragraph.

With regard to student dormitories, the dormitory blocks constructed in the early 1980s were still being used as they were when originally constructed, but concerns were felt for the safety of students as there were cracks on the walls and as doors and windows were also damaged. Similarly, as for the administration block, the existing Information Center accommodating the principal's room, the library, and so forth were still being used as they were before, so there was no space where all teachers could meet each other. Teachers of each subject were generally using the preparation rooms in classroom buildings as their offices.

Therefore, part of the outputs planned in this project had not been achieved, showing that expansion and substitution of necessary functions were not fully realized.



Girls' Dormitory Newly Constructed



Girls' Dormitory Unimproved

In this project, in addition to cooperation components from Japan, it was planned that Tuvalu would obtain permits and approvals necessary for project implementation and would implement site preparation works, cleaning and sludge removal from the existing septic tanks, development of temporary facilities necessary for school operation during the construction period, securing of electricity supply into the buildings to be expanded, provision of temporary facilities for construction, and so forth. According to the Executing Agency and the project consultant, all of these components were implemented during the project implementation period.

3.2.2 Project Inputs

3.2.2.1 Project Cost

This project was planned at a total cost of 696 million yen, including Japan's cooperation amount of 692 million yen.

The actual amount contributed by Japan was a total of 690 million yen consisting of 579 million yen for construction, 10 million yen for equipment, and 101 million yen for design and supervision. As the amount of contribution from Tuvalu was unknown, only the amounts of contribution from Japan were compared. While the actual amount of contribution from Japan was apparently within the plan, it was the amount after the cancellations of Boys' Dormitory 1, Girls' Dormitory 1 and the Administration Block. In the evaluation judgement, the actual amount was required to be estimated with the assumption that these facilities were actually constructed and the associated equipment was procured. While the actual amount detailing each facility and piece of equipment was unknown, it was estimated, judging from the cost breakdown in the plan, that the construction and procurement of facilities and equipment practically exceeded the plan by almost 200 million yen.

Therefore, the actual amount of cooperation from Japan was as planned at 100% of the plan; however, it did not match the reduced outputs.

3.2.2.2 Project Period

The planned implementation period of this project was a total of 18.5 months, including 3.5 months for detailed designing, 2.5 months for inviting tenders, and 12.5 months for construction and procurement.

In the initial plan, it was estimated that 2.5 months would be needed from the opening of tender to the signing of contracts, but a tender cancellation occurred once due to the withdrawal of a prospective bidder and a tender failure occurred twice as the bidding prices were higher than the planned prices. Eventually, 13 months were required for the contractor to be selected and the contract to be signed after the third opening of the tender. As a primary consequence of this factor, the actual period of the signing of the grant agreement till the completion of construction and procurement was 32 months between August 2011 and March 2014, exceeding the plan substantially by 73%.

In light of the above, efficiency is low as the project cost practically exceeded the plan and the project period significantly exceeded the plan.

3.3 Effectiveness⁸ (Rating:②)

3.3.1 Quantitative Effects (Operation and Effect Indicators)

At the time of planning of this project, the operation indicators of this project were expected to be the number of students per classroom with permanent structure⁹, the percentage of students who could stay in the dormitories with permanent structure, and the percentage of students receiving education until their final year.

⁸ Sub-rating for Effectiveness is to be put with consideration of Impact.

⁹ Indicating the facilities with solid structure constructed in the previous project 'Upgrading and Expansion of Educational Facilities at Motufoua Secondary School (1996)' and this project.

Table 4: Operation Indicators of this Project

	Baseline	Target	Actual			
	2010	2017	2014	2015	2016	2017
	Planned Year	3 Years After Completion	Completion Year	1 Year After Completion	2 Years After Completion	3 Years After Completion
Number of students per classroom with permanent structure*	55	28	25	25	25	25
Percentage of students who could stay in the dormitories with permanent structure	50%	100%	71%	66%	88%	No data
Percentage of students receiving education until their final year	76%	100%	100%	100%	100%	100%

Source: Data provided by JICA and the Executing Agency

* The number of students per classroom indicates the maximum number of students taking the same class.

Regarding the number of students per classroom with permanent structure, it was confirmed that the target figure had been well achieved immediately following project completion as the number of classrooms increased through this project and a sufficient number of classrooms were available. Also, the ‘Percentage of students receiving education until their final year’, an indicator to show the percentage of students who could take classes in the classrooms with permanent structure until their final year, was an indication of the physical capacities of classrooms. The target of this indicator had also been achieved immediately following project completion¹⁰.

On the other hand, as for student dormitories, one building for boys and one for girls were not built and the old student dormitories continued to be used. The capacities (i.e., the number of beds) of each dormitory building and the number of students were as follows.

¹⁰ The percentages of students reaching their final year based on the student populations were 72% (2015) and 56% (2016) due to various reasons, such as a lack of academic achievement, suspension, expulsion and so forth.

Table 5: Number of Students in Dormitories

Name of Student Dormitory		Bed capacity	2014	2015	2016	
Boys' Dormitory	Naisali	New	50	37	24	26
	Ionatana	Previous	20	30	20	21
	Tau	Previous	20	29	16	20
	Jiro	Previous	18	30	16	21
	Toomu	Old	16	33	23	19
	Toalipi	Old	24	30	20	20
	7 th Former Hostel	Old	20	0	25	24
	Total		168	189	144	151
	Percentage of Students in Facilities with Permanent Structure		—	67%	53%	58%
Girls' Dormitory	Toalipi	New	50	35	41	24
	Ionatana	Previous	44	43	48	29
	Tau	Previous	50	36	51	28
	Jiro	Previous	50	48	57	28
	7 th Former Hostel	Old	34	0	32	26
	Toomu	Old	26	34	42	26
	Naisali	Old	30	41	44	30
	Total		284	237	315	191
	Percentage of Students in Facilities with Permanent Structure		—	68%	63%	57%

Source: Data provided by MSS

Note: 'Previous' means the dormitories constructed in the Grant Aid project 'Upgrading and Expansion of Educational Facilities at Motufoua Secondary School', implemented in 1996, which were rehabilitated in this project.

The percentage of students who could stay in the dormitories with permanent structure was between 66% and 88%, calculated based on the information provided by the Executing Agency. However, based on the actual number of students per dormitory obtained, the percentage of students staying in the dormitories constructed and rehabilitated in the previous project and in this project turned out to be 53% - 68%. It was observed that the old student dormitories needed to be continually used as it had been difficult to accommodate all students in the dormitories constructed in this project and the previous one even if all students were meant to stay in these dormitories.

3.3.2 Qualitative Effects (Other Effects)

At the time of planning of this project, the qualitative effects expected through project implementation indicated that an adequate facility environment for teachers to do routine work and have meetings would be developed, improving their ability in the operation of school affairs, and that effective teaching in line with the curriculum would be enabled in classes.

With regard to improvements in operations of school affairs, teachers' work and meetings had both been conducted in existing buildings, such as each preparation room and the

Information Center, as the administration block was not built in this project. In other words, it can be said that an environment where teachers could always gather together had not been developed and there were still issues in terms of school operations. Concerning the realization of effective teaching in classes, however, many comments were heard from the principal and other teachers stating that they had observed substantial improvements in the contents and practicality taught in classes, such as those seen through demonstrations by teachers, the possibility of efficient implementation of cooking practice, and the greater ease of drawing figures and producing works of art in technology classes, as the equipment, especially the cooking and technology equipment, had been renewed along with the improvement of facilities. Therefore, it is considered that effective operation of classes has become possible as the development of facilities and equipment has enabled the contents to be materialized into the curriculum, such as practical lessons and demonstrations.

3.4 Impacts

3.4.1 Intended Impacts

In addition to the qualitative effects described above, the following impacts were expected through implementing this project.

- (1) As a result of effective classroom teaching, better-quality education would be provided.
- (2) Provision of superior education would lead to the improvement in students' learning outcomes.

These impacts were checked in conjunction with teachers, staff, and students of MSS in the ex-post evaluation, and it was heard that the following effects had been generated.

- Students could concentrate on their studies as the desks, chairs, ceiling fans, ventilation, and lighting in the new classrooms had improved.
- Understandings gained by students had become deeper as the facilities and equipment were developed and practical lessons became easier.
- Driving rain used to leak into classrooms during rough weather, causing classes to be cancelled. However, such cancellations of classes had been eliminated, and it had become possible for all students staying in dormitories to do self-studying in the classrooms at night (as there were no study desks in dormitories, students in lower grades had to study on their own beds before the implementation of this project).
- As a sufficient number of desks and chairs were provided, all students became able to be seated during classes.

- Since fans were installed and the ventilation environment improved significantly, students could concentrate on their studies.
- With the improvement of blackboards and notice boards, more information could be written down and displayed.

As above, feedback from both teachers and students were obtained, stating that the degree of concentration and understanding gained by students had risen through continuous teaching in classes regardless of the weather and through practical teaching with better facilities and equipment. It can be said that a certain degree of effects had been generated.

A check was conducted as to whether learning outcomes had actually improved as a result of these improvements to the learning environment. As shown in Table 6, quantitative improvements were not observed in particular. As the exam takers and exam questions were different in any given year, it was difficult to verify causal relationships.

Table 6: Results of Examinations at the End of Each Year

	2013	2014	2015	2016
Year 10	31%	44%	36%	28%
Year 11	51%	48%	84%	47%
Year 12	67%	76%	61%	65%

Source: Data provided by the Executing Agency

Note: The percentage of students scoring pass marks in all subjects is indicated.

3.4.2 Other Positive and Negative Impacts

3.4.2.1 Impacts on the Natural Environment

In Tuvalu, the Environment Protection Regulations had been set forth under the Environmental Protection Act, and it was required to conduct an Environmental Impact Assessment prior to project implementation. As this project was designed to construct and rehabilitate the facilities within the existing school premises, no particular negative impacts were expected. Therefore, a fully-fledged Environmental Impact Assessment was not necessary and a submission of a Preliminary Environmental Assessment Report was expected instead. In addition, in approving the project plan, it was necessary to reach an agreement with the Council of Vaitupu Island (called Kaupule), where MSS is located, regarding the extraction of aggregate (i.e., corals and sand), the cutting of trees, the disposing of wastes, and so forth.

Furthermore, the following measures were to be taken during the construction to avoid negative impacts on the natural environment:

- Construction waste generated at the project site was to be minimized by bringing in prefabricated materials and components.
- Existing facilities were to be utilized to the extent possible as temporary facilities.
- Use of concrete was to be limited so as not to require excavation of large amounts of aggregate in Vaitupu.
- Rainwater collection systems were to be rebuilt to conserve underground water.
- Wastewater was to be discharged into the ground through a septic tank and a soakage pit in accordance with the standards of the Public Works Department of the Ministry of Works and Energy.

These procedures and measures were checked in the ex-post evaluation study, which found that while the Preliminary Environmental Assessment Report had not been submitted as an independent report, a project proposal including the descriptions on environmental impacts had been submitted to the Development Coordinating Committee of the Government of Tuvalu and its contents had been discussed. Also, an approval of the environmental measures to be taken in association with this project had been obtained from the Council of Vaitupu Island and all necessary measures were subsequently taken.

As all measures to prevent negative environmental impacts were taken and no particular impacts were found during and after project implementation, it is considered that there were no problems in terms of the environmental aspect as a whole.

3.4.2.2 Land Acquisition and Resettlement

Interviews with the principal of MSS and the project consultant were conducted during the ex-post evaluation and confirmed that this project was implemented within the existing school premises and that no resettlement or land acquisition occurred.

Regarding the quantitative effects of this project, as the classrooms with permanent structure increased, both the number of students per classroom and the percentage of students who could study in those classrooms until their final year rose, achieving the target value set at the time of planning. However, the cancellations of constructing student dormitories (boys and girls: one for each) and the administration block resulted in the shortage of bed capacities of student dormitories with permanent structure, and no major improvements were observed in school operation by the teachers and other staff members.

As for the impact, while no improvements in exam results were seen in particular, a certain level of positive impacts were considered to have been generated as it was heard from teachers and students that students had become able to concentrate on their studies and had gained a

better understanding of the contents taught in classes. In addition, no particular negative impacts on the natural environment and on social aspects were observed.

In light of the above, this project has achieved its objectives to some extent. Therefore, the effectiveness and impact of the project are fair.

3.5 Sustainability (Rating:③)

3.5.1 Institutional Aspects of Operation and Maintenance

The Executing Agency of this project was the Department of Education of the Ministry of Education, Youth and Sports, which is the organization supervising MSS. The Department had 10 staff members comprised of school supervisors, training officers, and others, all of whom are operating under the Director of Education.

Routine maintenance of facilities and equipment was undertaken by MSS under the direction of the Department of Education School Supervisor and the principal. There was a maintenance team (seven members in total: three carpenters, two plumbers, one waterman, and one driver) formed directly under the principal as an internal organization. Maintenance of the equipment in the technology department was undertaken by four teachers in the department, and large-scale repair, for example, the replacement of the roof in the traditional assembly hall (outside the project scope), within the premises was carried out with the participation of villagers of the island and students.

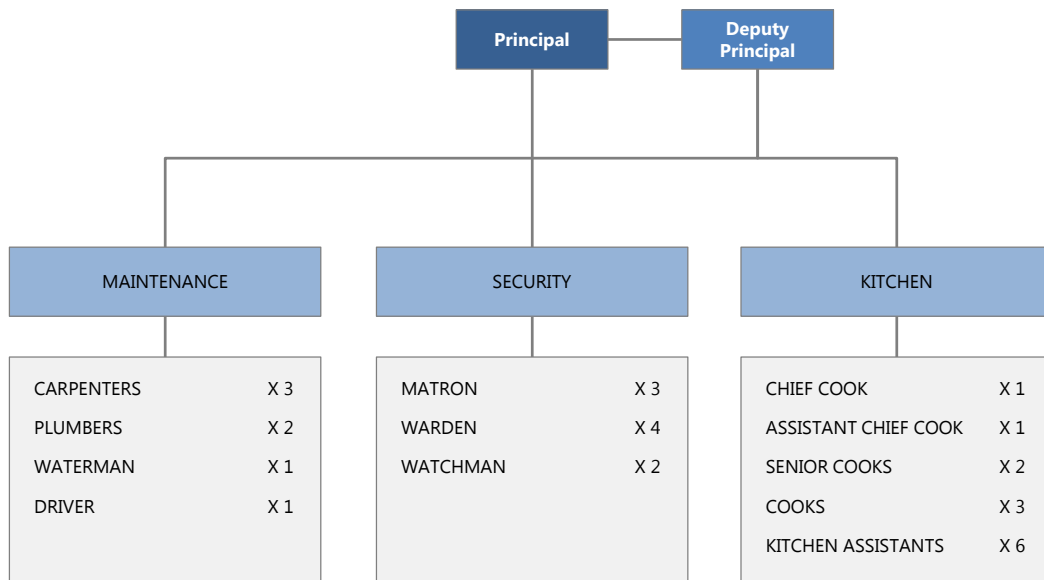


Figure 1: MSS Administrative Organization Chart (Support Division)

Source: Provided by MSS

There were no changes in the structure of operation and maintenance at MSS at the time

of planning and ex-post evaluation. The number of maintenance team members was seven including a driver, the number of which had remained the same.

The total number of teachers was 49, and among that number, there were 10 Fijian teachers who had joined through the Fiji Volunteer Services (FVS) since 2014. Some of the teachers were away¹¹ due to long-term training programs in Fiji and New Zealand, but MSS responded to such vacancies by hiring temporary staff members within the country. Volunteer teachers from FVS were also with MSS and no particular manpower shortage was observed at the time of ex-post evaluation.

Therefore, there were no particular problems seen in terms of the institutional aspects of operation and maintenance.

3.5.2 Technical Aspects of Operation and Maintenance

According to the principal at MSS, while the maintenance team had the ability to carry out basic maintenance work on the facilities and equipment at the school, they could not repair some equipment, such as photocopiers, computers, refrigerators and so forth. When considering the cost for transportation and repair, it was not necessarily efficient to do the repair. Therefore, whether to do the repair required consideration from not only technical aspects but also financial aspects. However, no lack of skills for the maintenance of facilities was found and it was assumed that the contents and methods for maintenance training instructed to MSS staff by the contractor of this project at the time of project completion were sufficient. When there were any troubles with the electricity system, the maintenance team could get prompt support from Tuvalu Electricity Corporation and it was heard that the electricity supply had become significantly stable compared to that of several years ago.

Regarding the training for maintenance, training programs on electricity and electronics, supported by Fiji National University, and on carpentry, through the support of Taiwan, had been implemented in recent years, but there were neither regular nor systematic training programs. Also, it was heard that there was no maintenance manual in particular. However, as there was no frequent turnover of the staff on the maintenance team, maintenance work had been carried out based on the long-term experience of each staff member.

Therefore, while the training system to improve technical skills of the maintenance team had not been established, the skills of MSS on maintenance of facilities and equipment were considered to be largely sufficient.

¹¹ At the time of ex-post evaluation, 11 teachers were away from MSS for one to three years to obtain academic degrees in either Fiji or New Zealand. Their scholarships were provided by either the Government of Tuvalu or that of New Zealand.

3.5.3 Financial Aspects of Operation and Maintenance

In Tuvalu, approximately 20% of the national budget has been allocated to the Ministry of Education in recent years to date, and 10 - 20% of the Ministry budget is allocated to MSS.

Table 7: Budget and Expenditure of MSS

(Unit: thousand Australian dollars)

	2011	2012	2013	2014		2015		2016	
	Budget	Budget	Budget	Budget	Expenditure	Budget	Expenditure	Budget	Expenditure
Salary	823	823	836	1,043	1,043	1,009	1,009	1,099	1,099
Travel and Communications	14	14	14	14	26	11	11	15	19
Maintenance	30	25	35	35	25	35	32	36	57
Electricity	21	20	20	20	14	20	17	20	16
Fuel	1	1	2	5	5	5	5	5	3
Food	400	400	400	400	378	460	405	460	342
Other	60	60	60	60	60	60	60	60	60
Total	1,349	1,344	1,368	1,577	1,551	1,600	1,539	1,695	1,596

Source: Data provided by the Executing Agency

Note 1: 1 Australian dollar = 81.7 yen (2016 average, based on the JICA Foreign Currency Conversion Rate Table)

Note 2: Individual figures and total figures may not necessarily correspond due to rounding.

While the largest item of the budget is the salary for teachers and the staff, expenditures on food for students (fully subsidized by the government) comprises 20 – 30% of the entire budget. The amount of budget for maintenance has been approximately 35,000 Australian dollars every year and it seems sufficient for conducting routine maintenance. The maintenance status also indicates that there are no particular issues to be observed. While the budget is broken down to show expense items, it can be accommodated for the necessity of each item at the principal's discretion, as seen in 2016 when the amount of maintenance expenses necessarily exceeded the initial budget.

Therefore, no concerns were seen in terms of the financial aspect of operation and maintenance.

3.5.4 Current Status of Operation and Maintenance

The maintenance work at MSS, including the facilities and equipment developed in this project, was mainly undertaken by doing repairs based on the damage records reported by teachers and other staff members. It was confirmed that the maintenance team had been checking the points concerned within the school every day and that the classroom blocks and

dormitories developed in this project had been cleaned by students every day and kept in clean conditions. Inside the school campus including the courtyard was also kept in good condition.



MSS Campus

With respect to the status of the facilities developed, it was confirmed that some measures had been taken, such as non-metal materials for the frames of louver windows being used to prevent chloride damage as MSS is located along the coast. On the other hand, as the joint sections of water faucets in the wash basins of boys' and girls' dormitories were made of plastic, it was difficult to tighten them again after the faucets had become totally loose, and the ex-post evaluation found that most of them had been taken apart. Prompt repairs were considered necessary.

As for the equipment procured in this project, one refrigerator was out of order due to trouble with the compressor. In addition, a switch on an electric circular saw and a belt on a thicknesser needed to be replaced. However, it was heard that a long time was required to procure parts due to the locational factor, that is, being an outer island of Tuvalu. It seemed that approximately two weeks would have been required if the parts could have been found in the capital of Funafuti, and three months, for example, if the part would have needed to be procured from another country.

The facilities developed in this project were generally cleaned and inspected on a routine basis and were maintained largely in good condition. While there were some issues in the maintenance condition of equipment, it was unavoidable that an unusually long time would have been required to procure spare parts under the condition of being an outer island, where there were no agents. Therefore, some of the equipment was not fully repaired. It seemed inevitable in this project, as a realistic matter, that some equipment couldn't be repaired from a cost-effectiveness viewpoint.

Overall, it was confirmed that there were no issues in the institutional aspects of operation and maintenance and that the school had the technical skills to undertake routine maintenance work. Financially, no problems were observed, as a certain level of operation and maintenance budget had been allocated. In terms of operation and maintenance status, it can be said that while some of the equipment was unusable, they were generally well maintained. Therefore, no major problems have been observed in the institutional, technical, and financial aspects and

current status of the operation and maintenance system. Therefore, the sustainability of the project effects is high.

4. Conclusion, Lessons Learned and Recommendations

4.1 Conclusion

In this project, facilities were rehabilitated and upgraded and equipment was procured to improve the safe and adequate learning environment at MSS, the only public secondary school in Tuvalu. The relevance of this project is high as it was consistent with the development plan and sector plan as well as the development needs of Tuvalu at the time of both planning and ex-post evaluation in terms of Tuvalu's education policy, a plan which aims to achieve high-quality education, and the importance of secondary education, and as it was consistent with Japan's ODA policy at the time of planning. As for the implementation of the project, it was judged that the project cost exceeded the plan in reality since the actual project cost was almost the same as the plan while the project components contracted from the original plan. Also, the project period significantly exceeded the plan. Therefore, the efficiency is low. With regard to project effects, while the target including the number of students per classroom was achieved, the improved capacity of student dormitories and the better efficiency in operation of school affairs were not achieved as the student dormitories and the administration building were not constructed. Regarding the impact, it is considered that a certain degree of positive impact was generated as the students became able to concentrate on their studies and had profound understandings of their class contents, although little improvement in test results was observed. Therefore, the effectiveness and impact of this project are fair. It was confirmed that there were no institutional issues in operation and maintenance and that they had the technical capacity to conduct routine maintenance. No financial problems were found as a certain level of the operation and maintenance budget had been allocated, and the facilities and equipment developed in this project were in good condition as a whole. Therefore, sustainability is judged to be high.

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

4.2 Recommendations

4.2.1 Recommendations to the Executing Agency

At MSS, while it was confirmed that the budget for routine maintenance had been allocated and could be flexibly used to some extent at the principal's discretion, maintenance expenses were expected to increase as the facilities and equipment gradually became decrepit. For this reason, it is considered important that a long-term maintenance plan be formulated, and that the Ministry of Education secure the budget for large-scale maintenance works

separately every few years.

In this project, the project scope was scaled down, and the boys' dormitory, the girls' dormitory and the administration block were not constructed. Due to this, some of the effects targeted in this project were not generated, particularly the safety of students staying in the dilapidated dormitories. Since there was a plan not to have Year 9 and Year 10 students at MSS, the number of students was expected to be smaller than the number estimated at the time of project planning. It would be desirable to allocate students into the dormitories developed in both this project and the previous project so that a safe living environment can be realized.

4.2.2 Recommendations to JICA

None

4.3 Lessons Learned

Examination of the components and cost of a project in an outer island of a small island nation

In this project, curtailment of the project scope and a substantial extension of the project period occurred mainly due to a discrepancy between the project cost estimated during the planning stage and the bidding price offered by the contractor. While the assistance to Tuvalu's only public secondary school is of great significance for the country's human resource development, there were constraints in securing materials, equipment, local contractors, and human resources as well as a lack of accessible transportation routes as the school is located on an outer island. Therefore, in a project implicating nationwide effects despite inherent difficulties in providing efficient assistance, such as in a project which was implemented in an outer island of a small island nation similar to this project, it is considered important to examine project components and costs more elaboratively than in other projects.

End