Internal Ex-Post Evaluation for Grant Aid Project

conducted by Fiji Office: March, 2023

Country Name	**the Project for the Rehabilitation of the Medium Wave Radio Transmission**
Republic of Fiji	

I. Project Outline

Background	In Fiji, an island nation composed of more than 330 islands, radio broadcasting was an effective means of conveying information to the people surely and rapidly. Medium wave (MW) radio, provided by Fijian Broadcasting Company (FBC), however, was unstable and extremely limited in coverage because sufficient transmission output could not be secured due to age-deterioration of transmitters installed in 2000 and repairing of broken-down parts on a stopgap basis. In addition, the MW antenna installed in 1953 needed immediate renewal due to aging, wear and tear. Frequency Modulation (FM) broadcasting was continued, but its transmission range was narrower than that of MW radio broadcasting due to its structure, which was limited to Viti Levu, the largest island in the country where the capital Suva was located, and urban areas of Vanua Levu. As the MW radio broadcasting was the only radio broadcasting in Fiji, which could convey disaster information to remote islands, its rehabilitation was urgently needed.					
Objectives of the Project	This project aimed to rehabilitate MW radio transmission in Fiji by procuring and installing MW radio broadcasting equipment such as MW antenna, transmitters, etc. and constructing a radio transmitter house of FBC, thereby contributing to reliable and rapid conveyance of disaster information, etc. to the people in the country.					
Contents of the Project	1. Project Site: Naulu Rewa (about 10 km north-east from central Suva) 2. Japanese side: Provision of grant necessary for procurement and installment of MW radio broadcasting equipment (1 lot of MW antenna system, 1 lot of MW transmitter (558 kHz), 1 lot of MW transmitter (990 kHz), 1 lot of change-over switch and dummy load, 1 lot of power supply equipment, 2 sets of air conditioners, 4 sets of ISDN codecs, 1 lot of maintenance equipment and tools, 1 lot of spare parts and consumables, and construction of a radio transmitter house (56.0 m^2) at FBC Naulu Transmission Station[1]. 3. Fiji side: Provision of temporary storage area for the procured equipment, removal of the existing antenna, implementation of test broadcasts, etc.					
Project Period	E/N Date	August 31, 2015	Completion Date (ex-ante)	May 2017	Completion Date (actual)	August 14, 2017 (Date of hand over)
	G/A Date	August 31, 2015				
Project Cost	E/N Grant Limit / G/A Grant Limit: 865 million yen			Actual Grant Amount: 862 million yen		
Executing Agency	Fijian Broadcasting Corporation (FBC) *; Ministry of Economy as the Project Responsible Agency[2] *The name of FBC was changed to Fijian Broadcasting Corporation after the project completion in 2017.					
Contracted Agencies	Main Contractors: NBK Corporation Main Consultant: Yachiyo Engineering Co., LTD.					

II. Result of the Evaluation

< Special Perspectives Considered in the Ex-Post Evaluation >

・ The target area of the assumed impact mentioned in the Ex-ante Evaluation Sheet (i.e., "Contribution to reliable and rapid conveyance of disaster information, etc. to the people in Fiji") excluded Rotuma Island according to the Minutes of Discussions of the project.

1 Relevance

<Consistency with the Development Policy of Fiji at the Time of Ex-Ante Evaluation>

At the time of ex-ante evaluation, the project was consistent with the Roadmap for Democracy and Sustainable Socio-Economic Development (2010-2014) of the Government of Fiji, which recognized information and telecommunication as well as disaster reduction and disaster management as in important policies and set forth universal access to information and improvement of community response capacity in dealing with disasters and risks.

<Consistency with the Development Needs of Fiji at the Time of Ex-Ante Evaluation >

At the time of ex-ante evaluation, the project was consistent with development needs of Fiji for rehabilitation of the MW radio transmission as described in "Background". In addition, it was consistent with the organizational needs of the FBC, which was commissioned by the government to implement emergency broadcasts in the event of natural disasters such as cyclones, tsunami, flooding, etc.

<Consistency with Japan's ODA Policy at the Time of Ex-Ante Evaluation>

At the time of ex-ante evaluation, the project was consistent with the Japanese ODA policy toward Fiji, which included assistance to strengthen the capacity to cope with natural disaster[3].

<Evaluation Result>

In light of the above, the relevance of the project is high.

2 Effectiveness/Impact

<Effectiveness>

The project achieved its objective of rehabilitation of MW radio transmission in Fiji. As for quantitative effects, all the major equipment

[1] Construction of the transmitter house was included in the installation work of the transmitters.

[2] At the time of ex-ante evaluation, the Ministry of Public Enterprise, which had jurisdiction over FBC and other public enterprises, was assigned as the Project Responsible Agency. The Ministry was abolished before the project completion in 2017 and FBC fell under the jurisdiction of the Ministry of Economy, Civil Service, and Communication.

[3] ODA country data collection (2014).

procured and the transmitter house constructed under the project were maintained in good condition and utilized as originally intended. The number of audible population increased from 780 thousand people to 883 thousand people (target: 880 thousand people) (Indicator 1), the broadcasting interruption time decreased from 100 hours/year to 8 hours/year (target: 8 hours/year) (Indicator 2), and the power consumption decreased from approximately 55 kWh to approximately 34 kWh (target: approximately 38kWh) (Indicator 3). With respect to qualitative effects, the broadcasting quality of the MW radio was improved as a result of the project because the signal quality was improved. Provision of the MW radio broadcasting service, including disaster information, became stable because the rehabilitated MW radio broadcasting system was very stable in contrast to the system before as sufficient transmission output was secured. FBC recorded no breakdowns from 2018 onwards with the procured equipment, which also led to good uptime of the service.

<Impact>

As assumed at the time of ex-ante evaluation, the MW radio transmission rehabilitated through this project contributed to reliable and rapid conveyance of disaster information, etc. to the people in the country (except for Rotuma Island). The rehabilitated MW radio broadcasting system acted as a reliable backup for the (FM) radio broadcasting system for the blanket coverage to the whole country (except Rotuma Island) during the tropical cyclones when remote FM stations were damaged[4]. News transmitted through the rehabilitated MW radio broadcasting system, including disaster information and any health-related information such as COVID-19 situation, were conveyed to the general public rapidly because they were announced on hourly basis. Other positive impact was also observed. The MW broadcasting was the only lifeline for information for the maritime areas, where there is no FM coverage available. So, with the rehabilitation of the MW radio transmission, the general public in these areas were better informed of any disasters, public health, education and agriculture related activities. They were also able to receive timely updates on the current affairs as well.

<Evaluation Result>

Therefore, the effectiveness/impact of the project is high.

Quantitative Effects

Indicators	Baseline 2014 Baseline Year	Target 2020 3 years after Completion	Actual 2018 1 year after Completion	Actual 2019 2 years after Completion	Actual 2020 3 years after Completion	Source:
Indicator 1: Number of audible population (thousand people) (*1)	780	880 (*2)	883	883	883	FBC and Census (2017)
Indicator 2: Broadcasting interruption time (hours/year)	100 (*3)	8 (*4)	8	8	8	FBC
Indicator 3: Power consumption (kWh)(*5)	Approx. 55	Approx. 38 (*6)	Approx. 34	Approx. 34	Approx. 34	FBC

*1: Number of audible listeners is calculated based on the estimated population of coverage area.

*2: Estimated population of entire area of Fiji excluding Rotuma Island.

*3: Interruption due to problems with the existing broadcasting equipment.

*4: Interruption due to minimum necessary stoppages for maintenance work

*5: Power consumption is calculated assuming that output is 10kW.

*6: It was estimated that electricity saving ratio would be about 30% through adopting the energy saving transmitters to be procured by the project.

3 Efficiency

While the project cost was within the plan, the project period[5] slightly exceeded the plan (ratio against plan: 100% and 104% respectively). The reason why the actual period slightly exceeded the planned period could not be identified. Meanwhile, the outputs of the project were produced as planned. Therefore, the efficiency of the project is fair.

4 Sustainability

<Institutional/Organizational Aspect>

The 5-Year Development Plan (2017-2021) and the 20-Year National Development Plan (2017-2036) launched in 2017 set forth "inclusive socio-economic development" and its strategy was designed "to empower every Fijian and to widen the reach of programmes, services and networks of infrastructure". At FBC, operation and maintenance (O&M) of the procured equipment and the constructed transmitter house fell under Director of Technical Operations. In total, 2 technicians were allocated (an experienced technician, who had received the on-the-job training (OJT) in O&M of the procured equipment and the constructed transmitter house by the Japanese supplier of the procured equipment under the project[6], and a junior technician). Although the trained experienced technician felt the needs for some more staff, the minimum necessary number of staff was secured because the procured equipment and the installed transmitter house were kept in good condition. It is noted that FBC was planning to outsource the maintenance of all TV and radio equipment, including the transmitter houses to WALESI[7] from mid-2022 in order to establish the stable and O&M system and, for that, it will request necessary budget to the Ministry of Economy. As mentioned in footnote 6, WALESI had 3 former FBC technicians trained under the project. In addition, FBC is planning to provide intensive training for WALESI technicians by the Japanese supplier after the outsourcing contract is completed so that proper maintenance of the procured equipment and the constructed transmitter house would be ensured. FBC is planning to outsource the maintenance of all the whole MW radio broadcasting system inclusive of the transmitter house, antenna system, antenna tuning unit and all relevant equipment. Once these are in place, FBC will have to continuously operate this equipment as this is the only

[4] The recent example was the Tropical Cyclone Yasa in 2020. FBC relied on the MW transmission rehabilitated through the project to keep the northern parts of the country covered while damages to the FM stations were rectified.

[5] The signing month of the contract with the consultant for the detailed design (DD) was used as the starting point. The signing month of the G/A was not used for the starting point because the planned period mentioned in the Ex-ante Evaluation Sheet (23 months) did not include the period between the signing of the G/A and procurement of the consultant for the DD according to the Preparatory Survey Report.

[6] Although 4 FBC technicians received the OJT by the Japanese supplier under the project, 3 of them transferred jobs to WALESI, a government-owned TV company, after the project completion in 2017.

[7] For reference, WALESI had already been contracted by FBC for maintenance of the TV equipment.

communication channel available for the remote maritime islands and also used a backup of FM broadcasting during natural disasters and emergency situation.

<Technical Aspect>

FBC technicians acquired necessary skills and knowledge to conduct proper O&M of the equipment procured and the transmitter house installed under the project. All the manuals provided under the project are kept well and referred to, when needed. The trained experienced technician who remained with FBC was able to conduct proper O&M and the junior technician learnt from the trained experienced technician through the OJT. In addition, FBC had contacted the Japanese supplier to provide OJT by the marker to enable the other 3 technicians to learn and conduct proper O&M of the procured equipment and the constructed transmitter house.

The OJT planned for 2021 was not materialized due to the travel restrictions posed by the COVID-19 pandemic and is planned for 2022 once travel restrictions is eased.

FBC was planning to make the OJT by the Japanese supplier regular one. In the case that the FBC's plan to contract out maintenance of all TV and radio equipment to WALESI is materialized, proper maintenance of the procured equipment and the constructed transmitter house is also expected to be ensured as explained in <Institutional/Organizational Aspect>.

<Financial Aspect>

Necessary budget for O&M of the procured equipment and the installed transmitter house was secured from the budget of FBC, including Public Service Broadcasting fees allocated by the Ministry of Economy. FBC also set aside 400,000 Fijian Dollars annually for renewal of the procured equipment after 8 years.

<Current Status of Operation and Maintenance>

Regular maintenance activities were conducted as planned and necessary spare parts and consumables were properly procured in a timely manner.

<Evaluation Result>

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

5 Summary of the Evaluation

The project achieved its objective of rehabilitation of MW radio transmission in Fiji and the assumed impact of contribution to reliable and rapid conveyance of disaster information, etc. to the people in Fiji was observed. Regarding the sustainability, no major problems have been observed in the institutional/organizational, technical, financial aspects and current status of the operation and maintenance system. As for the efficiency, the project period slightly exceeded the plan. Considering all of the above points, this project is evaluated to be highly satisfactory.

III. Recommendations & Lessons Learned

Recommendations to Executing Agency:

- Currently, all procured equipment is working well and maintained properly by FBC; however, FBC has only 2 staff members responsible for O&M and in the case of unlikely event that FBC loses their staff, it may not be able to continue proper maintenance. FBC's future plan to outsource the equipment maintenance to WALESI from mid-2022 is a practical and effective way to prepare for the staff shortage and to establish efficient and robust system to continue maintenance over the long term. In order to ensure that this plan is implemented, FBC is recommended to secure the necessary budget by mid-2022 and will implement as planned.

Lessons Learned for JICA:

- Even after the completion of this project, a good relationship was established between FBC and the Japanese supplier of the procured equipment and FBC made regular orders for after-sales services and training in O&M. In a grant aid project in which Japanese equipment is to be installed, it is effective that JICA would clarify the service requirements after the completion of the project at the preparatory survey and include them in the design specifications. It will contribute to the executing agency being able to receive appropriate service including both charged and non-charged even after the completion of the project.

MW Radio Broadcasting Equipment procured under the project

Outside of MW Transmitter House constructed under the project.