Internal Ex-Post Evaluation for Grant Aid Project

conducted by Saint Lucia Office: January, 2023

Country Name	**the Project for Improvement of Fishery Equipment and Machinery in Saint Vincent and the Grenadines**
Saint Vincent and the Grenadines	

I. Project Outline

Background	The fisheries industry is an important industry of Saint Vincent and the Grenadines (SVG) besides tourism and agriculture. However, the reduction of coastal marine resources due to overfishing in the entire Caribbean region, including SVG, became an issue. The Caribbean Community (CARICOM) established the Caribbean Regional Fisheries Mechanism (CRFM) in March 2003, and CRFM began activities aiming at managing fisheries resources throughout the region. For sustainable use of fishery resources, it was important to introduce resource-management fisheries to reduce fishing pressure in coastal areas and to distribute fishery products to the maximum without loss. However, another issue in SVG was the aging of main fishery equipment, such as refrigerating equipment, most of which had been developed under the past Japanese grant aid projects, and this problem would lead to distribution losses due to deterioration of freshness of landed fish.			
Objectives of the Project	This project aimed to improve fish distribution and to promote fishery management by upgrading part of equipment developed under the past grant aid projects and related equipment at the six fisheries centers as well as by installing new equipment for fishery management, thereby contributing to the sustainable fishery development of the country.			
Contents of the Project	1. Project Site: Calliaqua, Kingstown, Owia, Paget Farm (Bequia Island), Friendship Bay (Canouan Island), Clifton (Union Island), and Offshore. 2. Japanese side: Provision of grant necessary for the procurement of refrigerating system/ice plants (ice machines, compressors, ice storages, etc.[1]) (6 locations with varied subcomponents), refrigerated vans (1 location), elevated water reservoir tank (1 location), subsidiary works on some facilities, and floating submerged fish aggregating devices (FADs) (2 offshore locations). 3. SVG side: Removal and storage of cylinders filled with waste refrigerant, dismantling of existing equipment/materials to the outside, etc.			
Project Period	E/N Date	September 2, 2014	Completion Date	September 23, 2016 (Completion of installation of equipment)
	G/A Date	September 2, 2014		
Project Cost	E/N Grant Limit / G/A Grant Limit: 486 million yen, Actual Grant Amount: 400 million yen			
Executing Agency	The Ministry of Agriculture, Forestry, Fisheries, Rural Transformation, Industry and Labour (MAFFRTIL) * Ministry of Agriculture, Forestry, Fisheries and Rural Transformation (MOA) during the project implementation period.			
Contracted Agencies	Main Contractor(s): Marubeni Protechs Corporation Main Consultant(s): System Science Consultants Inc.			

II. Result of the Evaluation

<Constraints on Evaluation>

- Due to COVID-19, both SVG and Japanese sides faced the difficulty in usual communication filling out the questionnaire as well as carrying out the projects site visits. Following travel restrictions, quarantine measures and work from home policy, it took extra months to complete the survey. As a result, JICA St. Lucia Office contracted the CRFM to support the office in implementing a smooth evaluation process. This evaluation report is a result reflecting such constraints and limited site visits.

<Special Perspectives Considered in the Ex-Post Evaluation>

- This evaluation excluded Indicator 1, "ice/fish ratio," from the ground for judging effectiveness since it might not accurately represent the effect of using the refrigerating equipment procured by the project as fish catches fluctuate due to external factors.[2] Instead, the evaluation used "ice sales" as the alternative indicator for ice/fish ratio.[3]

1 Relevance

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

At the time of ex-ante evaluation, the project was consistent with the governmental strategies for fisheries development that are clarified in the 2012 budget statement as the "Corporate Plan and Advance Proposal 2013-2015," including its vision, mid-term strategies, and annual top priority action plans. The fundamental policy for fisheries development is "sustainable utilization and effective development/management of fisheries resources." The mid-term strategies contain 13 items, including the development of comprehensive distribution strategies of fisheries products, improvement of fisheries infrastructure, implementation of various surveys for appropriate resource utilization, etc.

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

At the time of ex-ante evaluation, there was a need to improve fish distribution and fishery management promotion, as mentioned in

[1] The refrigerant was converted from R22 (one of hydrochlorofluorocarbons: HCFC) to R404a (one of hydrofluorocarbons: HFC). The Montreal Protocol on Substances that Deplete the Ozone Layer was designed to phase-out or to reduce the production and consumption of HCFC to zero by 2030 for developing countries; the target for HFC was undetermined as of 2014. It was desirable to select natural refrigerant (e.g., ammonia) having less impact on ozone depletion and global warming. Since the Government of SVG had a view that the choice of ammonia was still immature, R404a was selected in this project because it had longer time allowance for its phasing out according to the Montreal Protocol.

[2] The preparatory survey report for the Project for Improvement of Fishery Equipment and Machinery in Antigua and Barbuda (2015). It is found that the ice/fish ratio in SVG has the same problem as Antigua and Barbuda.

[3] The use of ice production or ice sales as an alternative indicator to ice/fish ratio was confirmed as reasonable by a JICA fishery expert in the ex-post evaluation of the Project for Improvement of Fishery Equipment and Machinery in Saint Lucia (2021).

"Background" above.

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

In the "Country Assistance Policy for Saint Vincent and the Grenadines" (April 2014), fisheries is one of the two priority areas of Japanese assistance.

<Evaluation Result>

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

2 Effectiveness/Impact

<Effectiveness>

The project's objective, namely, "to improve fish distribution and to promote fishery management," was achieved in the target year (2019) as the two quantitative indicators were achieved and not achieved (but was on the increase), respectively, and the significant qualitative effects manifested on the promotion of fishery management.

Regarding the improvement of fish distribution, the refrigerating equipment procured under this project was in operation in all target fisheries centers except for Canouan Fisheries Center (Friendship Bay), which has not been in operation since 2016 as the equipment has not been leased to an operator,[4] up to 2019. The ice sales (Alternative to Indicator 1) generally increased across all sites but Friendship Bay. Although the baseline and target values for this alternative indicator are not available, the Fisheries Division of the MAFFRTIL (the executing agency) commented that the ice sales in the target year achieved their expectation. The project's equipment extended the cooling capacity of the fisheries centers, and the continued supply of ice enabled the restoration or more stable supply of fresh fish to local areas, surrounding areas, inland areas, and international markets. The fisheries centers became able to handle the increased production of fishery products due to the growing demand (domestic and international) and improved fishing gear. Also, at Owia, where the project provided subsidiary works besides the refrigerating equipment, restored the function of the whole facility, which enabled the leasing of the facility to an operator in 2017. At the time of the ex-post evaluation, however, the refrigerating equipment in Calliaqua and Owia has not operated since 2020 and 2021, respectively (see "4 Sustainability" below for details), in addition to the one in Friendship Bay.

Regarding the promotion of fishery management, the project's submerged FADs have been in use. The registered number of fishers operating at the point of the submerged FADs as their fishing ground (Indicator 2) increased but only up to 24% of the target in 2019. The Fisheries Division explained that this was due to the hesitancy among fishers to invest in new fishing techniques such as dropline, which has been promoted for sustainable fishing. Nevertheless, lessons learned and best practices adopted under the Caribbean Fisheries Co-Management Project (JICA technical cooperation project known as the CARIFICO project, 2013-2018) allowed for the co-management approach to fisheries, and fishers are slowly gravitating towards the FADs as they have come to recognize the benefits of fishing around the FADs with new techniques. The Fisheries Division also commented that the number of FADs would need to be increased to accommodate the potential number of fishing boats and to avoid over-fishing and over-crowding as fishers tend to fish around the FADs that are closer to shore.

<Impact>

The expected impact of this project, namely, "contribution to the sustainable fishery development," has manifested. The increased production and availability of ice have improved the quality of the fish landed, thus allowing fishers to get a reasonably good price for their catch. Also, reduced operational expenses since fishers can go directly to the FADs and catch fish without much hunting have improved the overall efficiency of fishing by incurring less cost and time.

Another positive impact pointed out by the Fisheries Division is an increase in employment at all target fisheries centers. The refurbished facilities allowed for an increased amount of high-value fish products such as conch and yellowfin tuna to be processed, which also required more workers. It was also a positive impact on gender, as it is estimated that 80% of those employees are women (mostly for cleaning fish products). Employees are trained by the Product Development and Quality Assurance Unit on the Seafood Processing Standards (SPS), etc. No adverse impacts were observed.

<Evaluation Result>

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

Quantitative Effects

Indicators	Baseline 2014 Baseline Year	Target 2019 3 Years after Completion	Actual 2016 Year of Completion	Actual 2017 1 Year after Completion	Actual 2018 2 Years after Completion	Actual 2019 3 Years after Completion
Indicator 1: Ice/fish ratio	3.9-8.9	3.9-8.9 or higher	N.A.	N.A.	N.A.	N.A.
Alternative to Indicator 1: Ice sales (Total volume of Calliaqua, Kingstown, Owia, Paget Farm, Friendship Bay, and Clifton (t/year)	N.A.	–	1,685	2,150	2,365	2,365
Indicator 2: Registered number of fishers operating at the point of submerged FAD as their fishing ground (persons/year)	0	500	N.A.	70	90	120

Source: Ex-ante Evaluation Report; Fisheries Division

Note: The ground for calculation of the baseline and target values is not mentioned in the existing report.

3 Efficiency

[4] The facility at Friendship Bay had not been operated since the retirement of the manager of the lessee at the time of the ex-ante evaluation; direct management by the Fisheries Division had been considered, but this has not happened until the time of the post-evaluation. Before this project installed the new equipment in 2016, a cooperative-like group once operated the facility.

While the project cost was within the plan, the project period exceeded the plan (ratio against the plan: 82% and 156%, respectively). The project implementation was delayed for several reasons, such as the schedule adjustment with the executing agency, insufficient capacity of a Japanese technician of the contractor, stoppage of power supply at three sites due to payment delay by the SVG side, prolonged payment issues between the contractor and the subcontractor for procurement of materials, and absenteeism of the facility manager and unpaid salary at the subcontractor. The outputs were produced as planned. Therefore, the efficiency of the project is fair.

4 Sustainability

<Institutional/Organizational Aspect>

There are organizational structures in place at the target facilities. The Fisheries Division, MAFFRTIL, is responsible for overseeing fisheries centers and the operation and maintenance (O&M) of the FADs. The Government of SVG made a policy decision in 2017 to lease five of the fisheries centers to Fisheries Cooperatives and private sector investors in view of maximizing the full marketing opportunities that exist, namely: Owia, Calliaqua, Barrouallie, Bequia (Paget Farm), and Union Island (Clifton) fisheries centers, in addition to Kingstown Fisheries Center that had been operated by a private firm before this project. This change created employment for more than 200 persons, full and part-time workers who work as staff members at these facilities in particular processors, and opened new markets regionally and internationally. At the time of the ex-post evaluation, among the project's target fisheries centers, those in Kingstown, Clifton, Owia, and Paget Farm are operated by private operators, and Calliaqua Fisheries Center is operated by a fisherfolk cooperative. As already mentioned, there is an issue that Canouan Fisheries Center has not been leased for operation yet. The Fisheries Division is responsible for maintenance of the facility while in the process of selecting a suitable private sector investor to operate the facility. The number of staff assigned for O&M of the facility varies by fisheries center, but the Fisheries Division confirmed that staffing was adequate considering the current level of operations at each facility.

<Technical Aspect>

According to the Fisheries Division, most of the target fisheries centers have the basic skill/technical capacity for O&M of the project facilities, but there is a room for improvement and for hiring more skilled personnel to cope with the troubles of the equipment (see <Current Status of Operation and Maintenance> below). The Fisheries Division's technical support team, namely, the Extension Unit and the Product Development and Quality Assurance Unit, provide guidance and technical support to the operators. These units provided training for the operators on O&M and the processing and handling of fish. All operators of the five leased facilities (mentioned in <Institutional/Organizational Aspect> above) received necessary training when the leased agreements were signed along with their staff. The training is provided regularly and also at the request of the operators. A total of 24 training sessions were held with the operators of Kingstown, Bequia (Paget Farm), Calliaqua, Owia, and Union Island (Clifton) fisheries centers, and a total of 227 persons were trained. At Kingstown, there is a maintenance team of two persons with technical skills. For Calliaqua, Union Island (Clifton), and Owia, the operators consulted with the Fisheries Division and engaged private personnel with competent technical skills of O&M. For Bequia (Paget Farm), as it relates to the lack of maintenance of the equipment, the operators were written to and reminded of their O&M obligations as agreed to in the leased agreement signed in 2017. The Fisheries Division would make a recommendation in the next lease agreement to correct this situation. For the submerged FADs, the Fisheries Division continues to provide financial support in terms of materials for the construction and maintenance.

<Financial Aspect>

A budget for O&M of the project facilities/equipment is provided annually. The O&M budget is funded by the operator of each facility, with a steady expenditure of between EC$100,000 and EC$500,000 per year, depending on the facility. 20-35% of the budget is spent on maintenance, including spare parts. Regarding the submerged FADs, fishers are a bit reluctant to pay for the maintenance. The Fisheries Division continues to provide financial support in terms of materials for the construction and maintenance of the FADs. It is the policy of the Government to continue to promote the utilization of FADs in SVG.

<Current Status of Operation and Maintenance>

There have been issues with compressors at all target fisheries centers. The compressors had oil flow return, and this was reported to the contractors while compressors were under warranty so that the issue could be addressed. However, it is an ongoing issue with all the compressors at all the centers. The Fisheries Division has provided technical assistance to repair and replace parts when necessary, including assisting with procurement. The compressors require preventative maintenance on a frequent basis (almost daily).

The status of the major equipment of this project as of January 2022

Location	Equipment	In use	Current conditions
Calliaqua	Refrigeration Facilities	No	The facility is temporarily closed for renovation. The ice-making machine compressor needed to be repaired after two years of operation, and after 2020 it was not operational. The Fisheries Division is in the process of procuring the compressor from Japan. The facility is scheduled to be reopened in March 2022.
Paget Farm	Refrigeration System	Yes	The two compressors for ice-making machines needed to be repaired after two years of operation. The operator initially replaced one compressor, but the Fisheries Division requested that the original compressor design of this project be maintained.
Friendship Bay	Refrigeration System	No	Not fully operational since 2017, operation of the equipment should commence pending lease agreement in March 2022.
Clifton	Refrigeration System	Yes	The facility is in good working condition. All equipment is functional except for one ice-making machine compressor, which was broken after two years of operation. The operator of the facility is in the process of replacing the compressor, and the procurement will be done from Japan.
Kingstown	Overhauled Compressor	Yes	The equipment is well maintained. However, given the age of the equipment, there is a plan and a need for the replacement. Presently there is a window period of 15 months to have the equipment change out.
	Refrigerated vans	Yes	Good and in working condition. One of the refrigerated vans is presently undergoing maintenance (replacement parts for the motor), but replacement parts are difficult to source.
Owia	Elevated Water Reservoir Tank	No	The facility and equipment, including the ice-making machine, were in good working condition prior to the eruption of the volcano in 2021. Equipment assessment to be made (Post volcanic eruption). Assessment will be done in the first quarter of 2022.

Source: Fisheries Division

The O&M of the facilities is conducted based on the lease agreement. One of the clauses of the agreement requires the operators to submit

quarterly reports on the operation and maintenance of the facilities. All facility operators were provided with daily operational check sheets to log critical information during the operation of the equipment. The fisheries center in Kingstown keeps most of the O&M records. At the other facilities, operators rarely provide reports on a timely basis. However, the Fisheries Division conducts regular visits and provides relevant technical advice relative to the maintenance of the equipment.

<Evaluation Result>

In light of the above, some problems have been observed in terms of the institutional/organizational and technical aspect and the current status of the operation and maintenance system. Therefore, the sustainability of the project effect is fair.

5 Summary of the Evaluation

The project achieved the objective of improving fish distribution and promoting fishery management as indicated by the increased sales of ice at most of the sites, and the increasing number of fishers operating around the submerged FADs, which is still not high as expected but in an improving trend. Regarding sustainability, some problems are found in the institutional/organizational and technical aspects and the current status of the O&M of the refrigerating equipment, particularly compressors. However, it is commendable that the executing agency continues to provide technical support to resolve the issues, and the operator of each facility has secured the necessary budgets. As for the efficiency, the project period exceeded the plan. Considering all of the above points, this project is evaluated to be satisfactory.

III. Recommendations & Lessons Learned

Recommendations to the Executing Agency:

- The Canouan Fisheries Center is presently not leased and is not in operation since 2017. The Government is still in the process of selecting a suitable private sector investor to operate the facility. The Fisheries Division is recommended to continue discussions and develop arrangements to operationalize this facility.
- In Kingstown, given the age of the overhauled compressors, there is a plan and a need for the replacement within 15 months. The Fisheries Division is recommended to continue resource mobilization activities to implement the plan to replacement of the equipment to continue supplying ice and fresh products within the15 month time period.
- In Kingstown, one of the refrigerated vans is presently undergoing maintenance, and the replacement parts for the motor are difficult to source. The Fisheries Division is recommended to source replacements for the motor and repair the vehicle in order to continue distributing the fresh product.
- For Owia Fisheries Center, the Fisheries Division is recommended to conduct an equipment assessment (Post volcanic eruption) to determine the status of the facility and equipment, which were in good working condition pre-volcanic eruption.
- FAD maintenance remains a challenge as fishers are reluctant to pay for this. The Fisheries Division is recommended to continue to provide financial support in terms of materials for the construction and maintenance of the FADs.

Lessons Learned for JICA:

- Four of the fisheries centers were leased to fisheries cooperatives or private sector investors, which led to issues with equipment maintenance and procurement of spare parts. While country obligations to maintain and properly use the equipment are specified under the Grant Aid agreement, provisions for public sector/private sector partnerships should also be made.
- At several sites, ice machines and a refrigerated van have not been functioning due to the lack of essential spare parts, procurement of which remains challenging. The ease of procuring spare parts and frequency of replacement needs to be taken into account when developing obligations for Grant Aid, given the varying environmental conditions, costs, and shipping.
- Fishers are more aware of fishery resources management after the introduction of FADs. They are more educated by receiving training through workshops and stakeholders' consultation on how to better utilize the FADs for increased catch and reduced operational cost by consuming less fuel while fishing around the FADs. The collaborative co-management approach used in developing the FAD fishery is a good practice.

Ice-making machines installed at Union Island Fisheries Centre (Clifton) under this project. Photograph taken on the January 14, 2022

Ice-making machine compressor overhauled in 2016 under this project at Kingstown Fisheries Centre. Photograph taken on August 16, 2021