Independent State of Samoa

Ex-Post Evaluation of Japanese Grant Aid Project
"The Project for Construction of the Inter-Islands Ferry"

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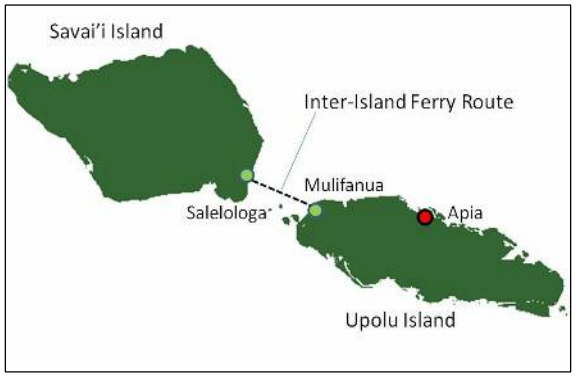
0. Summary

A passenger-cargo ferry was constructed under this project to ensure safe and stable maritime transportation between Samoa's two main islands of Upolu and Savai'i. This project, supporting a stable traffic flow between the islands, has been consistent with the development policy and needs of Samoa; both at the time of project planning and ex-post evaluation. It was also consistent with Japan's ODA policy; therefore the relevance of this project is high. The effectiveness and impact of the project is also high as it was observed that safe and stable operation services have been underpinning the demand for traffic between the two islands, and that the ferry has played a certain role in the development of Savaii as one of the key infrastructure facilities. The efficiency of the project is high as the project was implemented smoothly with both the project cost and period mostly as planned. With regard to sustainability, while no issues were identified relating to the organizational structure, maintenance conditions and financial conditions, some concerns emerged in terms of constant securing of technicians for maintenance activities.

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

1. Project Description



Project Location

A ferry provided under the project
(Lady Samoa III (LS3))

1.1 Background

A ferry linking the two islands of Upolu (where the capital is located) and Savai'i (the largest island in Samoa) plays an important role in stimulating the Samoan economy as a major artery for visits of people and distribution of goods. For residents of Savai'i, the ferry is a vital lifeline as a basic means of transport. In 2006/07, the ferries carried a total of 620,000 passengers and 60,000 vehicles.

The Samoa Shipping Corporation Limited (SSC), in charge of maritime transportation in Samoa, had four vessels, and the MV Lady Samoa II (LS2), one of the major ferries running between the two islands, came into service in 1988 under Japan's grant aid. In 2006, it carried 66% of all passengers and 58% of all vehicles. In the same year, passenger occupancy exceeded 100% in 85 cases.

However, the ferry was already old and deteriorating. On average, its services had to be cancelled 67 times a year due to unexpected problems, totalling approximately 14 days. Repair costs were rising year by year and there were also safety issues, which saw it become an increasingly unstable means of inter-island transport. Since transportation demand was forecast to continue growing in the future with the development of Savai'i, it was important to find a stable solution to this growing demand.

Based on the background above, this project was implemented as a grant aid project to provide a replacement vessel for LS2.

1.2 Project Outline

The objective of the project was to ensure safe and stable maritime traffic and transportation by providing a ferry to operate between Upolu and Savai'i Islands.

Grant Limit / Actual Grant Amount	1,319 million yen / 1,318 million yen
Exchange of Notes Date	June, 2008
Executing Agency	Samoa Shipping Corporation Limited
Project Completion Date	February, 2010
Main Contractor	ISB Co., Ltd. (Construction)
Main Consultant	Fisheries Engineering Co., Ltd.
Basic Design	May, 2008
Related Projects	<u>Technical Cooperation:</u> [Expert] Marine Engineering (4 experts, 1990-2003) Operation Management (Short-term, 2006) [Senior Volunteer (SV)] Ferry Maintenance (Electric/Electronic,

	2003-2005) Marine Engineering (3 volunteers, 2003-2013) [Japan Overseas Cooperation Volunteer (JOCV)] Marine Engineering (1987-1989) Electrical Engineering (5 volunteers, 1987-2000) <u>Grant Aid Projects:</u> - Domestic Transportation Strengthening Project (1984-1985) - The Project for Building the Inter-Island Passenger/Vehicular Ferry Boat (1987) - The Project on the Development of Apia Port (1988-1989) - The Project for Rehabilitation of Cyclone-damaged Ports and Construction of Quarry Plant (1990-1991) - The Project for Rehabilitation of Cyclone-damaged Ports and Apia Harbour Revetment (1992-1993) - The Project for Construction of the Inter-Islands Navigation Vessel (1997) - The Project for Construction of a Tugboat for Apia Port (2000) - The Project for the Second Development for Apia Port (2001-2003)

2. Outline of the Evaluation Study

2.1 External Evaluator

Keisuke Nishikawa (Ernst & Young Sustainability Co., Ltd.)[1]

2.2 Duration of Evaluation Study

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

Duration of the Study: November 2012 – November 2013

Duration of the Field Study: April 12 – 26, 2013

[1] Joined the evaluation team of Ernst & Young Sustainability as a team member from Japan Economic Research Institute Inc.

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

3.1 Relevance (Rating:③[3])

3.1.1 Relevance with the Development Plan of Samoa

Since 2002, Samoa has been formulating a national development plan, the 'Strategy for the Development of Samoa (SDS)', every three to five years. In the 'SDS 2005 – 2007', effective during project planning, enhancement of maritime transport connecting the two islands of Upolu, which was the main island, with three quarters of the country's population, and the largest island of Savai'i, was listed as a development challenge.

In the SDS 2012 – 2016, effective during ex-post evaluation, upgrading and maintenance of port facilities as well as other related services are regarded as one of the strategic areas although no direct reference has been made to the development of additional ferries. Accordingly, it can be considered that a stable maritime transport between the two islands has been a development agenda in a broad sense.

In light of the significance of transport infrastructure in the island state of Samoa, the SDS 2012 – 2016 also specifies the development and implementation of a Transport Sector Plan as another key strategic area. The Plan was being formulated during ex-post evaluation; mainly by the Ministry of Works, Transport and Infrastructure[4].

Thus, this project has been relevant to the development policy of Samoa as the importance of maritime transportation has been consistently stated in its development strategies; both during project planning and the ex-post evaluation.

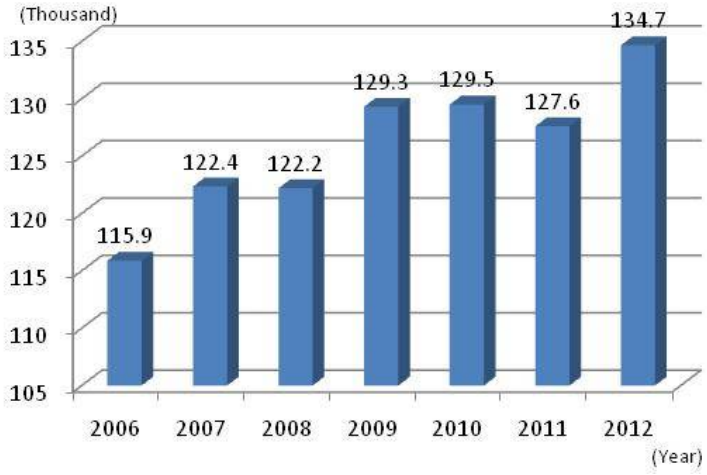
3.1.2 Relevance with the Development Needs of Samoa

In 2007, flows of people and goods were estimated to increase since the development of Savai'i, the development status of which was poor compared to that of Upolu where the capital is located, was deemed a key challenge, and tourism and commercial land were being developed there. Reflecting this increase, the demand for inter-island ferries was expected to increase. However, the only means of transport between the two islands had become increasingly unstable given the aging main ferry, the LS2, and an annual average of 14 days and 67 services had to be cancelled due to sudden breakdowns.

In Samoa, the tourism industry is one of the engines for economic growth, as indicated in the number of tourists reaching over two-thirds of the country's population (187,000)[5]. The number of tourists, as shown in the figure below, has remained steady,

[2] A: Highly satisfactory, B: High, C: Partially satisfactory, D: Unsatisfactory
[3] ③: High, ②: Fair, ①: Low
[4] According to the Ministry, the formulation of the Plan will be completed by the end of 2013.
[5] Based on the 2011 Census data. 76% in Upolu and 24% in Savai'i

despite decreases recorded in some years.



Source: Data from the Samoa Bureau of Statistics and Samoa Tourism Authority

Figure 1: Number of Tourists visiting Samoa

As described in '3.2 Effectiveness', passenger and vehicle traffic on the ferries linking Upolu and Savai'i decreased following the 2008 Lehman Crisis but has recovered since FY2009/10. According to a beneficiary survey[6] of 100 passengers on the Lady Samoa III (LS3), provided under this project, half the respondents make more than six trips on the ferries, showing that the service is an important means of transport and frequently used by Samoan residents in addition to foreign tourists. In sum, ferry services between the islands have played a key role as a fundamental means of transport to meet the needs of tourists as well as local residents. Accordingly, demand from the people can be considered consistently high.

In 2012, air services between the two islands were introduced by Samoa Air[7], but the impact on demand for maritime transport is considered minimal, given the very low passenger numbers and the fact that most use ferries to cross the strait.

3.1.3 Relevance with Japan's ODA Policy

When this project was being planned, the Japanese cooperation in Samoa focused on five key areas based on the priority areas of Japanese assistance declared at 'The Fourth

[6] An interview survey with 100 passengers on LS3 was conducted. 64% of the respondents were Samoan residents and 36% non-residents. The main questions concerned the ferry's physical and service improvement, safety, reliability, effects on local economies, tariff, maintenance conditions, etc.

[7] Fares on Samoa Air flights are based on the weights of the passenger and baggage and normally several times higher than the ferry fare. Therefore, the disparity is estimated to have limited any major competition between ferry and air services. (Samoa Air's passenger data were undisclosed at the time of the ex-post evaluation survey.)

Pacific Leaders' Meeting' between Japan and the members of the Pacific Islands Forum held in May 2006. This project was in line with one of the key areas, 'Social infrastructure development: assistance to transportation infrastructure and electricity projects', and was expected to contribute to 'Income generation: strengthening agricultural and fisheries sectors, development of domestic industries (development of tourism and local industries)'. In this way, this project can be judged to have been consistent with Japan's ODA policy at the time.

This project has been highly relevant with Samoa's development plan, development needs, as well as Japan's ODA policy; therefore its relevance is high.

3.2 Effectiveness[8] (Rating:③)

3.2.1 Quantitative Effects

3.2.1.1 Achievement of Stable and Safe Operations

It had been expected that implementing this project would reduce service cancellations of and eliminate overcrowding on ferry services that was becoming increasingly problematic during project planning. Incidents of service cancellations and excessive passenger numbers during the project planning and ex-post evaluation were as shown in the table below.

Table 1: Improvement in Ferry Operations

Item	During planning in 2006	Target figure in 2011	Actual figure during ex-post evaluation
Reduction in the number of cancellations due to sudden breakdowns	Approx. 14 days, 67 services	Several days, several services	None (2011) None (2012)
Elimination of services with excessive passengers (annual number)	85 services (4.7% of all services)	None	16 services (2011) 10 services (2012)

Source: Basic Design Report and the Data provided by the Executing Agency

104 services in 25 days were cancelled due to sudden breakdowns caused by initial engine troubles in 2010, soon after LS3 was provided, although these troubles were fixed under warranty by the supplier. Following these initial troubles, ferry operations remained continually stable without any cancellations due to sudden breakdowns in 2011 and 2012[9]. In the beneficiary survey, 84% of the respondents

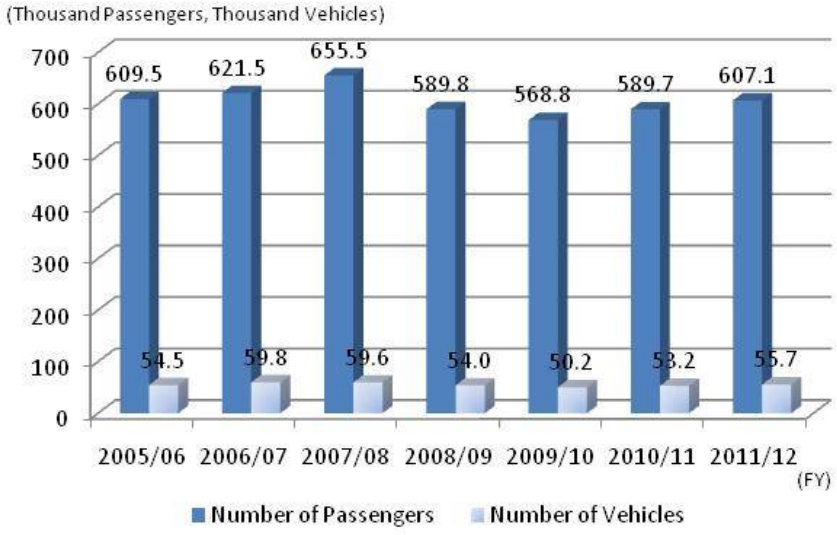
[8] Sub-rating for Effectiveness is to be put with consideration of Impact.
[9] Excluding the number of services by other vessels due to regular inspections and cancellations caused by

indicated that LS3 was operated more reliably compared to the former LS2 ferry.

The full complement is set with the objective of securing passengers' safety. As life vests and life-saving rafts are installed in accordance with the complement, excessive passengers onboard would be a safety issue. However, such services were seen even during the ex-post evaluation, following the cancellations of previous services and also during peak season (e.g. Christmas). While the number of such services decreased substantially from 85 recorded during planning, it has yet to reach the target of zero, set during the planning stage. However, the proportion of services with excessive passengers declined to 1.07% in 2011 and 0.58% in 2012 on LS3 while the corresponding figure was 4.7% in 2006 on LS2.

3.2.1.2 Number of Passengers and Vehicles

In addition to the expected project effects, the number of people and vehicles travelling was expected to increase as the Savai'i Island became more developed. In this survey, data of some basic indicators such as the operation of ferries, number of passengers and vehicles were collected as indicated below.



Source: Data provided by the Executing Agency

Figure 2: Number of Passengers and Vehicles between Upolu and Savai'i Islands

Although the number of passengers and vehicles on the four ferries travelling between Upolu and Savai'i Islands increased steadily, they hovered at a lower level between 2008 – 2010 due to the slowdown of the global economy caused by the Lehman Crisis in 2008, before rising again in FY2010/11. During the same period,

bad weather conditions

GDP growth in Samoa was -3.7% in 2008, -1.4% in 2009, 2.1% in 2010, 1.2% in 2011 and 0.8% in 2012 respectively. The flow of people and vehicles on the ferries showed a similar trend. By providing LS3, the ferries operating between the two islands can be said to have stably underpinned all these traffic demands.

The operation records of LS2, previously the main ferry, and that of LS3, currently the main ferry, are summarised in the following table:

Table 2: Operation Record of LS2 and LS3

Vessel	LS2			LS3	
FY	2004/05	2005/06	2006/07	2010/11	2011/12
Operating Days	336	353	340	343	360
Number of Services	1,812	1,877	1,814	1,495	1,738
Number of Passengers	361,080	386,698	381,175	399,170	425,300
Number of Vehicles	31,321	30,897	32,538	33,968	37,212

Source: Data provided by the Executing Agency

While this project was not expected to generate new demand directly, the number of passengers and vehicles on LS3 in FY2010/11 was planned at 109.7% and 115.3% respectively, compared with the records of LS2 in FY2006/07. The actual performance shown in Table 2 indicates that the passenger and vehicle traffic numbers were 104.7% and 104.4%, namely below the planned volume. However, LS2 is still utilised as a backup vessel when other vessels, including LS3, undergo periodical inspections and/or need repairing, or during the peak season, which means that the operations undertaken only by LS2 previously are now mainly done by LS3 but still supported by LS2. Therefore, the comparison of the performance of the past LS2 and that of the current LS3+LS2 reveals that the figures are 112.4% for passengers and 113.4% for vehicles. With these figures, it can be considered that the figures for passenger and vehicle traffic in FY 2010/11 have generally been as expected.

Photo 1: Main Cabin (lower level)

Photo 2: Vehicle Deck

Photo 3: Business Class Cabin

3.2.2 Qualitative Effects

While no qualitative effects of this project were expected during planning, the satisfaction level of passengers in business class was examined as the business class cabin was newly established on the LS3 in addition to the economy class cabin. The summary of the responses were:

- 83% of the passengers who had used business class (a total of 72 passengers) replied that it was more comfortable than the LS2 cabin.
- Regarding the balance between the business class fare (over three times that of economy class) and comfort, 38% said that it was 'very cost-effective' and another 47% considered it 'reasonable'.

These results indicate that more than 80% of the respondents were generally satisfied with the balance between cost and comfort. It is assumed that the introduction of business class has been effective to some extent.

3.3 Impact

3.3.1 Intended Impacts

An impact of this project estimated during planning was that the industrial and tourism development in Savai'i would be promoted so that the cash-earning opportunities would increase and the standard of living would be improved.

In Samoa, tourism revenues have been moving at a level slightly exceeding three hundred million Tala since reaching this figure in 2009. This amount comprises over 20% of GDP and the expenditure per tourist in 2011 is 2,500 Tala on average[10].

While no data on the tourist number and revenues specific to Savai'i were available, a beneficiary survey of the passengers on LS3 showed that 58% were feeling socioeconomic changes in Savai'i, especially around Salelologa, which were attributed to increased commercial activities and tourist numbers. Interviews with the owners of the market stalls, shops and hotels in Salelologa also revealed that transportation of more passengers and vehicles were now possible and that there were more visitors to Savai'i.

The development of Savai'i has always been positioned as one of the development challenges as described above, and the Salelologa Market was relocated to an area about two kilometres west of the Salelologa Port several years ago, and developed as a commercial area alongside other facilities. The 'Samoa National Infrastructure Strategic Plan', formulated in 2011, also lists improvements of infrastructure facilities in Savai'i, including the development of Salelologa Port.

In the ex-post evaluation survey, no concrete examples in which stable ferry

[10] 1 Samoan Tala was about 42 Japanese Yen (as of July 2013).

operations induced socioeconomic changes or generated increased passenger and vehicle traffic were observed. However, passengers and local businesses felt that their business activities were more vibrant and there were more visitors to Savai'i, indicating that LS3 played a role in stably underpinning these changes as one of the key infrastructural facilities.

3.3.2 Other Impacts

3.3.2.1 Impacts on the Natural Environment

It was anticipated that the ferry to be provided would be more environmentally-friendly than LS2, thanks to adopting a fuel-efficient system and a low NOx emission engine.

The actual ferry provided was equipped with a low NOx emission engine as planned, and it was also confirmed that an oily water separator installed was preventing the discharge of oil. With regard to fuel consumption, while every service of LS2 was consuming 1,753 litres of fuel (average from 2007 – 2009), LS3 consumed an average of 1,582 litres per service (2011 – 2012), representing an improvement of approximately 10%. In addition, no negative environmental and social impacts related to the operation of vessels, including the dredging of ports, were observed in the survey.

In light of the above, LS3 has enabled higher fuel efficiency and reduced environmental burdens due to environmental measures taken on its engine. No other negative environmental impacts have been reported, and it can be said that there are no problems or issues associated with this project.

3.3.2.2 Land Acquisition and Resettlement

The ferry provided in this project was constructed at a shipyard in Japan, whereupon it was sailed and handed over to Samoa. This meant neither land acquisition nor resettlement of residents was involved and no related problems have been identified during or after the implementation of the project.

3.3.2.3 Unintended Impact

As briefly described in 'Effectiveness', LS2 is still maintained and utilised even after 2011, when the ferry was thought to have come to the end of its service life. During the ex-post evaluation, the ferry was operated as a backup or charter vessel when other vessels underwent inspections or broke down. With these measures, overall operations between the two islands were stabilised and sufficient time for maintenance and inspection of LS3, a highly reliable ferry, could be allocated,

leading to the achievement of breakdown-free operations. Having noted that, certain measures were considered necessary to determine how stable operation could be continued in the same way, even after the retirement of LS2, given the limited remaining service period.

Photo 5: LS2, utilised as a backup vessel (anchored at the Salelologa Port)

With respect to satisfaction concerning the safety and services of LS3, the beneficiary survey revealed that 91% of respondents had a sense of better safety and no-one responded that operations had become more dangerous. In addition to most (97%) being positive about their satisfaction with the operation of LS3, 96% were also satisfied with the cabin services. In sum, passenger satisfaction with the operational safety and services was overwhelming.

This project has largely achieved its objectives; therefore its effectiveness and impact is high.

3.4 Efficiency (Rating:③)

3.4.1 Project Outputs

In this project, a passenger/vehicle ferry offering services between Upolu and Savai'i Islands was provided. Based on the main specifications shown in Table 3, the ferry was provided mostly in accordance with the plan.

Table 3: Comparison of Original and Actual Outputs

[Provision of a Passenger/Vehicle Ferry]

	Original	Actual
Complement	752 (Passenger 740, Crew 12)	752 (Passenger 740, Crew 12)
Passenger car carrying capacity	Approx. 37	Approx. 37
Length overall	46.7m	46.7m
Breadth, molded	13.0m	13.0m
Gross tonnage	Approx. 1,000 tons	1,045 tons
Main engine	880kW(1,200ps) * 2 units	880kW(1,200ps) * 2 units

Source: Basic Design Report and Completion Report

Providing LS3 meant the transport capacities of the ferry could be expanded up to 740 passengers (seated economy class: 460, standing economy class: 232, business class: 48)[11] and approximately 37 passenger cars on LS3, both up from 480 (seated economy class: 300, standing economy class: 180) and a carrying capacity of approximately 30 passenger cars on LS2. 90% of respondents in the beneficiary survey also replied that the loading capacity of the ferry had improved.

The project components to be undertaken by Samoa did not include anything related to the construction of the ferry itself but solely the issuance of documents required for the construction and cruising as well as customs clearance procedures upon arrival of the ferry. These procedures were all executed promptly and as planned.

3.4.2 Project Inputs

3.4.2.1 Project Cost

The planned project cost to be borne by Japan was approximately 1,319 million yen. In addition, 1.3 million yen was to be spent by Samoa as banking commission fees.

The following table summarises a breakdown of the planned and actual project costs contributed by the Japanese side:

Table 4: Comparison of Original and Actual Project Costs

(Unit: million yen)

Breakdown	Original	Actual
Construction	1,246	1,227.0
Cruising	22	40.0
Designing and Supervision	51	51.3
Total	1,319	1,318.3

Source: Basic Design Report and Completion Report

The actual project cost was 1,318.3 million yen (Japanese portion), which fell within the planned amount. The banking fees to be borne by the Samoan side turned out to be 36,000 Tala (Approximately 1.26 million yen), which was also within the planned amount.

[11] Unlike LS2, since the armrests between seats are fixed/non-adjustable on LS3, this prevents some passengers from lying down and taking up several seats. The executing agency regards it as a means of increasing the effective space for passenger seats.

3.4.2.2 Project Period

The period of this project was planned at 20.5 months (4.5 months for detailed designing and tender document preparation, and 16.0 months for construction and cruising). The actual project period was 20 months from July 2008 to February 2010, mostly as planned and scheduled. No issues were observed during either the construction or cruising.

Both the project cost and project period are mostly as planned; therefore the efficiency of the project is high.

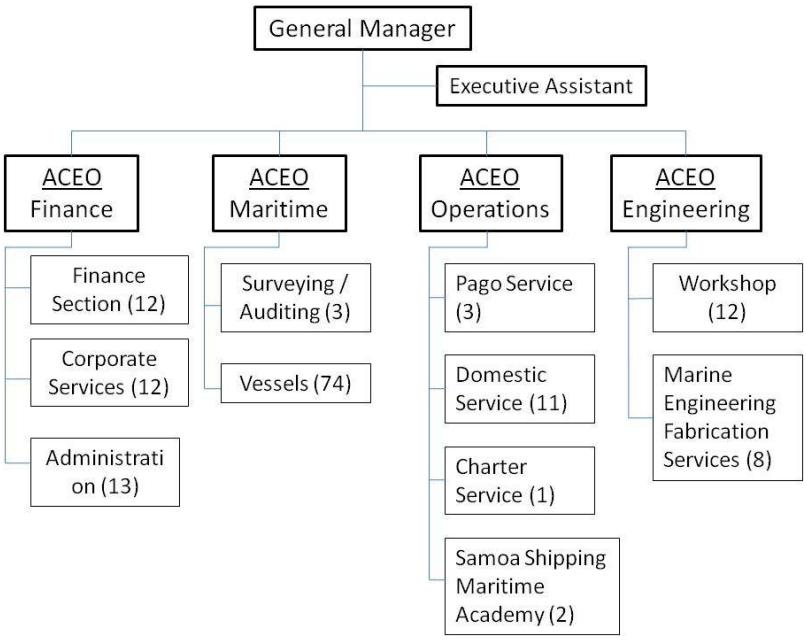
3.5 Sustainability (Rating:②)

3.5.1 Institutional Aspects of Operation and Maintenance

The Executing Agency of this project is the Samoa Shipping Corporation Limited (SSC), which is operating LS3 and a barge-type Fotu-o-Samoa; mainly in charge of cargo transport between Salelologa and Mulifanua on the domestic route[12]. It also has the LS2 (a passenger/vehicle ferry) and Samoa Express (barge-type) as backup vessels.

In terms of organisational structure, SSC has four departments under the General Manager, consisting of 156 staff members, 20 up on the planning period. While the four-department structure has remained unchanged, the main factors behind the increase in the overall number of staff are the new establishment of the 'Samoa Shipping Maritime Academy' and the 'Marine Engineering and Fabrication Services (MEFS)' under the Operations Department and the Engineering Department, respectively, and the increase in the number of staff in the Accounting and Finance Department. The Maritime Department, in charge of the operation of ferries, including the one provided, has an unchanged structure and 74 staff members, 13 of whom are engaged in operating the LS3. The Engineering Department, which is responsible for the maintenance of ferries, has 20 members in total. 12 engineers are allocated to the SSC Workshop for regular maintenance and inspections of the vessels, while an additional eight members are assigned to MEFS, and taking orders from the private sector for specific parts, in addition to the backup function for the required maintenance and inspection of vessels. According to the Executing Agency, the number of staff in charge of maintaining vessels is sufficient.

[12] SSC is operating an international route weekly between Samoa and American Samoa with MV Lady Naomi, a vessel provided under a Japanese aid project in 1997.



Source: Information Provided by the Executing Agency

Figure 3: Organisational Structure of the Samoa Shipping Corporation Limited

Compared to the planning period, SSC has expanded its activity areas, e.g. by establishing a maritime school and a section to fabricate specific parts, but no negative impact was observed. The staff members for LS3 and the Workshop seem to have been secured and a smooth operation and maintenance system looked well-established during the site visit.

3.5.2 Technical Aspects of Operation and Maintenance

During project planning, the Executing Agency already had more than 30 years of experience in maritime transport, and was certified in 1998 with the International Safety Management system (ISM) for its offices and vessels by the Lloyd's Register of Shipping. Also, thanks to more than a decade of technical assistance provided by Japan, it was judged that they had a certain level of equipment and human resources to facilitate ordinary maintenance and repairs of the ferry provided under this project. During the ex-post evaluation, the operation system in line with the ISM was maintained, passing the annual inspections of the ISM Committee as well as the Ministry of Works, Transport and Infrastructure, which demonstrated that the management had reached a level always certified with an international safety management system.

Concerning the maintenance techniques for the LS3, pre-determined items were checked and repaired accordingly when a quarterly inspection was visited during the

ex-post evaluation survey. It is presumed that, coupled with the fact that no serious problems affecting operation have occurred, the engineers have a certain capacity to conduct inspections and repairs. To develop the engineers' capacities, in addition to OJT (On-the-Job-Training), some are taking vocational training courses such as fitting/machining and welding classes provided through an Australian aid project at the Institute of Technology of the National University of Samoa (NUS-IoT). The Executing Agency also established the Maritime Academy in 2013 and started implementing a half-year practical course targeting graduates of NUS-IoT, which included providing practical sessions on inspecting and cleaning LS3. In this way, the Executing Agency is trying to train technicians and engineers by itself.

Despite these efforts, SSC's in-house engineers cannot necessarily deal with all the repairs unaided. According to a senior volunteer from Japan, instructions by highly-skilled external experts are still needed in the fields of electricity, electronics and marine engineering. While Japan has provided technical assistance by dispatching experts and senior volunteers since the 1990s, there were several cases where the technicians and engineers who had acquired certain knowledge and skills left their jobs to migrate overseas, leading to a lack of accumulated technology within the corporation. Therefore, it is assumed to be particularly necessary to develop the capacities of several engineers in the same field so that the skills will be systematically improved and transferred.

3.5.3 Financial Aspects of Operation and Maintenance

The Executing Agency is a financially-independent corporation without any government subsidies, but has operated in the black for more than a decade. Part of the surplus has been accumulated in the Vessel Replacement Fund (VRF) since 1999, as agreed between the governments of Japan and Samoa when it was decided that the next vessel after LS3 would be covered by the accumulated reserves in this fund, based on the project implementation.

The following table shows the annual operational incomes and expenditures of the Executing Agency after FY 2005/2006:

Table 5: Operational Income and Expenditure of All Vessels

(Unit: thousand Tala)

FY	2005/06	2006/07	2007/08	2008/09	2009/10	2010/11	2011/12
Revenue from Operation	14,132	13,648	13,741	16,085	18,602	22,628	23,501
Direct Expenses	8,407	8,551	8,896	10,243	9,798	14,999	15,645
Operational Profit	2,881	2,099	4,844	5,842	8,803	7,930	7,856
Profit after Tax	1,523	657	154	1,389	4,372	3,045	2,199
Accumulated Profit	4,815	5,471	5,067	6,457	10,829	13,873	16,071
Transfer into VRF	1,169	712		115	1,181	724	86
Accumulated VRF	2,508	3,220	2,341	2,456	3,637	4,361	4,447

Source: Data provided by the Executing Agency

As shown in the above table, the operational profit has been steady every year, leading to a rise in the accumulated profit of the Executing Agency. Part of the profit is transferred into the VRF, which has been gradually growing thanks to sound financial conditions. A decrease in the balance of the fund from FY 2006/07 to FY 2007/08 was due to the purchase of a cruise ship 'MV Lady Filifilia', covered by part of the fund. As transfers into VRF were always made in all other years, the balance as of the end of FY2011/12 was 4.45 million Tala (ref: 1.8 million yen). To purchase the next ferry entirely by accumulated reserves in the VRF, however, the pace of transfer to date will be unable to cover all the costs and an annual transfer exceeding one million Tala will be needed. However, the Executing Agency said that the government had yet to determine how the financing would be arranged 25 years later and also how much of the profit would be accumulated for that purpose.

The revenue from operation has recently shown a steady increase, supporting sound management of the Executing Agency. One of the main factors is a 33% hike in adult fares backed by the rise in fuel prices, compared to the project planning period. However, this 33% hike is considered reasonable, since the consumer price index in 2012 was 28% higher than that in 2007. In the beneficiary survey, 4% of the respondents said that the fare was cheap, and 64% considered it 'reasonable', suggesting that a fair level had been maintained as a public means of transport.

The above is the overall financial conditions of the Executing Agency, and Table 6 shown below summarises the balance of LS3, provided in this project.

Table 6: Operation Balance of LS2 and LS3

(Unit: thousand Tala)

	2007	2011		2012
	LS2 (Actual)	LS3 (Plan)	LS3 (Actual)	LS3 (Actual)
Revenue from Operation	5,623	6,295	7,596	8,736
Expenditure from Operation	3,325	3,155	3,410	3,788
Balance	2,298	3,139	4,186	4,949

Source: Data provided by the Executing Agency

During project planning, an operational profit of 3.13 million Tala was expected for 2011, but the actual figure proved to be much higher at 4.19 million Tala. It rose even further to 4.95 million Tala in 2012, supporting the bread and butter of the Executing Agency's sound management. While revenue has increased steadily, it can be observed from the above table that expenditure has been curbed as far as possible. One of the contributing factors is LS3 improving fuel consumption by 10% on an actual operational basis compared to LS2.

As above, it has become clear that the financial conditions of the Executing Agency have been sound, enabling the steady transfer of part of the surplus into the VRF, and the LS3 has been a key contributor to it.

3.5.4 Current Status of Operation and Maintenance

The Executing Agency, with its own workshop within the premises of the headquarters, has been conducting all internal maintenance of vessels, apart from dry-docking of the ship bottom. Upon implementing this project, a preventive maintenance programme specifying regular inspections and replacement of parts was formulated in addition to the provision of the ferry. During the site survey of the ex-post evaluation study, it was confirmed that weekly maintenance every Tuesday, quarterly maintenance, and the first dry-docking in American Samoa in 2012 had all been implemented as scheduled. Inside, the ferry was generally kept clean and no problems potentially hindering its operation were identified in the engines.

Photo 6: LS3, anchored in the Apia Harbour for its regular inspection

Photo 7: Inspection of the main engine

Photo 8: Cleaning during the inspection (by the students of the Maritime Academy)

According to the Executing Agency, the main issue in their routine work was the long time and high cost needed to procure spare parts from overseas. Also, as an issue related to '3.5.2 Technical Aspects of Operation and Maintenance', particularly in the fields of electrical and marine engineering, instructions and guidance by external technicians may be needed depending on the level of troubles. However, it is estimated that the initially expected 25-year service life period will be sufficiently achieved with

the continuation of maintenance and cleaning system currently introduced.

In addition to the maintenance condition of the ferry, there were no hindrances to its operation, as the buoys along the route were managed well and the channels were dredged without any problems[13]. Should a problem be discovered, it will be reported to the Samoa Ports Authority.

The beneficiary survey result shows that such maintenance has been favourably regarded by passengers, reflected in the fact that 85% are 'Highly satisfied' or 'Satisfied' and 14% consider the maintenance conditions of LS3 'Reasonable'.

Some problems have been observed in terms of technical aspect; therefore the sustainability of the project effect is fair.

4. Conclusion, Lessons Learned and Recommendations

4.1 Conclusion

A passenger-cargo ferry was constructed under this project to ensure safe and stable maritime transportation between Samoa's two main islands of Upolu and Savai'i. This project, supporting a stable traffic flow between the islands, has been consistent with the development policy and needs of Samoa; both at the time of project planning and ex-post evaluation. It was also consistent with Japan's ODA policy; therefore the relevance of this project is high. The effectiveness and impact of the project is also high as it was observed that safe and stable operation services have been underpinning the demand for traffic between the two islands, and that the ferry has played a certain role in the development of Savaii as one of the key infrastructure facilities. The efficiency of the project is high as the project was implemented smoothly with both the project cost and period mostly as planned. With regard to sustainability, while no issues were identified relating to the organizational structure, maintenance conditions and financial conditions, some concerns emerged in terms of constant securing of technicians for maintenance activities.

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

4.2 Recommendations

4.2.1 Recommendations to the Executing Agency

4.2.1.1 Training of Maintenance Technicians

As the Executing Agency experienced losses of highly-skilled technicians / engineers resigning to migrate overseas and such risk is inevitable, it is essential to improve the environment to minimise the risk of brain drain. Even if it happens,

[13] The Samoa Ports Authority is responsible for maintaining buoys and dredging channels.

training of several technicians, particularly in the fields of electrical and marine engineering, key to stable operations of the ferry, will be crucial to implement appropriate maintenance and repairs.

4.2.1.2 Constant Accumulation into the Vessel Replacement Fund

After the Vessel Replacement Fund was established at the end of 1990s, some of the profit has been accumulated into the fund. However, it cannot be said that the level of accumulation is sufficient toward the next replacement coming in 20-odd years' time, with only 4.45 million Tala accumulated by the end of FY2011/12. No concrete system has been established by the Executing Agency as to the proportion of surplus to be accumulated into VRF, leading to ambiguous operation of the fund. As the financial conditions improved with the project implementation, a steady and continuous accumulation of an amount sufficient for the next replacement will be important from a long-term perspective.

4.2.1.3 Elimination of Overcrowded Services

Although elimination of overcrowded services was expected through this project, they are still occurring during specific seasons every year, such as Christmas and White Sunday. During those periods, it will be essential to avoid such services by ensuring efficient operations of all existing vessels as well as firmly limiting the number of passengers boarding to ensure the safety of the vessel.

4.2.2 Recommendations to JICA

No recommendations.

4.3 Lessons Learned

Japan has long provided technical assistance, especially in electrical and marine engineering, to improve the capacities and skills of technicians at the Executing Agency. This project was implemented amid these efforts to maintain the ferry in good condition after the provision. Good ferry maintenance and safe operations provided under this project will help ensure the effective use of the vessel for a further extended period, passenger convenience, and also sound management of the corporation. In this respect, a long-term technical cooperation by 'working together' to improve the maintenance capacities of the technicians on marine engines and electrical equipment, essential for the operation of vessels, can be highly regarded as a combination applicable to other similar projects.

(End)