Performance Evaluation Report

Reference Number: PPE:FIJ 2011-62
Project Number: 32525
Loan Number: 1902
December 2011

Fiji: Fiji Ports Development Project

Independent Evaluation Department

Asian Development Bank

CURRENCY EQUIVALENTS

Currency Unit – Fiji dollar (F$)

		At Appraisal (15 November 2001)	At Project Completion (15 June 2006)	At Independent Evaluation (4 November 2011)
F$1.00	=	US$0.4395	US$0.56785	US$0.56180
US$1.00	=	F$2.2753	F$1.76103	F$1.77999

ABBREVIATIONS

ADB	–	Asian Development Bank
DMF	–	design and monitoring framework
EIRR	–	economic internal rate of return
FIRR	–	financial internal rate of return
FPCL	–	Fiji Ports Corporation Limited
GRT	–	gross registered tonnage
IEM	–	independent evaluation mission
m	–	meter
MPAF	–	Maritime and Ports Authority of Fiji
NPV	–	net present value
PCR	–	project completion report
PPER	–	project performance evaluation report
PSC	–	port service charge
PTL	–	Ports Terminal Limited
RRP	–	report and recommendation of the President
t	–	ton
TA	–	technical assistance
TEU	–	twenty-foot equivalent unit

NOTE

In this report, "$" refers to US dollars, unless otherwise stated.

Key Words

asian development bank, development effectiveness, fiji, lautoka, lessons, performance evaluation, port, ports development, suva, transport

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The guidelines formally adopted by the Independent Evaluation Department (IED) on avoiding conflict of interest in its independent evaluation were observed in the preparation of this report. The fieldwork was undertaken by Franklin De Guzman (IED), Joselito Supangco, and Moti Lal Autar (staff consultants) under the guidance of the mission leader. To the knowledge of the management of IED, there were no conflicts of interest of the persons preparing, reviewing, or approving this report.

APPENDIXES

BASIC DATA

Fiji Ports Development Project (Loan 1902-FIJ)

Program Preparation/Institution Building

TA No.	Technical Assistance Name	Type	Person-Months	Amount ($'000)	Approval Date
3199	Port Asset Management Improvement Project	ADTA	27[a]	150	31 May 1999

[a] While two consultants were fielded over a 27-month period, the exact number of person-months is unknown because the assignment was intermittent.

Key Project Data ($ million)	As per ADB Loan Documents	Actual
Total project cost	32.26	36.23
Foreign exchange cost	17.61	19.93
Local currency cost	14.65	16.30
ADB loan amount utilized	16.80	16.12
ADB loan amount cancelled		0.68

Key Dates	Expected	Actual
Fact-finding		19–29 January 1999
Appraisal		24–30 March 1999
Loan negotiations		13–16 July 1999
Board approval		5 March 2002
Loan agreement		23 July 2002
Loan effectiveness	23 October 2002	3 September 2002
First disbursement		3 September 2002
Project completion	June 2005	November 2005
Loan closing	30 June 2006	1 March 2007
Months (effectiveness to completion)	32	38

Internal Rates of Return (%)	**Appraisal**	**Completion**	**Evaluation**
Economic internal rate of return	15.8 (Suva)		26.4 (Suva)
	17.6 (Lautoka)		22.8 (Lautoka)
		19.8 (Overall)	24.46 (Overall)
Financial internal rate of return	22.3 (Suva)		17.8 (Suva)
	16.5 (Lautoka)		16.4 (Lautoka)
		12.8 (Overall)	17.2 (Overall)

Borrower: Maritime and Ports Authority of Fiji (subsequently Fiji Ports Corporation Limited)
Executing Agency: Maritime and Ports Authority of Fiji (subsequently Fiji Ports Corporation Limited)

Mission Data

Type of Mission	No. of Missions	No. of Person-Days
Reconnaissance	1	5
Fact-Finding	1	17
Appraisal	1	6
Appraisal follow-up	1	10
Inception	1	24
Review	3	42
Project completion	1	12
Independent evaluation	1	32

ADB = Asian Development Bank, ADTA = advisory technical assistance, TA = technical assistance.

EXECUTIVE SUMMARY

This project performance evaluation report (PPER) presents the findings from evaluation of the Fiji Ports Development Project to assess its performance and highlight lessons. It provides inputs to the Regional Sector Assistance Performance Evaluation on Pacific Transport.

The Project

The project's main objective was to support Fiji in achieving a stable macroeconomic environment; support trade, investment, and private sector development; and enhance competitiveness of the Fijian economy. Approximately 90% of the country's import and export trade occurs through the two ports of Suva and Lautoka. Suva Port, the country's busiest international entry port, had inadequate capacity to handle the current cargo levels. Its wharf structure and landfill reclamation were below minimum seismic standards, and storage space for containers was insufficient. Lautoka Port, the country's second busiest port, lacked adequate storage and berth capacity to support the local export industries. Additional storage and berth capacity were needed to improve shipping services, and ensure better intermodal allocation of cargo traffic to reduce impact on the road system and environment. Policy dialogue conducted by the processing missions focused on the introduction of competition and market conditions to improve cargo-handling performance, improving port operations and management, and providing a cleaner environment at the ports and their surroundings.

The project was negotiated with the government in July 1999 and approved by ADB in March 2002. The Maritime and Ports Authority of Fiji (MPAF) was the executing agency, with its general manager of technical services as project manager responsible for overall project administration. During the early stages of the project, MPAF performed as envisaged. However, MPAF ceased to exist when port subsector reforms were implemented during latter stages of the project. Most of its functions were transferred to a new entity, Fiji Ports Corporation Limited (FPCL), which took over as executing agency in February 2005. FPCL maintained continuity in managing the project. The organizational change had no negative consequence for the project since MPAF's general manager for technical services became FPCL's general manager for infrastructure and services.

Overall Assessment

Overall, the project is rated *successful*. The project is assessed *relevant*. It was relevant during project appraisal, completion, and evaluation. The envisaged impacts, outcome, and outputs were consistent with the government's development strategies, including Fiji's Strategic Development Plan for 2003–2005 and its latest Strategic Development Plan for 2007–2010. The project was also consistent with ADB's country strategies and programs at the time of appraisal. However, the project design had shortcomings. The project preparation was weak in that calculation of the EIRR was incorrect and the DMF did not properly identify output and outcome indicators. Better consultation could also have improved implementation performance.

The project is assessed *effective*. Four of the six intended outcome indicators have been fully achieved and seven of the 10 intended output indicators have been fully or largely achieved. The intended outcomes of faster average vessel turnaround time, increased cargo volume, increased number of ship calls, and more effective use of stacking areas have all been fully achieved. There also have been marked improvements in cargo-handling operations as a result of the project. However, increased competition in cargo-handling services was not achieved. Most of the expected outputs have been achieved and civil works are of high quality,

with the Suva wharf now meeting seismic standards and the extended Lautoka wharf able to accommodate more container traffic. Detracting from a higher effectiveness rating is the fact that two project outputs were dropped and there were two other departures from the original design. These departures did not, however, materially affect the achievement of the outcomes, nor are they affecting the impact achievement.

The project is assessed *highly efficient*. The Independent Evaluation Mission used a corrected EIRR methodology to estimate direct benefits from the port improvements, namely reduction in vessel waiting time at anchorage, reduction in vessel service time at berth, and savings in cargo handling. The overall reestimated EIRR is computed as 24.5%, with Suva Port having an EIRR of 26.4% and Lautoka Port an EIRR of 22.8%. The project was completed with a 5-month delay vis-à-vis the appraisal schedule. However, it should be noted that the project started 18 months late and that the actual pace of implementation was very quick in the latter stages.

The project is assessed *likely* to be sustainable. The current level of maintenance is satisfactory, but there are some issues with regard to poor utilization rates of the FPCL-owned shore cranes and inadequate cargo-handling equipment. The reestimated financial internal rate of return (FIRR) for the entire project is a relatively high 17.2%, with Suva Port and Lautoka Port having FIRRs of 17.8% and 16.9%, respectively. FPCL's financial performance has varied through its existence, with earnings before interest and income tax falling below the appraisal forecast until 2002 but exceeding the forecast thereafter. FPCL has recently commenced in implementing Port Tariff Regulations 2009, which are intended to improve FPCL's financial viability in operating and maintaining the various ports under its administrative and operational purview.

Key Issues

Costs and benefits of the various options for meeting water quality objectives should have been more thoroughly considered. The project scope was modified and the envisaged ship-to-shore sewage in Suva Port never undertaken. Although the PCR was silent on the reason for this decision, IED was informed that the component was dropped because the cost for the pipeline was substantially higher than originally estimated. Provision of the ship-to-shore sewage connection likely would have afforded better protection to the environment in Suva Port and its vicinity, since it would have enabled the port to control the discharge of ship wastes. During project design, it would have been better if the costs and benefits of the various options for meeting water quality objectives had been more thoroughly considered. The private sector subsequently found it profitable to provide tankers to siphon and transport ships' liquid waste to the Kinoya sewage treatment plant for a fee.

Site development planning and stakeholder consultation should have been given more importance. The project scope was modified and the envisaged container yard and ancillary civil works on reclaimed land at Lautoka Port were never undertaken. The PCR is again silent on the reason for this decision, but it appears there was no firm commitment from the private sector to take up the reclaimed land for development into inland container depots. There appears to have been inadequate site development planning and stakeholder consultation for that component.

Competition in cargo handling could have improved productivity. Postponement in privatizing cargo handling at the ports was another variance from what was envisaged at appraisal. Government staff cited a number of reasons for this delay, but these did not seem

serious enough to account for the lack of progress in this area. Competition could have boosted cargo-handling productivity and equipment inventory while pressuring shipping agents and companies to reduce their port service charges. There seems to have been no definite strategy for implementing privatization and competition in cargo handling.

Benchmark survey should have been conducted. FPCL's failure to conduct a benchmark survey to establish baseline data marks another departure from what was expected at appraisal. FPCL was given the responsibility to compile and analyze data to facilitate project performance monitoring and evaluation, and then to forward the information to ADB and the government in accordance with an agreed schedule. The initial failure eventually led FPCL to renege on its other undertakings related to performance monitoring.

Reducing and eliminating the port service charge (PSC) could improve Fiji ports' competitive advantage. PSC is imposed by shipping lines and agents on cargo to and from Suva and Lautoka ports. It represents a surcharge over and above the shipping freight rate to compensate for perceived port inefficiencies, such as longer waiting time at anchorage or longer service time at the port due to port congestion or lack of cargo-handling equipment. It is a transaction between the shipping line or agent and the shipper of cargo, and it is outside the control of FPCL and the project. The fee puts Fijian ports at a considerable competitive disadvantage vis-à-vis other ports in the Pacific. Reducing and eventually eliminating the PSC remains an important government policy objective, but little progress has been made in addressing the issue.

Lessons

The project could have benefited from more careful preparation. The project was prepared through a sequence of four processing missions, without the benefit of dedicated project preparatory TA. In retrospect, given the weaknesses in the project design, it could have benefited from more careful preparation. Due to the unexpected long delay between the end of the last processing mission and the project's approval following the political instability during 2000–2002, there was ample opportunity for a more complete preparation. Small-scale project preparatory TA should have been considered during this period to better prepare the project.

More thorough stakeholder consultation during project processing could have led to better project design. The project processing missions could have consulted the key project stakeholders more effectively. For example, decrease in the port service charge by 50% in 2009 and its elimination by 2010 was cited as a project benefit, but this would have required agreement of the shipping agents and companies to implement. The same applies to the Lautoka reclamation component, which should have been undertaken only after commitment by project stakeholders had been obtained. More thorough consultation would have ensured that all parties are aware of their commitments and resulted in a better project design.

More rigorous risk assessment during project processing would have allowed for better monitoring of key assumptions during implementation. A key impact assumption overlooked was elimination of the PSC by shipping agents and companies. Another assumption that shipping agents would not construct their own container yards near Lautoka Port should have been highlighted as a key output assumption for sustainable utilization of the reclamation area financed by the project.

Lack of baseline data hampered evaluation. Higher priority should have been given to ensuring that baseline data was collected and reported during project implementation. The PCR

identified this as a lesson, and this is reconfirmed at the evaluation stage. Subsequent to the PCR, FPCL and Ports Terminal Limited have introduced a more systematic performance management system, but port statistics provided to the IEM were still insufficient. The absence of these baseline data targets made independent evaluation of the project considerably more difficult.

Follow-up Actions

ADB's *2007 Fiji Islands: Reengagement Approach* stipulates that there will be no country partnership strategy or country operational business plan for the country until such time as the criteria for reengagement have been achieved. Two follow-up actions are proposed for the sector division to take up upon reengagement: (i) follow up with FPCL to expedite introducing competition in cargo handling, and (ii) encourage the government to enter into dialogue with shipping agents and companies to work toward eliminating the PSC.

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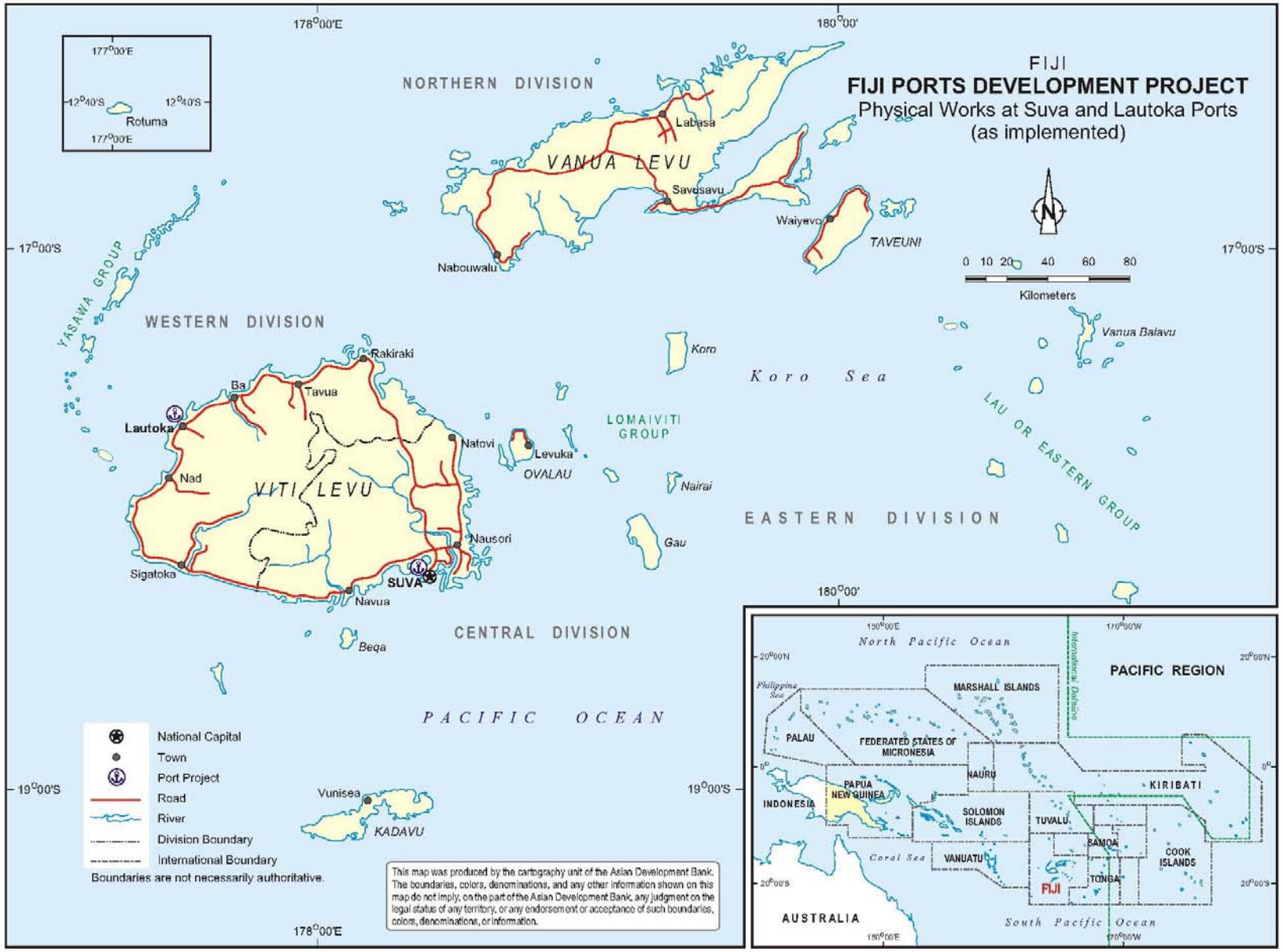

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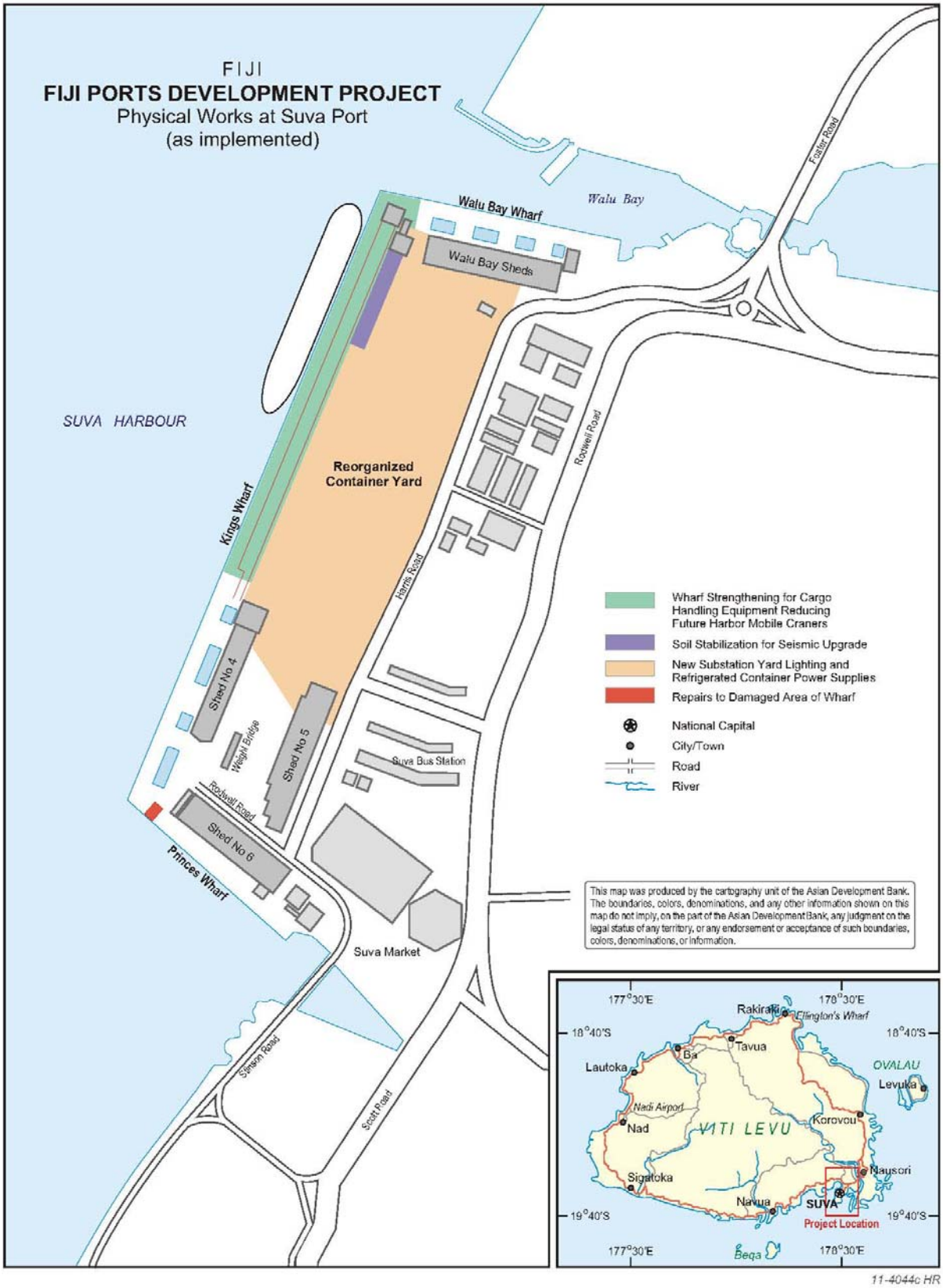
Map 1

Map 2


FIJI
FIJI PORTS DEVELOPMENT PROJECT
Physical Works at Suva Port
(as implemented)
Walu Bay
Walu Bay Wharf
Walu Bay Sheds
Foster Road
SUVA HARBOUR
Reorganized Container Yard
Kings Wharf
Rodwell Road
Harris Road
Shed No 4
Weight Bridge
Shed No 5
Suva Bus Station
Rodwell Road
Shed No 6
Princes Wharf
Suva Market
Simpson Road
Scott Road
Wharf Strengthening for Cargo Handling Equipment Reducing Future Harbor Mobile Craners
Soil Stabilization for Seismic Upgrade
New Substation Yard Lighting and Refrigerated Container Power Supplies
Repairs to Damaged Area of Wharf
National Capital
City/Town
Road
River
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177°30'E
178°30'E
18°40'S
19°40'S
Rakiraki
Ellington's Wharf
Tavua
Ba
Lautoka
OVALAU
Levuka
Nadi Airport
Nad
VITI LEVU
Korovou
Nausori
Sigatoka
Navua
SUVA
Project Location
Beqa
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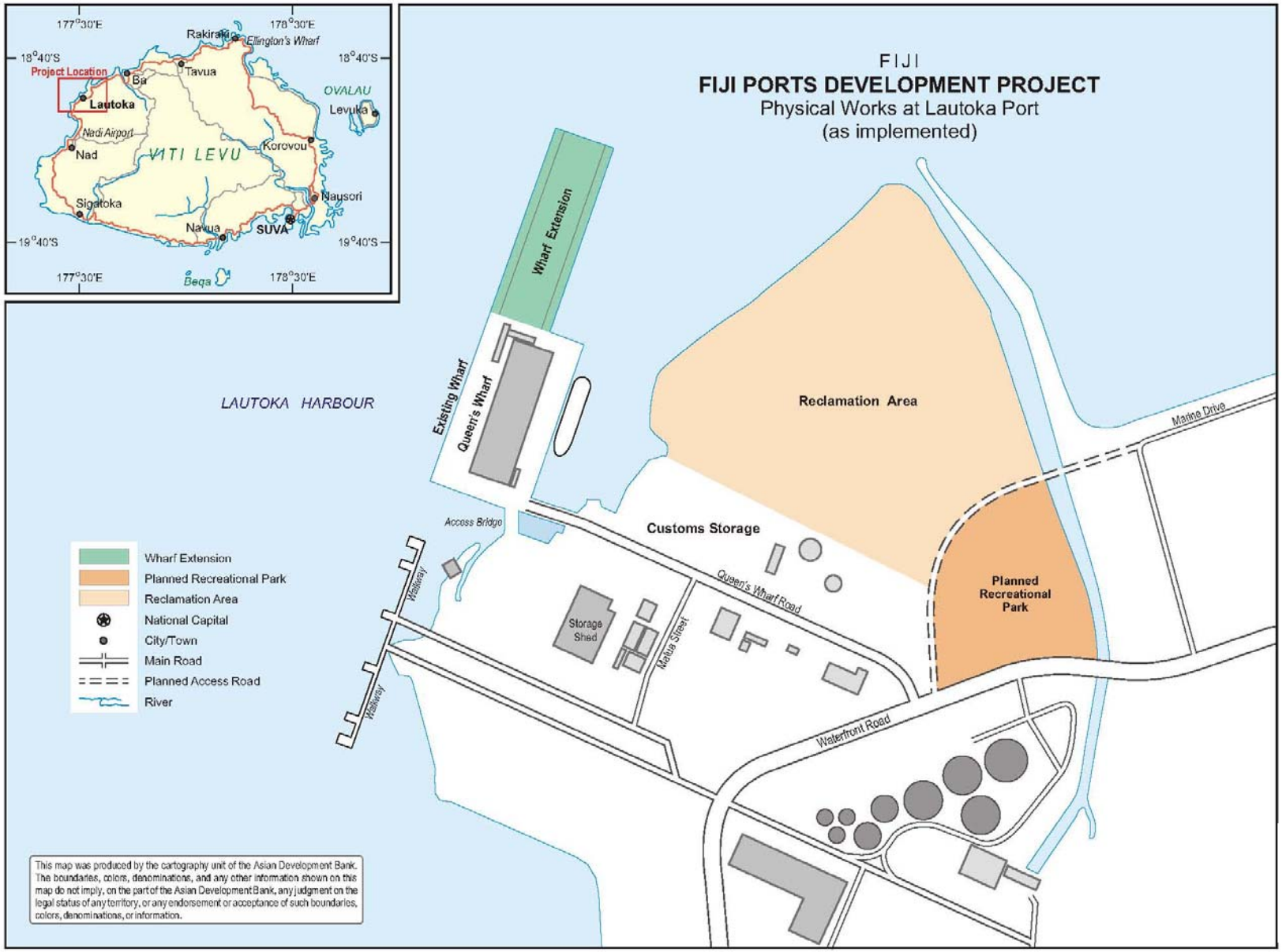
FIJI
FIJI PORTS DEVELOPMENT PROJECT
Physical Works at Lautoka Port
(as implemented)
177°30'E
178°30'E
18°40'S
19°40'S
Project Location
Rakiraki
Ellington's Wharf
Ba
Tavua
Lautoka
OVALAU
Levuka
Nadi Airport
Nad
VITI LEVU
Korovou
Nausori
Sigatoka
Navua
SUVA
Beqa
LAUTOKA HARBOUR
Wharf Extension
Existing Wharf
Queen's Wharf
Reclamation Area
Marine Drive
Access Bridge
Customs Storage
Queen's Wharf Road
Planned Recreational Park
Walkway
Storage Shed
Matua Street
Waterfront Road
Wharf Extension
Planned Recreational Park
Reclamation Area
National Capital
City/Town
Main Road
Planned Access Road
River
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Map 3

I. INTRODUCTION

A. Evaluation Purpose and Process

1. The Fiji Ports Development Project was to assist the Government of Fiji in developing port sector facilities and operations, thereby enhancing competitiveness of the Fijian economy.[1] The project was expected to support sector performance improvements, including by introducing competition in cargo handling, crystallizing agency responsibilities, optimizing operational management, and enhancing environmental management of ports.

2. The Independent Evaluation Department selected the project for evaluation to provide inputs to the Regional Sector Assistance Performance Evaluation on Pacific Transport. The preparation of this project performance evaluation report (PPER) more than 5 years after project completion in 2005 allows sufficient time for impacts to be visible. Following Independent Evaluation Department evaluation guidelines,[2] the PPER reassesses the status of the ports improved, provides lessons, and suggests follow-up actions. The evaluation draws on a review of project documents and other studies and on discussions between Asian Development Bank (ADB) staff members and officials of government agencies concerned with the project, international development institutions resident in the country, and consultants. It incorporates the results of the independent evaluation mission's (IEM) field inspections. A copy of the draft PPER was shared with the Pacific Department of ADB and the government, and their comments were incorporated where relevant.

3. In 2008, the project completion report (PCR)[3] rated the project *successful*. The project was considered highly relevant to meeting both the government's and ADB's country and sector objectives. The PCR did not explicitly rate the other three evaluation subcriteria (effectiveness, efficiency, and sustainability), but it assessed all of these positively. The PCR drew two lessons: (i) failure to adequately establish performance indicators, targets, and baseline data made systematic evaluation of the project more difficult; and (ii) in designing and implementing projects, the executing agency should be required to assess the probable effects of other investments in the sector upon the project and advise ADB accordingly. The PCR enumerated a number of recommendations, mainly related to noncompliance and partial compliance with project loan covenants. These called for (i) better support by the executing agency for implementing covenants covering design and implementation of appropriate performance measures, (ii) closer monitoring and stronger dialogue by the executing agency with the central government on timely implementation of covenants that are beyond the executing agency's control, and (iii) incorporating into the loan agreement effective and proportionate sanctions for noncompliance. Other project-related recommendations included that ADB should follow up with the executing agency to (i) secure compliance of project-specific covenants covering environmental provisions of port regulations, (ii) push for the privatization of cargo handling services, and (iii) undertake benchmarking surveys to monitor project performance, including the financial aspects (e.g., return on investment and debt coverage).

B. Project Objectives

4. The project's envisaged impact was to contribute to Fiji's economic growth through port sector support to trade, investment, and competitiveness. The two impact indicators/targets

[1] ADB. 2002. *Report and Recommendation of the President to the Board of Directors on a Proposed Loan to the Maritime and Ports Authority of Fiji for the Fiji Ports Development Project in the Republic of the Fiji Islands*. Manila.
[2] ADB. 2006. *Guidelines for Preparing Performance Evaluation Reports for Public Sector Operations*. Manila.
[3] ADB. 2008. *Completion Report: Fiji Ports Development Project in the Fiji Islands.* Manila (*Loan 1902-FIJ*).

identified at appraisal in the design and monitoring framework (DMF) of the report and recommendation of the President (RRP) were (i) reduced cost of port services, and (ii) improved competiveness of port services. These indicators/targets were modified at project completion to cover four areas: (i) increased trade through Suva and Lautoka, (ii) increased container ship calls at Lautoka, (iii) reduced level of ocean freight rates, and (iv) reduction or elimination of port services charge (PSC) of F$150.[4]

5. The RRP included three intended outcomes for the project: (i) sustained improvement in port efficiency and in port productivity, (ii) postponement of expensive new port project, and (iii) improved intermodal interfacing of container traffic. At project completion, however, the PCR's DMF excluded outcome (iii). While the RRP had listed six outcome performance indicators/targets, most of these were modified in the PCR.

6. The project consisted of two components covering Suva and Lautoka ports. In the RRP, the intended outputs under each of the components were as follows:

(i) Component 1: Suva Port – (a) restoration of King's Wharf to extend its life to 2020, (b) upgrade of King's Wharf to minimum seismic standards, (c) strengthening of the King's Wharf deck and reorientation of the container yard to improve the efficiency of cargo handling, and (d) ship-to-shore sewage to improve water quality control at Suva Port.

(ii) Component 2: Lautoka Port – (a) remedial rehabilitation of Queen's Wharf, (b) extension of Queen's Wharf, and (c) additional container storage space.

7. Under the Suva Port component, the PCR reduced the number of intended outputs from four to two by combining outputs (a) and (b) into one output with multiple indicators/targets and removing output (d) on improving water quality control of Suva Port. The intended outputs of the Lautoka Port component in the PCR were likewise modified, with (a) being replaced by establishment of an access bridge and (c) being labeled as "reclamation."

8. There were several weaknesses in the RRP's DMF. First, the outcome and output statements were poorly formulated. In particular, instead of three separate outcome statements, a single outcome covering all three elements could have been formulated. Second, there were improperly specified indicators. For example, the PCR's impact indicator to reduce or eliminate the PSC would have been more appropriate as an impact assumption. Also the output indicator of improved water quality at Suva Port would have been more suitable as an impact indicator. Third, the DMF lacked monitorable indicators suitable for evaluating the success of several impact and outcome statements. For example, there were no impact indicators for measuring improvements in trade and investment as a result of the project. The PCR's DMF improved upon the RRP's DMF, particularly with regard to the retrospective specification of impact and outcome indicators. Nevertheless, there were still some improperly specified indicators, such as including the reduction of the PSC as an impact indicator.

9. Given the aforementioned weaknesses, the independent evaluation mission (IEM) modified the design summary statements and grouped the performance targets/indicators more logically. New indicators/targets have been added and others revised in order to better measure attainment of the design summary statements. These revisions reflect the IEM's findings and understanding of the major distinct categories. Modified impact, outcome, and output groupings and the additional indicators and/or targets are reflected in the revised summary DMF in Appendix 1.

[4] The project goal stated in the RRP equates with impact, and the project purpose equate with outcome.

II. DESIGN AND IMPLEMENTATION

A. Formulation

10. The project comprised ADB's 14th loan to Fiji and the second in its port subsector. It was approved on 5 March 2002 in the amount of $18.8 million. It had been preceded by an ADB port loan in 1979, which rehabilitated and developed Suva Port to handle containers.[5] The loan was developed within the context of the Suva Port Master Development Plan funded by the European Investment Bank.[6] It benefitted from work undertaken under ADB technical assistance (TA),[7] which helped to put in place maritime sector structural reforms. Given this substantial previous work, it was decided that dedicated project preparatory TA would not be necessary and the project was prepared through a sequence of four processing missions (reconnaissance, fact-finding, appraisal, and follow-up appraisal) over the period December 1998 to September 1999. The long delay between the end of the last processing mission and the project's approval in March 2002 was due to disruption caused by the coup d'état of May 2000 and subsequent political instability.

11. The four processing missions prepared the technical, economic, and financial justifications for the project. In retrospect, the RRP and PCR both used a flawed methodology to calculate the economic internal rate of return (EIRR), which understated the benefits from the project (see paras. 70–73).

12. Details of consultations with beneficiaries and affected people during project preparation were not provided in the RRP. The IEM found evidence of consultation with stakeholders of Suva and Lautoka ports, but it would appear that some issues (e.g., elimination of the PSC and the Lautoka reclamation area) were not given enough attention (see para. 96).

13. Policy dialogue conducted by the processing missions focused on introducing competition and market conditions to improve port cargo-handling performance, improving port operations and management, and providing a cleaner environment at the ports and its surroundings. In retrospect, the policy dialogue could have paid closer attention to eliminating the PSC imposed by shipping operators on all international cargoes to and from the country once port productivity improvements were realized after project completion (see para. 71).

14. The related ADB TA (see footnote 7) on maritime sector structural reforms, which was rated *successful*, supported the project's institutional elements and defined its loan covenants.

B. Rationale

15. The ports financed under the project were intended to support Fiji in achieving a stable macroeconomic environment; support trade, investment, and private sector development; and enhance competitiveness of the economy. Currently, approximately 90% of the country's import and export trade occurs through Suva and Lautoka ports. The increased capacity of the two ports to handle vessel and cargo traffic responds to the additional demand for port services coming from exporters of mineral water to the United States and animal feed to the Middle East,

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[5] ADB. 1979. *Report and Recommendation of the President to the Board of Directors on a Proposed Loan to the Ports Authority of Fiji for the Suva Port Project.* Manila (Loan 0411-FIJ: Suva Port, for $7.0 million, approved on 20 September 1979).

[6] European Investment Bank. 1996. *Suva Port Master Development Plan: Final Report.* Luxembourg.

[7] ADB. 1999. *Small Scale Technical Assistance Project to Fiji Islands on Port Asset Management Improvement*. Manila (TA 3199-FIJ, for $150,000, approved on 31 May 1999).

as well as importers of coal and bricks. Suva Port, the country's busiest international entry port, had been degenerating such that (i) the aging wharf apron had inadequate capacity to handle current cargo levels, (ii) the wharf structure and its landfill reclamation were below minimum seismic standards, and (iii) storage space for containers was insufficient. Lautoka Port, the country's second busiest port, lacked adequate storage and berth capacity to support the local export industries. Additional storage and berth capacity were needed to improve shipping services to Lautoka and Fiji, and ensure optimal intermodal allocation of cargo traffic to reduce impact on the country's road system and environment.

16. Fiji recognized the importance of transport service underpinning economic growth. This particularly emphasizes the need to improve the efficiency and productivity of port operations by increasing the role of the private sector, commercializing services, maintaining high safety levels, and ensuring intermodal coordination. The country's aim was—and continues to be—to ensure future competitive and lower port services costs while providing adequate capacity to meet the anticipated traffic and cargo growth.

17. An infrastructure development plan by the Maritime and Ports Authority of Fiji (MPAF) had proposed eventual replacement of Suva Port by a multipurpose cargo facility at Rokobili, 5 kilometers from the current port. A geotechnical analysis in 1998 had concluded, however, that the soil sediments at that site were soft, thus rendering the proposed facility uneconomical. In the interim, and in the absence of the port relocation project, the master plan demonstrated a need to repair and rehabilitate Suva Port to extend its life to 2020. The rehabilitation also was needed to improve the port's competitiveness and ability to cope with the anticipated throughput while establishing King's Wharf as a lifeline wharf that could continue to function after a major earthquake.

18. Extension of the facilities at Lautoka Port was expected to increase capacity for cargo storage and handling by (i) allowing additional berthage for long distance vessels to North America and Asia, (ii) increasing productivity of Suva and Lautoka ports, (iii) improving intermodal interface between land and maritime transport, (iv) reducing road deterioration, and (v) supporting tourism by enabling development of attractive berth possibilities for small and large cruise ships. Together with greater flexibility in vessel scheduling, the Lautoka Port project was expected to catalyze long-term benefits from local export industries and from international cargo vessels by enabling these to include the port as a single point of call in Fiji.

19. The project rationale remains valid at the evaluation stage. The project supported trade, investment, and private sector development; it enhanced competitiveness of the Fijian economy; and it provided adequate capacity to meet the anticipated traffic and cargo growth. In particular, connectivity between the Pacific countries within the ports' influence areas has been strengthened, consistent with the long-term pursuit of Suva's becoming a Pacific hub port.

C. Cost, Financing, and Executing Arrangements

20. As reported in the PCR, the overall actual project cost was $36.23 million, which was about $4 million higher than the $32.26 million estimate at appraisal. The ADB loan was utilized to cover actual costs of $16.12 million, as compared to the appraisal estimate of $16.79 million. Thus, instead of financing 52% of total project costs, ADB in the end financed only 44%. The main reason for the lower level of ADB financing was the approximately 32% drop in the value

of the US dollar against the Fijian dollar early in the physical implementation period.[8] Fortunately, MPAF's strong financial position allowed it to make up the financing shortfall.

21. The project was financed by a loan of $16.8 million from ADB's ordinary capital resources. The loan was made to the executing agency, MPAF, and guaranteed by the government. Local commercial borrowing from the Australia and New Zealand Bank of F$20 million was secured, and the balance was financed by MPAF.

22. As envisaged at appraisal, MPAF was the executing agency, with its general manager of technical services as project manager responsible for overall administration of the project. Preconstruction activities were to be undertaken by consultants assisted by MPAF supervisory staff. The PCR indicated that during early stages of the project, MPAF performed the roles as envisaged. However, following port subsector reforms implemented in early 2005, most of MPAF's functions were transferred to a new entity, Fiji Ports Corporation Limited (FPCL), which took over the role of executing agency in February 2005. FPCL maintained continuity in managing the project. The organizational change had no negative consequence for the project since the MPAF general manager for technical services became the general manager for infrastructure and services of FPCL.

D. Procurement, Construction, and Scheduling

23. **Procurement.** Project procurement was divided into two packages for design review and project supervision consultancy, four civil works packages, and some minor civil works contracts. These packages were funded under one or more of the three financing sources. Consultancy contracts were awarded in accordance with ADB's *Guidelines on the Use of Consultants*. The consultancy contract for Lautoka Port was by direct engagement, since the consultant had already prepared detailed designs for the Lautoka Port improvement and there were clear cost and quality advantages in ensuring continuity. ADB financing for the Suva and Lautoka ports supervision consultants was $1.51 million and $0.33 million, respectively. Procurement of civil works was carried out using international competitive bidding in accordance with ADB's Procurement Guidelines. ADB financing for the Suva and Lautoka ports' civil works packages was $8.40 million and $4.54 million, respectively. ADB financed $0.68 million of the Lautoka reclamation component. Minor civil and electrical works were procured through local competitive bidding.

24. In the tender for the civil works component for Lautoka Port, the inclusion or exclusion of value-added tax (VAT) in the tendered price was uncertain. Bidders included, excluded, or were silent on the VAT issue. The supervising consultant adjusted tendered prices to align these and was supported in general terms by the government, by ADB, and by a legal opinion that was subsequently obtained. A bidder challenged this process, believing it did not conform to the guidelines. Clearer definition in the bidding documents regarding VAT would have avoided the issue. Except for this, the procurement processes were considered satisfactory.

25. **Construction.** For Suva Port, the detailed engineering design was completed in June 2003. Civil works commenced in February 2004, and construction was completed in December 2004 for civil works contract 2 and December 2005 for civil works contract 1. For Lautoka Port, the detailed engineering design was completed in January 2003. Civil works construction was completed in April 2005.

[8] The policy of pegging the Fiji dollar's exchange rate to a basket of the currencies of its main trading partners largely contributed to the overvaluation of the Fiji dollar.

26. **Scheduling.** The initial project scope included only improvements at Suva Port. Project processing was delayed by an attempted coup in May 2000, however, and by the time the government was in a position to move forward further growth in demand had put more pressure on the capacity of Lautoka Port. The project was reappraised in June 2001 and expanded to Lautoka Port. The loan was approved by the Board on 5 March 2002. The loan agreement was signed 4.6 months after approval. Loan effectiveness required an additional 3 months.

27. The project was implemented over the period September 2002–November 2005, which resulted in actual completion being 5 months later than envisaged at appraisal. Consulting services for Suva Port began in September 2002 and finished in November 2005. As envisaged at appraisal, the Suva Port project was to be implemented over 39 months, but actual implementation required just 23 months. The civil works were commenced in February 2004, 18 months later than envisaged at appraisal, partly owing to a global shortage of steel. Civil works were completed in November 2005, five months later than envisaged at appraisal, with a very quick pace of implementation in the latter stages. Consulting services for Lautoka Port began in September 2002 and finished in May 2005. The civil works were implemented over 16 months, just 1 month over the 15 months envisaged at appraisal. The appraisal and actual implementation schedules are in Appendix 3.

E. Design Changes

28. There were four departures from the original scope of work during project implementation. First, the envisaged ship-to-shore sewage pipeline to improve water quality control in Suva Port was not undertaken. The executing agency staff indicated that the reason the activity was dropped was that the original cost estimates only budgeted $100,000, which was insufficient to undertake the work. Shipping companies' staff members further indicated that, in any case, vessels either rely on tanker trucks provided by contractors to suction and discharge the liquid waste into the city's sewage treatment plant or, in the case of larger vessels, use on-board wastewater treatment facilities. The underbudgeting can be considered a project design flaw, while, in hindsight, the demand for the ship-to-shore sewage services from the shipping companies could have been highlighted as a project risk and/or assumption.

29. Second, the reclamation of 6 hectares of land was dropped from the scope of the project and was funded from FPCL's own resources. The envisaged objectives were to build a slipway on the reclaimed land to accommodate five ships at one time and to provide an additional 24 container ground slots in view of the anticipated increase in cargo handling resulting from the Queen's Wharf extension. However, private companies opted to establish their own container storage areas outside of the port area. The reclaimed site is unutilized and overgrown with grass. Ancillary civil works for the reclamation area, such as provisions for base course, lighting and power points, construction of an access road, and establishment of a recreational park, did not materialize. One of the reasons cited for not building the public park was that the Lautoka City Council was concerned about possible social problems that might result.

30. Third, for Suva Port, the planned lifeline wharf length of 150 meter (m) was reduced to 140 m due to budgetary constraints and the need to offset the additional soil stabilization cost. This reduction in wharf length does not significantly affect the technical soundness of the port. Minimum seismic standards were achieved through soil stabilization, installation of rock anchors, and strengthening of sheet piles.

31. Fourth, a minor change in project scope was approved during project implementation. Savings from loan proceeds were used to partly finance structural repairs to the Queen's Wharf in Lautoka Port which were originally intended to be funded solely by the executing agency.

F. Outputs

32. **Suva Port.** As mentioned in the foregoing section, minor design changes slightly altered the outputs of this component from those envisaged at appraisal, particularly those pertaining to installation of the ship-to-shore sewage pipeline and reduction in the lifeline wharf's length. The main outputs were as follow:

(i) strengthening of the sections of wharf to meet seismic standards and provide a lifeline berth with a length of 140 m,
(ii) strengthening of wharf deck,
(iii) rebuilding of the southwest corner of the wharf measuring 30 m long and about 2–3 m wide, and
(iv) reorganization of the container storage area.

33. **Lautoka Port.** As mentioned in the Design Changes section (para. 29), a few minor departures from the original scope of work affected the outputs associated with reclamation activities. The main outputs of this component were the following:

(i) construction of an extended wharf measuring 154 m long and 48 m wide which provided for two additional berths,
(ii) building of an access bridge which was about 38 m long and 12 m wide, and
(iii) reclamation of 6 hectares of land north of the wharf.

G. Consultants

34. The PCR rated the performance of the consultants as generally satisfactory. The project was delivered on time, within budget, and to an acceptable quality. The main supervision consultant succeeded in resolving the soil stabilization issue in Suva Port, thereby mitigating possible adverse effects on cost and timely completion. However, the consultants failed to guide the executing agency in preparing a benchmark survey to establish baseline data for the project, thus rendering project evaluation more difficult.

H. Loan Covenants

35. Twenty of the 24 loan covenants were complied with, 2 were partly complied with, and 2 were not complied with. One loan covenant not complied with was for FPCL to award and make effective two or more nonexclusive licenses to different firms for cargo-handling operations. So far, FPCL (through Ports Terminal Limited [PTL]) retains a monopoly of cargo-handling services. That is despite the Reorganization Charter approved by the government in June 2004 which allowed for flexibility in implementing privatization of cargo handling. The PCR noted that the difficulty in securing an adequate level of political support for change was impeding progress on this issue, and the IEM concurs with this assessment. Privatization of cargo-handling operations is politically not expedient in view of the possible job losses or reduction in job security among the cargo-handling labor force.

36. Another covenant not complied with pertains to the conduct of a benchmark survey to establish baseline data for the project. FPCL indicated that during project implementation the priority was on civil works associated with rehabilitation of the ports. While the consultants were technically adept in providing sufficient advice on the envisaged conduct of a benchmarking

survey and the data could, in general, have been gathered, the consultants' efforts were primarily focused on the establishment of port facilities.

37. A covenant partly complied with pertains to new or increased penalties for violating the environmental provisions of the Port Regulations. The penalty for first-time violators was raised from F$400 to F$10,000. An Environmental Act was promulgated in 2005 and came into effect in 2007. However, the enforcement of this Act targets only land-based pollution. The Department of Environment is currently working with the Fiji Islands Maritime Safety Administration to develop more comprehensive marine regulations. Another covenant partly complied with concerns FPCL's meeting and maintaining an annual return of not less than 2% on its average net revalued fixed assets in operation. This was initially complied with during implementation but FPCL subsequently failed to meet this target from 2006 onwards. However, with the approval of the revised port tariffs in 2009 and in 2011, it is expected that FPCL would be able to meet this covenant requirement in the future.

I. Policy Setting

38. **Poverty reduction.** ADB's Pacific Strategy for the New Millennium[9] focuses on poverty reduction; continuing support for economic management, governance, and public sector reforms; private sector development; a more active role for women; and sustainable environmental management. It addresses results-oriented management of government systems and organizations, processes to emphasize performance, and improvement in service delivery. In the wake of the 2006 coup d'etat, ADB management endorsed in 2007 an approach to reengagement with the Fiji Islands under which there will be no country partnership strategy or country operational business plan for the country until such time as the criteria for reengagement have been achieved.[10]

39. During 2005, the government reviewed its Strategic Development Plan 2003–2005 to reinforce its objectives to (i) reduce poverty; (ii) rebuild a cohesive and a more prosperous society; (iii) achieve peace, unity, and multiracial harmony; (iv) strengthen the foundation for increasing economic growth; and (v) rebuild confidence in social and political stability.[11]

40. **Competition in port services.** The government recognized the importance of transport service underpinning economic growth. It particularly emphasized the need to improve efficiency and productivity of port operations by increasing the role of the private sector, commercializing services, maintaining high safety levels, and providing intermodal coordination. This is to ensure future competitive and lower-cost port services, as well as adequate capacity to meet the anticipated growth in traffic and cargo.

41. **Regional integration.** FPCL is pursuing its long-term goals of becoming a Pacific hub port, developing free port facilities, and increasing transshipment capacity. Its infrastructure development plan outlines FPCL's infrastructure development needs.

[9] ADB. 2000. *A Pacific Strategy for the New Millennium.* Manila.
[10] ADB. 2007. *Fiji Islands: Reengagement Approach.* Manila.
[11] Government of Fiji. 2002. *Strategic Development Plan 2003–2005, Parliamentary Paper No. 72.* Suva. Although formalized in 2003, the Strategic Development Plan was informally available during the project preparation stage.

III. PERFORMANCE ASSESSMENT

A. Overall Assessment

42. Overall, the project is rated *successful*. In terms of the four evaluation criteria, the project is assessed *relevant*, *effective*, *highly efficient*, and *likely to be sustainable*. Both the Suva and Lautoka components are rated *successful*. The Suva component was assessed slightly higher than the Lautoka component, since it achieved more of its envisaged project outputs and had better economic and financial rates of return. Both components were, however, given the same ratings of *relevant*, *effective*, *highly efficient,* and *likely to be sustainable*.

43. To arrive at the overall assessment, the individual component ratings were aggregated using weightings developed by the project performance evaluation review mission: Suva Port (65%) and Lautoka Port (35%). These weightings reflect the relative importance of the component groupings to expected overall project outcomes and each component's ADB-funded civil works cost as a percentage of the total civil works cost. The rating of each component group used four criteria: relevance (20% weight), effectiveness (30%), efficiency (30%), and sustainability (20%). Individual criterion ratings were in whole numbers from 0 to 3, in increasing order of project performance. The overall assessment is summarized in Table 1. Further details are in Appendix 4.

Table 1: Overall Performance Assessment of Project Components

Criterion	Suva Port	Lautoka Port	Overall
1. Relevance	2.0	2.0	2.0
2. Effectiveness	2.0	2.0	2.0
3. Efficiency	3.0	3.0	3.0
4. Sustainability	2.0	2.0	2.0
Overall rating[a]	**2.3**	**2.3**	**2.3**

[a] Highly successful: ≥ 2.7, successful (S): 2.7 > S ≥ 1.6, partly successful (PS): 1.6 > PS ≥ 0.8, unsuccessful: < 0.8.

Source: Independent evaluation mission.

B. Relevance

44. The project is assessed to be *relevant*. It was relevant at the time of project appraisal as well as at the time of its completion. The project's envisaged impacts, outcome, and outputs were consistent with the government's development strategies and ADB's country strategies and programs. The project's design is considered generally appropriate, but there were some shortcomings.

45. The project was consistent with the government's strategic plan for 2003–2005 (footnote 11), which specified improvement of shipping services and infrastructure as a key policy objective and explicitly targeted the upgrading of Suva and Lautoka ports by 2005. Its latest development plan for 2007–2011 identified the need to achieve faster and sustainable economic growth through, among other things, exports and restructuring of the public and private sectors.[12] It also specified 12 priorities, which include promoting competition and efficiency and raising export earnings. Thus, the project remains consistent with the country's current strategies and programs.

[12] Government of Fiji. 2006. *Strategic Development Plan 2007–2011.* Suva.

46. ADB's strategy for the country at the time of the project's approval was based on its Pacific Strategy for the New Millennium (footnote 9), which supported broader reforms in the areas of economic policy, public sector management, poverty, governance, and private sector development. This included continued transport infrastructure development and maintenance, with related investments into physical, telecommunications, and information technology infrastructure. Specifically, ADB's assistance for physical infrastructure was to address the need for Fiji Islands' transport sector to contribute to growth, trade, and competitiveness. Although there is currently no country partnership strategy or operational business plan for the country (para. 38), the project remains consistent with ADB's latest Pacific Approach strategy.[13]

47. The project design had a number of shortcomings. First, the RRP's DMF had weaknesses in formulating the outcome and output statements, had improperly specified indicators, and lacked monitorable indicators suitable for evaluating the success of the impact and outcome statements (para. 8). The PCR's DMF improved upon the RRP's DMF, particularly with regard to specifying impact and outcome indicators. Nevertheless, there were still some improperly specified indicators, such as including reduction of the PSC charge as an impact indicator. Second, the RRP and PCR used a flawed methodology to calculate the EIRR for the project (paras. 11 and 70–73). Third, there were some lapses in the stakeholder consultation (para. 12) and policy dialogue (para. 13) during the processing missions.

C. Effectiveness

48. Overall, the project is assessed *effective*. The intended outcome of sustained improvement in port productivity has been largely achieved. There have been marked improvements in cargo-handling operations as a result of the project. Most of the expected outputs have been achieved and civil works were of high quality, with the Suva wharf now meeting seismic standards. The following discussion on outcome and output achievement is based on the revised summary project DMF in Appendix 1.

1. Achievement of Outcome

49. The project has largely achieved its outcome of sustained port productivity improvement. Out of 6 project outcome indicators, 4 were fully achieved, 1 was partially achieved, and 1 was not achieved. The achieved indicators were (i) reduction in average vessel turnaround time, (ii) increased cargo volume, (iii) increased number of ship calls, and (iv) more effective use of container stacking areas. The performance indicator for increased cargo handling rates has been only partially achieved, while the indicator for introducing competition in cargo-handling services was not achieved.

50. In general, port productivity has greatly improved. Container vessel calls have significantly increased. For example, ship calls, which are indicative of traffic growth, rose from 961 in 2002 to 1,235 in 2010. The total of foreign cargo vessels making port calls grew from 1,369 in 2004 to 1,477 in 2009. Stevedored cargo tonnage carried by foreign vessels increased from 1.6 million in 2004 to as much as 1.84 million in 2007. Cargo tonnage slightly dipped to about 1.8 million in 2008 then matched the 2004 figure in 2009. Reduction in average vessel turnaround time is typically measured by service time at anchorage and service time at berth. A typical vessel can now discharge about 300–400 containers within 20–24 hours as compared to about 32–48 hours for the same amount of cargo before the project. In the case of Suva, the reorganization of the container stacking area has boosted storage capacity from 70,000

[13] ADB. 2009. *ADB's Pacific Approach 2010–2014*. Manila.

containers per annum before the project to about 100,000 containers per annum. Containers can now be stacked 4 high as compared to 3 high before the project.

51. However, the performance target to boost handling rate to 15 containers per hook per hour has been only partially achieved. Average crane rate rose from 3–6 containers per hook per hour to about 8–10 containers per hook per hour using ships' cranes and to 15–18 containers per hook per hour using mobile cranes. For ships' cranes, this has more to do with the condition of the cranes, and these are outside the control of FPCL and PTL. In general, with more experience, it is expected the efficiency of crane operators will climb to levels approaching international standards. Overall, the productivity of ships' cranes and shore mobile cranes depend on the sufficiency of cargo-handling equipment, including forklifts, front-end loaders, reach stackers, straddle carriers, spreaders, terminal tractors and container chassis, and port container management software. All these are provided by the port operator or cargo handler.

52. Increased competition in cargo-handling services was not achieved. PTL retains a monopoly of cargo-handling services, and a Cabinet decision approving its privatization in 2005 has yet to be implemented due to the lack of political support (para. 35).

2. Achievement of Outputs

53. Most of the expected project outputs have been achieved and civil works were of high quality for both Suva and Lautoka ports. At Suva Port, the strengthened wharf, container storage area, and fenders (to protect the berth from vessels) were observed to be in very good condition. Some minor maintenance works need to be done, such as resealing of pavement joints in the container storage area. At Lautoka Port, the wharf extension was also in very good condition, including the new bridge to an unpaved container storage area inside the port.

a. Suva Port Component

54. For Suva Port, 3 out of 5 output indicators were fully achieved, 1 was mostly achieved, and 1 was not achieved. The fully achieved indicators were (i) strengthening of wharf deck, (ii) rebuilding of the southwest corner of the wharf, and (iii) reorganization of the container storage area. The indicator for repair and rehabilitation of King's Wharf was mostly achieved, and the indicator for installation of a ship-to-shore sewage was not achieved.

55. **Repair and rehabilitation of King's Wharf.** The King's Wharf's repair and rehabilitation has two performance targets/indicators. These are (i) strengthening sections of the wharf to meet seismic standards, including construction of a lifeline berth designed at 150 m in length; and (ii) strengthening of the wharf deck.

56. Strengthening critical sections of King's Wharf to meet seismic standards was mostly achieved. The envisaged lifeline wharf length was reduced to 140 m to keep the project within budget. This reduction does not significantly impact on the technical soundness of Suva Port. Soil stabilization and ancillary activities, including jet grouting and use of cement-stabilized bentonite "barrets" (columns), were done to ensure this lifeline berth would remain operational after a possible earthquake. Minimum seismic standards were achieved by installing rock anchors and strengthening sheet piles. A complete seismic upgrading would have entailed complete overhaul or replacement of existing facilities, and would not have been necessary since the berth was particularly intended for emergency purposes.

57. Strengthening of the wharf's deck has allowed for the use of advanced cargo-handling equipment such as heavy forklifts and mobile harbor cranes. This has increased port capacity. Fender panels and supports were also installed. All cracked piles were repaired, including to rebuild longitudinal beams.

58. **Rebuilding and strengthening southwest corner of King's Wharf.** Rebuilding of the southwest corner of the wharf was fully achieved. Measuring 30 m long and about 2–3 m wide, this portion was rebuilt and strengthened with appropriate supports and panels.

59. **Reorganization and improvements to the container storage area.** Improvements and reorganization of the container storage area included removing, replacing, and providing container yard facilities; demolition, relocation, and/or replacement of substation and transit sheds; reorienting of container stacks; provision of lighting and reefer power points; and realignment of traffic circulation and access. As a result, traffic flows have improved substantially.

60. **Ship-to-shore sewage.** Although the PCR's DMF indicated that this component had been installed, the envisaged ship-to-shore sewage to improve water quality control was not undertaken. This output was dropped due to cost considerations. Vessels' liquid waste is now off-loaded via tanker trucks and transported to a city sewage treatment plant. Information collected by the IEM indicates that to date FPCL and Fiji Islands Maritime Safety Administration have effectively minimized the disposal of ship's liquid waste into the Suva Lagoon through increased penalties and better enforcement of the environmental provisions under the Port Regulations (para. 86). However, there is not enough evidence to conclude that Suva Lagoon water quality will not further deteriorate as a result of the project.

b. Lautoka Port Component

61. For Lautoka Port, 2 out of 5 output indicators have been fully achieved, 1 was mostly achieved, and 2 were not achieved. The wharf extension and building of the access bridge were fully achieved. On the other hand, the reclamation of about 6 hectares north of the wharf could only be considered mostly achieved since the ancillary civil works that were envisaged such as lighting and other fixtures were not installed. Moreover, the construction of an access road to connect Marine Drive with the reclaimed area was not achieved. The establishment of a small public recreational park also was not achieved.

62. **Queen's Wharf extension.** Construction of the extended wharf (154 m long and 48 m wide) was completed, as originally envisaged. Two additional berths were actually added (1 full berth and 1 small berth) as compared with the before-project situation wherein only one berth was used. Piling was successfully completed, including the provision of concrete deck works. New lighting and port fenders were also installed.

63. **Establishment of access bridge.** The access bridge, measuring about 38 m long and 12 m wide, was intended to shorten the distance between the wharf and the container yard. The bridge can handle axle loads of up to 95 tons and can support fully laden forklift operations.

64. **Reclamation activities.** The reclamation north of the wharf consisted of laying and compacting around 180,000 cubic meters of rock and gravel. Although the reclamation was completed, the reclaimed area is idle. Private companies that had been expected to use the reclaimed area for container storage have established their own container storage areas outside of the port area. There is only gravel and grass in the area and no lighting or other fixtures were

built. This was fully funded by FPCL (para. 29), however, which is currently marketing the leasing of space in the reclaimed area and has received expressions of interest.

65. **Construction of access road.** Although the PCR's DMF indicated that this component had been constructed, the envisaged building of an access road 120 m by 10 m to connect Marine Drive with the reclaimed container yard was not undertaken.

66. **Establishment of a recreational park.** Although the PCR's DMF indicated that this component had been constructed, the envisaged establishment of a small public recreational park of 0.25 hectares at the reclamation site was not undertaken.

D. Efficiency

67. Overall, the project is assessed *highly efficient*. In particular, it was highly efficient in terms of its economic viability, achieving a high EIRR. In terms of project implementation, the project was completed with a 5-month delay vis-à-vis the appraisal schedule, but the pace of implementation after the initial start-up delay was very quick.

1. Economic Viability

68. Table 2 compares the economic viability estimations made at appraisal, completion, and evaluation stages. At appraisal, the RRP had estimated EIRRs of 15.8% and 17.6% for Suva and Lautoka Ports, respectively. At completion, the PCR had estimated an overall project EIRR of 19.8%. At evaluation, the PPER's reevaluation indicates an EIRR for the entire project of 24.5%, with Suva and Lautoka ports having EIRRs of 26.4% and 22.8%, respectively.

Table 2: Comparison of Economic Viability Estimations

Item	Suva Port	Lautoka Port	Entire Project
Appraisal EIRR	15.8%	17.6%	-
Completion EIRR	-	-	19.8%
Evaluation EIRR	26.4%	22.8%	24.5%

"-" = no estimate made. EIRR = economic internal rate of return.
Sources: Independent evaluation mission estimates; ADB. 2002. *Report and Recommendation of the President to the Board of Directors on a Proposed Loan to the Maritime and Ports Authority of Fiji for the Fiji Ports Development Project in the Republic of the Fiji Islands*. Manila; ADB. 2008. *Completion Report: Fiji Ports Development Project in the Fiji Islands*. Manila (Loan 1902-FIJ).

69. Sensitivity analysis was undertaken by increasing project costs and decreasing project benefits by 20%. Overall, EIRRs are above the 12% hurdle rate and net present value at 12% is positive when cost factors are increased by 20% or benefits decreased by 20%. Details on the assumptions and methodology used in the economic reevaluation are in Appendix 5.

70. The PCR assessed the project *efficient*, but it used a flawed methodology to calculate the EIRR. The main methodological shortcomings noted in the PCR were that

(i) project costs had omitted government-financed costs,
(ii) no shadow pricing was undertaken,
(iii) project benefits should not have included benefits from eliminating the PSC, and
(iv) project benefits should not have included land-bridging cost savings and damage averted by means of seismic strengthening.

These shortcomings were corrected in the PPER's economic reevaluation. Also, unlike the PCR, the PPER's reevaluation is undertaken based on the estimates of the net benefits for each of the two project components separately and combined. Economic benefits are calculated by estimating the direct benefits from the wharf improvements, namely reduction in vessel waiting time at anchorage, reduction in vessel service time at berth, and cargo-handling time savings. The approach taken in this reevaluation is based on the standard and accepted approach used in the economic evaluation of port projects. The following paragraphs provide further details regarding the PPER reevaluation's project benefit calculation and how this differed from that undertaken at project appraisal and completion.

71. The direct benefits identified in the PPER's reevaluation differ in three ways from those assumed at project appraisal and completion. First, the PSC collected by shipping agents and shipping lines was considered a primary benefit at both appraisal and completion stages. At appraisal, the PSC was F$150 per twenty-foot equivalent unit (TEU), while at completion it was F$250 per TEU and at the IEM stage (May 2011) it was F$350 per TEU. The IEM found that the PSC is a unilateral imposition by the shipping agents and shipping lines for profit and to cover costs normally absorbed and integrated into shipping rates. Its name is misleading and gives the impression that it is imposed by FPCL. This was confirmed during meetings with officials of FPCL; the Suva Chamber of Commerce; and the Department of Public Enterprises of the Ministry of Public Enterprises, Tourism and Communication. The PSC is a transfer payment and should not be considered as an economic cost foregone. Appendix 6 provides more details on the PSC.

72. Second, another economic benefit assumed in the PCR pertained to savings in road transport cost. Containers were being "land-bridged" from Lautoka to Suva due to the infrequent vessel calls at Lautoka Port. It was assumed that reduction in land-bridging traffic due to more ship calls at Lautoka would reduce deterioration of the Nadi–Suva road. In the absence of vehicle origin–destination data along this corridor, road transport savings could not be determined with reasonable accuracy.

73. Third, another project benefit identified at appraisal for Suva Port was that its "seismic strengthening confers a benefit from the averted damage cost should an earthquake occur, expressed as the expected value of damage multiplied by the annual probability of occurrence." Given that such event has not occurred since 1953 and its certainty cannot be estimated to a reasonable level, this was not considered in the reevaluation. This benefit is difficult to quantify, and, even if were estimated, the reliability of such calculation would be questionable. The benefit was correctly excluded from the PCR's economic analysis.

2. Project Implementation

74. As mentioned in para. 27, the project was completed 5 months behind schedule. The PCR attributed this delay to the long 18-month postponement in commencing civil works due to a worldwide shortage of steel. Once civil works commenced, the actual pace of implementation was very quick and made up for much of the initial delay.

E. Sustainability

75. Overall, the project is assessed *likely to be sustainable*. The rating applies to both the Suva and Lautoka components.

76. The project is technically sound and adequate maintenance and operating procedures are in place. FPCL's strong ownership and commitment to the project are confirmed by the IEM, as reported in the PCR. The IEM's inspection found the main project outputs to be in generally good condition, although minor sealing of pavement joints in the container stacking area of Suva Port is needed to prevent deterioration of the pavement. FPCL should ensure that adequate annual budget for port maintenance is allocated.

77. There is an issue with regard to three shore cranes (two in Suva Port and one in Lautoka Port) which are owned by FPCL and leased to PTL. FPCL is concerned that a private sector stevedore, or PTL in a fully privatized state, may choose not to employ the cranes or not be able to pay FPCL enough to cover its debt servicing. However, this could be easily resolved by requiring the "privatized PTL" and cargo handling competitors to assume responsibility for amortization and maintenance of these shore cranes.

78. Another issue concerns the quantity and maintenance of the cargo-handling equipment. Shipping agents consider the existing cargo-handling equipment inventory inadequate to service vessels calling at Suva and Lautoka ports, given the increased volume of cargo. The two shore cranes operating at Suva Port are said to break down frequently, rendering these unreliable and insufficient to serve requirements. During the IEM's visit in Suva Port, one shore crane was out of service and only one was servicing a bulk/break-bulk vessel. A container vessel docked at the same time had to use its own cranes to unload and load containers.

79. Table 3 compares the financial viability estimates made at appraisal, completion, and evaluation stages. Financial reevaluation of the project yielded an FIRR of 17.2%, compared with the PCR estimate of 12.8%. One methodological shortcoming of the PCR's estimate was that it failed to take into account the government-financed share of the project costs, which resulted in a higher FIRR result. The PPER's reevaluation now includes the government-financed costs. In terms of project components, the reestimated FIRR for Suva Port is 17.8% while that for Lautoka Port is 16.4%. Details on the assumptions and methodology used in the financial reevaluation are in Appendix 7.

Table 3: Comparison of Financial Viability Estimations

Item	Suva Port	Lautoka Port	Entire Project
Appraisal FIRR	22.3%	16.5%	-
Completion FIRR	-	-	12.8%
Evaluation FIRR	17.8%	16.4%	17.2%

"-" = no estimate made. FIRR = financial internal rate of return.

Sources: Independent evaluation mission estimates; ADB. 2002. *Report and Recommendation of the President to the Board of Directors on a Proposed Loan to the Maritime and Ports Authority of Fiji for the Fiji Ports Development Project in the Republic of the Fiji Islands*. Manila; ADB. 2008. *Completion Report: Fiji Ports Development Project in the Fiji Islands*. Manila (Loan 1902-FIJ).

80. FPCL's financial performance has been variable. In terms of revenues, its actual performance was well below that forecast at the appraisal stage for the period 2000–2004, but it exceeded the forecast from 2005 onwards. In terms of total expenses, the appraisal and PCR forecasts were significantly below the expenses actually incurred. Actual operating profit before interest and income tax was less than forecast up to 2002 but exceeded the forecast thereafter. FPCL has recently commenced in implementing the Port Tariff Regulations 2009, which were supposed to have been implemented starting on 1 October 2009 but were held in abeyance until early 2011. These new port tariffs are intended to improve FPCL's financial viability in

operating and maintaining the various ports under its administrative and operational purview. Appendix 8 provides more details on the financial performance of FPCL.

IV. OTHER ASSESSMENTS

A. Impact

81. **Project-level impacts.** The project was envisaged to contribute to Fiji's economic growth through port sector support to trade and competitiveness. Maritime trade at both the Suva and Lautoka ports has grown strongly. For Suva Port, stevedored exports increased from 365,500 tons (t) in 2002 to 473,700 t in 2010, or 3.29% annual growth for the period. Stevedored import tons rose from 851,300 t in 2002 to 961,800 t in 2010, or by 1.54% annually. For Lautoka Port, stevedored exports grew from 106,200 t in 2002 to 324,100 t in 2010, or 15.0% annually. Stevedored imports increased from 149,200 t in 2002 to 304,600 t in 2010, an annual growth rate of 9.3%. With regard to competitiveness, Suva Port is currently the third-largest port in the Pacific after Apra (Guam) and Papeete (French Polynesia). It has gradually assumed the role of a leading regional hub for the South Pacific over the past 10 years, and according to staff of the Secretariat of the Pacific Community it is well-positioned to further strengthen this role in the future.

82. **Impact on institutions.** Although no associated TA was provided with the loan, the project benefited from work undertaken under ADB's Small Scale Technical Assistance Project to Fiji Islands on Port Asset Management Improvement (completed in 2005, para. 10). That TA, which was rated successful, assisted to put in place maritime sector structural reforms, supported the project's institutional elements, and defined the project's loan covenants.

83. **Socioeconomic impact.** The PCR mentioned some of the project's main impacts. For Suva Port, the effective life of the main wharf has been extended and its capacity increased by the physical improvements to King's Wharf. These improvements should delay the need for investments in new port facilities at Rokobili. The wharf's improved load-bearing capacity allows the use of more productive cargo-handling equipment, which will lead to more rapid turnaround of ships in port, reduced port congestion, and, ultimately, lower freight rates and shipping surcharges. This should provide a stimulus to the country's international trade. The ability of the critical infrastructure to withstand seismic shocks has been improved, and this reduces the risk of interruptions to essential supplies to the Fijian community in the aftermath of a natural disaster.

84. **Gender impact.** Neither the RRP nor the PCR discussed the potential gender impacts of the project. The IEM met with a sociologist at the University of the South Pacific in Suva to collect information on social and gender impacts of the project, but, unfortunately, no social surveys or studies were available. The sociologist noted, however, that he was not aware of any negative gender impact from the project.

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85. **Environmental impact.** An initial environmental examination was prepared for the Suva and Lautoka port components in accordance with ADB's *Environmental Guidelines for Selected Infrastructure Projects*. The examination concluded that impacts of the project on the environment are within acceptable levels and could be effectively mitigated during construction and operations. Subsequently, no detailed environmental impact assessment was warranted. As per the PCR, the safeguard covenant in the loan agreement covering rights to land and control of dredging activities was complied with.

86. As originally envisaged, the project included construction of a pipeline to provide ship-to-shore sewage discharge at Suva Port. This was intended to contribute to a cleaner environment surrounding the port. The pipeline was not built due to cost considerations (para. 60). The IEM collected some initial data on water quality monitoring in Suva Port from 2002 to 2010, which indicates that water quality has not deteriorated significantly. Given the possible contaminant sources, such as industries, poor waste management, river-borne materials, urban runoff, shipbuilding and repair, and ship spillage and leakage, it is difficult to point at shipping as a major pollution source. Nevertheless, FPCL and Fiji Islands Maritime Safety Administration have effectively minimized the disposal of ships' liquid waste into Suva Lagoon. New or increased penalties for violating he environmental provisions of the Port Regulations are now being enforced (e.g., the penalty for first-time violators has been increased from F$400 to F$10,000). In lieu of the ship-to-shore sewage pipeline, private contractors provide liquid sewage disposal services for ships without on-board sewage treatment plants and transport these to Suva's sewage treatment plant. Through this alternative service, FPCL has prevented the project from contributing to Suva Lagoon pollution. The same liquid sewage disposal services for ships without on-board sewage treatment plants are available in Lautoka Port.

B. Asian Development Bank Performance

87. In general, the IEM found ADB's performance to be *partly satisfactory*. ADB carried out three loan review missions to monitor project progress and resolve implementation issues. A technical review mission was also fielded in May 2005. The project completion review mission did not properly identify those project outputs that were not achieved, such as the ship-to-shore sewage pipeline at Suva Port and the access road and recreational park at Lautoka Port. The methodology used for calculating the EIRR was also faulty.

88. On the positive side, FPCL and PTL staff indicated they were generally satisfied with ADB's performance. They particularly appreciated the continuity provided by posting of the original ADB staff member who designed the project as the ADB country director in Suva.

C. Borrower Performance

89. The IEM confirms the PCR's finding that the executing agency's performance was *satisfactory*. FPCL and its predecessor MPAF implemented the project diligently and efficiently, resulting in completion of civil works with just a five month delay vis-à-vis the appraisal schedule. However, the IEM agrees with the PCR that the executing agency should have given more attention to the four non-complied covenants for introducing competition into cargo handling, conducting benchmark surveys, introducing new or increased penalties for violations of the Port Regulations' environmental provisions, and maintaining an annual return of not less than 2% (paras. 35–37).

V. ISSUES, LESSONS, AND FOLLOW-UP ACTIONS

A. Issues

90. **Costs and benefits of the various options for meeting water quality objectives should have been more thoroughly considered.** The project scope was modified and the envisaged ship-to-shore sewage pipeline in Suva Port never undertaken (paras. 28 and 60). Although the PCR was silent on the reason for this decision, IED was informed that the component was dropped because the cost for the pipeline was substantially higher than originally estimated. The proposed ship-to-shore sewage connection likely would have afforded

better protection to the environment in Suva Port and its vicinity, since it would have enabled the port to control the discharge of ship wastes. During project design, it would have been better if the costs and benefits of the various options for meeting water quality objectives had been more thoroughly considered. The private sector subsequently found it profitable to provide tankers to siphon and transport ships' liquid waste to the Kinoya sewage treatment plant for a fee.

91. **Site development planning and stakeholder consultation should have been given more importance.** The project scope was modified and the envisaged container yard and ancillary civil works on the reclaimed land at Lautoka Port were never undertaken (paras. 29, 64–66). The PCR is again silent on the reason for this decision, but it appears there was no firm commitment from the private sector to take up the reclaimed land for development into inland container depots. There appears to have been inadequate site development planning and stakeholder consultation for that component.

92. **Competition in cargo handling could have improved productivity** Postponement of the privatization of cargo handling at the ports was another variance from what was envisaged at project appraisal and also resulted in noncompliance with a project covenant (para. 35). Government staff cited a number of reasons for this delay, but these did not seem serious enough to account for the lack of progress in this area. Competition would have boosted cargo-handling productivity and equipment inventory while pressuring shipping agents and companies to reduce their port service charges. There seems to have been no definite strategy for implementing privatization and competition in cargo handling.

93. **Benchmark survey should have been conducted.** FPCL's failure to undertake and complete a benchmark survey to establish baseline data for the project marks another departure from what was expected at appraisal and also resulted in noncompliance with a project covenant (para. 36). FPCL was given the responsibility to compile and analyze data to facilitate project performance monitoring and evaluation, then forward the information to ADB and the government in accordance with an agreed schedule. The initial failure eventually led FPCL to renege on its other undertakings related to performance monitoring.

94. **Reducing and eliminating the port service charge could improve Fiji ports' competitive advantage.** The PSC is imposed by shipping lines and agents on cargo moving to and from Suva and Lautoka ports (para. 71). It represents a surcharge over and above the shipping freight rate to compensate for perceived port inefficiencies, such as longer waiting time at anchorage or longer service time at the port due to port congestion or lack of cargo-handling equipment. It is a transaction between the shipping line or agent and the shipper of cargo, and it is outside the control of FPCL and the project. The fee puts Fijian ports at a considerable competitive disadvantage vis-à-vis other ports in the Pacific. Reducing and eventually eliminating the PSC remains an important government policy objective, but little progress has been made in addressing the issue.

B. Lessons

95. **The project could have benefited from more careful preparation.** The project was prepared through a sequence of four processing missions, without the benefit of dedicated project preparatory TA. In retrospect, given the weaknesses in the DMF (paras. 8–9), the four departures from the original scope of work (paras. 28–31), and the methodological shortcomings in the EIRR calculation (paras. 70–73), the project could have benefited from more careful preparation. Due to the unexpected long delay between the end of the last processing mission and the project's approval following the political instability during 2000–

2002, there was ample opportunity for a more complete preparation. Small-scale project preparatory TA should have been considered during this period to better prepare the project.

96. **More thorough stakeholder consultation during project processing could have led to a better project design.** The project processing missions could have consulted the key project stakeholders more effectively. For example, as mentioned in para. 71, a decrease in the PSC by 50% in 2009 and its elimination by 2010 was cited as a project benefit, but this would have required agreement of the shipping agents and shipping companies to implement. The same applies to the Lautoka reclamation component, which should have been undertaken only after commitments by shipping companies and agents had been obtained. More thorough consultation would have ensured that all parties were aware of their commitments and resulted in better project design.

97. **More rigorous risk assessment during project processing would have allowed for better monitoring of key assumptions during implementation.** Related to the above lesson on better consultation, the project should have done a better risk assessment. A key impact assumption overlooked was elimination of the PSC by shipping agents and companies. Another assumption that shipping agents would not construct their own container yards near Lautoka Port should have been highlighted as a key output assumption for sustainable utilization of the reclamation area financed by the project.

98. **Lack of baseline data hampered evaluation.** Higher priority should have been given to ensuring that baseline data was collected and reported during project implementation (para. 36). The data that should have been collected includes (i) benchmarking data, to provide MPAF management with objective reference points for impact evaluation corresponding with the needs of the port users and consumers; (ii) benefit monitoring data, to ensure that the project benefits actually accrue to the port users; and (iii) post-project performance evaluation data, to assess overall effectiveness of the project. The PCR identified this as a lesson, and this is reconfirmed at the evaluation stage. Subsequent to the PCR, FPCL and PTL have introduced a more systematic performance management system, but port statistics provided to the IEM were still insufficient. The absence of these baseline data targets made independent evaluation of the project considerably more difficult.

C. Follow-Up Actions

99. ADB's *2007 Fiji Islands: Reengagement Approach* (para. 38) stipulates that there will be no country partnership strategy or country operational business plan for the country until such time as the criteria for reengagement have been achieved. Two follow-up actions are proposed for the sector division to take up upon reengagement

100. **Follow up with FPCL to expedite introduction of competition in cargo handling.** The government is still obliged to comply with the covenant requiring it to introduce competition in stevedoring services. This remains relevant and necessary for achieving efficient port operations (para. 35). The sector division is recommended to follow up with the FPCL on this issue.

101. **Encourage the government to enter into dialogue with the shipping agents and companies to work toward eliminating the PSC.** The continuance of the PSC is still a significant issue (para. 94). The sector division should encourage the government to have a dialogue with the shipping agents and/or shipping companies to work toward its elimination.

REVISED SUMMARY DESIGN AND MONITORING FRAMEWORK SHOWING PROJECT ACHIEVEMENTS AGAINST INTENDED IMPACT, OUTCOME, AND OUTPUTS

(Prepared by the Independent Evaluation Mission)

Design Summary[a]	Performance Indicators/Targets[b]	Assessment	Project Achievements
Impact Increased trade opportunities and competitiveness through expanded and improved port facilities and services, without significant adverse environmental effects	Increase in maritime trade through Suva and Lautoka ports	Achievable	In general, maritime trade has increased at both ports. For Suva Port, stevedored exports rose from 365,500 t in 2002 to 473,700 t in 2010 (3.29% annual growth for the period). Stevedored imports grew from 851,300 t in 2002 to 961,800 t in 2010 (1.54% annual growth). At Lautoka Port, stevedored exports increased from 106,200 t in 2002 to 324,100 t in 2010 (15.0% annually). Stevedored imports rose from 149,200 t in 2002 to 304,600 t in 2010 (annual growth of 9.3%).
	Suva Port becomes increasingly important regionally[c]	Achievable	Suva Port is currently the third-largest in the Pacific after Apra (Guam) and Papeete (French Polynesia). It has gradually become a leading regional hub for the South Pacific over the past 10 years, and staff at the Secretariat of the Pacific Community reports it is well-positioned to further strengthen this role in the future.
	No significant deterioration in water quality due to shipping in Suva and Lautoka ports	Insufficient evidence to assess achievement	Data on water quality monitoring at Suva Port during 2002–2010 is available, but, given the possible contaminant sources, such as industries, poor waste management, river-borne materials, urban runoff, shipbuilding and repair, and ship spillage and leakage, it is difficult to point to shipping as a major pollution source. No data is available for Lautoka Port. There is evidence that Fiji Ports Corporation Limited and Fiji Islands Maritime Safety Administration have effectively minimized the disposal of ship's liquid waste into Suva Lagoon by increasing penalties and better enforcing the environmental provisions under the Port Regulations. Private contractors provide liquid sewage disposal services for ships without on-board sewage treatment plants and transport sewage to Suva's Kinoya sewage treatment plant. The same liquid sewage disposal services for ships without on-board sewage treatment plants are available in Lautoka Port.
Outcome Sustained improvement in port productivity	Increased cargo handling rates to 15 containers per hook per	Partially achieved	Average crane rate rose from 3–6 containers per hook per hour to about 8–10 containers per hook per hour

Design Summary[a]	Performance Indicators/Targets[b]	Assessment	Project Achievements
	hour		using ships' cranes and 15–18 containers per hook per hour using mobile cranes.
	Reduction in average vessel turnaround time	Fully achieved	A typical vessel can now discharge about 300–400 containers in 20–24 hours compared to about 32–48 hours for the same amount of cargo before the project.
	Increased cargo volume	Fully achieved	Stevedored cargo tonnage carried by foreign vessels grew from 1.6 million in 2004 to as much as 1.84 million in 2007. Cargo tonnage slightly dipped to about 1.8 million in 2008 then matched the 2004 figure in 2009.
	Increased number of ship calls	Fully achieved	Ship calls (traffic growth) grew from 961 in 2002 to 1,235 in 2010. Total foreign cargo vessels making port calls rose from 1,369 in 2004 to 1,477 in 2009.
	More effective use of container stacking areas	Fully achieved	Reorganizing container stacking areas in Suva Port has boosted storage capacity from 70,000 containers per annum before the project to about 100,000 containers per annum. Containers can now be stacked 4 high as compared to 3 high before the project.
	Increased competition in cargo-handling services from one company handling such services	Not achieved	Ports Terminal Limited retains a monopoly of cargo-handling services and a Cabinet decision approving its privatization in 2005 has yet to be implemented.
Outputs A. Suva Port component 1. Repair and rehabilitation of King's Wharf	Strengthening of the sections of wharf to meet seismic standards; lifeline berth designed at 150 m in length	Mostly achieved	The envisaged lifeline wharf length of 150 m was reduced to 140 m due to budgetary constraints. However, this reduction does not impact on the technical soundness of Suva Port. Soil stabilization and ancillary activities were carried out to ensure this lifeline berth would remain operational after an earthquake. Minimum seismic standards were achieved by installing rock anchors and strengthening sheet piles. Complete seismic upgrading would have entailed full overhaul or replacement of existing facilities and would not have been necessary since the berth was particularly intended for emergency purposes.
	Strengthening of wharf deck	Fully achieved	Suva's wharf deck was strengthened, thus allowing for use of advanced cargo-handling equipment such as heavy forklifts and mobile harbor cranes and resulting in increased port capacity. Fendering was also installed.
2. Rebuilding and	Rebuilding of southwest	Fully achieved	The southwest corner of the wharf,

Design Summary[a]	Performance Indicators/Targets[b]	Assessment	Project Achievements
strengthening of southwest corner of King's Wharf	corner of the wharf		measuring 30 m long and about 2–3 m wide, was rebuilt and strengthened.
3. Reorganization and improvements to the container storage area	Reorganization of the container storage area	Fully achieved	The container area was improved by removing, replacing, and providing container yard facilities.
4. Ship-to-shore sewage	Installation of a ship-to-shore sewage system	Not achieved	The component was dropped due to cost considerations. Vessels' waste is now off-loaded via vacuum trucks and transported to the sewage treatment plant at Kinoya.
B. Lautoka Port component			
1. Wharf extension	Wharf extension 154 m long and 48 m wide	Fully achieved	Construction of the extended wharf (154 m long and 48 m wide) was completed. Two additional berths were actually added: 1 full berth and 1 small berth.
2. Establishment of access bridge	Building of an access bridge 38 m long and 12 m wide	Fully achieved	The access bridge was constructed.
3. Reclamation activities and installation of facilities	Reclamation of 6 hectares north of the wharf	Mostly achieved (using Fiji Ports Corporation Limited's funds)	Reclamation of 6 hectares was completed. The reclaimed area is not being used as a container yard, however, since private companies have established their own container storage areas. There is only gravel and grass in the area, and no lighting or other facilities were built.
4. Construction of access road	Building of a 120 m by 10 m access road	Not achieved	Building of the access road to connect the marine drive with the reclaimed container yard was not undertaken.
5. Establishment of a small public recreational park	Establishment of a 0.25 hectare public recreational park	Not achieved	The recreational park was not established.

m = meter, t = ton.

[a] The design summary statements have been modified in accordance with ADB's *Guidelines for Preparing a Design and Monitoring Framework* and to reflect design summaries included in design and monitoring frameworks of the report and recommendation of the President and the project completion report, as well as the findings of the independent evaluation mission.

[b] Performance indicators/targets are by and large the same as those included in the design and monitoring frameworks of the report and recommendation of the President and project completion report. However, new indicators/targets have been added and others revised in order to better measure attainment of the design summary statements.

[c] Performance indicator added at evaluation stage to better measure attainment of design summary statement.

Sources: Independent evaluation mission findings; ADB. 2008. *Completion Report: Fiji Ports Development Project in the Fiji Islands.* Manila (Loan 1902-FIJ); ADB. 2002. *Report and Recommendation of the President to the Board of Directors on a Proposed Loan to the Maritime and Ports Authority of Fiji for the Fiji Ports Development Project in the Republic of the Fiji Islands*. Manila.

APPRAISAL COSTS AND ACTUAL COSTS AND FINANCING

1. Appraisal of the project began on 24 March 1999 and was completed on 30 March 1999. Loan negotiations were completed by 16 July 1999, and Asian Development Bank (ADB) Board approval was given on 5 March 2002. The loan agreement was dated 23 July 2002, with loan effectiveness starting on 23 October 2002.

2. At appraisal, the cost estimate for the project was $32.26 million with foreign exchange cost of about $17.6 million (or 55% of total cost) and local currency cost of $14.65 million equivalent (including taxes and duties) at the then-prevailing exchange rate of $1.00 = F$2.2753. This was rounded off to $1.00 = F$2.30.

3. The project was to be financed by an ADB loan of $16.8 million, with the balance from Fiji Ports Corporation Limited (FPCL) resources or domestic borrowings of $15.46 million. The table below details the project cost estimates at appraisal.

Table A2.1: Estimated Project Costs at Appraisal

	Foreign Cost (million)		Local Cost (million)		Total Cost (million)		ADB (US$	FPCL (US$	Total (US$
Description	**F$**	**US$**	**F$**	**US$**	**F$**	**US$**	million)	million)	million)
A. Base Cost									
1. Maintenance repairs	3.22	1.40	2.29	1.00	5.51	2.40	1.40	1.00	2.40
2. Seismic upgrade	7.90	3.43	2.48	1.08	10.38	4.51	3.43	1.08	4.51
3. Wharf deck strengthening	4.00	1.74	3.62	1.57	7.62	3.31	1.74	1.57	3.31
4. Container yard reorganization	1.03	0.45	1.66	0.72	2.69	1.17	0.45	0.72	1.17
5. Lautoka wharf extension	11.37	4.95	8.78	3.82	20.15	8.77	4.95	3.82	8.77
6. Lautoka approach bridge	0.48	0.21	0.31	0.13	0.79	0.34	0.21	0.13	0.34
7. Queen's wharf rehabilitation	0.72	0.31	0.48	0.21	1.20	0.52	0.00	0.52	0.52
8. Lautoka northeast reclamation	1.16	0.50	5.65	2.46	6.81	2.96	0.00	2.96	2.96
9. Consulting services	3.66	1.59	2.43	1.06	6.09	2.65	1.59	1.06	2.65
Subtotal A	**33.54**	**14.60**	**27.70**	**12.05**	**61.24**	**26.64**	**13.79**	**12.86**	**26.64**
B. Contingencies									
1. Physical contingency	3.49	1.52	2.81	1.22	6.29	2.74	1.52	1.22	2.74
2. Price contingency	0.80	0.35	1.11	0.48	1.91	0.83	0.35	0.48	0.83
Subtotal B	**4.29**	**1.87**	**3.92**	**1.70**	**8.21**	**3.57**	**1.87**	**1.70**	**3.57**
C. Financing Charges									
1. Interest and commitment charged during construction	2.26	0.98	2.06	0.90	4.32	1.88	0.98	0.90	1.88
2. Front-end fee	0.39	0.17	0.00	0.00	0.39	0.17	0.17	0.00	0.17
Subtotal C	**2.65**	**1.15**	**2.06**	**0.90**	**4.71**	**2.05**	**1.15**	**0.90**	**2.05**
Total	**40.48**	**17.61**	**33.68**	**14.65**	**74.16**	**32.26**	**16.80**	**15.46**	**32.26**

ADB = Asian Development Bank, FPCL = Fiji Ports Corporation Limited.
Note: A physical contingency of 10% was applied to all civil works, except the container yard which has received physical contingencies of 5 percent. A price contingency of 2.4% was added for the project's foreign cost components and 4% for the local cost components.
Source: ADB. 2002. *Report and Recommendation of the President to the Board of Directors on a Proposed Loan to the Maritime and Ports Authority of Fiji for the Fiji Ports Development Project in the Republic of the Fiji Islands*. Manila.

4. The report and recommendation of the President estimated the project would be completed by 31 December 2005. It was actually completed on 30 June 2006, six months after

the expected project end date. The project completion report (PCR) was finished on 15 October 2008.

5. The PCR did not provide a detailed breakdown of the actual costs for the various project components as given in Table A2.1 above. The independent evaluation mission attempted to acquire a detailed breakdown of the actual cost, but search of the project files yielded no such detail.

6. Using the PCR's breakdown of project costs and comparing this with the estimate at appraisal showed that ADB's actual share in the project costs was about 4% less than estimated, while FPCL's share in project costs was about 30% greater than estimated. For the Suva Port civil works, ADB's cost share was about 23% higher than estimated while FPCL's was about 72% higher than originally estimated. In US dollar terms, the cost overruns were $1.63 million for the ADB part and $3.16 million for the FPCL part. For the Lautoka Port civil works, ADB's share was $0.62 million less than estimated, while FPCL's share represented a cost overrun of $3.79 million.

7. For consulting services, the ADB share was actually $0.25 million greater than the appraisal estimate, while FPCL's share actually was lower by $0.61 million. For financing charges, ADB's share was less than estimated by $0.06 million. FPCL's actual cost for financing charges was the same as the appraisal estimate.

8. While ADB incurred lower cost than estimated during appraisal, FPCL incurred a substantial cost overrun of about $4.64 million due to its higher actual civil works costs. Table A2.2 gives the appraisal costs estimate and actual project costs.

Table A2.2: Project Appraisal Estimate and Actual Costs Incurred

($ million, except as indicated)

	Appraisal Estimate			Actual Cost			Deviation from Appraisal Estimate (%)		
Component	**ADB**	**FPCL**	**Total**	**ADB**	**FPCL**	**Total**	**ADB**	**FPCL**	**Total**
Civil works, Suva Port	7.02	4.37	11.39	8.65	7.53	16.18	23.22	72.31	42.10
Civil works, Lautoka Port	5.16	7.44	12.60	4.54	11.23	15.77	(12.02)	50.94	25.20
Consulting services	1.59	1.06	2.65	1.84	0.45	2.29	15.72	(57.55)	(13.6)
Physical and price contingencies	1.87	1.70	3.57	0.00	0.00	0.00		(100.00)	(100.00)
Financing charges	1.15	0.90	2.05	1.09	0.90	1.99	(5.22)	0.00	(2.90)
Total	**16.79**	**15.47**	**32.26**	**16.12**	**20.11**	**36.23**	**(3.99)**	**29.99**	**12.30**

ADB = Asian Development Bank, FPCL = Fiji Ports Corporation Limited.

Source: ADB. 2002. *Report and Recommendation of the President to the Board of Directors on a Proposed Loan to the Maritime and Ports Authority of Fiji for the Fiji Ports Development Project In the Republic of the Fiji Islands. Manila*; ADB. 2008. *Completion Report: Fiji Ports Development Project in the Fiji Islands.* Manila (Loan 1902-FIJ).

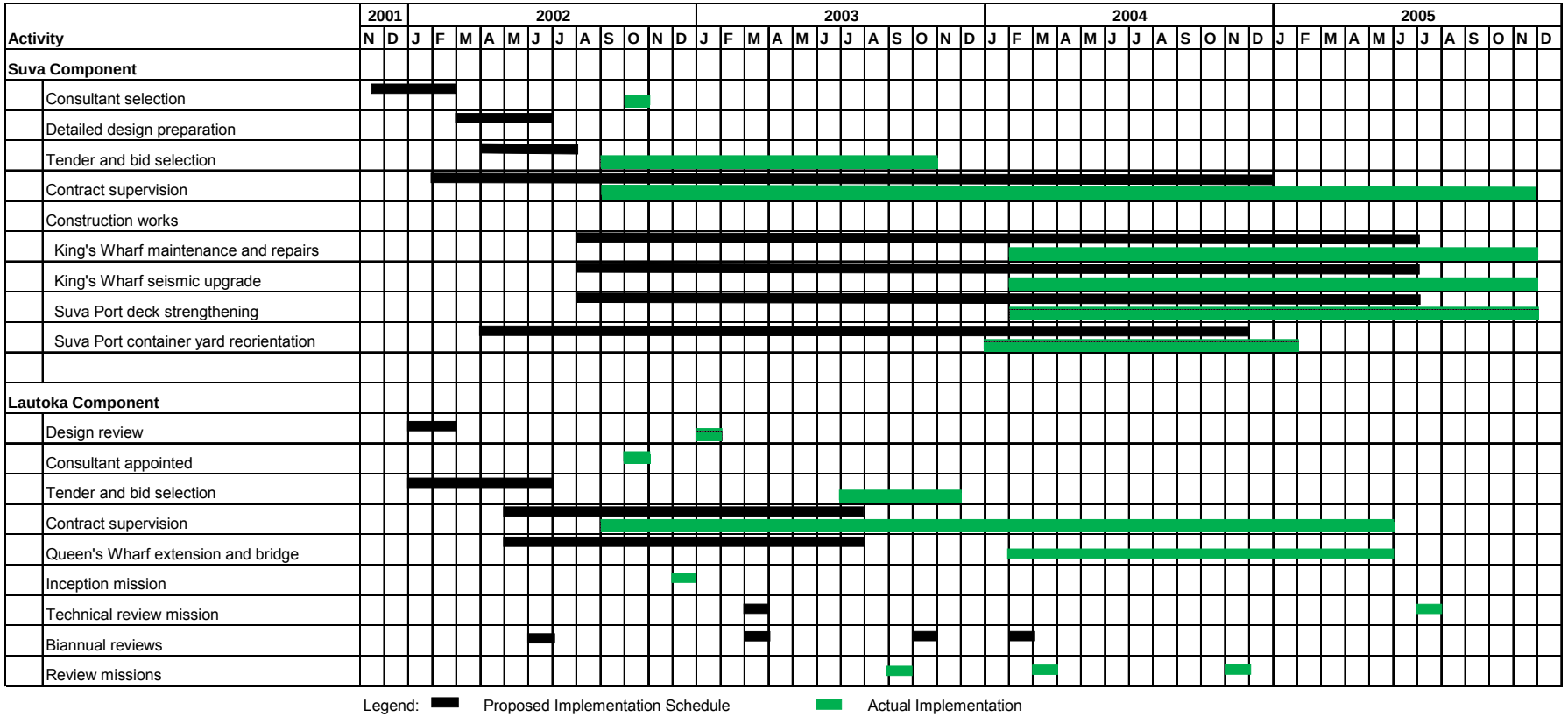
APPRAISAL AND ACTUAL IMPLEMENTATION SCHEDULE

1. Although the project had been initially appraised in March 1999 and loan negotiations completed by 16 July 1999, project processing for the improvements of Suva Port was delayed by an attempted coup in the country in May 2000. By the time the government was ready to resume, due to the growth in trade through Lautoka Port, the project was reappraised in June 2001 and expansion of the Lautoka Port was included. The loan for Suva and Lautoka ports was approved by the Asian Development Bank Board on 5 March 2002.

2. From an initial start-up date scheduled for mid-November 2001, the project activities actually began in September 2002. Nevertheless, the project was completed in November 2005, just 6 months later than originally scheduled. This can be attributed to the shorter-than-planned period for implementing the various Suva Port components. Versus the original estimate of 35 months, actual construction of civil works at Suva Port was completed in 22 months. The Suva Port container yard reorientation, for example, was anticipated to take 31 months, but construction was completed in 14 months.

In general, even with the initial delays in project processing due to political upheaval in the country, the actual project implementation period was significantly shorter than planned. The following figure shows the planned and actual project implementation schedules.

Project Implementation Schedule—Proposed and Actual



Source: ADB. 2008. *Completion Report: Fiji Ports Development Project in the Fiji Islands.* Manila (Loan 1902-FIJ).

ASSESSMENT OF OVERALL PERFORMANCE

Table A4.1: Suva Port Component Rating

(65% weighting in overall rating)

Criterion	Weight[a] (%)	Assessment	Rating Value (0–3)	Weighted Rating
1. Relevance	20	Relevant	2	0.4
2. Effectiveness	30	Effective	2	0.6
3. Efficiency	30	Efficient	3	0.9
4. Sustainability	20	Likely	2	0.4
Total	**100**			**2.3**

Source: Independent evaluation mission.

Table A4.2: Lautoka Port Component Rating

(35% weighting in overall rating)

Criterion	Weight[a] (%)	Assessment	Rating Value (0–3)	Weighted Rating
1. Relevance	20	Relevant	2	0.4
2. Effectiveness	30	Effective	2	0.6
3. Efficiency	30	Efficient	3	0.9
4. Sustainability	20	Likely	2	0.4
Total	**100**			**2.3**

Source: Independent evaluation mission.

Table A4.3: Overall Rating

Criterion	Weight[a] (%)	Assessment	Rating Value (0–3)	Weighted Rating
1. Relevance	20	Relevant	2	0.4
2. Effectiveness	30	Effective	2	0.6
3. Efficiency	30	Efficient	3	0.9
4. Sustainability	20	Likely	2	0.4
Total	**100**	**Successful**		**2.3**

[a] Weighted average of rating values for each component rounded to whole numbers.
Highly successful: Overall weighted average is ≥ 2.7. Successful (S): Overall weighted average is 1.6 ≤ S < 2.7. Partly successful (PS): Overall weighted average is 0.8 ≤ PS ≤ 1.6. Unsuccessful: Overall weighted average is < 0.8.
Source: Independent evaluation mission.

ECONOMIC REEVALUATION

1. Economic reevaluation of the Suva and Laotoka ports is undertaken based on estimating net benefits for each individual subproject and of the two combined. Economic benefits are calculated by estimating the direct benefits from the wharf improvements, namely reduction in vessel waiting time at anchorage, vessel service time at berth, and cargo-handling time. The approach taken in this reevaluation differs from that in the report and recommendation of the President and project completion report (PCR), and it is based on the standard and accepted approach for the economic evaluation of port projects.

2. The direct benefits identified in this reevaluation differ from those identified in the appraisal and PCR, with removal of the port service charge (PSC) collected by shipping agents and shipping lines from consideration as the primary project benefit. At appraisal, the PSC was F$150 per twenty-foot equivalent unit (TEU) above and beyond the freight rate and other shipping charges. It was F$250 per TEU at the time of the PCR and, more recently, F$350 per TEU (effective February 2011). Instead of removing the PSC after completion of the project improvements, the shipping agents and shipping lines increased it, which was the complete opposite of expectations in both the appraisal and PCR. The retention and even increase in the PSC is a disbenefit to the project and affects the previous viability expectations.

3. The independent evaluation mission (IEM) notes that the PSC is merely a unilateral imposition by the shipping agents and shipping lines to generate profits or cover costs which are normally absorbed and integrated into the shipping rates. Its description is misleading and gives the impression that it is imposed by Fiji Ports Corporation Limited (FPCL), which is the general perception.

4. In the economic sense, the PSC is a transfer payment and cannot be considered an economic cost. The PSC and port productivity are discussed comprehensively in Appendix 7.

5. In reestimating project benefits, data was used for vessel calls, waiting time at anchorage, vessel service time at berth, and volume of cargo throughput at both ports. Through Ports Terminal Limited, FPCL collects and consolidates data on vessel calls and cargo throughput but not data on vessel waiting time at anchorage and service time at berth.

6. Based on data provided by Ports Terminal Limited from 2002 to 2010, only vessels using the project berths were considered in estimating project benefits. Excluded were cruise ships, tankers (Lautoka Port only), as well as fishing, naval, and other vessels. While cruise ships use the berths improved or constructed under the project, they are given berth priority and therefore incur no waiting or service time at the ports. As given in Table A5.1, vessel calls from 2002 to 2010 grew on average by 3.54% annually at Suva Port, 10.45% at Lautoka Port, and 5.64% for both ports.

7. Vessel calls are expected to remain at 2010 levels as shipping companies meet growth in trade by deploying bigger not additional vessels. Given the lower operating cost per TEU of larger-capacity container vessels, shipping lines are better off replacing existing vessels with capacities of 1000 TEU or less. As demand for container slots in vessels increases, larger-capacity container vessels are being ordered, built, and fielded by major shipping lines. This has resulted in a cascade effect, as big ships are displacing small ships across all ship sizes. This would also be true for bulk/break–bulk, and roll-on, roll-off (RORO), or lift-on, lift-off (LOLO)

vessels. Given such scenario, and as evidenced by the annual change in vessel calls shown in the table below, growth in vessel calls is expected to be flat in 2011 and thereafter.

Table A5.1: Selected Vessel Calls in Suva and Lautoka Ports, 2002–2010

Vessel Type	2002	2003	2004	2005	2006	2007	2008	2009	2010	Growth Rate
Dry Bulk	**21**	**24**	**21**	**21**	**24**	**35**	**35**	**31**	**29**	4.12%
Suva	16	20	16	17	19	16	16	14	16	0.00%
Lautoka	5	4	5	4	5	19	19	17	13	12.69%
Tankers	**169**	**214**	**189**	**184**	**178**	**213**	**245**	**252**	**250**	5.02%
Suva	73	88	74	66	60	82	108	112	102	4.27%
Lautoka	96	126	115	118	118	131	137	140	148	5.56%
LOLO	**246**	**389**	**355**	**418**	**467**	**441**	**474**	**486**	**465**	8.28%
Suva	166	246	234	277	296	281	304	289	261	5.82%
Lautoka	80	143	121	141	171	160	170	197	204	12.41%
LOLO/RORO	**67**	**69**	**85**	**76**	**52**	**48**	**46**	**45**	**41**	(5.95%)
Suva	45	44	39	32	29	24	24	24	21	(9.09%)
Lautoka	22	25	46	44	23	24	22	21	20	(1.18%)
Car carriers	**9**	**10**	**10**	**11**	**9**	**7**	**6**	**9**	**8**	(1.46%)
Suva	9	9	10	11	9	7	6	9	8	(1.46%)
Lautoka	0	1	0	0	0	0	0	0	0	
Total	**416**	**580**	**545**	**592**	**612**	**613**	**669**	**683**	**645**	5.63%
Annual change (%)		**0.39**	**(0.06)**	**0.09**	**0.03**	**0.00**	**0.09**	**0.02**	**(0.06)**	
Suva	**309**	**407**	**373**	**403**	**413**	**410**	**458**	**448**	**408**	3.54%
Annual change (%)		**0.32**	**(0.08)**	**0.08**	**0.02**	**(0.01)**	**0.12**	**(0.02)**	**(0.09)**	
Lautoka	**107**	**173**	**172**	**189**	**199**	**203**	**211**	**235**	**237**	10.45%
Annual change (%)		**0.62**	**(0.01)**	**0.10**	**0.05**	**0.02**	**0.04**	**0.11**	**0.01**	

LOLO = lift-on, lift-off; RORO = roll-on, roll-off.

Source: Fiji Ports Corporation Limited; independent evaluation mission estimate.

8. Findings from interviews during the IEM field visit at Suva and Lautoka ports yielded estimates of 1–2 days for average vessel waiting time at anchorage and 2–3 days average service time at berth prior to the wharf improvements and lengthening. At present, berth capacities at Suva and Lautoka ports are sufficient to accommodate vessels upon arrival. Cargo-handling (stevedoring and arrastre) productivity has improved, though it remains below the level expected. It was assumed that since completion of the Suva subproject improvements, average vessel waiting time at anchorage has been reduced to almost nil and average vessel service time at berth by 1 day. For the Lautoka subproject, the assumed reduction was 2 days for waiting time at anchorage and 1 day for service time at berth.

9. Vessel costs were derived from previous studies,[14] since data on vessel operating costs comprise confidential information kept by shipping companies. For the reevaluation, 2002 reference shipping costs used are given in the table below. Since FPCL annual statistics do not break out vessel information by size, April 2011 vessel schedule data was used to estimate the average sizes of vessels calling at the two ports.

[14] Japan International Cooperation Agency; Ministry of Transport; Socialist Republic of Vietnam National Maritime Bureau; Overseas Coastal Area Development Institute of Japan and Japan Port Consultants, Ltd. 2002. *Final Report for the Port Development Study in the South of the Socialist Republic of Vietnam*, Volume 4. Hanoi.

Table A5.2: Estimated Vessel Total Operating Cost, by Vessel Size and Type

Vessel Size (DWT)	Vessel Type	
	Container ($/day)	General ($/day)
3,000	6,500	5,200
5,000	7,900	6,320
9,000	9,500	7,600
10,000	9,900	7,920
14,000	10,700	8,560
15,000	11,000	8,800
20,000	12,100	9,680
50,000	18,100	14,480

DWT = deadweight tonnage.
Sources: Japan International Cooperation Agency; Ministry of Transport; Socialist Republic of Vietnam National Maritime Bureau; Overseas Coastal Area Development Institute of Japan and Japan Port Consultants, Ltd. 2002. *Final Report for the Port Development Study in the South of the Socialist Republic of Vietnam*, Volume 4. Hanoi.

10. Further, it was assumed that the reduction in vessel waiting time at anchorage and vessel service time at the ports has resulted in a decrease in cargo waiting time, where the cost of waiting was conservatively estimated at $1 per ton per day. Total savings in cargo waiting time are estimated based on the forecast annual cargo throughput at the two ports. For Suva Port, assumed cargo waiting without the project was 2 days; considering that the Lautoka subproject was for berth extension, for Lautoka this was 3 days. The estimated growth rate from 2002 to 2010 is shown in the table below.

11. Total stevedored tons grew by an average 3.3% annually for Suva Port export cargo and 1.4% annually for import cargo. For Lautoka Port, export cargo grew by 15.0% annually while import cargo grew by 9.3% annually. The significant growth in Lautoka cargo throughput may reflect substantial cargo diversion from Suva Port, which was one of the intended outcomes of the Lautoka Port subproject component. For the cargo throughput forecast, the growth rate assumed at appraisal and PCR are still assumed to be realistic, given the erratic growth shown from 2002 to 2010.

Table A5.3: Exports and Imports Stevedored, Suva Port
(1000 tons)

Description	2002	2003	2004	2005	2006	2007	2008	2009	2010	CAGR (%)
Exports										
General cargo stevedored	364.9	367.3	376.4	444.2	446.9	563.6	497.8	425.9	473.7	3.31
Annual change (%)		0.7	2.47	18.0	0.6	26.1	(11.7)	(14.5)	11.2	
Total dry bulk tons stevedored	0.6	0.0	0.0	6.0	0.0	0.0	0.0	0.0	0.0	
Total tons stevedored	**365.5**	**367.3**	**376.4**	**450.2**	**446.9**	**563.6**	**497.8**	**425.9**	**473.7**	**3.29**
Annual change (%)		0.5	2.5	19.6	(0.7)	26.1	(11.7)	(14.5)	11.2	
Imports										
General cargo stevedored	692.5	737.5	832.1	801.0	793.7	776.6	773.8	677.9	727.8	0.62

Description	2002	2003	2004	2005	2006	2007	2008	2009	2010	CAGR (%)
Annual change (%)		6.49	12.8	(3.8)	(0.9)	(2.2)	(0.4)	(12.4)	7.4	
Dry bulk tons stevedored	158.8	196.3	170.3	302.2	274.8	271.3	239.1	234.3	234.0	4.97
Annual change (%)		23.6	(13.3)	77.5	(9.1)	(1.3)	(11.9)	(2.0)	(0.1)	
Total tons stevedored	**851.3**	**933.7**	**1002.4**	**1103.2**	**1068.5**	**1047.9**	**1012.9**	**912.2**	**961.8**	**1.54**
Annual change (%)		9.7	7.4	10.1	(3.1)	(1.9)	(3.4)	(9.9)	5.4	

CAGR = compound annual growth rate, 2002–2010.

Sources: Fiji Ports Corporation Limited, 2011; independent evaluation mission estimate.

Table A5.4: Exports and Imports Stevedored, Lautoka Port
(1000 tons)

Description	2002	2003	2004	2005	2006	2007	2008	2009	2010	CAGR (%)
Exports										
General cargo stevedored	68.3	84.8	164.6	141.1	166.8	239.2	254.1	223.9	324.1	21.5
Annual change (%)		24.2	94.0	(14.3)	18.2	43.4	6.3	(11.9)	44.8	
Dry bulk tons stevedored	37.9	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Total tons stevedored	**106.3**	**84.8**	**164.6**	**141.1**	**166.8**	**239.2**	**254.1**	**223.9**	**324.1**	**15.0**
Annual change (%)		(20.2)	94.0	(14.3)	18.2	43.4	6.3	(11.9)	44.8	
Imports										
General cargo stevedored	149.2	193.8	243.8	226.4	268.4	257.6	276.4	278.0	285.2	8.4
Annual change (%)		29.9	25.8	(7.1)	18.5	(4.0)	7.3	0.6	2.6	
Dry bulk tons stevedored	0.0	23.3	44.4	21.5	36.0	27.1	33.7	29.3	19.4	
Annual change (%)			90.3	(51.6)	67.3	(24.8)	24.4	(13.1)	(33.5)	
Total tons stevedored	**149.2**	**217.1**	**288.2**	**247.9**	**304.4**	**284.7**	**310.1**	**307.3**	**304.6**	**9.3**
Annual change (%)		45.5	32.7	(14.0)	22.8	(6.5)	8.9	(0.9)	(0.9)	

CAGR = compound annual growth rate, 2002–2010.

Sources: Fiji Ports Corporation Limited, 2011; independent evaluation mission estimate.

12. The growth trends in container traffic at the two ports exhibit substantial differences. Suva Port container traffic in total TEUs showed an average annual gain of only 1.13% while full TEUs showed annual decline of –0.13% per annum. While total exports in TEUs increased by 2.61% annually, full TEUs showed a lower growth of 1.39% per annum. For imports, total TEUs declined by –0.12% annually while full TEUs decreased by a greater −1.09% annually. Thus, growth in Suva Port container traffic is attributed to the export trade. On the other hand, Lautoka Port exhibited much improved performance concerning container traffic; annual increase in total TEUs was 15.03% while full TEUs grew by 16.11%. For exports, container traffic in total TEUs increased by 14.48% annually, while full TEUs grew by 21.17%. For imports, container traffic in total TEUs rose by 16.12% annually while full TEUs grew by 16.11%. The double-digit annual growth exhibited by Lautoka Port container traffic is quite substantial, although this is only half of the expected 65,000 TEUs of container traffic forecast at appraisal for 2010. Given Lautoka Port's container traffic, it has apparently diverted traffic away from Suva, resulting in Suva Port's poor growth in container traffic. Container traffic for the two ports is shown in the tables below.

Table A5.5: Container Traffic Statistics, Suva Port (2002–2010)

Description	2002	2003	2004	2005	2006	2007	2008	2009	2010	CAGR
Exports										
FCL 20-foot	14,651	11,376	12,203	14,637	14,854	19,414	16,637	12,609	13,785	(0.76%)
FCL 40-foot	0	1,208	1,341	1,394	1,400	1,464	1,577	1,629	2,577	11.4%
LCL	66	1	0	0	0	0	0	2	0	
Empty 20-foot	7,657	7,287	6,644	6,381	7,300	6,896	7,553	8,512	8,521	1.35%
Empty 40-foot	0	2,434	2,157	2,719	3,021	2,837	3,012	3,012	2,623	1.07%
Transshipment	1	0	0	0	0	0	0	0	0	
Total TEU	22,375	22,306	22,345	25,131	26,575	30,611	28,779	25,764	27,506	2.61%
Total TEU (full)	14,652	12,584	13,544	16,031	16,254	20,878	18,214	14,238	16,362	1.39%
Imports										
FCL 20-foot	24,850	18,823	21,188	21,069	20,695	20,242	20,405	17,644	18,384	(3.70%)
FCL 40-foot	0	4,063	4,238	4,160	4,157	4,603	4,691	4,145	4,614	1.83%
LCL	98	0	0	0	0	0	0	4	0	
Empty 20-foot	3,858	1,734	1,970	2,405	2,674	3,567	4,293	5,705	4,594	2.21%
Empty 40-foot	0	328	424	318	365	507	495	948	1,200	20.36%
Transshipment	260	0	0	0	0	0	0	0	0	
Total TEU	29,066	24,948	27,820	27,952	27,891	28,919	29,884	28,446	28,792	(0.12%)
Total TEU (full)	25,110	22,886	25,426	25,229	24,852	24,845	25,096	21,789	22,998	(1.09%)
Total (imports plus exports)										
Total TEU	**51,441**	**47,254**	**50,165**	**53,083**	**54,466**	**59,530**	**58,663**	**54,210**	**56,298**	**1.13%**
Annual change		**(8.1%)**	**6.2%**	**5.8%**	**2.6%**	**9.3%**	**(1.5%)**	**(7.6%)**	**3.9%**	
Total TEU (full)	**39,762**	**35,470**	**38,970**	**41,260**	**41,106**	**45,723**	**43,310**	**36,027**	**39,360**	**(0.13%)**
Annual change		**(10.8%)**	**9.9%**	**5.9%**	**(0.4%)**	**11.2%**	**(5.3%)**	**(16.8%)**	**9.3%**	

CAGR = compound annual growth rate, FCL = full container load, LCL = less than container load, TEU = twenty foot equivalent unit.
Sources: Fiji Ports Corporation Limited, 2011; independent evaluation mission estimate.

Table A5.6: Container Traffic Statistics, Lautoka Port (2002–2010)

Description	2002	2003	2004	2005	2006	2007	2008	2009	2010	CAGR
Exports										
FCL 20-foot	2,685	3,110	4,389	5,061	6,935	8,966	10,848	8,664	11,673	20.17%
FCL 40-foot	0	57	247	386	342	385	474	391	806	46.00%
LCL		0	0	0	0	0	0	0	0	
Empty 20-foot	2,338	3,396	3,177	2,385	2,557	2,016	3,012	4,251	1,988	(2.01%)
Empty 40-foot	0	286	854	586	440	390	218	516	351	2.97%
Transshipment	0	0	0	0	0	0	0	0	0	
Total TEU	5,023	6,849	8,667	8,418	10,274	11,757	14,552	13,822	14,818	14.48%
Total TEU (full)	2,685	3,167	4,636	5,447	7,277	9,351	11,322	9,055	12,479	21.17%
Imports										
FCL 20-foot	4,470	4,838	5,866	6,023	7,516	7,752	9,321	8,787	9,285	9.57%
FCL 40-foot	0	748	933	749	816	808	844	847	1,878	14.05%
LCL		0	0	0	0	13	50	75	46	
Empty 20-foot	294	662	912	1123	1,783	7,189	5,913	3,623	4,272	39.73%
Empty 40-foot	0	72	120	271	85	233	185	503	266	20.53%
Transshipment	0	0	0	0	0	0	0	14	0	
Total TEU	4,764	6,320	7,831	8,166	10,200	15,995	16,313	13,849	15,747	16.12%
Annual change		32.7%	23.9%	4.3%	24.9%	56.8%	2.0%	(15.1%)	13.7%	
Total TEU (full)	4,470	5,586	6,799	6,772	8,332	8,560	10,165	9,648	11,163	12.12%
Annual change		25.0%	21.7%	(0.4%)	23.0%	2.7%	18.8%	(5.1%)	15.7%	
Total (imports plus exports)										
Total TEU	**9,787**	**13,169**	**16,498**	**16,584**	**20,474**	**27,752**	**30,865**	**27,671**	**30,565**	**15.30%**
Annual change		**34.6%**	**25.3%**	**0.5%**	**23.5%**	**35.5%**	**11.2%**	**(10.3%)**	**10.5%**	
Total TEU (full)	**7,155**	**8,753**	**11,435**	**12,219**	**15,609**	**17,911**	**21,487**	**18,703**	**23,642**	**16.11%**
Annual change		**22.3%**	**30.6%**	**6.9%**	**27.7%**	**14.7%**	**20.0%**	**(13.0%)**	**26.4%**	

CAGR = compound annual growth rate, FCL = full container load, LCL = less than container load, TEU = twenty foot equivalent unit.
Sources: Fiji Ports Corporation Limited; independent evaluation mission estimate.

13. One other project benefit identified at appraisal and in the PCR for Lautoka Port was the reduced land transport costs for shippers, since cargo can now be loaded and unloaded at the expanded Lautoka Port without need of trucking to and from Suva Port from Nadi and the Lautoka Port influence area. While shipping through Lautoka Port does offer transport cost savings, the diverted volume could not be determined since no origin–destination survey was undertaken during appraisal and the PCR did not quantify this. It was determined during the IEM field visit that Fiji Water was utilizing Lautoka Port for its shipment to the United States' east and west coasts, but this trade was developed only after the Lautoka Port expansion was already completed. Depending on vessel schedule, however, it still utilized Suva Port for its exports. During the IEM land travel between Nadi and Suva, only two 40-foot containers from Fiji Water headed for Suva from Nadi were counted. This benefit was not estimated for purposes of this reevaluation.

14. One project benefit identified at appraisal for Suva Port was that its "seismic strengthening confers a benefit from the averted damage cost should an earthquake occur, expressed as the expected value of damage multiplied by the annual probability of occurrence." Given that such an event has not occurred and the certainty of its occurrence cannot be ascertained, this was not considered in the reevaluation. In addition, this benefit would be quite difficult to quantify, and, even if estimated, any calculation would raise questions as to its reliability.

15. The actual costs of the two subprojects were taken from the PCR. Only actual construction costs were available for each subproject, and project design and supervision costs had not been allocated to each subproject. These costs were distributed to each subproject using the ratio of each subproject's construction cost to total construction cost, which was 51% for Suva and 49% for Lautoka. Front-end fee, interest, and commitment charges during construction were not included in computing EIRRs. The resulting actual financial cost allocation is given in the table below. This is further adjusted using shadow pricing by applying a standard goods conversion factor of 0.986 and labor conversion factor of 0.86 calculated for the Fiji Islands. Since the cost details provided did not break out costs by goods, skilled labor, unskilled labor, and others, it was assumed that 85% of project cost was for goods, equipment, and skilled labor, while 15% was for unskilled labor.

Table A5.7: Actual Project Financial Cost, Suva and Lautoka Ports (2002–2007)

Description	2002	2003	2004	2005	2006	2007
A. Suva Port						
1. Civil works			5,809	10,177	106	
2. Consulting services	120	262	258	263	0	28
Subtotal (A)	**120**	**262**	**6,066**	**10,441**	**106**	**28**
B. Lautoka Port						
1. Civil works			9,454	6,312		
2. Consulting services	116	256	251	257	0	27
Subtotal (B)	**116**	**256**	**9,705**	**6,569**	**0**	**27**
Total	**236**	**518**	**15,772**	**17,009**	**106**	**55**

Source: ADB. 2008. *Completion Report: Fiji Ports Development Project in the Fiji Islands.* Manila (Loan 1902-FIJ).

16. In computing project costs, the PCR had excluded the Maritime and Ports Authority of Fiji (i.e., the government's) share of project costs. As during appraisal, all valid project expenditures from all sources should have been included into computations for the subprojects' and project's viability indicators. In addition, no shadow pricing was undertaken. Thus, lower actual costs were used in computing the EIRR in the PCR, resulting in higher EIRR estimates.

17. The computed EIRR for the Suva Port subproject was 26.35% and the net present value (NPV) was $12.59 million at a 12% discount rate based upon savings in vessel waiting time at anchorage, savings in vessel service time at berth, and savings in cargo wait time. For Lautoka Port, the computed EIRR was 22.84% and NPV was $12.61 million. The overall project EIRR was 24.46% and overall NPV at the 12% discount rate was $25.19 million.

18. Sensitivity analysis was undertaken by increasing and decreasing project costs and benefits, respectively, by 20%. For Suva Port, the EIRR was 22.37% and NPV at 12% was $10.39 million with a 20% increase in actual project cost and EIRR was 18.13% and NPV at 12% was $4.18 million when operating and maintenance costs were increased by 20%. When benefits decrease by 20%, EIRR is 11.08% and NPV is 12% of –$0.53 million. For Lautoka Port,

EIRRs are above the 12% hurdle rate even when cost factors increase by 20% or benefits decrease by 20%. Overall, EIRRs are above the 12% hurdle rate and NPVs positive when cost factors are increased by 20% or benefits decreased by 20%.

19. Table A5.8 compares the appraisal, PCR, and IEM economic evaluation results.

Table A5.8: Comparison of Economic Internal Rates of Return and Net Present Value Findings for Suva, Lautoka, and Both Ports Combined

	Appraisal		PCR		IEM	
	EIRR	**NPV**	**EIRR**	**NPV**	**EIRR**	**NPV**
Scenario	In %	$ million	In %	$ million	In %	$ million
Suva Port						
Base case	15.80	2.2			26.35	12.59
20% increase in project cost	13.38				22.37	10.39
20% increase in operating cost					18.13	4.18
20% decrease in benefits	15.06				11.08	0.53
Lautoka Port						
Base case	17.64	4.2			22.84	12.61
20% increase in project cost	14.17				19.95	10.49
20% increase in operating cost					20.69	9.81
20% decrease in benefits	17.03				16.94	5.16
Both ports						
Base case			19.8	11.7	24.46	25.19
20% increase in project cost					21.05	20.88
20% increase in operating cost					19.64	13.99
20% decrease in benefits					14.77	4.63

EIRR = economic internal rate of return, IEM = independent evaluation mission, NPV = net present value, PCR = project completion report.

Sources: Independent evaluation mission estimates; ADB. 2008. *Completion Report: Fiji Ports Development Project in the Fiji Islands.* Manila (Loan 1902-FIJ); ADB. 2002. *Report and Recommendation of the President to the Board of Directors on a Proposed Loan to the Maritime and Ports Authority of Fiji for the Fiji Ports Development Project in the Republic of the Fiji Islands*. Manila.

Table A5.9: Base Case Estimates of Economic Internal Rate of Return and Net Present Value, Suva Port
($'000)

	Costs			Benefits				
Year	Capital Costs	Operating & Maintenance Costs	Total Costs	Savings in Vessel Waiting Time at Anchorage	Savings in Vessel Service Time at Berth	Savings in Cargo Waiting Time	Total Benefits	Net Benefits
2002	116		116					(116)
2003	254		254					(254)
2004	5,867		5,867					(5,867)
2005	10,097		10,097					(10,097)
2006	103		103					(103)
2007	27	8,587	8,614	6,282	6,282	2,434	14,998	6,384
2008		8,785	8,785	7,017	7,017	2,434	16,469	7,684
2009		8,987	8,987	6,864	6,864	2,434	16,162	7,175
2010		9,194	9,194	6,251	6,251	2,434	14,936	5,743
2011		9,405	9,405	6,297	6,297	2,482	15,077	5,672
2012		9,621	9,621	6,297	6,297	2,532	15,127	5,505
2013		9,843	9,843	6,297	6,297	2,583	15,177	5,335
2014		10,069	10,069	6,297	6,297	2,634	15,229	5,160
2015		10,301	10,301	6,297	6,297	2,687	15,282	4,981
2016		10,537	10,537	6,297	6,297	2,741	15,335	4,798
2017		10,780	10,780	6,297	6,297	2,796	15,390	4,610
2018		11,028	11,028	6,297	6,297	2,851	15,446	4,418
2019		11,281	11,281	6,297	6,297	2,908	15,503	4,222
2020		11,541	11,541	6,297	6,297	2,967	15,561	4,020
2021		11,806	11,806	6,297	6,297	3,026	15,621	3,814
2022		12,078	12,078	6,297	6,297	3,086	15,681	3,603
2023		12,356	12,356	6,297	6,297	3,148	15,743	3,387
2024		12,640	12,640	6,297	6,297	3,211	15,806	3,166
2025		12,931	12,931	6,297	6,297	3,275	15,870	2,940
2026		13,228	13,228	6,297	6,297	3,341	15,936	2,708
						EIRR		**26.35%**
						NPV@12%		**$12.59 million**

Source: Independent evaluation mission estimates.

Table A5.10: Base Case Estimates of Economic Internal Rate of Return and Net Present Value, Lautoka Port
($'000)

	Costs			Benefits				
Year	Capital Costs	Operating & Maintenance Costs	Total Costs	Savings in Vessel Waiting Time at Anchorage	Savings in Vessel Service Time at Berth	Savings in Cargo Waiting Time	Total Benefits	Net Benefits
2002	113		113					(113)
2003	247		247					(247)
2004	5,676		5,676					(5,676)
2005	9,767		9,767					(9,767)
2006	99		99					(99)
2007	26	2,862	2,889	2,976	2,976	766	6,719	3,830
2008		2,928	2,928	3,094	3,094	766	6,954	4,025
2009		2,996	2,996	3,446	3,446	766	7,657	4,662
2010		3,065	3,065	3,475	3,475	766	7,716	4,652
2011		3,135	3,135	3,624	3,624	789	8,038	4,903
2012		3,207	3,207	3,781	3,781	813	8,376	5,169
2013		3,281	3,281	3,946	3,946	837	8,730	5,449
2014		3,356	3,356	4,119	4,119	863	9,101	5,745
2015		3,434	3,434	4,301	4,301	888	9,491	6,057
2016		3,512	3,512	4,492	4,492	915	9,899	6,387
2017		3,593	3,593	4,693	4,693	943	10,328	6,734
2018		3,676	3,676	4,903	4,903	971	10,777	7,101
2019		3,760	3,760	5,124	5,124	1,000	11,248	7,487
2020		3,847	3,847	5,356	5,356	1,030	11,742	7,895
2021		3,935	3,935	5,356	5,356	1,061	11,773	7,837
2022		4,026	4,026	5,356	5,356	1,093	11,805	7,779
2023		4,119	4,119	5,356	5,356	1,125	11,837	7,719
2024		4,213	4,213	5,356	5,356	1,159	11,871	7,658
2025		4,310	4,310	5,356	5,356	1,194	11,906	7,596
2026		4,409	4,409	5,356	5,356	1,230	11,942	7,532
					EIRR			**22.84%**
					NPV@12%			**$12.61 million**

Source: Independent evaluation mission estimates.

Table A5.11: Base Case Estimates of Economic Internal Rate of Return and Net Present Value, Both Ports
($'000)

	Costs			Benefits				
Year	Capital Costs	Operating & Maintenance Costs	Total Costs	Savings in Vessel Waiting Time at Anchorage	Savings in Vessel Service Time at Berth	Savings in Cargo Waiting Time	Total Benefits	Net Benefits
2002	228		228					(228)
2003	501		501					(501)
2004	11,542		11,542					(11,542)
2005	19,864		19,864					(19,864)
2006	202		202					(202)
2007	53	11,450	11,503	9,258	9,258	3,200	21,717	10,214
2008		11,713	11,713	10,111	10,111	3,200	23,422	11,709
2009		11,982	11,982	10,310	10,310	3,200	23,820	11,837
2010		12,258	12,258	9,726	9,726	3,200	22,653	10,395
2011		12,540	12,540	9,922	9,922	3,272	23,115	10,575
2012		12,828	12,828	10,079	10,079	3,345	23,503	10,674
2013		13,123	13,123	10,244	10,244	3,420	23,907	10,784
2014		13,425	13,425	10,417	10,417	3,497	24,330	10,905
2015		13,734	13,734	10,599	10,599	3,575	24,773	11,039
2016		14,050	14,050	10,789	10,789	3,656	25,235	11,185
2017		14,373	14,373	10,990	10,990	3,738	25,718	11,345
2018		14,704	14,704	11,200	11,200	3,822	26,223	11,519
2019		15,042	15,042	11,421	11,421	3,908	26,751	11,709
2020		15,388	15,388	11,653	11,653	3,997	27,303	11,915
2021		15,742	15,742	11,653	11,653	4,087	27,393	11,652
2022		16,104	16,104	11,653	11,653	4,179	27,486	11,382
2023		16,474	16,474	11,653	11,653	4,274	27,580	11,106
2024		16,853	16,853	11,653	11,653	4,370	27,677	10,824
2025		17,241	17,241	11,653	11,653	4,469	27,776	10,535
2026		17,637	17,637	11,653	11,653	4,571	27,877	10,240
						EIRR		**24.46%**
						NPV@12%		**$25.19 million**

Source: Independent evaluation mission estimates.

Table A5.12: Sensitivity Analysis: Project Cost Increased by 20%
Estimates of Economic Internal Rate of Return and Net Present Value, Suva Port
($'000)

	Costs			Benefits				
Year	Capital Costs	Operating & Maintenance Costs	Total Costs	Savings in Vessel Waiting Time at Anchorage	Savings in Vessel Service Time at Berth	Savings in Cargo Waiting Time	Total Benefits	Net Benefits
2002	139		139					(139)
2003	305		305					(305)
2004	7,040		7,040					(7,040)
2005	12,117		12,117					(12,117)
2006	123		123					(123)
2007	32	8,587	8,620	6,282	6,282	2,434	14,998	6,378
2008		8,785	8,785	7,017	7,017	2,434	16,469	7,684
2009		8,987	8,987	6,864	6,864	2,434	16,162	7,175
2010		9,194	9,194	6,251	6,251	2,434	14,936	5,743
2011		9,405	9,405	6,297	6,297	2,482	15,077	5,672
2012		9,621	9,621	6,297	6,297	2,532	15,127	5,505
2013		9,843	9,843	6,297	6,297	2,583	15,177	5,335
2014		10,069	10,069	6,297	6,297	2,634	15,229	5,160
2015		10,301	10,301	6,297	6,297	2,687	15,282	4,981
2016		10,537	10,537	6,297	6,297	2,741	15,335	4,798
2017		10,,780	10,780	6,297	6,297	2,796	15,390	4,610
2018		11,028	11,028	6,297	6,297	2,851	15,,446	4,418
2019		11281	11,281	6,297	6,297	2,908	15,503	4,222
2020		11,541	11,541	6,297	6,297	2,967	15,561	4,020
2021		11,806	11,806	6,297	6,297	3,026	15,621	3,814
2022		12,078	12,078	6,297	6,297	3,086	15,681	3,603
2023		12,356	12,356	6,297	6,297	3,148	15,743	3,387
2024		12,640	12,640	6,297	6,297	3,211	15,806	3,166
2025		12,931	12,931	6,297	6,297	3,275	15,870	2,940
2026		13,228	13,228	6,297	6,297	3,341	15,936	2,708
						EIRR		**22.37%**
						NPV@12%		**$10.39 million**

Source: Independent evaluation mission estimates.

Table A5.13: Sensitivity Analysis: Project Cost Increased by 20%
Estimates of Economic Internal Rate of Return and Net Present Value, Lautoka Port
($'000)

	Costs			Benefits				
Year	Capital Costs	Operating & Maintenance Costs	Total Costs	Savings in Vessel Waiting Time at Anchorage	Savings in Vessel Service Time at Berth	Savings in Cargo Waiting Time	Total Benefits	Net Benefits
2002	135		135					(135)
2003	297		297					(297)
2004	6,811		6,811					(6,811)
2005	11,720		11,720					(11,720)
2006	119		119					(119)
2007	31	2,862	2,894	2,976	2,976	766	6,719	3,825
2008		2,928	2,928	3,094	3,094	766	6,954	4,025
2009		2,996	2,996	3,446	3,446	766	7,657	4,662
2010		3,065	3,065	3,475	3,475	766	7,716	4,652
2011		3,,135	3,135	3,624	3,624	789	8,038	4,903
2012		3,207	3,207	3,781	3,781	813	8,376	5,169
2013		3,281	3,281	3,946	3,946	837	8,730	5,449
2014		3,356	3,356	4,119	4,119	863	9,101	5,745
2015		3,434	3,434	4,301	4,301	888	9,491	6,057
2016		3,512	3,512	4,492	4,492	915	9,899	6,387
2017		3,593	3,593	4,693	4,693	943	10,328	6,734
2018		3,676	3,676	4,903	4,903	971	10,777	7,101
2019		3,760	3,760	5,124	5,124	1,000	11,248	7,487
2020		3,847	3,847	5,356	5,356	1,030	11,742	7,895
2021		3,935	3,935	5,356	5,356	1,061	11,773	7,837
2022		4,026	4,026	5,356	5,356	1,093	11,805	7,779
2023		4,119	4,119	5,356	5,356	1,125	11,837	7,719
2024		4,213	4,213	5,356	5,356	1,159	11,871	7,658
2025		4,310	4,310	5,356	5,356	1,194	11,906	7,596
2026		4,409	4,409	5,356	5,356	1,230	11,942	7,532
						EIRR		**19.95%**
						NPV@12%		**10.49 million**

Source: Independent evaluation mission estimates.

Table A5.14: Sensitivity Analysis: Project Cost Increased by 20%
Estimates of Economic Internal Rate of Return and Net Present Value, Both Ports
($'000)

	Cost			Benefits				
Year	Capital Cost	Operating & Maintenance Cost	Total Cost	Savings in Vessel Waiting Time at Anchorage	Savings in Vessel Service Time at Berth	Savings in Cargo Waiting Time	Total Benefits	Net Benefits
2002	274		274					(274)
2003	601		601					(601)
2004	13,851		13,851					(13,851)
2005	23,837		23,837					(23,837)
2006	242		242					(242)
2007	64	11,450	11,514	9,258	9,258	3,200	21,717	10,203
2008		11,713	11,713	10,111	10,111	3,200	23,422	11,709
2009		11,982	11,982	10,310	10,310	3,200	23,820	11,837
2010		12,258	12,258	9,726	9,726	3,200	22,653	10,395
2011		12,540	12,540	9,922	9,922	3,272	23,115	10,575
2012		12828	12,828	10,079	10,079	3,345	23,503	10,674
2013		13,123	13,123	10,244	10,244	3,420	23,907	10,784
2014		13,425	13,425	10,417	10,417	3,497	24,330	10,905
2015		13,734	13,734	10,599	10,599	3,575	24,773	11,039
2016		14,050	14,050	10,789	10,789	3,656	25,235	11,185
2017		14,373	14,373	10,990	10,990	3,738	25,718	11,345
2018		14,704	14,704	11,200	11,200	3,822	26,223	11,519
2019		15,042	15,042	11,421	11,421	3,908	26,751	11,709
2020		15,388	15,388	11,653	11,653	3,997	27,303	11,915
2021		15,742	15,742	11,653	11,653	4,087	27,393	11,652
2022		16,104	16,104	11,653	11,653	4,179	27,486	11,382
2023		16,474	16,474	11,653	11,653	4,274	27,580	11,106
2024		16,853	16,853	11,653	11,653	4,370	27,677	10,824
2025		17,241	17,241	11,653	11,653	4,469	27,776	10,535
2026		17,637	17,637	11,653	11,653	4,571	27,877	10,240
						EIRR		**21.05%**
						NPV@12%		**$20.88 million**

Source: Independent evaluation mission estimates.

Table A5.15: Sensitivity Analysis: Operating and Maintenance Cost Increased by 20% Estimates of Economic Internal Rate of Return and Net Present Value, Suva Port
($'000)

	Cost			Benefits				
Year	Capital Cost	Operating & Maintenance Cost	Total Cost	Savings in Vessel Waiting Time at Anchorage	Savings in Vessel Service Time at Berth	Savings in Cargo Waiting Time	Total Benefits	Net Benefits
2002	116		116					(116)
2003	254		254					(254)
2004	5,867		5,867					(5,867)
2005	10,097		10,097					(10,097)
2006	103		103					(103)
2007	27	10,305	10,332	6,282	6,282	2,434	14,998	4,666
2008		10,542	10,542	7,017	7,017	2,434	16,469	5,927
2009		10,784	10,784	6,864	6,864	2,434	16,162	5,378
2010		11,032	11,032	6,251	6,251	2,434	14,936	3,904
2011		11,286	11,286	6,297	6,297	2,482	15,077	3,791
2012		11,546	11,546	6,297	6,297	2,532	15,127	3,581
2013		11,811	11,811	6,297	6,297	2,583	15,177	3,366
2014		12,083	12,083	6,297	6,297	2,634	15,229	3,146
2015		12,361	12,361	6,297	6,297	2,687	15,282	2,921
2016		12,645	12,645	6,297	6,297	2,741	15,335	2,690
2017		12,936	12,936	6,297	6,297	2,796	15,390	2,454
2018		13,233	13,233	6,297	6,297	2,851	15,446	2,213
2019		13,538	13,538	6,297	6,297	2,908	15,503	1,965
2020		13,849	13,849	6,297	6,297	2,967	15,561	1,712
2021		14,168	14,168	6,297	6,297	3,026	15,621	1,453
2022		14,493	14,493	6,297	6,297	3,086	15,681	1,188
2023		14,827	14,827	6,297	6,297	3,148	15,743	916
2024		15,168	15,168	6,297	6,297	3,211	15,806	638
2025		15,517	15,517	6,297	6,297	3,275	15,870	353
2026		15,874	15,874	6,297	6,297	3,341	15,936	62
						EIRR		**18.13%**
						NPV@12%		**$4.18 million**

Source: Independent evaluation mission estimates.

Table A5.16: Sensitivity Analysis: Operating and Maintenance Cost Increased by 20%
Estimates of Economic Internal Rate of Return and Net Present Value, Lautoka Port
($'000)

	Cost			Benefits				
Year	Capital Cost	Operating & Maintenance Cost	Total Cost	Savings in Vessel Waiting Time at Anchorage	Savings in Vessel Service Time at Berth	Savings in Cargo Waiting Time	Total Benefits	Net Benefits
2002	113		113					(113)
2003	247		247					(247)
2004	5,676		5,676					(5,676)
2005	9,767		9,767					(9767)
2006	99		99					(99)
2007	26	3,435	3,461	2,976	2,976	766	6,719	3,258
2008		3,514	3,514	3,094	3,094	766	6,954	3,440
2009		3,595	3,595	3,446	3,446	766	7,657	4,063
2010		3,677	3,677	3,475	3,475	766	7,716	4,039
2011		3,762	3,762	3,624	3,624	789	8,038	4,276
2012		3,849	3,849	3,781	3,781	813	8,376	4,527
2013		3,937	3,937	3,946	3,946	837	8,730	4,793
2014		4,028	4,028	4,119	4,119	863	9,101	5,074
2015		4,120	4,120	4,301	4,301	888	9,491	5,371
2016		4,215	4,215	4,492	4,492	915	9,899	5,684
2017		4,312	4,312	4,693	4,693	943	10,328	6,016
2018		4,411	4,411	4,903	4,903	971	10,777	6,366
2019		4,513	4,513	5,124	5,124	1,000	11,248	6,735
2020		4,616	4,616	5,356	5,356	1,030	11,742	7,125
2021		4,723	4,723	5,356	5,356	1,061	11,773	7,050
2022		4,831	4,831	5,356	5,356	1,093	11,805	6,973
2023		4,942	4,942	5,356	5,356	1,125	11,837	6,895
2024		5,056	5,056	5,356	5,356	1,159	11,871	6,815
2025		5,172	5,172	5,356	5,356	1,194	11,906	6,734
2026		5,291	5,291	5,356	5,356	1,230	11,942	6,650
						EIRR		**20.69%**
						NPV@12%		**$9.81 million**

Source: Independent evaluation mission estimates.

Table A5.17: Sensitivity Analysis: Operating and Maintenance Cost Increased by 20%
Estimates of Economic Internal Rate of Return and Net Present Value, Both Ports
($'000)

	Cost			Benefits				
Year	Capital Cost	Operating & Maintenance Cost	Total Cost	Savings in Vessel Waiting Time at Anchorage	Savings in Vessel Service Time at Berth	Savings in Cargo Waiting Time	Total Benefits	Net Benefits
2002	228		228					(228)
2003	501		501					(501)
2004	11,542		11,542					(11,542)
2005	19,864		19,864					(19,864)
2006	202		202					(202)
2007	53	13,740	13,793	9,258	9,258	3,200	21,717	7,924
2008		14,056	14,056	10,111	10,111	3,200	23,422	9,367
2009		14,379	14,379	10,310	10,310	3,200	23,820	9,441
2010		14,710	14,710	9,726	9,726	3,200	22,653	7,943
2011		15,048	15,048	9,922	9,922	3,272	23,115	8,067
2012		15,394	15,394	10,079	10,079	3,345	23,503	8,109
2013		15,748	15,748	10,244	10,244	3,420	23,907	8,159
2014		16,110	16,110	10,417	10,417	3,497	24,330	8,220
2015		16,481	16,481	10,599	10,599	3,575	24,773	8,292
2016		16,860	16,860	10,789	10,789	3,656	25,235	8,375
2017		17,248	17,248	10,990	10,990	3,738	25,718	8,470
2018		17,644	17,644	11,200	11,200	3,822	26,223	8,578
2019		18,050	18,050	11,421	11,421	3,908	26,751	8,701
2020		18,465	18,465	11,653	11,653	3,997	27,303	8,838
2021		18,890	18,890	11,653	11,653	4,087	27,393	8,503
2022		19,325	19,325	11,653	11,653	4,179	27,486	8,161
2023		19,769	19,769	11,653	11,653	4,274	27,580	7,811
2024		20,224	20,224	11,653	11,653	4,370	27,677	7,453
2025		20,689	20,689	11,653	11,653	4,469	27,776	7,087
2026		21,165	21,165	11,653	11,653	4,571	27,877	6,713
						EIRR		**19.64%**
						NPV@12%		**$13.99 million**

Source: Independent evaluation mission estimates.

Table A5.18: Sensitivity Analysis: Benefits Decreased by 20%
Estimates of Economic Internal Rate of Return and Net Present Value, Suva Port
($'000)

	Cost			Benefits				
Year	Capital Cost	Operating & Maintenance Cost	Total Cost	Savings in Vessel Waiting Time at Anchorage	Savings in Vessel Service Time at Berth	Savings in Cargo Waiting Time	Total Benefits	Net Benefits
2002	116		116					(116)
2003	254		254					(254)
2004	5,867		5,867					(5,867)
2005	10,097		10,097					(10,097)
2006	103		103					(103)
2007	27	8,587	8,614	5,026	5,026	1,947	11,998	3,384
2008		8,785	8,785	5,614	5,614	1,947	13,175	4,390
2009		8,987	8,987	5,491	5,491	1,947	12,930	3,943
2010		9,194	9,194	5,001	5,001	1,947	11,949	2,756
2011		9,405	9,405	5,038	5,038	1,986	12,062	2,657
2012		9,621	9,621	5,038	5,038	2,026	12,101	2,480
2013		9,843	9,843	5,038	5,038	2,066	12,142	2,299
2014		10,069	10,069	5,038	5,038	2,107	12,183	2,114
2015		10,301	10,301	5,038	5,038	2,150	12,225	1,925
2016		10,537	10,537	5,038	5,038	2,193	12,268	1,731
2017		10,780	10,780	5,038	5,038	2,236	12,312	1,532
2018		11,028	11,028	5,038	5,038	2,281	12,357	1,329
2019		11,281	11,281	5,038	5,038	2,327	12,403	1,121
2020		11,541	11,541	5,038	5,038	2,373	12,449	908
2021		11,806	11,806	5,038	5,038	2,421	12,497	690
2022		12,078	12,078	5,038	5,038	2,469	12,545	467
2023		12,356	12,356	5,038	5,038	2,519	12,594	239
2024		12,640	12,640	5,038	5,038	2,569	12,645	5
2025		12,931	12,931	5,038	5,038	2,620	12,696	(234)
2026		13,228	13,228	5,038	5,038	2,673	12,748	(479)
						EIRR		**11.08%**
						NPV@12%		**–$0.53 million**

Source: Independent evaluation mission estimates.

Table A5.19: Sensitivity Analysis: Benefits Decreased by 20%
Estimates of Economic Internal Rate of Return and Net Present Value, Lautoka Port
($'000)

	Cost			Benefits				
Year	Capital Cost	Operating & Maintenance Cost	Total Cost	Savings in Vessel Waiting Time at Anchorage	Savings in Vessel Service Time at Berth	Savings in Cargo Waiting Time	Total Benefits	Net Benefits
2002	113		113					(113)
2003	247		247					(247)
2004	5,676		5,676					(5,676)
2005	9,767		9,767					(9,767)
2006	99		99					(99)
2007	26	2,862	2,889	2,381	2,381	613	5,375	2,487
2008		2,928	2,928	2,475	2,475	613	5,563	2,635
2009		2,996	2,996	2,756	2,756	613	6,126	3,130
2010		3,065	3,065	2,780	2,780	613	6,173	3,108
2011		3,135	3,135	2,900	2,900	631	6,431	3,296
2012		3,207	3,207	3,025	3,025	650	6,701	3,494
2013		3,281	3,281	3,157	3,157	670	6,984	3,703
2014		3,356	3,356	3,296	3,296	690	7,281	3,925
2015		3,434	3,434	3,441	3,441	711	7,593	4,159
2016		3,512	3,512	3,594	3,594	732	7,919	4,407
2017		3,593	3,593	3,754	3,754	754	8,262	4,669
2018		3,676	3,676	3,922	3,922	777	8,621	4,945
2019		3,760	3,760	4,099	4,099	800	8,998	5,238
2020		3,847	3,847	4,285	4,285	824	9,393	5,546
2021		3,935	3,935	4,285	4,285	849	9,418	5,483
2022		4,026	4,026	4,285	4,285	874	9,444	5,418
2023		4,119	4,119	4,285	4,285	900	9,470	5,351
2024		4,213	4,213	4,285	4,285	927	9,497	5,284
2025		4,310	4,310	4,285	4,285	955	9,525	5,214
2026		4,409	4,409	4,285	4,285	984	9,553	5,144
						EIRR		**16.94%**
						NPV@12%		**$5.16 million**

Source: Independent evaluation mission estimates.

Table A5.20: Sensitivity Analysis: Benefits Decreased by 20%
Estimates of Economic Internal Rate of Return and Net Present Value, Both Ports
($'000)

	Cost			Benefits				
Year	Capital Cost	Operating & Maintenance Cost	Total Cost	Savings in Vessel Waiting Time at Anchorage	Savings in Vessel Service Time at Berth	Savings in Cargo Waiting Time	Total Benefits	Net Benefits
2002	228		228					(228)
2003	501		501					(501)
2004	11,542		11,542					(11,542)
2005	19,864		19,864					(19,864)
2006	202		202					(202)
2007	53	11,450	11,503	7,407	7,407	2,560	17,373	5,871
2008		11,713	11,713	8,089	8,089	2,560	18,738	7,025
2009		11,982	11,982	8,248	8,248	2,560	19,056	7,073
2010		12,258	12,258	7,781	7,781	2,560	18,122	5,864
2011		12,540	12,540	7,937	7,937	2,617	18,492	5,952
2012		12,828	12,828	8,063	8,063	2,676	18,802	5,974
2013		13,123	13,123	8,195	8,195	2,736	19,126	6,003
2014		13,425	13,425	8,333	8,333	2,797	19,464	6,039
2015		13,734	13,734	8,479	8,479	2,860	19,818	6,084
2016		14,050	14,050	8,632	8,632	2,925	20,188	6,138
2017		14,373	14,373	8,792	8,792	2,990	20,574	6,201
2018		14,704	14,704	8,960	8,960	3,058	20,978	6,275
2019		15,042	15,042	9,137	9,137	3,127	21,401	6,359
2020		15,388	15,388	9,323	9,323	3,197	21,843	6,455
2021		15,742	15,742	9,323	9,323	3,269	21,915	6,173
2022		16,104	16,104	9,323	9,323	3,343	21,989	5,885
2023		16,474	16,474	9,323	9,323	3,419	22,064	5,590
2024		16,853	16,853	9,323	9,323	3,496	22,142	5,288
2025		17,241	17,241	9,323	9,323	3,575	22,221	4,980
2026		17,637	17,637	9,323	9,323	3,657	22,302	4,665
						EIRR		**14.77%**
						NPV@12%		**$4.63 million**

Source: Independent evaluation mission estimates.

PORT SERVICE CHARGE

1. The report and recommendation of the President had indicated that the cost of poor performance in cargo-handling services is borne by the Fijian consumers who pay the additional $73 (F$150) per twenty-foot equivalent unit (TEU) container as a port service charge (PSC) that is collected by shipping agents for the ship owners for import and export cargo.[1] About $2.4 million (F$5.5 million) that is collected annually from shippers is passed on to local consumers for imports. Meanwhile, Fijian exports are made less competitive due to the PSC. Removal of the PSC (regarded as savings in handling charges) was identified as the project's main benefit.

2. By the project completion stage, the amount of the PSC had increased to about $160 (F$250) per TEU container. Considering that the project completion report was prepared 2 years after project completion, it was apparent that the expected removal of the PSC did not materialize and the charge had in fact been increased. Again, ship owners through their local shipping agents justified the higher PSC for increased costs they incur as a result of congestion and poor handling performance in the port. It was estimated that $8.8 million (F$14.0 million) was collected annually by shippers from the PSC.

3. As of the evaluation stage, the PSC had increased further to about $220 (F$350) per TEU container. Shipping agents justified the higher rate by increase in cost, without really identifying what particular item (e.g., bunker fuel) had caused the upward adjustment.

4. It is apparent that shipping agents and ship owners have no intention to remove the PSC, even though there is no evident and justifiable reason for its imposition. In addition, it has been made to appear that the PSC is an imposition of the Maritime and Ports Authority of Fiji and Fiji Ports Corporation Limited (FPCL), which is untrue. In fact, nowhere in the FPCL Port Tariff Schedule was there ever any mention of the PSC. Moreover, discussions with representatives of the Commerce Commission, Economic Development Division of the Secretariat of the Pacific Committee, and the Suva Chamber of Commerce lead us to conclude that the PSC was widely believed to be a charge by FPCL.

5. To resolve the rationale for the PSC as imposed by ship owners and shipping agents, in-depth research on shipping rate practices helped to clarify the concept of the PSC:

(i) Shipping rates normally cover the line-haul cost of shipping companies inclusive of lifting the container/cargo from the berth into the vessel at the origin port and from the vessel to the berth at the destination port. Lifting of the container/cargo into and from the vessel is commonly referred to as stevedoring and usually is paid by the ship owner through the shipping agent to the cargo handler. The cost of shifting a container from one slot in the vessel to another slot to unload a target container is borne by the ship owner.

(ii) Shuttling of the container/cargo from the berth to the storage area, thence to the customs inspection area, and loading onto a tractor/trailer for transport outside of the port is paid for by the shipper. This is usually referred to as arrastre services.

(iii) In the case of Fiji Island ports, the previous and current port tariff schedule does not differentiate between stevedoring and arrastre and have lumped the two services into a "Cargo-Handling Charge (Stevedoring)." There is no specific tariff item for "arrastre," which makes it difficult to determine where responsibility for

[1] ADB. 2002. *Report and Recommendation of the President to the Board of Directors on a Proposed Loan to the Maritime and Ports Authority of Fiji for the Fiji Ports Development Project in the Republic of the Fiji Islands*. Manila.

payment of the charge for ship owners and shipping agents ends and that for the shipper begins.

(iv) It is common practice in international shipping that companies pass on as much of their cost as possible to shippers. They do so by charges that might be called by different names, such as Terminal Handling Cost, Terminal Service Charge, Port Service Charge, etc. A charge may not be one that is imposed by the shipping company, but rather is charged by the local branch of the shipping company and/or shipping agent to generate additional revenues. They impose these charges in collusion with other shipping operators and shipping agents in the area.

(v) The European Commission is conducting an industry-wide probe into suspected price-fixing practices of shipping companies such as Neptune Orient Lines (NOL), AP Moller Maersk, CMA CGM, Hapag-Lloyd, Orient Overseas, Evergreen Marine, and Hanjin Shipping. These companies may have violated the European Union's antitrust rules that prohibit cartels and restrictive business practices and/or abuse of a dominant market position.[2]

(vi) A typical shipping rate sheet would break down shipping costs as shown below (for example only).

6. The estimated costs on importing a container from the United States to the ports in Fiji are as shown in Tables A6.1 and A6.2.

Table A6.1: Container Shipping Rates: United States East or West Coast to Lautoka or Suva

Direction	**20-foot Container** ($)	**40-foot Container** ($)	**Transit Time** (days)
East Coast–Lautoka	3,195	4,859	53
West Coast–Lautoka	2,917	4,526	40
East Coast–Suva	3,391	5,542	50
West Coast–Suva	3,431	5,582	37

Sources: International Shipping. Shipping Rates to Fiji (Lautoka) http://fiji.shipping-international.com/rates/lautoka/; International Shipping. Shipping Rates to Fiji (Suva) http://fiji.shipping-international.com/rates/suva/.

[2] *The Straits Times*, Singapore. 19 May 2011. Page B19.

Table A6.2: Additional Shipping Charges: United States East or West Coast to Lautoka or Suva

Description	**Amount** ($)
Bunker adjustment factor (BAF charges)	90–180
Wharfage	3.00/metric ton
Bill of lading	50
Drayage from terminal to your door (depends upon distance)	$220 (minimum) for 20-foot container $235 (minimum) for 40-foot container
Fuel surcharge	starts at $40
Shipper's declaration (over $2,500)	50
Allowance for industrial goods	100–150
Hazardous material	100

Sources: International Shipping. Shipping Rates to Fiji (Lautoka). http://fiji.shipping-international.com/rates/lautoka/; International Shipping. Shipping Rates to Fiji (Lautoka). http://fiji.shipping-international.com/rates/suva/.

7. From the rate sheet, the PSC is not included in the cost paid by the shipper. If the PSC were for congestion cost at the port, it should appear as a congestion surcharge. If it were for some cost that the ship owner incurs by calling in Fiji ports, such as low port productivity, it should be so indicated.

8. In a speech by Isimeli Bose, chairman of FPCL, during the commissioning of the cranes at the Suva King′s Wharf, "he took the opportunity to remind shipping agents of an agreement entered into with government, the port company and local shipping agents on behalf of their foreign and local owners, that the port service charge of F$250 per TEU (Twenty Foot Equivalent Unit), or F$500 per FEU (Forty Foot Equivalent Unit) be abolished when the hook handling rates reach 15 or more TEUs per hour."[3] If the government and FPCL are banking on an immediate removal of port service charges, however, local shipping agents have made it clear that any removal will depend on concrete evidence of an improvement in efficiency and productivity resulting from the new cranes.

9. It is therefore quite clear that there is more to imposition of the PSC by shipping agents and ship owners than they are willing to admit. Their unwillingness to remove the PSC in spite of significant improvements in port productivity is a refusal to give up a revenue source that comes without needing to provide a corresponding service.

[3] http://www.islandsbusiness.com/islands_business/index_dynamic/containerNameToReplace=MiddleMiddle/focusModuleID=15843/overideSkinName=issueArticle-full.tpl.

FINANCIAL REEVALUATION

1. The financial reevaluation of the subprojects required preparing a new estimate of the revenue streams generated by each of the subproject ports. The basis for the project completion report (PCR) estimates of subproject revenues was not adequately explained, thus requiring a more detailed computation to fully understand the sources of the revenue streams.

2. Since the project facilities in the Suva and Lautoka ports are utilized by specific vessel types and cargoes, these were segregated from the other vessel types and subsequently used as the basis for estimating vessel-related port charges.

3. As in Appendix 5 above, the average gross registered tonnage (GRT) for the specific vessel types using the project facility was estimated. For Suva Port, the computed average vessel GRT was 12,456 and for Lautoka Port it was 13,850.

4. For cargo volume, only general cargo, dry bulk and containerized cargo were considered. Liquid bulk cargo used specialized handling facilities for loading and unloading of vessels, which were outside the project-provided facilities. The cargo and container growth rate used was 3.0%, which was close to the 2.8% used in the appraisal and PCR. This was considered still acceptable and conservative, given the computed growth rate for the 2002–2010 period as shown in Table A7.1 below. Table A7.2 provides the general cargo and container volumes from 2002 to 2010 for the two ports.

Table A7.1: General Cargo and Containers Computed Growth Rates, 2002–2010

Description	Growth Rate
Suva Port	
Total general cargo	1.61%
Dry bulk	4.92%
FCL 20-foot	(2.53%)
FCL 40-foot	4.54%
Empty 20-foot	1.64%
Lautoka Port	
Total general cargo	13.74%
Dry bulk	(8.01%)
FCL 20-foot	14.38%
FCL 40-foot	18.77%
Empty 20-foot	11.44%
Empty 40-foot	8.09%

FCL = full container load.
Source: Independent evaluation mission estimate.

Table A7.2: General Cargo and Containers, 2002–2010

Description	2002	2003	2004	2005	2006	2007	2008	2009	2010
Suva Port									
Total general cargo	1,057,460	1,104,808	1,208,539	1,245,176	1,240,662	1,340,186	1,271,592	1,103,739	1,201,492
Dry bulk	159,382	196,257	170,258	308,201	274,802	271,280	239,074	234,268	234,014
No. of containers									
FCL 20-foot	39,501	30,199	33,391	35,706	35,549	39,656	37,042	30,253	32,169
FCL 40-foot	…	5,271	5,579	5,554	5,557	6,067	6,268	5,774	7,191
LCL	164	1	…	…	…	…	…	6	…
Empty 20-foot	11,515	9,021	8,614	8,786	9,974	10,463	11,846	14,217	13,115
Empty 40-foot	…	2,762	2,581	3,037	3,386	3,344	3,507	3,960	3,823
Lautoka Port									
Total general cargo	217,510	278,583	408,302	367,495	435,197	496,786	530,546	501,931	609,306
Dry bulk	37,939	23,341	44,417	21,500	35,969	27,046	33,648	29,235	19,454
No. of containers									
FCL 20-foot	7,155	7,948	10,255	11,084	14,451	16,718	20,169	17,451	20,958
FCL 40-foot	…	805	1,180	1,135	1,158	1,193	1,318	1,238	2,684
LCL	…	…	…	…	…	13	50	75	46
Empty 20-foot	2,632	4,058	4,089	3,508	4,340	9,205	8,925	7,874	6,260
Empty 40-foot	…	358	974	857	525	623	403	1,019	617

"…" = data not available, FCL = full container load, LCL = less than container load, No. = number.
Source: Fiji Ports Corporation Limited

5. Fiji Ports Corporation Limited (FPCL) has recently begun to implement its Fiji Ports Corporation Ltd. (Tariffs) Regulations 2009, which were supposed to have come into force on 1 October 2009. These had been held in abeyance, however, and the government has only recently approved their implementation. These regulations had replaced the Maritime and Ports Authority of the Fiji Islands (Tariffs) Regulations 2001, which came into force on 1 July 2001.

6. The new port tariffs are intended to improve the financial viability of FPCL in operating and maintaining the various ports under its administrative and operational purview. For the relevant charges, the new port tariffs effected significant increases from the previous schedule. For this reevaluation, only the following port charges are considered as relevant and directly related to the facilities provided under the project.

Table A7.3: Revised Vessel Charges for Suva and Lautoka Ports (Selected Charges)

Port Tariff	Unit	Fixed Rate (F$)	Variable Rate ($F)
Marine Service Charge	per GRT	806.25	0.22
Berthing Fees	per GRT	397.75	0.11
Dockage Fees	per 100 GRT		1.94

GRT = gross registered tonnage.
Source: Fiji Ports Corporation Ltd (Tariffs) Regulations 2009, Fiji Ports Corporation Limited.

Table A7.4: Stevedoring Handling Charges (Charged to Overseas Ships)

Description	Unit	Rate (F$)
Container, full	20-footer	90.000
	40-footer	135.000
Container, empty	20-footer	60.000
	40-footer	108.000
Transshipment	20-footer	80.000
	40-footer	144.000
Wharfage on transshipment container	box	36.550
Dry bulk	ton	5.375
General cargo	ton	15.250
Stuff/unstuff container	20-footer	104.650
	40-footer	136.500

Source: Fiji Ports Corporation Ltd (Tariffs) Regulations 2009, Fiji Ports Corporation Limited.

Table A7.5: Vessel Charges for Suva and Lautoka Ports
(Selected Charges, 2001)

Port Tariff	Unit	Variable Rate (F$)
Marine Service Charge	Per 100 GRT	6.57
Berthing Fees	Per 100 GRT/day	5.03
Dockage Fees	100 GRT	1.13

GRT = gross registered tonnage.
Source: Maritime and Ports Authority (Tariff) Regulations 2001, Fiji Ports Corporation Limited, 2011.

Table A7.6: Stevedoring Handling Charges (Charged to Overseas Ships)

Description	Unit	Rate (F$)
Container, full	20-footer	50.00
	40-footer	100.00
Container, empty	20-footer	10.00
	40-footer	20.00
Transshipment	20-footer	34.00
	40-footer	68.00
Wharfage on transshipment container	box	
Dry bulk	ton	1.50
General cargo	ton	3.57
Stuff/unstuff container	20-footer	…
	40-footer	…

"…" = data not available.
Source: Maritime and Ports Authority (Tariff) Regulations 2001, Fiji Ports Corporation Limited.

7. Regarding project cost, the PCR failed to include the government counterpart. This may have resulted in higher calculated financial internal rates of return (FIRRs) and net present values (NPVs) at that time. This has been included in the financial reevaluation.

8. For Suva Port, the computed FIRR is 17.77% and NPV at 12% is $7.6 million. For Lautoka Port, the computed FIRR is 16.37% and NPV at 12% is $6.95 million. For the project as a whole, the computed FIRR is 17.15% and NPV is $18.96 million. Details of the computation are given in Tables A6.8 to A6.10. Table A6.3 below shows the FIRR and NPV estimates at appraisal, from the PCR, and by the independent evaluation mission.

Table A7.7: Financial Internal Rate of Return and Net Present Value Estimates at Appraisal, Project Completion, and Independent Review

Description	FIRR (%)	NPV at 12% ($ million)
A. At Appraisal		
Suva Port	22.3	7.60
Lautoka Port	16.5	3.47
B. From Project Completion Report		
All Ports	12.8	1.84
C. At Independent Evaluation Mission		
Suva Port	17.77	12.01
Lautoka Port	16.37	6.95
All Ports	17.15	18.96

FIRR = financial internal rate of return, NPV = net present value.
Source: Independent evaluation mission estimate.

Table A7.8: Economic Internal Rate of Return and Net Present Value Computation, Suva Port

	Cost			Revenues			
Year	Capital Cost	Operating & Maintenance Cost	Total Cost	Revenue–Vessel Charges	Revenue–Cargo Charges	Total Revenues	Net Revenue
2002	120		120				(120)
2003	262		262				(262)
2004	6,066		6,066				(6,066)
2005	10,441		10,441				(10,441)
2006	106		106				(106)
2007	28	8,615	8,643	650	5,185	5,836	(2,807)
2008		8,785	8,785	727	4,917	5,643	(3,141)
2009		8,987	8,987	711	4,254	4,964	(4,022)
2010		9,194	9,194	647	4,633	5,280	(3,914)
2011		9,405	9,405	1,428	17,709	19,137	9,732
2012		9,621	9,621	1,428	18,240	19,668	10,047
2013		9,843	9,843	1,428	18,787	20,215	10,373
2014		10,069	10,069	1,428	19,351	20,779	10,710
2015		10,301	10,301	1,428	19,931	21,360	11,059
2016		10,537	10,537	1,428	20,529	21,958	11,420
2017		10,780	10,780	1,428	21,145	22,573	11,794
2018		11,028	11,028	1,428	21,780	23,208	12,180
2019		11,281	11,281	1,428	22,433	23,861	12,580
2020		11,541	11,541	1,428	23,106	24,534	12,993
2021		11,806	11,806	1,428	23,799	25,227	13,421
2022		12,078	12,078	1,428	24,513	25,941	13,864
2023		12,356	12,356	1,428	25,249	26,677	14,321
2024		12,640	12,640	1,428	26,006	27,434	14,794
2025		12,931	12,931	1,428	26,786	28,214	15,284
2026		13,228	13,228	1,428	27,590	29,018	15,790
					FIRR		**17.77%**
					NPV@12%		**$12.01 million**

Source: Independent evaluation mission estimates.

Table A7.9: Economic Internal Rate of Return and Net Present Value Computation, Lautoka Port

	Cost			Benefits			
Year	Capital Cost	Operating & Maintenance Cost	Total Cost	Revenue–Vessel Charges	Revenue–Cargo Charges	Total Revenues	Net Revenue
2002	116		116				(116)
2003	256		256				(256)
2004	9,705		9,705				(9,705)
2005	6,569		6,569				(6,569)
2006	0		0				0
2007	27	2,862	2,890	358	2,039	2,397	(492)
2008		2,928	2,928	476	2,226	2,701	(227)
2009		2,996	2,996	530	2,042	2,571	(424)
2010		3,065	3,065	534	2,419	2,953	(112)
2011		3,135	3,135	934	8,429	9,363	6,228
2012		3,207	3,207	975	8,682	9,656	6,449
2013		3,281	3,281	1,017	8,942	9,959	6,678
2014		3,356	3,356	1,062	9,210	10,272	6,916
2015		3,434	3,434	1,109	9,487	10,595	7,162
2016		3,512	3,512	1,158	9,771	10,929	7,417
2017		3,593	3,593	1,209	10,065	11,274	7,681
2018		3,676	3,676	1,264	10,366	11,630	7,954
2019		3,760	3,760	1,321	10,677	11,998	8,238
2020		3,847	3,847	1,380	10,998	12,378	8,531
2021		3,935	3,935	1,380	11,328	12,708	8,773
2022		4,026	4,026	1,380	11,668	13,048	9,022
2023		4,119	4,119	1,380	12,018	13,398	9,279
2024		4,213	4,213	1,380	12,378	13,759	9,545
2025		4,310	4,310	1,380	12,749	14,130	9,820
2026		4,409	4,409	1,380	13,132	14,512	10,103
					FIRR		**16.37%**
					NPV@12%		**$6.96 million**

Source: Independent evaluation mission estimates.

Table A7.10: Economic Internal Rate of Return and Net Present Value Computation, Both Ports

	Cost			Benefits			
Year	Capital Cost	Operating & Maintenance Cost	Total Cost	Revenue–Vessel Charges	Revenue–Cargo Charges	Total Revenues	Net Revenue
2002	236		236				(236)
2003	518		518				(518)
2004	15,772		15,772				(15,772)
2005	17,009		17,009				(17,009)
2006	106		106				(106)
2007	55	11,478	11,533	1,008	7,224	8,233	(3,300)
2008		11,713	11,713	1,202	7,143	8,345	(3,368)
2009		11,982	11,982	1,240	6,295	7,536	(4,447)
2010		12,258	12,258	1,181	7,052	8,233	(4,025)
2011		12,540	12,540	2,362	26,138	28,500	15,960
2012		12,828	12,828	2,403	26,922	29,325	16,496
2013		13,123	13,123	2,445	27,730	30,175	17,051
2014		13,425	13,425	2,490	28,561	31,051	17,626
2015		13,734	13,734	2,537	29,418	31,955	18,221
2016		14,050	14,050	2,586	30,301	32,887	18,837
2017		14,373	14,373	2,638	31,210	33,847	19,474
2018		14,704	14,704	2,692	32,146	34,838	20,134
2019		15,042	15,042	2,749	33,111	35,859	20,817
2020		15,388	15,388	2,809	34,104	36,912	21,525
2021		15,742	15,742	2,809	35,127	37,936	22,194
2022		16,104	16,104	2,809	36,181	38,989	22,886
2023		16,474	16,474	2,809	37,266	40,075	23,601
2024		16,853	16,853	2,809	38,384	41,193	24,340
2025		17,241	17,241	2,809	39,536	42,344	25,104
2026		17,637	17,637	2,809	40,722	43,530	25,893
					FIRR		**17.15%**
					NPV@12%		**$18.96 million**

Source: Independent evaluation mission estimates.

FINANCIAL PERFORMANCE OF THE EXECUTING AGENCY

1. At the appraisal stage, the Maritime and Ports Authority of Fiji (MPAF) was identified as the executing agency for the project. Its general manager for technical services was responsible for project implementation and to handle overall administration including procurement, disbursement, monitoring, and reporting. During the early stages of the project, MPAF undertook its roles as intended under the project design. Due to sector reforms implemented by the government during the latter stages of the project, MPAF was abolished and most of its functions transferred to a new entity, Fiji Port Corporation Limited (FPCL), which also took over the role of executive agency. FPCL had the same structure and capacity as the previous MPAF. The general manager for technical services of the MPAF became the general manager for infrastructure and services under the new FPCL. Thus, the change had no negative effect on implementation of the project.

2. Ports Terminal Limited (PTL) was initially created as a subsidiary of FPCL to handle the provision of such marine services at the ports as stevedoring and cargo handling. It was supposed to become a separate entity with employee shareholding as part of opening up stevedoring services to other service providers. As of the visit by the independent evaluation mission, PTL still retained its monopoly over port services (stevedoring and cargo handling), using equipment turned over to the entity by FPCL. In addition, FPCL had acquired three quay cranes to improve cargo-handling productivity, of which two are at Suva Port and one at Lautoka Port. These are leased out to PTL at highly concessionary rates of F$150,000 per month for the three cranes, with FPCL having responsibility for maintaining the equipment.

3. In addition to PTL, FPCL has another subsidiary, Fiji Ships Heavy Industry, with three core business activities: (a) slipping of marine vessels, (b) ship repairs and maintenance, and (c) heavy industrial and engineering works. It operates the shipyard at Sannergren Drive and the slipway at Eliza Street, both in Walu Bay, Suva. As of 2009, FPCL had invested F$1.30 million into Fiji Ships Heavy Industry to finance infrastructural refurbishment and rehabilitation work.

4. In analyzing the financial performance of FPCL, the financials of the two subsidiaries were not considered. The independent evaluation mission was provided the detailed financial statements up to 2010 (unaudited). Comparing the actual performance of FPCL from 2000 to 2010 with the forecast made during appraisal, it was observed that forecast revenues had been quite optimistic up to 2004, but revenue forecasts were lower than actual revenues from 2005 onwards. For total expenses, the appraisal and project completion report forecasts were significantly below the actual expenses incurred. The actual expenses exceeded the forecast by F$191.72 million during 2000–2010. For operating profit before interest and income tax, the actual was less than forecast up to 2002, but actual exceeded the forecast thereafter.

5. Considering only operating revenues of FPCL, the return on net fixed assets met the covenant requirement of being equal to or above 2% only during 2003–2005. It failed to meet the target from 2006 forward. With implementation in 2011of the revised port tariffs approved in 2009, it is expected FPCL will be able to meet the covenant requirement for return on net fixed assets. Table A8 compares the forecast financial performance of FPCL at the appraisal stage with its actual performance at the project completion and evaluation stages.

Table A8: Financial Performance of Fiji Ports Corporation Limited, 2000–2010

Item	1998	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	Growth Rate (%)
ACTUAL AND FORECAST (APPRAISAL)													
Total Operating Revenue	14.32	17.24	17.79	18.29	18.80	19.33	19.87	20.43					**2.87**
Total Expenses	10.74	14.01	14.80	15.34	15.90	17.38	17.98	18.60					**4.84**
Operating Profit before Interest and Tax	3.58	3.23	2.99	2.95	2.90	1.95	1.89	1.83					**(9.03)**
Net Profit after Abnormal Items and Tax	1.92	1.65	1.08	0.93	0.93	0.38	0.40	0.39					
Return on Net Fixed Assets (%)	5.90	5.80	5.50	5.50	3.90	2.70	2.70	2.70					
ACTUAL AND ESTIMATED (PROJECT COMPLETION REPORT, FROM FPCL)													
Total Operating Revenue		11.60	13.00	14.40	17.30	16.90	20.90	24.40	22.50	22.95	23.59	24.25	**7.65**
Total Expenses		11.40	13.50	15.70	14.30	14.50	15.00	18.20	19.10	19.54	19.99	20.45	**6.02**
Operating Profit before Interest and Tax		0.20	(0.50)	(1.30)	3.00	2.40	5.90	6.20	3.40	3.41	3.60	3.81	**34.26**
Net Profit after Abnormal Items and Tax		(0.30)	(1.10)	(1.90)	1.50	1.80	2.40	2.30	0.30				
Return on Net Fixed Assets (%)		(0.50)	(1.90)	(3.20)	2.60	2.20	2.20	1.70	0.30				
ACTUAL (FROM FPCL)													
Total Operating Revenue	14.32	11.60	13.00	14.40	17.30	16.90	20.90	24.40	22.50	23.96	25.91	28.93	**9.57**
Total Expenses	10.74	11.40	13.50	15.70	14.30	14.50	15.00	18.20	19.10	23.40	24.50	22.12	**6.85**
Operating Profit before Interest and Tax	3.58	0.20	(0.50)	(1.30)	3.00	2.40	5.90	6.20	3.40	0.56	1.41	6.81	**42.30**
Net Profit after Abnormal Items and Tax	1.92	(0.30)	(1.10)	(1.90)	1.50	1.80	2.40	2.30	0.30	0.09	0.92	4.98	
Return on Net Fixed Assets (%)	5.90	(0.50)	(1.90)	(3.20)	2.60	2.20	2.20	1.70	0.30	0.00	0.01	0.04	
VARIANCE (Actual versus Appraisal Forecast)													
Total Operating Revenue		(5.64)	(4.79)	(3.89)	(1.50)	(2.43)	1.03	3.97		1.01	2.32	4.68	
Total Expenses		(2.61)	(1.30)	0.36	(1.60)	(2.88)	(2.98)	(0.40)		3.86	4.51	1.67	
Operating Profit before Interest and Tax		(3.03)	(3.49)	(4.25)	0.10	0.45	4.01	4.37		0.56	1.41	6.81	
Net Profit after Abnormal Items and Tax		(1.95)	(2.18)	(2.83)	0.57	1.42	2	1.91		0.09	0.92	4.98	
Return on Net Fixed Assets (%)		(6.30)	(7.40)	(8.70)	(1.30)	(0.50)	(0.50)	(1.00)		0.00	0.01	0.04	

FPCL = Fiji Ports Corporation Limited.

Notes: Gray-shaded cells denote actual performance, while the non-shaded areas are forecast data. Estimate of variance made by Independent Evaluation Mission estimate.

Sources: ADB. 2008. *Completion Report: Fiji Ports Development Project in the Fiji Islands.* Manila (Loan 1902-FIJ); ADB. 2002. *Report and Recommendation of the President to the Board of Directors on a Proposed Loan to the Maritime and Ports Authority of Fiji for the Fiji Ports Development Project in the Republic of the Fiji Islands*. Manila; Fiji Ports Corporation Limited, May 2011.