



Completion Report

Project Number: 32208
Loan Number: 1948(SF)
September 2008

Marshall Islands: Outer Island Transport Infrastructure Project

Asian Development Bank

CURRENCY EQUIVALENTS

The unit of currency in the Republic of the Marshall Islands is the US dollar.

ABBREVIATIONS

ADB	–	Asian Development Bank
AMI	–	Air Marshall Islands
DMC	–	developing member country
EIRR	–	economic internal rate of return
EPA	–	Environmental Protection Authority
FY	–	fiscal year
JICA	–	Japan International Cooperation Agency
km	–	kilometer
km ²	–	square kilometer
m	–	meter
nm	–	nautical mile
MIAA	–	Marshall Islands Airport Authority
MIPA	–	Marshall Islands Ports Authority
MOF	–	Ministry of Finance
MOIA	–	Ministry of Internal Affairs
MOTC	–	Ministry of Transportation and Communications
MPW	–	Ministry of Public Works
MRD	–	Ministry of Resources and Development
NGO	–	nongovernment organization
O&M	–	operation and maintenance
PMU	–	project management unit
PPTA	–	project preparatory technical assistance
RMI	–	Republic of the Marshall Islands
TA	–	technical assistance
UNDP	–	United Nations Development Programme

GLOSSARY

Atoll	–	Coral atolls are formed from volcanic cones that have subsided and a coral barrier reef has formed at their perimeter; some atolls are completely encircled by reef with no sea outlet, while others are breached by reef passages, enabling vessels to enter the lagoon. There are 29 atolls in the Republic of the Marshall Islands, 22 of which are permanently inhabited.
Beach channel	–	Local widening and deepening, usually artificial, between the deeper water of the lagoon, or ocean side reef, and the beach to enable small boat access
Docks	–	Berthing facilities for interisland shipping
Field trip	–	The interisland combined cargo and passenger ships and

services, based out of the home ports of Majuro and Ebeye, that provide round trip circuits of atoll groups, often with several ports of call at each atoll. They were originally operated by Government-owned vessels then reformed into a Government-funded, private sector-operated service under competitive tendering.

Island	–	True isolated islands, with no central lagoon
Islets	–	The areas of dry land around an atoll's perimeter. They are characterized as being low lying, typically no more than two meters above sea level, and narrow. In some cases, chains of nearby islets have been connected by artificial causeways.
Jetties	–	Berthing facilities for lagoon boats and interisland shipping boats
Outer islands	–	Islands and atolls without international port or airport services that are served by domestic sea and air transport from the main islands of Majuro and Ebeye.
Pass	–	Deepwater breaks in the atoll ring permitting ships to enter the lagoon; otherwise known as passages.
Rearcart	–	Handcart with tubular steel frame, wooden deck and sides, and pneumatic bicycle tires.

NOTES

- (i) The fiscal year (FY) of the Government ends on 30 September. FY before a calendar year denotes the year in which the fiscal year ends, e.g., FY2000 ends on 30 September 2000.
- (ii) In this report, "\$" refers to US dollars.

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BASIC DATA

A. Loan Identification

1.	Country	Republic of the Marshall Islands
2.	Loan Number	1948-RMI
3.	Project Title	Outer Island Transport Infrastructure Project
4.	Borrower	The Republic of the Marshall Islands
5.	Executing Agency	Ministry of Transportation and Communications
6.	Amount of Loan	SDR5.304 million
7.	Project Completion Report Number	PCR: RMI 1060

B. Loan Data

1.	Appraisal	
	– Date Started	03 July 2002
	– Date Completed	10 July 2002
2.	Loan Negotiations	
	– Date Started	16 October 2002
	– Date Completed	17 October 2002
3.	Date of Board Approval	28 November 2002
4.	Date of Loan Agreement	14 February 2003
5.	Date of Loan Effectiveness	
	– In Loan Agreement	15 May 2003
	– Actual	05 June 2003
	– Number of Extensions	One
6.	Closing Date	
	– In Loan Agreement	30 June 2007
	– Actual	23 January 2007
	– Number of Extensions	None
7.	Terms of Loan	
	– Interest Rate	1% per annum
	– Maturity (number of years)	32 years
	– Grace Period (number of years)	8 years
9.	Disbursements	
a.	Dates	
	Initial Disbursement	Final Disbursement
	02 July 2004	23 January 2007
	Effective Date	Original Closing Date
	05 June 2003	30 June 2007
		Time Interval
		30 months
		Time Interval
		48 months

b. Amount (SDR)

Category or Subloan	Original Allocation	Last Revised Allocation	Amount Canceled	Net Amount Available	Amount Disbursed	Undisbursed Balance
01	3,538,400		3,538,400		0	3,538,400
02	909,200		572,931	336,269	336,269	572,931
03	75,800		75,030	770	770	75,030
04	780,600		780,600		0	780,600
Total	5,304,000		4,966,961	337,039	337,039	4,966,961

01 = civil works, 02 = consulting services, 03 = interest charge, 04 = unallocated.

An undisbursed loan amount of SDR4,966,960.67 (\$7,398,039.57 equivalent) was cancelled on 23 January 2007.

10. Local Costs (Financed)

- Amount (\$)	0
- Percent of Local Costs	0%
- Percent of Total Cost	0%

C. Project Data

1. Project Cost (\$)

Cost	Appraisal Estimate	Actual
Foreign Exchange Cost	6,840,000	507,517
Local Currency Cost	3,160,000	0
Total	10,000,000	507,517

2. Financing Plan (\$)

Cost	Appraisal Estimate	Actual
Implementation Costs		
Borrower Financed	3,160,000	0
ADB Financed	6,740,000	506,401
Other External Financing	0	0
Total	9,900,000	506,401
IDC Costs		
Borrower Financed	0	0
ADB Financed	100,000	1,116
Other External Financing	0	0
Total	100,000	1,116

ADB = Asian Development Bank, IDC = interest during construction.

3. Cost Breakdown by Project Component (\$)

Component	Appraisal Estimate (‘000)	Actual
A. Base Costs		
1. Docks and Navigation Aids	3,590	0
2. Warehouses, Channels, and Airstrips	1,540	0
3. Mobilization (Establishment) Cost	2,050	0
4. Site Investigation	200	0
5. Consulting Services	1,000	506,401
Subtotal	8,380	
B. Contingencies		
1. Physical	770	0
2. Price	760	0
Subtotal	1,520	0
C. Interest During Construction	100	1,116
Total	10,000	507,517

4. Project Schedule^a

Item	Appraisal Estimate	Actual
Project Implementation Consultants		
Date of Contract with Consultants	Sep 2003	14 Dec 2004
Completion of Site Investigation	Mar 2003	Apr 2005
Completion of Engineering Designs	Jun 2003	Jun 2005
Prequalification of Contractors	Jan–Jun 2003	not done
Closure of Tenders	Sep 2003	1 Mar 2006
Civil Works Contract		- ^b
Date of Award	Sep 2003	-
Completion of Work	Jun 2006	-
Technical Assistance		
Date of Contract with Consultants	8 Dec 2004	Sep–Oct 2005
Completion of TA Services	May 2004	30 Apr 2006

^a Schedule assumed advance action.^b Project did not proceed to construction.

5. Project Performance Report Ratings

Implementation Period	Ratings	
	Development Objectives	Implementation Progress
From 28 Nov 2002 to 31 May 2004	S	S
From 31 May 2004 to 30 Jun 2004	S	HS
From 30 Jun 2004 to 31 Dec 2005	S	S
From 31 Dec 2006 to 28 Feb 2006	S	PS
From 28 Feb 2006 to 30 Nov 2006	S	PS
From 30 Nov 2006 to 31 Dec 2006	S	U
From 31 Dec 2006 to 30 Jun 2007	S	PS

HS = highly satisfactory, PS = partially satisfactory, S = satisfactory, U = unsatisfactory.

D. Data on Asian Development Bank Missions

Name of Mission	Date	No. of Persons	No. of Person-Days	Specialization of Members^a
Fact-Finding	4–7 Dec 2001	4	16	a, b, c, d
Pre-Appraisal/Appraisal	3–10 Jul 2001	4	32	a, g, h, i
Inception	14–21 Apr 2004	2	16	a, e
Review 1	26 Feb–4 Mar 2005	1	2	a
Reappraisal/Review 2	15–22 Aug 2005	5	40	a, b, b, f
Country Portfolio Review	20 Feb–10 Mar 2006	1	4	a
Country Consultation	5–9 Jun 2006	1	1	a
Special Loan Administration	13–21 Nov 2006	1	3	a
Project Completion Review	7–18 Jul 2008 ^b			

^a a = economist, b = transport engineer consultant, c = maritime transport planner specialist, d = transport economist, e = project analyst, f = aviation specialist consultant, g = country operations officer, h = economist/poverty specialist, i = resettlement specialist.

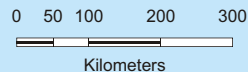
^b No PCR mission to RMI was fielded. Instead, a staff consultant visited ADB Headquarters on above dates to assist in the preparation of the project completion report.

REPUBLIC OF THE MARSHALL ISLANDS **OUTER ISLAND TRANSPORT INFRASTRUCTURE PROJECT** (as completed)

N O R T H P A C I F I C O C E A N

13°00'N

13°00'N



- Project Area
 - ★ National Capital
 - Reef/Atoll
 - International Boundary
- Boundaries are not necessarily authoritative.

160°00'E

170°00'E

ENEWETAK

BIKINI

Ailinginae

Rongelap

Rongerik

Taongi

Bikar

Utirik

Taka

MEJIT

Ailuk

Likiep

Wotho

Wotje

Erikub

Maloelap

Aur

Namu

LIB

Lae

Kwajalein

Ujae

Ailinglaplap

MAJURO

MAJURO

Amo

Jaluit

Mili

KNOX

Namdrik

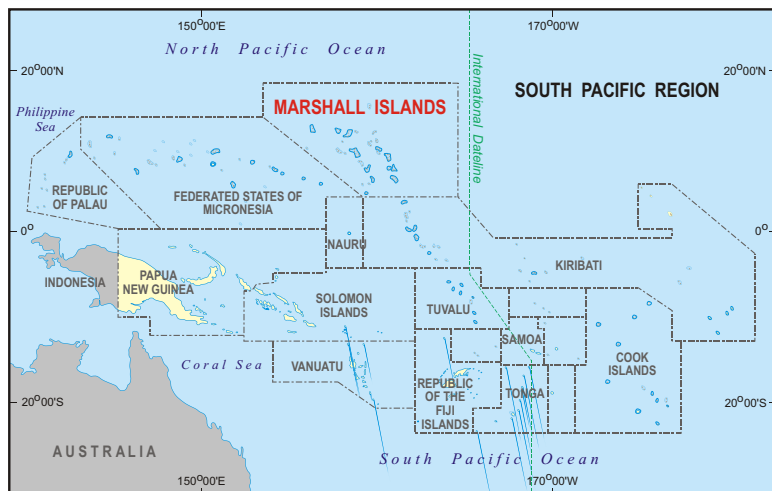
KILI

Ebon

170°00'E

5°00'N

5°00'N



I. PROJECT DESCRIPTION

A. Objective

1. The objective of the Project as set out in the Report and Recommendation of the President¹ was to contribute to poverty reduction in the outer islands while recognizing the importance of the transport services, particularly shipping, as essential lifelines to outer island communities. This was to be achieved by (i) improving transport services to and from the outer islands for people and their produce, (ii) increasing accessibility to goods and basic services, and (iii) creating opportunities for more diversified economic activities and employment. The Project was to help reduce the cost of shipping goods to outer island communities, increase the opportunity to earn income, create new employment opportunities, and improve access to basic services, such as health and education. It was also to reduce the amount of subsidy required to provide outer island transport services, freeing budget resources for further poverty reduction activities and priority sector development, including health and education services. The project framework is in Appendix 1.

2. Specifically, the Project was to fund selected transport infrastructure, primarily marine civil engineering, and also complementary engineering and building works on land, which would yield savings in transport costs and provide safer and more reliable services. In turn, these works would encourage increased economic production in the outer islands, help limit migration to Majuro and Ebeye, and assist in the delivery of social services.

B. Components and Outputs

3. The Project comprised the following components:

- (i) landing facilities (ship docks, small jetties, and boat channels) to expedite loading and unloading, and to reduce cargo spoilage and passenger discomfort and injury;
- (ii) warehousing, mainly for copra, but also for general inward cargo, and with ancillary areas for radio communications, office, and community workroom; and improvement to tracks to facilitate concentration of copra collections and distribution of inward cargo at selected loading points;
- (iii) navigation aids to enable access to landing points at night and under disturbed sea and low light conditions, to improve safety and eliminate overnight delays; and
- (iv) extensions and general improvements to selected airstrips where there are runway length constraints.

C. Rationale

4. The Republic of the Marshall Islands (RMI) comprises 29 coral atolls and 5 true islands scattered over 1.9 million square kilometers (km²) of the central Pacific Ocean. The atolls are distributed over 900 kilometers (km) from north to south and 1,200 km from east to west in two roughly parallel chains running northwest to southeast—the eastern Ralik Chain and the western Ratak Chain. The total land area of about 180 km² constitutes only 0.01% of the total

¹ ADB. 2002. *Report and Recommendation of the President to the Board of Directors on a Proposed Loan and Technical Assistance Grant to the Republic of the Marshall Islands for the Outer Island Transport Infrastructure Project*. Manila.

geographic area within the RMI's exclusive economic zone. The population of the RMI, according to the 1999 census, was 50,840 and concentrated in the two main atolls of Majuro (23,676) and Kwajalein (10,902), which is also known as Ebeye. The outer islands support populations of between 95 and 2,000 each, spread over numerous islets, and typically with population concentrations of up to 200 people per km². In some cases, individual islets are connected by a dry reef at low tide and in a few cases have been connected by engineered causeways.

5. The outer island population subsists on a diet of fish, coconut, breadfruit, pandanus, and other produce, supplemented with imported rice, flour, and sugar. The main cash crop is copra. Outer island production also includes handicrafts, small quantities of fruits and vegetables, and fish for sale in Majuro and Ebeye. Vessels carry passengers and general cargo to and from the outer islands.

6. Thirty percent of the population lives in the 18 outer islands of the project area. Communities in the outer islands suffer from physical isolation, leading to low incomes, lack of basic services, and a poverty of opportunity. The people who live in these outer islands have significantly lower incomes than the national average, and it is estimated that almost two thirds of the population in the project area have an income level below the United Nations Development Programme (UNDP) poverty line threshold of \$1 a day.

7. Transport services provide a lifeline to these outer islands. Shipping brings in essential goods and services, and carries out island produce from which the people earn a substantial portion of their incomes. Shipping also brings in government services and supplies, particularly to schools and health clinics. Shipping provides an essential service to families by transporting children to and from secondary schools and colleges elsewhere in the RMI, and by linking the general population to urban centers and the outside world. Air services provide passenger and freight transport, as well as emergency evacuation services for sick and vulnerable people.

8. Transport operations are complicated by poor infrastructure and facilities in the outer islands. In particular, the sea approaches and landings on coral atolls are often constrained by narrow reef passages, navigation obstructions, and shallow reef flats, which combine to make landing difficult. Weather, sea, and light conditions restrict the time available for anchoring and transporting goods and passengers ashore; passengers are subject to risk and discomfort; and there is frequent damage to cargo. Navigation aids are almost entirely absent and there are few ship docks or small boat jetties. Where beach landings are required, channels need to be cleared to allow small boats to reach the shore. On land, warehousing to store goods and local produce for export is required at a central location to improve the efficiency of shipping operations. Most atolls have airstrips, but they are unsealed and often poorly maintained. In some cases, restricted runway length reduces aircraft capacity and range.

9. The rationale for the Project was to provide new or improved transport infrastructure to selectively reduce or remove these constraints where it was practical and economic to do so, while taking into account the size and status of the local populations to be served. Relieving constraints would lead to more frequent and reliable services, reduced safety risks to passengers and cargo, and lower costs for outer island transport. In turn, this would provide more opportunity for social interaction; increase access to education, health, and business development services; and improve the ability of public agencies to deliver programs and develop social infrastructure in the outer islands. It also would reduce the prices of essential goods and encourage increased production and marketing of local produce, such as copra, fruits and vegetables, fish, and handicrafts. The present transport constraints are a factor in

population drift to the overcrowded cities of Majuro and Ebeye, and the Project was expected to assist in arresting urban migration by improving the economic and social conditions of the outer islands.

II. EVALUATION OF DESIGN AND IMPLEMENTATION

A. Relevance of Design and Formulation

10. The Project was relevant and responsive to the Government's development objectives as set out in *Meto2000*.² *Meto2000* included six goals: (i) increased self-reliance, (ii) renewed economic growth, (iii) equitable distribution, (iv) improved public health, (v) increased international competitiveness, and (vi) environmental sustainability. The second and third goals included strategies for "improved infrastructure—ensure regular and reliable outer island shipping and air services"; "outer island development program—maintain reliable shipping services through monitored contracts with private operators"; and "bring under review infrastructure in the atolls other than Majuro and Kwajalein; identify areas of significantly below-average access and inventory; and develop a practical program for progressively reducing the deficiencies as revenue and aid resources permit".

11. The origins of the Project date from earlier ADB funded technical assistance (TA)³ that reviewed transport sector policy, institutional reform, revenue and cost recovery, and investment priorities for infrastructure rehabilitation and development. In the port subsector, improvements to outer island transport infrastructure rated as the third priority after repairs at Majuro port and improvements at Ebeye port.

12. The project preparatory technical assistance (PPTA)⁴ was prepared against the background of the 1999 Country Assistance Program,⁵ which highlighted health, education and vocational training, microfinance, and direct lending to the private sector as the main areas of emphasis for ADB's program. The Country Assistance Program attributes the declining economic performance of the RMI over the 1995–1998 period to a contraction of the fishing and agricultural (mainly copra) sectors. The social effects of this economic decline were amplified by the Government's efforts to reduce the size of the public sector. ADB's transport sector strategy focused on the port subsector, although not specifically the outer islands, and a PPTA was proposed for 1999–2000 and loan project in 2000–2001. While the PPTA pre-dated the Poverty Reduction Partnership Agreement⁶ and analysis of poverty in the RMI,⁷ these studies confirmed that infrequent and unreliable shipping services, caused in part by poor infrastructure, contributed to the relative disadvantage and hardship experienced by residents of the outer islands.

² ADB. 2001. *Marshall Islands: Meto 2000—Economic Report and Statement of Development Strategies*. Manila. *Meto* is a Marshallese word for a stick frame used for open sea navigation in the Marshall Islands. Preparation of the *Meto 2000* was funded by ADB and involved a national consultative process; it followed on from the earlier 2nd National Development Plan (1995–1999).

³ ADB. 1994. *Technical Assistance to Marshall Islands for Transport Infrastructure Development Project*. Manila.

⁴ ADB. 2000. *Technical Assistance to Marshall Islands for Preparing the Outer Islands Transport Infrastructure Project*. Manila.

⁵ ADB. 1999. *Country Assistance Program (2000–2002): Republic of the Marshall Islands*. Manila.

⁶ Poverty Partnership Agreement between the Marshall Islands and Asian Development Bank, June 2002.

⁷ ADB. 2003. *Priorities of the People: Hardship in the Marshall Islands*. Manila.

B. Project Outputs

13. The Project components and outputs were (i) construction of landing facilities (ship docks, small jetties, and boat channels); (ii) warehousing for copra and other cargo, offices, communications centers, and community workrooms; (iii) navigation aids to allow ships' passage under low light conditions or at night, and (iv) extensions and general improvements to selected airstrips. As the undisbursed portion of the loan was cancelled and the loan closed after the contract tendering stage, none of the Project components was achieved. Technical assistance attached to the Project⁸ for improving the delivery of sea and air transport services was completed and rated partly successful,⁹ because the implementation of recommended changes to shipping services had yet to have an impact.

14. The loan was closed in the wake of ADB's consideration of the Government's debt position, continuing project implementation delays, rising cost estimates, and a lack of evidence of Government ownership and support for the Project.

C. Project Costs

15. A threefold increase in the estimated Project cost between PPTA and the detailed design and tender stages was a primary, although not the sole, reason for the cancellation of the remaining loan prior to the construction contract award. Reasons for the cost increases included: (i) inflation in construction prices between the PPTA estimate in 2001 and the detailed design estimate and tender prices in 2005–2006, and (ii) changes to the design concepts between the PPTA and detailed design, due in part to differences in the assessment of appropriate technical and environmental standards. Other probable, albeit less quantifiable, reasons were the limited competitive market for marine engineering work in the RMI, which was exacerbated by a strong demand for engineering construction in the Asia-Pacific region and difficulty in attracting contractor interest. The Project also carried particular pricing risks for contractors unfamiliar with the market. There had been few recent examples in the RMI that contractors could refer to when estimating costs or setting bid prices, and there were uncertain and potentially high costs associated with mobilization and weather-induced delays.

16. The Project was conceived as a collection of priority projects with a total of \$10 million in funding. Cost increases could only be accommodated by a reduction in scope. Despite the cost increases, a parallel increase in benefits—due mainly to a doubling in ship operating costs over the period and the removal of less beneficial project components, such as outer island jetties—enabled the same selection of subprojects to retain an economic internal rate of return (EIRR) of 12.3% based on the design estimates, which had been reduced from 14.5% at the project preparation stage. With the number of subprojects reduced to conform to the loan amount, the EIRR rose to 15.3%. The navigation aid component showed the highest individual EIRR at 18.7% based on the reviewed design estimates.

17. A comparison of the Project costs between the PPTA and detailed design are shown in Table 1 below and a more detailed analysis is in Appendix 2. The preliminary design estimate of \$21.8 million was three times the estimate in the PPTA. A Project Review Mission in August 2005 conducted a value management review of the engineering standards and design concepts proposed by the consultants, in response to which the consultant revised the designs and cost

⁸ ADB. 2002. *Technical Assistance to the Republic of the Marshall Islands for Improving the Delivery of Sea and Air Transport Services*. Manila.

⁹ ADB. 2006. *Technical Assistance Completion Report on Improving the Delivery of Sea and Air Transport Services in Marshall Islands*. Manila.

estimate downward by 42% to \$12.7 million. A comparison of common elements between the PPTA and detailed design estimate shows an overall increase of 71%. This compares with cost escalations over the same period of 108% for steel, 21% for cement, and 141% for oil.¹⁰ The most significant cost item, navigation aids, was reduced by 28%. The high cost of this component in comparison to the PPTA estimate was largely due to the design consultant's recommendation that all channel beacons be fixed by piles into the reef shelves and coral heads, rather than through the use of buoys as proposed by the PPTA consultants. Appendix 3 provides more detail on the design issues.

Table 1. Comparison of Project Cost Estimates

Item	RRP ^a 2002	Design (2005) ^b		% of PPTA	Reduced Project
		Preliminary	Reviewed		
Navigation aids	1.87	8.69	6.24	334%	4.48
Jetties	2.42	6.15	2.62	108%	0.00
Warehouses	1.69	4.22	1.61	95%	1.57
Airports and roads	0.92	0.56	0.34	37%	0.00
Reef platforms and channels	1.27	2.16	1.86	146%	1.13
Base Cost	7.18	21.78	12.67	176%	7.18
Investigation, Design and Supervision	1.22				1.22
Contingencies	1.61				1.61
Total Project Cost	10.00				10.00

PPTA = project preparatory technical assistance, RRP = Report and Recommendation of the President.

^a ADB. 2002. *Report and Recommendation of the President to the Board of Directors on a Proposed Loan and Technical Assistance Grant to the Republic of the Marshall Islands for the Outer Island Transport Infrastructure Project*. Manila.

^b SMEC International Pty Ltd. 2005. *Outer Island Transport Infrastructure Project, Design Report*.

Source: Asian Development Bank estimates.

18. The Project also suffered from poor economy of scale, involving relatively small subprojects at widely scattered locations with high fixed costs and vulnerability to unpredictable weather delays. As the project scope was reduced in the face of cost escalation, the problem of economy of scale was exacerbated.

D. Disbursements

19. The disbursement schedule was linked to the implementation schedule. Delays in disbursements were attributed to delays in project implementation. (Direct payment procedures were used.) By the time of loan closing on 23 January 2007, a total of \$507,517 had been disbursed from the loan account. Disbursements under the loan were for expenditures in foreign exchange associated with the project implementation consultants and interest during construction. The Government paid for expenditures in local currency. These expenditures were associated with costs for counterpart funding, such as office accommodation and transport, remuneration and per diem of domestic consultants, and other administrative expenses.

Table 2. Contract Awards versus Disbursements by Year

Amount (in \$million)	2004	2005	2006	2007	Total
Contract Awards	0.003	0.504	0.000	0.000	0.507
Disbursements	0.003	0.348	0.098	0.059	0.508

Note: Amount of \$.002 million in Unallocated, interest during construction, front-end fee, etc.

Source: Asian Development Bank.

¹⁰ The World Bank. *Commodity Price Data (Pink Sheet)*, various months.

E. Project Schedule

20. A detailed chronology of the Project is given in Appendix 4. There were lengthy delays in the appointment of the project implementation consultants and, following preparation of the contract documents, in advertising the tender. The project implementation schedule provided for a 6-month program of site investigation, detailed design, and contract document preparation to commence at loan effectiveness (5 June 2003) and run in parallel with contractor pre-qualification. A 3-month period was allowed for tendering, tender evaluation, and approval, with expected contractor mobilization to take place in June 2004, or 12 months after loan effectiveness.

21. In practice, the Ministry of Transportation and Communications (MOTC) took 12 months to select the project implementation consultants using quality- and cost-based selection (QCBS) procedures. In the end, MOTC had to be assisted by the Loan Inception Mission. The consultants, who were mobilized after an additional 3 months in January 2004, completed site investigation and designs on schedule by June 2004. There was another delay of 3 months to review the design concepts and costs (as explained in paragraphs 15–17) and obtain Environmental Protection Authority (EPA) approval. The final revised design reports and contract documentation were completed in November 2005. There was an additional 2-month delay, until January 2006, before bid advertisements were published internationally, due to the unavailability of counterpart funds. The three received bids were opened on 4 April 2006 at ADB, and found to be in the range of \$12 million to \$16 million, or 70% to 120% more than the design estimate. Neither a bid analysis nor a recommendation was reported to ADB. At this point, the Government proposed direct negotiation with a domestic contractor on a reduced scope of work, which was unacceptable to ADB. The bid validity period of 90 days expired on 30 June 2006, and a proposal was made to cancel the undisbursed balance and close the loan, which was approved by ADB on 15 September 2006. Overall, there was a 20-month delay between loan effectiveness and the receipt of tenders when compared with the implementation schedule.

22. As the Project did not proceed with construction, no comments can be made on possible performance compared with the schedule beyond the tender stage. The construction schedule was expected to be 2 years, a relatively long period given the size of the Project, and took into account likely periods of forced inactivity due to weather. A comparison of the actual implementation schedule with the schedule at Appraisal is given in Appendix 5.

F. Implementation Arrangements

23. **Project Management.** The implementation arrangements of the Government failed to deliver timely outputs up until the closure of the loan. The Project Management Unit (PMU) was staffed with a project director who, although a capable person, was clearly not engaged full-time with the Project because he was also expected to manage several other assignments within the Government. The Government did not support the Project by allocating the agreed amount of counterpart funds, and the lower level of approved funding was further reduced in practice. This weakness in project management was the primary reason for the delays between loan effectiveness and putting the construction contract out to tender.

24. **Procurement.** The procurement method was a conventional bill of quantities and schedule of rates contract, with site investigation, design, and tender document preparation carried out by the project implementation consultants. The alternative of a design-and-build

procurement was considered by the PPTA consultants, but ultimately was rejected because (i) the amount of work was not well-defined (e.g., subprojects were to be selected from a list, with a provision for back-up projects should some projects have unexpectedly high costs or prove to be impractical after site investigation); (ii) ground conditions were unknown; and (iii) the work was of a general nature, rather than being suited to a proprietary system where the design skills were more likely to reside with a contractor. The procurement method was confirmed at the design stage, but modified to remove contractor pre-qualification in favor of a post-qualification, single-envelope bidding process to allow for comparison of technical and price considerations, and contractor capability in a single evaluation process. In part, the change in the bidding method was to recover lost time in project implementation.

25. Following the receipt of tenders that were well in excess of cost estimates, the Government proposed—an alternative procurement arrangement, which the ADB could not accept, involving direct negotiation with a single local contractor on a design and build basis, with expert design advice to be supplied by the project implementation consultant and with oversight and approval from a PMU located in the Ministry of Public Works (MOW). However, the cost savings anticipated in this arrangement would apparently have come from changes to the subproject selection process and a lowering of design standards, rather than from any inherent advantages in the procurement method. Also, as a no-bid evaluation had been proposed, it would not have been possible to compare the local contractor's bid with any other bids.

G. Conditions and Covenants

26. There were no conditions to loan effectiveness. Of the eight specific assurances, four were related to the construction phase or long-term sustainability of the Project, and these were not invoked. Three were related to the performance of MOTC and the Government and were either not, or only partially, complied with. These three specific assurances from the Government included (i) maintaining a dialogue with ADB on the status of relevant transport issues including maritime safety, tariffs and user charges, sector funding, institutional organization and external assistance; (ii) budgeting adequate counterpart funding for project implementation in accordance with the financing plan; and (iii) maintaining an adequately-staffed project office headed by an appropriate project manager with qualifications and experience acceptable to ADB. The assurance that the Government would ensure that at least one private sector shipping service would participate in the shipping franchise service was fulfilled up until the closure of the loan. However, the Government's ongoing commitment to encouraging private sector involvement is doubtful.

27. While satisfactory dialogue was maintained during project processing and review missions, remote communications with MOTC and the Government were difficult and limited, and the Government appeared to have only a weak commitment to the domestic shipping service improvements upon which the benefits of the project's improved infrastructure outputs relied.

28. The agreed counterpart funding appropriation for fiscal year (FY)05 and FY06 was \$870,000, of which only \$350,000 was provided. An additional annual appropriation of \$50,000 was to be provided for maintenance of project facilities, but was not invoked.

29. A Government project steering committee¹¹ was established as required. Staffing for the project office was inadequate. The appointed project manager was effectively the only Government support and was available only part-time, and he continued in his role as Assistant Secretary to MOTC. While assurances to the contrary had been given, a project accountant was not appointed and no qualified accounting support was provided.

H. Related Technical Assistance

30. A TA for site investigation, environmental assessment, detailed design, and supervision of construction was provided under the loan as envisaged at appraisal.¹² Apart from delays in recruitment and an extension in the period of performance of services due to design and cost reviews, the consulting services were performed as expected.

31. ADB provided TA¹³ in conjunction with the loan to review and propose improvements for the domestic shipping franchising system—including MOTC's commercial, regulatory and monitoring systems—and to review the structure, financial, and operational management of Air Marshall Islands (AMI).

32. Commercial operation systems were put in place for ship maintenance, including a shipping management information system and performance monitoring of domestic shipping. In nearly all cases, the outputs met the original expectations. The ship maintenance outputs were targeted to seafarers and supervisors who were without much formal training or experience, and were well-received and understood by the recipients.

33. The TA completion report rated the TA as partially successful. The aviation component was successful, mainly due to the new AMI general manager's focus on changing the airline's strategic direction and financial performance. The shipping component has yet to demonstrate success. The TA provided valuable recommendations and the Government is implementing some changes, such as the formation of a shipping corporation to enable realization of the TA benefits. The TA also provided analysis for dialogue between the Government and ADB on the conduct of the copra trade, copra subsidy, and outer island shipping services.

I. Consultant Recruitment and Procurement

34. A firm of international consultants was recruited for project implementation by MOTC under QCBS procedures. At loan negotiation, MOTC advised ADB of its lack of capacity in applying the QCBS method and in response ADB conducted a familiarization seminar. Nevertheless, MOTC still experienced difficulty in correctly applying the technical scoring system and ultimately was assisted by the ADB Inception Mission. Three consulting firms submitted proposals that attained the required technical score and there was no disagreement over consultant selection.

¹¹ The Steering Committee had high level representation from MOTC, Ministry of Finance (MOF), Marshall Islands Ports Authority (MIPA), Ministry of Internal Affairs (MOIA), EPA, Ministry of Resources and Development (MRD), and MOW.

¹² ADB. 2002. *Report and Recommendation of the President to the Board of Directors on a Proposed Loan to the Republic of the Marshall Islands for the Outer Island Transport Infrastructure Project*. Manila.

¹³ ADB. 2002. *Technical Assistance to the Republic of the Marshall Islands for Improving the Delivery of Sea and Air Transport Services*. Manila.

J. Performance of Consultants, Contractors, and Suppliers

35. The project implementation consultants were professional and timely in the performance of their services. The main issue arising during the investigation and detailed design stage was the appropriateness of the proposed design concepts that had higher cost implications and differed from those of the PPTA consultants (see Appendix 3 for more detail), particularly with respect to the navigation aids. A value engineering design review conducted during an ADB project review mission led to a more economical design, but certain project components still had to be removed to match the loan amount and account for the higher cost design of the navigation aids. After receiving bids from contractors that were higher than the revised design estimates, the Government expressed the view that the designs, specifications, and methodologies proposed were not appropriate to the conditions and requested a major change to the procurement method. The implication was that the project implementation consultants' adherence to international best practice standards and designing infrastructure for robustness and durability was probably inappropriate to the situation in the outer islands where shipping often contended with a complete absence of existing maritime navigation aids and landing facilities, and only a modest capital investment could be supported by the economic benefits to be gained.

36. A related issue was the influence of environmental safeguards on design. As all of the marine engineering was confined to existing reef passes, channels, and landing points, the modification to the environment was small and, in comparison with the extensive reef areas on each atoll, extremely minor and localized. However, there is significant aversion to any impact at all on coral reefs, and the design costs were higher as a result. ADB's emphasis on safeguards may have encouraged an overly conservative approach towards the risks of minor reef damage, particularly where damage would likely occur anyway, and possibly to a greater extent, without the use of navigation aids.

K. Performance of the Borrower and the Executing Agency

37. **Executing Agency.** The general weakness of the RMI's government institutions was recognized by ADB well before the Project was conceived, as evident by a series of TAs and a loan being provided for institutional strengthening and reform.¹⁴ MOTC was selected as the executing agency (EA) for the Project rather than MOW because of its responsibility for the domestic shipping franchise system and marine navigation and landing facilities in the outer islands. Developing the capacity of MOTC to administer the shipping franchise system was a Project output, and ownership was best achieved by locating the Project in MOTC. However, while it was the EA for the PPTA and prior TA, it did not have experience in administering a project loan or in recruiting and managing consultants. Underperformance by MOTC was recognized as an output risk to the Project at appraisal (see project framework in Appendix 1 for more detail) due to its limited capacity and experience. This was also pointed out by MOTC itself during loan negotiation. Support was provided by ADB through training seminars in Manila, which were attended by both the PMU manager and the secretary of transport, and through direct assistance during the inception mission. Ultimately, the Government failed to support MOTC with counterpart funding and staffing for the PMU, leading to delays. The performance of MOTC is rated as partly satisfactory.

¹⁴ ADB. 1996. *Report and Recommendation of the President to the Board of Directors on a Proposed Loan to the Republic of the Marshall Islands for the Public Sector Reform Program*. Manila.

38. **Borrower.** The Government maintained its support throughout for the Project in meetings and communications with ADB, but failed to provide the agreed counterpart funding. Its financial management and commitment were also brought into question by falling into arrears with its loan repayments to ADB beginning in December 2005, which was the primary reason for cancelling the remaining undisbursed loan. At the time of cancellation, the RMI's external indebtedness was high, reported to be 70% of gross domestic product in FY 2005, of which 68% was ADB loans, and the situation was expected to worsen as the grace periods on a number of loans were set to expire. The performance of the Government is rated as unsatisfactory.

L. Performance of the Asian Development Bank

39. ADB fielded three Project Preparatory Missions, an Inception Mission, and two Review Missions during the implementation phase; and a mission to discuss loan cancellation. The Project was also supported with two Country Review Missions over the course of project preparation and implementation. The input of ADB resources was above average, and high in relation to the Project size. MOTC staff were provided with timely assistance in project administration during the missions and through staff training seminars in Manila. There were no significant delays on the part of ADB. The performance of ADB is rated as satisfactory.

III. EVALUATION OF PERFORMANCE

A. Relevance

40. The Project design was highly relevant to the purpose of improving the effectiveness, regularity, and safety of outer island cargo and passenger transport; and in reducing net costs to the Government. The design recognized the complex relationships between shipping operations, navigation aids, landings and shore-based handling and storage, and weather and tides, and optimized the project components within a funding level that allowed for an acceptable economic rate of return. The physical components were matched by the TA aimed at achieving the complementary operational improvements in the shipping franchise system necessary to maximize project benefits. As the Project did not proceed beyond tender stage, the performance of the design was not tested.

B. Effectiveness in Achieving Outcome

41. The Project failed to achieve its physical outputs of construction and rehabilitation of maritime and other outer island transport infrastructure. It was successful, through the TA attached with the loan, in achieving management and operational improvements in domestic aviation, but improvements in domestic shipping services remain uncertain.

C. Efficiency in Achieving Outcome and Outputs

42. The efficiency of the investment at the time of Project cancellation was effectively zero, with only \$503,777 of loan funds expended for no output other than engineering designs, site investigations, and environmental approvals. However, should the Government choose to pursue the Project by other funding means, the design work completed would have lasting value. The financial and economic analysis would need to be reworked to suit the requirements of a new funding agency and to update the cost base. The process was protracted and ultimately fruitless so its efficiency must be rated as poor, both in time and costs to ADB and the Government.

D. Preliminary Assessment of Sustainability

43. The physical works were not constructed so no sustainability issues arose. The sustainability of the management and operational changes introduced to the domestic air and shipping services as a result of the TA is difficult to gauge. The TA was the last in a long series of similar advisory services to the domestic maritime sector funded by ADB and other development organizations. It has proven difficult to decouple the provision of outer island services from political influence and action, such as ordering when and where services run, and accepting or purchasing new vessels without due diligence as to suitability, ongoing costs, or effects on other operators. The goal of a competitive franchising system that effectively targets subsidies to the poor and disadvantaged outer island population at the lowest cost possible to the Government, but without undermining the commercial private sector, has proven difficult to achieve in practice due to management weakness within MOTC and the lack of regard for efficiency and service performance. The Government has a preference for operating the subsidized domestic shipping service, even at high cost, and is reluctant to rely too heavily on the private sector which, in turn, has little incentive to enter the market.

44. The situation in the RMI's domestic shipping services contains all the elements of the regional diagnosis by ADB.¹⁵ This review found that service franchise schemes in the region encounter a range of problems: (i) shortage of private sector operators willing to bid for and operate the services, (ii) unsuitability of vessels deployed to deliver franchised services, (iii) erratic performances by contracted service providers, (iv) unwillingness or inability of governments to enforce sanctions for nonperformance, (v) unwillingness of governments to commit the funds required to make subsidy payments for the full period of the franchise contract, (vi) communities not meeting the original criteria for inclusion in the scheme applying pressure on governments for later inclusion, and (vii) lack of implementation of contract bidding requirements by governments.

45. Absent any further involvement in port sector projects in the RMI, ADB's follow-up actions should probably be at the wider regional level, encouraging Pacific developing member countries (DMCs) to share best practice in providing semi-commercial domestic shipping services. Sponsorship of regional seminars may be an avenue for this to occur.

E. Impact

46. The impact of the Project is limited to the institutional changes effected by the TA attached to the loan. These changes should enable MOTC to operate a more efficient commercialized service, to separate its commercial performance from its community service obligation, and to better maintain its fleet. In turn, the benefits of more reliable and lower cost services to outer island communities will be realized, but without the additional benefits that would have been generated by the infrastructure improvements. However, whether these gains are realized will critically depend upon the Government adequately funding the agreed service subsidies in accordance with the statements of intent between the Government and the commercial shipping arm of MOTC. Prior experience suggests that this is not likely to occur.

¹⁵ ADB. 2007. *Oceanic Voyages: Aviation and Shipping in the Pacific*. Manila.

IV. OVERALL ASSESSMENT AND RECOMMENDATIONS

A. Overall Assessment

47. The project concept was a good one. It was consistent with ADB's country strategy and goal of poverty reduction, and the Government's medium term development plan. The project goal of poverty reduction in the outer islands through improvements to cargo and passenger transport to allow for more trading opportunities, lower costs, and better delivery of and access to social services, was basically sound. Realization of the full project benefits depended in part on improved efficiency in the administration and operation of the domestic shipping services, and the associated TA assisted MOTC to this end, although with uncertain results and sustainability. Even without the shipping efficiency improvements, the Project would have delivered benefits in the form of more reliable and safer services, and better access to transport for the outer island populations.

48. Long delays in the early stages of implementation—attributable to a lack of capacity and urgency in MOTC—were compounded by the Government's failure to provide the required counterpart funds and coincided with a period of rapidly escalating project input costs. The appropriateness of designs was also an issue. The project implementation consultants developed more robust, but less affordable, design solutions than those proposed by the PPTA consultants. For example, the cost of the preliminary design was three times the PPTA estimate. This was largely resolved through a value engineering exercise initiated by ADB during a Review Mission, although the designer's higher-cost solution for navigation beacons was retained, partly on environmental grounds. The Government responded to the eventual 70% higher-design-cost estimate by maintaining the nominal loan amount and reducing the outputs, rendering an already small project with high mobilization costs even less viable. Although widely advertised, there were only three tenders and their bids ranged from between 170% and 220% of the revised cost estimate.

49. In April 2006, ADB conducted an internal review of the status of the Project and advised the Government that it was considering cancelling the remaining loan in light of mounting problems. By this point, the Government's borrowing status was becoming a concern and further lending had been frozen. The Government responded with a proposal for an alternative procurement arrangement involving negotiation with the lowest bidder, but this proposal could not be accommodated by ADB. The Government also proposed that the MOW assume the role of EA, and other changes to project components and designs. In September 2006, after meeting with the Government, ADB formally advised the Government of its intention to cancel the undisbursed loan balance and close the loan.

50. The Project is rated as unsuccessful. Although relevant, the Project failed to achieve its outputs and its expected outcomes. The details of overall project rating are in Appendix 6. The supporting calculation is included in Appendix 7.

B. Lessons Learned

51. **Project Management.** The experience from the Project encapsulates many of the challenges that are encountered when dealing with small Pacific states with very limited institutional capacity.¹⁶ The government institutions in the RMI, as in other similarly-positioned small Pacific states, are inevitably closely entwined with the political and social structure. Direct

¹⁶ ADB. 2007. *Technical Assistance for Support for Results-Based Management in the Pacific*. Manila.

political influence on government operations, such as with the selection of projects, is common and even expected by the individual island-based electorates. With a national population the size of a small town in a mainland country, the social dynamics—including alliances and rivalries between social and family groups—have an important, if not openly acknowledged, influence on public, commercial, and social activity.

52. With the Project centered on the domestic shipping service and navigation aids, MOTC was the natural choice to be the EA even though it was recognized to have very limited capacity. The steering committee ensured that other stakeholders were involved, including MOW and the Ministry of Internal Affairs (MOIA). If MOW had been selected as the EA, there is no reason to believe that similar problems of staffing and counterpart funding could have been avoided. The staffing and funding of the PMU was clearly not a sufficient priority within the Government despite the loan covenants, and probably was ultimately attributable to the Government's constrained financial position and need to contain the size and cost of the public sector. However, no provision was made within the loan to fund the PMU, either as part of the Government's contribution or by ADB. While not a guarantee of improved performance, the inclusion of the PMU as a cost item in the financing plan might have ensured a stronger commitment from the Government to support the Project.

53. As well as a lack of capacity within the PMU, the part-time project manager had no prior experience in managing an infrastructure project or in the engagement and management of international consultants. There was clearly a reluctance to make decisions, most of which had to be referred to a higher level within the Government, and responses were slow. ADB training seminars were useful but not sufficient to build the capacity required. Direct staff assistance by ADB in the process of consultant recruitment could have eliminated at least 12 months of delays.

54. **Financial Capacity of the Borrower.** The Government was in a relatively weak fiscal position when the Project was initiated and this position progressively deteriorated over the 4 years between appraisal and eventual cancellation of the loan. The RMI has a very limited economic base and is heavily dependent on imported goods and on United States Compact Funds and lease income,¹⁷ which was in the process of renegotiation at the time. The Government falling into arrears on its loan repayments was symptomatic of its deteriorating fiscal position, and was sufficient reason for cancellation irrespective of the time delays and cost increases that were also putting the Project at risk. The question may be asked whether ADB as the principal lender to the RMI could have anticipated these difficulties and should have acted sooner to limit both its own exposure and that of the RMI before the project implementation consultants were engaged and in view of delays that had already occurred.

55. **Cost Estimates and Risk.** Cost estimates for civil engineering works in small remote island economies carry a greater than usual degree of risk. In this case, the long gap between the PPTA and the engagement of the project implementation consultants, combined with a period of high inflation and a change in the design concepts, led to unsupportable cost increases. General cost updating based on the PPTA could have been carried out prior to engaging the project implementation consultants or earlier in the project implementation consultants' work program, and would have alerted ADB and the Government to the general

¹⁷ In 1986, RMI entered into a Compact of Free Association with the United States of America (USA) under which it receives various forms of financial and in-kind assistance. It receives income from the lease of part of Kwajalein Atoll to the US as a military base. As part of the Compact arrangements, RMI and US citizens have visa-free rights to enter, live and work in each other's countries. The Compact Agreement was renewed in an amended form in 2004. Certain island communities in RMI have also been recipients of compensation payments for radiation health impacts and resettlement in consequence of nuclear testing in the 1950s.

scale of likely increases, enabling a decision to be made soon on how these increases could be managed and the associated implications for the Project.

56. **Procurement.** One aspect of a small and physically-remote economy is very limited capacity for undertaking construction work, along with the absence of market competition. There was one contractor in a dominant position in the RMI market, and it was almost inevitable that this company would be involved in some way in the construction contract, either as the main contractor or in a sub-contracting role to an international firm. While the market dominance of this contractor made truly competitive bidding, whether international or local, difficult to achieve, the contractor did possess local knowledge, an established base of operations, and plant capacity located in the RMI.

57. Difficulties in mobilization, susceptibility of project elements to delays due to seasonal weather patterns, and uncertainty of site conditions all required a degree of flexibility in timing and the ability to modify project designs during implementation. These uncertainties carried risks for the contractor, which needed to be priced into the bids received.

58. ADB's procurement guidelines do not cater very well to this type of situation. A turnkey approach was considered inappropriate, but neither was the conventional design and schedule-of-rates bid contract necessarily the most efficient procurement method given the circumstances. The Project required marine engineering design input, which was not available within RMI; needed to be responsive to the type of equipment and construction techniques that were locally available; and had to match design standards to the local situation. The Government's suggestion of a directly-negotiated contract with the local contractor that would be supplemented with design assistance from the project implementation consultant and oversight by the MOW had merit and was similar to a partnering form of contract, which has come into use in recent years, in North America, the United Kingdom and Australia but which is not within ADB's procurement guidelines. The advantages of this form of contracting are the removal of the adversarial nature of traditional consultant-contractor relationships, with built-in incentives provided for all parties to work together constructively to achieve the lowest cost and best quality output. Such contracts are also more adaptive to evolving conditions during implementation. However, they do not remove the need for competitive tender and require a capacity for contract negotiation and relationship management that is probably not available within the RMI. A further option, given the limit of \$10 million available for the Project, would have been for a fixed-price contract with flexibility in the subproject selection.

59. **Social and Environmental Safeguards.** Despite selection being deliberately limited to Category B¹⁸ subprojects without significant social or environmental impact, and having confirmed this status with the RMI's EPA during project preparation, environmental issues affecting project cost and feasibility were raised at the implementation stage. In part, this was attributable to attempting to apply overseas practices and standards that were probably not appropriate to RMI and to the small-scale impact of the subprojects. However, it highlighted the need to maintain continuous dialogue with the country environmental agency to reach a common position on environmental issues and to keep abreast of changes in processes, particularly in cases when a time gap occurs between appraisal and implementation.

¹⁸ Category B projects can have some adverse environmental impacts, but of lesser degree or significance than those in category A for which a full environmental impact assessment (EIA) is required. For category B projects, an initial environmental examination (IEE) is required to determine whether significant environmental impacts warranting an EIA are likely. If an EIA is not needed, the IEE is regarded as the final environmental assessment report.

60. **Government Commitment to the Project.** Although the Government maintained that it was committed to the Project, this was somewhat contradicted by the lack of counterpart support provided and the lack of urgency exhibited by the EA. In view of the long delay between the original appraisal and engagement of the project implementation consultants and the Government's deteriorating fiscal position, a critical reappraisal to confirm that the Project still retained broad-based and informed political and institutional support, and remained a sufficiently high priority within the public expenditure plan, might have resulted in the earlier closure of the Project and avoidance of unnecessary expenditure.

61. **Policy Dialogue and Technical Assistance.** Improvements to outer island infrastructure needed to be matched with efficient shipping services if the full benefits were to be realized. ADB's policy dialogue has been consistently directed towards encouraging a least-cost franchise arrangement for outer island services contracted from the private sector, rather than continuing with the high-cost, Government-owned and -operated fleet of field trip vessels. Evidence from around the Pacific¹⁹ has shown that government-operated fleets have suffered from poor operational management, low utilization, donation and acquisition of unsuitable vessels, poor maintenance and safety compliance, and unsustainably high costs. An example of a successful private sector franchise scheme exists in the Fiji Islands, and schemes are being developed in Papua New Guinea, the Solomon Islands, and Vanuatu.²⁰ While the Fiji scheme, which is the longest, established private sector franchise scheme, encountered difficulties in its early years, it has proven to be superior to the alternative of a heavily subsidized government-managed operation.

62. Prior to independence, the private sector in the RMI played a major role in interisland shipping services. Following independence, the Government took over the operation of field trip vessels designed for regional service among the Trust Territories,²¹ which were not suited for smaller-scale domestic operations. By the mid-1990s, the cost of operating the fleet had increased to an unsustainable level and many vessels had to be removed from service, while the remaining vessels were in poor condition.

63. Government policy became strongly supportive of the private sector, and encouraging private involvement in the domestic shipping operation became a priority. The franchise concept was introduced in 2002 and was initially embraced by the Government, although private sector interest was somewhat limited. In 2001, Taipei, China funded the acquisition of three vessels and the Government has since reverted to building up its own shipping fleet. ADB's TA attached to this Project has been directed towards improving the operating efficiency of the Government fleet, developing a process to separate safety regulation from commercial operations, and creating a framework to allow the private sector to compete on equal terms for service contracts. Following completion of the TA, the Government passed legislation to set up the Sea Transport Division of MOTC as the Marshall Islands Shipping Corporation. Meanwhile, developing a strategic action plan for privatizing the corporatized shipping service in the longer term was accorded a low priority and had not progressed by the end of the TA.

¹⁹ ADB. 2007. *Oceanic Voyages: Shipping in the Pacific*. Manila.

²⁰ ADB. 2005. *Technical Assistance to Solomon Islands for the Implementation of Inter-Island Shipping Reforms*. Manila.

²¹ Prior to independence under the Compact of Free Association with the USA and following the Second World War, the Marshall Islands formed part of the United Nations Trust Territory of the Pacific Islands administered by the USA, which also include islands that are now the Federated States of Micronesia, the Republic of Palau and the Commonwealth of the Northern Mariana Islands.

64. While the Government has agreed in principle to a privately-provided service franchise and withdrawal by the Government from direct operation of shipping, at a political level it has failed to support this policy direction. It has proven susceptible to offers of gifts of vessels or funding to acquire vessels for use in the Government fleet. There is evidently insufficient confidence within the Government that the private sector can be developed to operate domestic shipping services. This lack of confidence has not been helped by the Government's actions and payment delays on service contracts. It is also convenient for ministers to have Government vessels available that can be directed to perform services on demand or in response to emergencies.

65. ADB has provided TA to the RMI intermittently over a period of 10 years to improve the efficiency and cost-effectiveness of domestic shipping. While there was some initial progress in moving towards a more sustainable private sector-operated service based on period tendering for route franchises, the Government has gradually reverted to a public sector shipping fleet model, which seems likely to encounter the same problems that were evident in 1995. Ultimately, this demonstrates a lack of commitment at the political level to the agreed policy direction.

C. Recommendations

66. **Reduced Time Between Project Preparation and Implementation.** An extended amount of time between project preparation and implementation, particularly during a period of high cost inflation, can severely reduce the value of projects and contribute to failure. The fact that time is of the essence should be impressed on borrowers, EAs, and their consultants, and adherence to the project schedule should be closely monitored by ADB and remedial action taken swiftly in cases where delays are occurring without sufficient cause.

67. **Project Preparation.** For projects of this nature where there is a high cost of mobilizing resources for feasibility, site investigation, and design in relation to the overall project cost, more engineering resources should be applied at the project preparatory stage, and consideration given to including the preparation of detailed designs and bid documents as part of the PPTA. In this case, there was a 3-year gap between the PPTA and the detailed design, which was instrumental in the failure to proceed to construction because of cost escalation during this interim period. A single-stage process could have eliminated most of this delay.

68. **Capacity Development.** In countries where there is a critical shortage of capable staff within the EA, capacity building through training is insufficient to ensure timely execution of projects. In such circumstances, capacity substitution with personnel familiar with ADB processing procedures should be considered. In the case of this Project, external recruitment of an assistant to the PMU could have reduced the 2-year delay between loan signing and the fielding of the design consultants.

69. **Procurement.** It is recommended that the feasibility and appropriateness of alternative procurement methods be considered in similar circumstances. This could include a design-and-build fixed price contract. Also, it is recommended that the potential use of partnering contracts in ADB-funded operations be investigated.

70. **Technical Assistance.** It is recommended that any further assistance to the RMI in relation to the domestic shipping service and franchise arrangements be confined to regionally-based initiatives, such as participation in regional forums to exchange experiences and information.

71. **Policy Dialogue.** Policy dialogue should be maintained with the Government on transport sector issues, including the domestic shipping service, so that the Government's policy position and experience can be monitored, and ADB can consider whether resumption of TA is warranted in the future.

PROJECT FRAMEWORK

Design Summary	Performance Indicators/Targets	Monitoring Mechanisms	Assumptions and Risks
Goal Poverty reduction in the outer islands through improvements to transport infrastructure	Raise personal and household income levels in the project area above the United Nations Development Programme (UNDP) international poverty line of \$1 per day by 2010 Raise human development indicators in the project areas to levels of the main population centers Reduce disparity in prices of store goods from on-board merchants between outer islands and Majuro Increase employment and reduce levels of unemployment in the islands of the project area No increase in price subsidy to copra from budget	Asian Development Bank (ADB) poverty assessment reports and reviews Census surveys of income, vital statistics, and social development indicators Household income and expenditure surveys Consumer price surveys	Long-term failure of copra to provide an economic base for the outer islands Unavailability of income-earning substitutes Other sectors fail to implement complementary programs to raise outer island human development indicators
Purpose Provide transport infrastructure to improve effectiveness of outer islands cargo and passenger transport Improve safety, regularity, and reliability of sea and air transport services Reduce net costs to the Government of outer island sea and air	Shipping Service: <ul style="list-style-type: none"> • achieve frequency of 6–8 weeks • reliability +/- 1 week • hold fares and freight rates in real terms • reduce average voyage times by 30% • reduce nonworking days in port to 30 per year for each vessel • reduce Majuro load and discharge times by 30% • reduce net annual 	Voyage logs and reports to Ministry of Transportation and Communications (MOTC) MOTC voyage reports MOTC reports and annual accounting	Failure to reduce and/or reconfigure the shipping fleet to take advantage of savings Government policy bars private sector entry and competition Shipping service fails to take opportunities for voyage time savings and fails to meet performance targets/contract

Design Summary	Performance Indicators/Targets	Monitoring Mechanisms	Assumptions and Risks
Civil and building contractors	Consultants work on consent applications and designs, documents produced on time and within budget	Contractor quality assurance systems	Contractors are technically and financially competent
Ministry of Public Works construction under own forces or contract ^a	<p>Main construction contract completed on time and under budget</p> <p>Salaries, equipment, materials^b</p> <p>Works contract completed on time and under budget</p>	Ministry of Public Works quality assurance systems	Government provides timely budget allocation and Ministry of Public Works satisfactorily constructs that part of the work

ADB = Asian Development Bank, AMI = Air Marshall Islands, MOTC = Ministry of Transportation and Communications, TA = technical assistance.

^a Ministry of Public Works carries out the construction using its own engineering personnel, plant and materials supply or tenders the construction to a contractor.

^b For works conducted under own forces, the quantities and costs of salaries, plant and materials utilized were envisaged as performance indicators.

DETAILED PROJECT COSTS
(\$'000)

Item	Cost Base	Appraisal Mid-2002	Preliminary Design Estimate Mid-2005	Revised Design Estimate	Selected Items to Tender	Incurred Costs
A. Base Costs		7,190	21,831	12,065	7,219	
1. Docks and Navigation Aids		3,328	14,742	8,865	4,482	0
a. Navigation Aids		1,777	8,688	5,783	4,026	0
Majuro base facility			4,253	456	456	0
Mili		118	320	328	328	0
Arno		242	426	398	398	0
Aur		59	299	312	312	0
Maloelap		133	369	369	369	0
Wotje		33	157	156	156	0
Ailuk		165	655	686		
Likiep		63	379	393		
Utirik		112		465	465	0
Jaluit		270	684	743	743	0
Ailinglaplap		103	231	232	232	0
Namu		276	714	824	824	0
Lae		57	201	199	199	0
Ujae		90		399		
Wotho		54		278		
Jabat		3				
b. Docks and Jetties		1,551	6,054	2,626		0
Majuro base storage site			3,105			0
Arno – Malel (dock)		270	1,069	909		0
Maloelap – Taroa (dock)		647	886	744		0
Ailinglaplap – Buoj (dock)		558	937	926		0
Jaluit – Imiej (jetty)		77	57	47		0

Item	Cost Base	Appraisal Mid-2002	Preliminary Design Estimate Mid-2005	Revised Design Estimate	Selected Items to Tender	Incurred Costs
2.	Warehouses, Channels and Airstrips	3,863	7,088	3,200	2,737	
	a. Warehouses	1,273	4,790	1,607	1,607	0
	Mili – Mili	73	433	128	128	0
	Arno – Malel	147	560	141	141	0
	Aur – Tabal	73		60	60	0
	Maloelap – Airik	84	295	116	116	0
	Maloelap – Taroa	84	295	74	74	0
	Wotje – Wotje	133	433	128	128	0
	Wotje – Wormej	84	433	128	128	0
	Jaluit – Imiej	84	433	128	128	0
	Jaluit – Imroj	84	295	116	116	0
	Ailinglaplap – Buoj	133	433	128	128	0
	Ailinglaplap – Woja	84	295	116	116	0
	Jabat	42	295	116	116	0
	Namu – Namu	84	295	116	116	0
	Namu – Loen	84	295	116	116	0
	b. Channels and Reef Platforms	1,676	1,835	1,130	1,130	0
	Arno – West Pass	63	238			0
	Arno – Bikkarej (channel)	115	312	205	205	0
	Arno – Malel (channel)	92				0
	Mejit (reef platform)	684	329	344	344	0
	Jaluit – Jalit (channel)	84	172	60	60	0
	Namdrik (reef platform)	217	333	319	319	0
	Ailinglaplap – Woja (channel)	184	76	76	76	0
	Lae (channel)	84	76	54	54	0
	Ujae (channel)	154	300	72	72	0

Item	Cost Base	Appraisal Mid-2002	Preliminary Design Estimate Mid-2005	Revised Design Estimate	Selected Items to Tender	Incurred Costs
	c. Tracks and Airstrips	913	463	463		0
	Arno – Ine airstrip	168	214	214		0
	Taroa – track	22				0
	Arno – track	112				0
	Mili airstrip	427	249	249		0
	Maloelap track	22				0
	Wotje – Wormej track	22				0
	Majuro – conveyor and track	140				0
3.	Mobilization (Establishment) Cost	-----	-	---- included	above ----	-----
1–3	Construction Costs (from above)	7,180	21,690	12,665	7,180	
4.	Site Investigation	200	200	200	200	0
5.	Consulting Services	1,000	1,000	1,000	1,000	506,401
	Subtotal A	8,380	22,890	13,665	8,380	506,401
B.	Contingencies					
1.	Physical	770			770	0
2.	Price	760			760	0
	Subtotal B	1,520			1,520	0
C.	Interest during construction	100			100	1,116
	Total	10,000			10,000	507,517

Source: Asian Development Bank

DESIGN, COST, AND PROCUREMENT ISSUES

A. Design Concept

1. The Outer Island Transport Infrastructure Project is aimed at improving the safety, efficiency, and reliability of the domestic shipping service, and strengthening cargo and passenger service for copra collections. The demand for passenger service is so thin (often only 20–100 people live on an islet) that separate passenger and cargo services cannot be supported. With the exception of more highly-populated islands close to Majuro and Ebeye, passenger services are not commercially viable, even when offered only one time per month or every 6 weeks, and have to be subsidized by the Government of the Republic of the Marshall Islands (RMI). The atolls are widely spaced and the sailing time between islands can be as long as 1 day.

2. Some outer islands, such as Kili Island, receive special lease or compensation revenue from the Government and are self-sufficient in shipping. These islands were not included in the Project. Neither was Bikini Atoll, which is uninhabited apart from a diving venture that is self-supporting.

3. Almost all of the outer islands are atolls comprising an annular reef with generally one or two navigable deepwater passages into the lagoon. Namdrik is an atoll with no passage into the lagoon. Two outer islands (Jabat and Lib) are very small true islands and are even harder to land upon, due to the unsheltered open coastline and fringing reefs. In most cases, ship calls are made at docks, jetties, or more frequently, at beach landings within the sheltered waters of the lagoon using smaller boats from the interisland ship or boats based on the outer islands. There are generally several ports of call on larger or smaller islets around the lagoon. The main reef passage, navigation within the lagoon, and beach landings all present navigational challenges and hazards and are affected by the sea conditions, light, and tide. The final leg of the journey to shore is often the most hazardous, sometimes requiring small boats to surf over the reef and onto the beach in spite of the risk of drowning. Except where a jetty or dock is available, copra and other cargo are transported by hand in and out of small boats and lifted to shore where it is carried by small hand-drawn carts (rearcarts). On some islands, there are one or two pickup trucks and natural coral tracks that can be used for loading and unloading cargo.

4. Providing infrastructure, such as navigation marks at the main passages and channel markers through the lagoon to avoid coral heads; cutting channels through the reef to the beach to make small boat passage less hazardous; and providing jetties or docks and warehousing, where copra can be aggregated and stored prior to sailings, all contribute to making sea passage safer and more feasible across a wide range of conditions. Improved facilities can make the difference between a ship docking safely upon arrival or having to stand off shore all night waiting for daylight and a favorable tide, or even abandoning ports of call altogether, with possibly 1 to 2 months before attempting another call. In extreme cases, difficult islands have gone almost a year without a ship call.

5. The project preparatory technical assistance (PPTA) developed a simulation model of the several shipping routes, taking into account the state of tide, daylight, and probability of rough weather, based upon information from the ships' captains and residents on the islands. This allowed the effects of subprojects to be evaluated not singly, but as components in a chain of improvements that would benefit each shipping route, saving sailing time and costs, and potentially allowing services to run more frequently or having the same service level with fewer vessels.

6. The size of the project loan was established during the PPTA at \$10.0 million, with about \$7.2 million in construction works. There was a desire on behalf of Government to spread the project benefits among as many of the outer islands as possible. The extent of the infrastructure that was designed was aimed to be commensurate with the numbers living on each atoll, the amount of copra produced, and the extent of the shipping benefits gained. Consequently, construction of ship docks was only considered where there was sufficient draft close to land and at islets with larger populations. The subprojects identified exceeded the number that could be accommodated under a \$10 million project, and the less viable subprojects were kept in a reserve list in case any of the original subprojects should encounter technical or environmental difficulties at the design stage.

B. Design Standards

1. Navigation Aids

7. Navigation aids were identified as the critical infrastructure need. No maintenance had been carried out on the navigation marks for many years, and most of the original marks were either missing or damaged. There was a small pool of experienced captains who were familiar with the atolls and the location of the passages, and they could safely navigate in good weather and with good light through the reef passes and through the lagoons, while avoiding coral heads. However, for inexperienced captains, navigation could be hazardous even in good weather. The lagoons had not been surveyed and charted to a level that would allow unpiloted passage.

8. The proposed navigation aids comprised long range marks for the reef pass entrances, shorter range channel markers within the lagoon, and leading lights onshore at the loading point. The project implementation consultants and the PPTA consultants proposed a similar technical solution for the reef passes: a mast beacon with a steel pile foundation in the reef, and for leading lights on shore (of which there were only two required).

9. There was a difference in design approach for channel markers. The PPTA consultants recommended a system of lightweight, high-density polyethylene spar buoys with a single light tether to a chain and concrete block ground anchor. Buoys that became defective over time would be replaced by the field trip ships, being of a size that could be placed over the ship's side and into the desired position. The project implementation consultants considered two solutions for the channel buoys: (i) pile beacons similar to the reef markers, and (ii) steel can buoys anchored by chain to a spread anchorage of three or four concrete blocks. The second option was discounted because of the potential for the swept path of the anchor chain to damage the coral, citing the Great Barrier Reef Authority as having prohibited this method. Both the pile beacons and the steel can buoy system were more robust and more costly to deploy and replace than the lighter solution proposed by the PPTA consultants, and contributed in large part to the threefold increase in cost.

10. The value engineering review conducted by ADB in August 2005 requested that consideration be given to adopting floating buoys for all protected inner lagoon marker sites: *"it is envisaged that proprietary polyethylene or aluminum buoys with chain and wire anchorage to a base concrete anchor block would satisfy design requirements"*¹. The project implementation consultants rejected this proposal on the following grounds: (i) it was not consistent with a minimum maintenance principle that should guide the provision of outer island infrastructure; (ii)

¹ ADB. 2005: Back-to-Office Report and Aide Memoire, Project Reappraisal/Review Mission, 15–22 August 2005.

field trip ships would have difficulty replacing the buoys; (iii) the water depths were as much as 25 meters (m) to 40 m immediately adjacent to the reef and coral heads, which would allow the buoys to swing too far out of position based on a tether length of three to four times the water depth; (iv) a light range of five nautical miles (nm) was required in many instances rather than the one to two nm suggested; and (v) that the small polypropylene buoys proposed were not designed to carry daymarks and radar reflectors.

11. ADB contacted the PPTA consultants for comments on this and other design and costing issues raised during site investigation and detailed design. The PPTA consultants provided three examples of the lightweight buoy system in use in New Zealand and one in Samoa. Technical data on spar buoys indicated that daymarks and radar reflectors could be accommodated.² The PPTA consultants contended that the buoys could be deployed at depths of 20 m without additional buoyancy for the tether system. Chain damage to coral was dismissed as being very limited because of little coral growth in this depth of water, the small amount of affected lagoons (900 square meters [m²] of affected area within a total of 180,000 square kilometers of lagoons), and the fact that drilling or driving steel piles into the reef would inflict far more coral damage.

12. There was clearly a conflict of professional opinion on this matter, and it was of some considerable consequence to the viability of the Project. While the project implementation consultants had the advantage of their site investigation and a stronger focus upon design, there appears to have been a reluctance to move away from a technical position that had been adopted at an early stage of the design process. It would have been possible to obtain a small number of plastic spar buoys for trial use at relatively low cost. This suggestion had been made to the Marshall Islands Port Authority (MIPA) by the PPTA consultants in 2001. There was also a view within the Government, expressed in a letter from the Chief Secretary, that the design solutions being proposed by the project implementation consultants were not appropriate to the situation. The issue of buoys versus pile markers was specifically mentioned in the letter.

2. Docks and Jetties

13. The dock designs first made by the project implementation consultants were larger than those proposed in the PPTA, with jetty heads of 18 m x 8 m rather than 12 m x 6 m. The designs were reduced to 12 m x 6 m on review. Also, the design review led to a shortening of the approach at one dock (Taroa).

13. At Buoj, the project implementation consultants' examination of the existing Marshall Islands Marine Resources Authority dock, which had been proposed for extension, was that it had structurally deteriorated to a point where a new dock was required. As four years had elapsed between the two inspections, it would not be unusual that deterioration of some existing structures had advanced to a point where the design solution had to change. This again points to the loss of value that unnecessary delays can cause to a project. If the project implementation phase had immediately followed in late 2002 rather than in 2005, not only would there have been less physical deterioration, but there would have been far less escalation in the engineering costs.

² An example is the Finnish National Maritime Administration which has manufactured plastic spar buoys since 1976; buoys are manufactured to IALA Maritime Buoyage System A standard in a variety of sizes up to 10 m total length of which 4.3 m above sea level and can be fitted with buoy lights and radar reflectors.

14. In the case of Malel, the jetty structure developed by the project implementation consultants, as opposed to a solid structure suggested by the PPTA consultants, was the result of a difference in view on the potential for a solid structure in that location (sheltered water near the head of an inlet) to act as a barrier to littoral movement of sediment, and the ensuing environmental consequences. The cost implications were relatively high, and the original PPTA solution of a solid causeway and reef channel was adopted as the environmental disadvantages were regarded as being outweighed by the cost savings. However, this subproject was eliminated later to reduce the overall project cost.

15. There were a number of subprojects where the position of the RMI's Environment Protection Authority (EPA) changed between the PPTA and design stage. For Pacific Island projects, any modification of shoreline, particularly where coral detritus or living coral is involved, tends to be avoided. However, this can make projects too costly, and a balance needs to be struck between environmental modification and the development objectives.

3. Beach Channels

16. The PPTA and project implementation consultants were in general agreement on the beach channels, apart from the project implementation consultants proposing a more economical design by providing a square section channel instead of the beveled edge design suggested by the PPTA consultants.

4. Reef Platforms and Moorings

17. The technical solutions proposed by the PPTA and project implementation consultants were largely the same. Mooring bollards were added by the project implementation consultants at the two locations of Mejit and Namdrik, and also at two other locations.

5. Warehouses

18. The locations and general sizing of warehouses, communications offices, and community work buildings were maintained between the PPTA and design stage. The PPTA design concept proposed low-cost prefabricated buildings similar to those being constructed at the time. The project implementation consultants opted for a concrete masonry and timber truss roof design similar to other construction methods practiced but at a higher unit cost. The size of the warehouses was reduced in the reviewed design from 105 m² floor area to 95 m² for a small warehouse, compared with 120 m² in the PPTA report.

6. Airfields and Tracks

19. A limited amount of airfields and roads improvement was included in the original project design, taken from a list of airport development plans provided by the MOTC to ADB. The selected items were intended to bring selected airports up to a safe operating standard. There was also some minor work proposed on remedial maintenance of tracks to facilitate copra collections and limited new track construction, which was largely a matter of clearing a formation and spreading and compacting suitable natural materials. The airport works were not related to the marine infrastructure, and were reasonably removed from the Project when cost became an issue. Some of the tracks were integral to the marine infrastructure, but were also removed. However, these could easily be developed with local resources as part of Ministry of Public Works (MOW) or Ministry of Resources and Development (MRD) activities.

C. Costs

20. The PPTA cost estimate, upon which the appraisal costs were based, was generated in 2001. The design cost estimate was generated in 2005, almost 4 years later. The price increases affecting project input costs over this 4-year period were (i) wholesale diesel, excluding taxes, from \$0.50/liter to \$0.70/liter, for an increase of 40%; (ii) steel, from \$67.50/kilogram (kg) to \$140/kg, for an increase of 107%; and (iii) the U.S. Army Corp of Engineers cost index for construction of navigation, ports, and harbors for Hawaii increased by 33%.

21. The differences in cost of common subproject components between the PPTA consultants (appraisal estimate) and the project implementation consultants (design estimate) was (i) navigation aids (a 200% increase), which was mainly attributable to the use of piled marks throughout; (ii) docks and jetties (a 70% increase), including a larger amount of works, such as a new dock at Buoj; (iii) warehouses (a 26% increase), but the amount of work was reduced by the smaller floor plan; (iv) beach channels and reef platforms (a 26% increase) with a smaller amount of work; and (v) airstrips and roads (a 22% decrease), due to a difference in the amount of work assessed for the airfields (Mili, in particular).

22. A cost increase of 35% to 40% would have been expected due to materials and fuel price escalation alone, which could have been accompanied by a similar reduction of the project content to remain within \$10 million. The impact of the higher-cost solution for navigation aids, comprising 62% of the base costs, was to reduce the physical content of the Project by an additional 30%. In fact, the reduction was less severe due to cost savings made for the reef channels and platforms. The final tendered subprojects covered 10 atolls, with respect to navigation aids, compared with 15 atolls at appraisal; eliminated all of the docks and jetties; retained all 14 warehouses, but at smaller size; and eliminated the airfield and track remedial repairs and improvements. Overall, the physical size of the Project was roughly halved.

23. A reduction in the size of the Project after a 4-year delay was inevitable due to high cost escalation over the period (although less than the subsequent 2005 to 2008 period), together with a strong demand for engineering construction in the Asia-Pacific region, which probably dampened international contractor interest and made for less competitive tendering. More could have been done to find and test a more cost-effective solution for the navigation marking of lagoon channels, in view of the fact that at least some of the channel marks were in shallow protected water. This would have allowed at least part of the dock and jetty program to be reinstated.

24. The cost estimates made by both the PPTA consultants and the project implementation consultants included large fixed costs for establishment of the plant, equipment, and operational base on Majuro. The PPTA consultants allowed for this as an overall 40% increase on the quantities and rate derived costs, to cover setting up the cost of a traveling landing craft and plant for a period of two years. The project implementation consultants included smaller mobilization costs but some very large costs for a Majuro base, which were later revised downward. This large fixed cost component was another indication of the sensitivity of the Project to economy of scale. The most efficient way to carry out outer islands work requiring marine engineering that cannot be done from shore is to group as many projects as possible together and carry them out expeditiously.

D. Procurement

25. The RMI has a very small construction market, with only two contractors in a position to bid for this type of work, either alone or with an international contractor. One is based on Majuro, and the other operates in the RMI but is based in Guam. The RMI contractor was also involved in domestic shipping as a commercial service and participated in the franchise scheme. This contractor had the largest supply of plant, stockpiled aggregates, and working area on Majuro, and it could have been involved in the successful bid in some manner. As a local contractor, the company was also very well integrated into the social and commercial structure of the RMI and had strong political links.

26. The bidding process was successful in attracting three bidders, which given the circumstances was a good outcome. The range of bids was much higher than the revised estimate, between \$12.0 and \$16.0 million,³ compared with the estimate of \$7.3 million. By this time, a further year had elapsed since the design estimate (up to the end of the tender validity period) in a period of increasingly high inflation. However, the tenders received were clearly unacceptable. It is likely that high margins had been included for the risks of working in remote parts of the RMI, but it is also possible that earlier publicity given to the initial design cost estimate of \$22 million may have influenced the market perception of the Project. There may also have been risks priced in for payment delays and risks of underpayment or non-payment and disputes to account for the Government's deteriorating fiscal position and prior experience.

27. At a late stage, the Chief Secretary of the RMI wrote to ADB expressing concern over the status of the Project and ADB's suggestion that further loan disbursement be cancelled, and proposing that a directly-negotiated contract be entered into with the local contractor, which was ostensibly the lowest bidder. The Chief Secretary's letter suggested a design-and-build arrangement, with the project implementation consultants giving technical advice to the contractor who would also provide its own local knowledge and expertise and become responsible for the design solution. A change in the executing agency (EA) to the Ministry of Works was suggested so that its engineering expertise could be applied in an oversight and standards monitoring role. It was suggested that an alternative procurement arrangement would cut down on consultant costs, converting this input to more productive works outputs, and could have avoided the costs of site investigation, which would instead need to be carried out at the time of mobilization of the contract. However, as the original bidding process had not been followed through, without a bid evaluation having been prepared or a recommendation on a preferred contractor having been made, and in view of RMI's borrowing status with ADB, this course of action was declined by ADB.

28. ADB's procurement guidelines do not cater very well to this type of situation. A turnkey approach was considered inappropriate, but neither was the conventional design and schedule-of-rates bid contract necessarily the most efficient procurement method given the circumstances. The Project required marine engineering design input, which was not available within RMI; needed to be responsive to the type of equipment and construction techniques that were locally available; and had to match design standards to the local situation. The Government's suggestion of a directly-negotiated contract with the local contractor that would be supplemented with design assistance from the project implementation consultant and oversight by the MOW had merit and was similar to a partnering form of contract, which has come into use in recent years, in North America, the United Kingdom and Australia but which is not within

³ As the tenders were not officially evaluated and were allowed to lapse by the MOTC, details of the tenders are not held in ADB files, so a comparison of cost items cannot be made.

ADB's procurement guidelines. The advantages of this form of contracting are the removal of the adversarial nature of traditional consultant–contractor relationships, with built-in incentives provided for all parties to work together constructively to achieve the lowest cost and best quality output. Such contracts are also more adaptive to evolving conditions during implementation. However, they do not remove the need for competitive tender and require a capacity for contract negotiation and relationship management that is probably not available within RMI. Partnering contracts are not within ADB's current procurement procedures.

29. A further procurement option, in view of the cap of \$10 million on the Project, would have been for a fixed price contract with flexibility in the subproject selection.

CHRONOLOGY OF MAIN EVENTS

Date	Event
A. Project Processing	
2001	
May	Technical Assistance (TA) No. 3506-RMI (Project Preparatory Technical Assistance [PPTA]) commenced
November	Draft Final Report submitted, with tripartite meetings held in July and December 2001
4–7 December	Asian Development Bank (ADB) Fact-finding Mission for proposed loan project was fielded
2002	
3–10 July	Pre-Appraisal/Appraisal
16–17 October	Loan negotiations
28 November	Loan approval
2003	
14 February	Loan Agreement
5 June	Loan effectiveness
September	Shortlisting of project implementation consultants
B. Project Implementation	
2004	
14–21 April	ADB Inception Mission
8 December	Project implementation consultants appointed
2005	
7 February	Project implementation consultants fielded
26 February–4 March	ADB Review Mission
15–22 August	ADB Review Mission
October	Project implementation consultants submitted the Project Design Report
	Invitations to tenderers published
	Start of tender period
2006	
13 February	Due to the Republic of the Marshall Islands (RMI) arrears, all ADB loans to RMI suspended
21–24 February	ADB Review Mission
1 March	Construction bids received
29 March	Deadline for the Government to (i) provide adequate counterpart funding and (ii) engage full-time Project Manager and Project Accountant
	Letter from Chief Secretary of the RMI to ADB proposing direct negotiation with locally-based contractor
5–9 June	Consultation Mission discussed cancellation of undisbursed loan balance and loan closure
15 September	ADB management and staff decide to cancel undisbursed loan balance and close loan account; RMI Government informed
16–17 November	Consultation Mission discussed details of loan closure and further country programming
2007	
23 January	Loan closed

IMPLEMENTATION SCHEDULE

Activity	2002			2003				2004				2005				2006			
1. Loan approval																			
Appraisal																			
Actual																			
2. Recruitment of Implementation Consultants																			
Appraisal																			
Actual																			
3. Site Investigation																			
Appraisal																			
Actual																			
4. Detailed Design																			
Appraisal																			
Actual																			
5. Prequalification																			
Appraisal																			
Actual																			
6. Tendering and Contract Award																			
Appraisal																			
Actual																			
7. Construction																			
Appraisal																			
Actual																			

Source: Asian Development Bank.

OVERALL PROJECT RATING

Item	Assessment	Rating	Weight	Weighted Rating
Investment Components	Relevant	2	0.2	0.4
	Ineffective	0	0.3	0.0
	Inefficient	0	0.3	0.0
	Unsustainable	0	0.3	0.0
Overall Assessment	Unsuccessful			0.4

Source: Asian Development Bank staff estimates.

STATUS OF COMPLIANCE WITH LOAN COVENANTS

Covenant	Reference in Loan Agreement	Status of Compliance
Use of the Proceeds of the Loan		
1. The Borrower shall cause the proceeds of the Loan to be applied to the financing of expenditures on the Project in accordance with the provisions of the Loan Agreement.	Sec. 3.01, Article III	Complied with.
2. Except as the Bank may otherwise agree, the Borrower shall cause all goods and services financed out of the proceeds of the Loan to be used exclusively in the carrying out of the Project.	Sec. 3.04, Article III	Complied with.
Particular Covenants		
3. The Borrower shall cause the Project to be carried out with due diligence and efficiency and in conformity with sound administrative, financial, engineering, environmental, and maritime practices.	Sec. 4.01(a), Article IV	Partly complied with.
4. In the carrying out of the Project and operation of the Project facilities, the Borrower shall perform, or cause to be performed, all obligations set forth in Schedule 6 of the Loan Agreement.	Sec. 4.01(b), Article IV	Partly complied with; only part of the required counterpart funds were provided.
5. The Borrower shall make available, promptly as needed, the funds, facilities, services, land, and other resources which are required, in addition to the proceeds of the Loan, for the carrying out of the Project and for the operation and maintenance of the Project facilities.	Sec. 4.02, Article IV	Partly complied with; only part of the required counterpart funds were provided.
6. In the carrying out of the Project, the Borrower shall cause competent and qualified consultants and contractors, acceptable to the Borrower and the Bank, to be employed to an extent and upon terms and conditions satisfactory to the Borrower and the Bank.	Sec. 4.03(a), Article IV	Complied with.
7. The Borrower shall cause the Project to be carried out in accordance with plans, design standards, specifications, work schedules, and construction methods acceptable to the Borrower and the Bank. The Borrower shall furnish, or cause to be furnished, to the Bank, promptly after their preparation, such plans, design standards, specifications, and work schedules, and any material modifications subsequently made therein, in such detail as the Bank shall reasonably request.	Sec. 4.03(b), Article IV	Complied with.
8. The Borrower shall ensure that the activities of its departments and agencies with respect to the carrying out of the Project and operation of the Project facilities are conducted and coordinated in accordance with sound administrative policies and procedures.	Sec. 4.04, Article IV	Partly complied with.

Covenant	Reference in Loan Agreement	Status of Compliance
9. The Borrower shall make arrangements satisfactory to the Bank for insurance of the Project facilities to such extent and against such risks and in such amounts as shall be consistent with sound practice.	Sec. 4.05(a), Article IV	Not applicable. ^a
10. Without limiting the generality of the foregoing, the Borrower undertakes to insure, or cause to be insured, the goods to be imported for the Project and to be financed out of the proceeds of the Loan against hazards incident to the acquisition, transportation and delivery thereof to the place of use or installation, and for such insurance any indemnity shall be payable in a currency freely usable to replace or repair such goods.	Sec. 4.05(b), Article IV	Not applicable.
11. The Borrower shall maintain, or cause to be maintained, records and accounts adequate to identify the goods and services and other items of expenditure financed out of the proceeds of the Loan, to disclose the use thereof in the Project, to record the progress of the Project (including the cost thereof) and to reflect, in accordance with consistently maintained sound accounting principles, the operations and financial condition of the agencies of the Borrower responsible for the carrying out of the Project and operation of the Project facilities, or any part thereof.	Sec. 4.06 (a), Article IV	Complied with.
12. The Borrower shall (i) maintain, or cause to be maintained, separate accounts for the Project; (ii) have such accounts and related financial statements audited annually, in accordance with appropriate auditing standards consistently applied, by independent auditors whose qualifications, experience, and terms of reference are acceptable to the Bank; (iii) furnish to the Bank, as soon as available but in any event not later than nine months after the end of each related fiscal year, certified copies of such audited accounts and financial statements and the report of the auditors relating thereto (including the auditors' opinion on the use of the Loan proceeds and compliance with the covenants of this Loan Agreement as well as on the use of the procedures for imprest account/statement of expenditures), all in the English language; and (iv) furnish to the Bank such other information concerning such accounts and financial statements and the audit thereof as the Bank shall from time to time reasonably request.	Sec. 4.06(b), Article IV	Complied with.

Covenant	Reference in Loan Agreement	Status of Compliance
13. The Borrower shall enable the Bank, upon the Bank's request, to discuss the Borrower's financial statements for the project and its financial affairs related to the Project from time to time with the Borrower's auditors, and shall authorize and require any representative of such auditors to participate in any such discussions requested by the Bank, provided that any such discussion shall be conducted only in the presence of an authorized officer of the Borrower unless the Borrower shall otherwise agree.	Sec. 4.06(c), Article IV	Complied with.
14. The Borrower shall furnish, or cause to be furnished, to the Bank all such reports and information as the Bank shall reasonably request concerning <ul style="list-style-type: none"> (i) the Loan, and the expenditure of the proceeds and maintenance of the service thereof; (ii) the goods and services and other items of expenditure financed out of the proceeds of the Loan; (iii) the Project; (iv) the administration, operations, and financial condition of the agencies of the Borrower responsible for the carrying out of the Project and operation of the Project facilities, or any part thereof; (v) financial and economic conditions in the territory of the Borrower and the international balance-of-payments position of the Borrower; and (vi) any other matters relating to the purposes of the Loan. 	Sec. 4.07(a), Article IV	Complied with.
15. Without limiting the generality of the foregoing, the Borrower shall furnish, or cause to be furnished, to the Bank quarterly reports on the carrying out of the Project and on the operation and management of the Project facilities. Such reports shall be submitted in such form and in such detail and within such a period as the Bank shall reasonably request, and shall indicate, among other things, progress made and problems encountered during the quarter under review, steps taken or proposed to be taken to remedy these problems, and proposed program of activities and expected progress during the following quarter.	Sec. 4.07(b), Article IV	Complied with.
16. Promptly after physical completion of the Project, but in any event not later than three (3) months thereafter or such later date as may be agreed for this purpose between the Borrower and the Bank, the Borrower shall prepare and furnish to	Sec. 4.01(c), Article IV	Not applicable due to cancellation of the loan.

Covenant	Reference in Loan Agreement	Status of Compliance
the Bank a report, in such form and in such detail as the Bank shall reasonably request, on the execution and initial operation of the Project, including its cost, the performance by the Borrower of its obligations under this Loan Agreement, and the accomplishment of the purposes of the Loan.		
17. The Borrower shall enable the Bank's representatives to inspect the Project, the goods financed out of the proceeds of the Loan, and any relevant records and documents.	Sec. 4.08, Article IV	Not applicable.
18. The Borrower shall ensure that the Project facilities are operated, maintained, and repaired in accordance with sound administrative, financial, engineering, environmental, and maintenance and operational practices.	Sec. 4.09, Article IV	Not applicable.
19. It is the mutual intention of the Borrower and the Bank that no other external debt owed a creditor other than the Bank shall have any priority over the Loan by way of a lien on the assets of the Borrower. To that end, the Borrower undertakes (i) that, except as the Bank may otherwise agree, if any lien shall be created on any assets of the Borrower as security for any external debt, such lien will <i>ipso facto</i> equally and ratably secure the payment of the principal of, and interest charge and any other charge on, the Loan; and (ii) that the Borrower, in creating or permitting the creation of any such lien, will make express provision to that effect.	Sec. 4.10(a), Article IV	Complied with.
Imprest Account		
20. Except as the Bank may otherwise agree, the Borrower shall establish immediately after the Effective Date, at a bank acceptable to the Bank. The imprest account shall be established, managed, replenished, and liquidated in accordance with the Bank's <i>Loan Disbursement Handbook</i> dated January 2001, as amended from time to time, and detailed arrangements agreed upon between the Borrower and the Bank. The initial amount to be deposited into the imprest account shall not exceed the equivalent of \$100,000.	Para 9(a), Schedule 3	Complied with.
Procurement		
21. The Borrower shall ensure that all Bank-financed goods and services procured (including without limitation all computer hardware, software and systems, whether separately procured or incorporated within other goods and services procured) do not violate or infringe property or intellectual property right or claim of any third	Para 6(a), Schedule 3	Not applicable.

Covenant	Reference in Loan Agreement	Status of Compliance
party.		
22. The Borrower shall ensure that all Bank-financed contracts for the procurement of goods and services contain appropriate representations, warranties and, if appropriate, indemnities from the contractor or supplier with respect to the matters referred to in para 6(a).	Para 6(b), Schedule 3	Complied with.
Consultants		
23. The Borrower shall ensure that all Bank-financed contracts with consultants contain appropriate representations, warranties and, if appropriate, indemnities from the consultants to ensure that the consulting services provided do not violate or infringe any industrial property or intellectual property right or claim of any third party.	Para 5, Schedule 5	Complied with.
Execution of Project and Operation of Project Facilities; Financial Matters		
<i>Project Office</i> 24. The Borrower shall maintain at all times a Project Office satisfactory to the Bank. The Project Office shall be located in MOTC, shall have responsibility for the day-to-day implementation of the Project. The Project Office shall provide goods and services needed for the implementation of the Project. The Project Office shall be headed by a full-time Project Manager who shall report to the Secretary of Transport and Communication. The Project Manager shall have qualifications and experience satisfactory to the Bank. Local counterpart staff shall provide the Project implementation monitoring support in the outer islands.	Para 2, Schedule 6	Partly complied with; the Project Manager assigned was available only part time and there was insufficient counterpart support staff.
<i>Counterpart Funds</i> 25. Without limiting the generality of the provisions of Section 4.02, the Borrower shall ensure that the required counterpart funding necessary for timely and effective Project implementation shall be separately provided in the Borrower's annual budget for each fiscal year.	Para 4, Schedule 6	Partly complied with; only part of the required counterpart funds were provided.
26. Without limiting the generality of the provisions of Section 4.02, the Borrower shall provide an annual appropriation of \$50,000 for operation and maintenance of the Project facilities.	Para 5, Schedule 6	Not applicable.
27. The Borrower shall finance any shortfall of funds, after the collection of levies, to ensure effective and efficient operation and maintenance of the Project facilities over their economic lives of 25 years.	Para 6, Schedule 6	Not applicable.
<i>Monitoring and Evaluation</i> 28. A comprehensive review of the Project shall be carried out jointly by the Borrower and the Bank	Para 7, Schedule 6	Not applicable.

Covenant	Reference in Loan Agreement	Status of Compliance
after two years of implementation. The review shall assess the progress and achievements of the Project against its objectives, and identify problems being encountered and recommend remedial action if needed.		
<i>Environment</i> 29. The Borrower shall ensure that all construction shall be undertaken in an environmentally sound manner in accordance with the Borrower's existing laws, regulations, and standards concerning environmental protection and the Bank's <i>Environmental Guidelines for Selected Infrastructure Projects</i> .	Para 8, Schedule 6	Complied with.
<i>Involuntary Resettlement</i> 30. The Borrower shall ensure that the subprojects do not result in any losses that would trigger the Bank's <i>Policy on Involuntary Resettlement</i> . Before tendering of the civil work contract, on-site investigations shall be carried out for each subproject in order to ascertain that no involuntary resettlement shall be involved. In the event that a proposed subproject is found, during site investigation, to involve involuntary resettlement, it shall be replaced with a subproject that shall be subject likewise to same on-site screening process and that shall not involve any involuntary resettlement. MOTC shall be responsible for the subproject screening and for obtaining clearance from appropriate agencies and/or parties.	Para 9, Schedule 6	Complied with.
<i>Miscellaneous</i> 31. The Borrower shall maintain a dialogue with the Bank on the status of relevant transport issues, including maritime safety, tariffs, and user charges, sector funding, institutional organization, and external assistance.	Para 10, Schedule 6	Partly complied with.
32. The Borrower shall ensure that construction workers employed for the construction of the Project facilities are provided human immunodeficiency virus/acquired immunodeficiency syndrome (HIV/AIDS) education and protection.	Para 10, Schedule 6	Not applicable.

HIV/AIDS=Human Immunodeficiency Virus/Acquired Immunodeficiency Syndrome, MOTC=Ministry of Transportation and Communications.

^a Not applicable is noted for covenants that refer to project facilities that were not implemented.

Source: Asian Development Bank.