Evaluation Study

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Sector Assistance Program Evaluation
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Transport Sector in the Pacific Developing Member Countries (1995–2010)

Independent Evaluation Department

Asian Development Bank

ABBREVIATIONS

ADB	–	Asian Development Bank
AusAID	–	Australian Agency for International Development
CPS	–	country partnership strategy
DMC	–	developing member country
EC	–	European Commission
EIRR	–	economic internal rate of return
FIRR	–	financial internal rate of return
FRUP	–	Fiji Roads Upgrading Project
GDP	–	gross domestic product
ICAO	–	International Civil Aviation Organisation
IED	–	Independent Evaluation Department
IPBC	–	Independent Public Business Corporation
km	–	kilometer
MFF	–	multitranche financing facility
NMSA	–	National Maritime Safety Authority
PASO	–	Pacific Air Safety Office
PCR	–	project completion report
PNG	–	Papua New Guinea
PPER	–	project performance evaluation report
PRIF	–	Pacific Region Infrastructure Facility
RAMS	–	road asset management system
SES	–	special evaluation study
TA	–	technical assistance

NOTE

In this report "$" refers to US dollars

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The guidelines formally adopted by the Independent Evaluation Department on avoiding conflict of interest in its independent evaluation were observed in the preparation of this report. Indra Deo, Peter Freeman, and Peter Pacey were the international consultants. Des Eggelton, Allen Faerua, Marianne Juco, David Lidimani, and Sila Sikivou were the national consultants. To the knowledge of the management of the Independent Evaluation Department, there was no conflict of interest of the persons preparing, reviewing, or approving this report.

APPENDIXES

EXECUTIVE SUMMARY

Introduction

This regional evaluation study on the transport sector in Pacific developing member countries (DMCs) is intended to evaluate and derive lessons from the implementation of Asian Development Bank (ADB) support to transportation development in the Pacific region, and to provide inputs for upcoming regional and country assistance program evaluation studies in the Pacific DMCs. The evaluation focuses on the roads, maritime, and civil aviation subsectors, and emergency assistance related, covering 96% transport portfolio in the Pacific. It discusses issues associated with the isolation of outer islands, where applicable, and the extent of and potential for regional cooperation in the Pacific transport sector. Finally, the evaluation covers transport subsector issues of emergency assistance.

In formulating its lessons and recommendations this evaluation also recognizes the uniqueness of the situation in the Pacific DMCs and has endeavored to take on board the constraints they face because of the fragmented nature of their economies and their relative isolation and remoteness from world markets. These Pacific countries share some characteristics—dependence on aid, small population size, ethnic diversity, and low levels of rural–urban migration—that make it difficult to build strong institutions. Except for the countries exporting minerals and gas, the region as a whole has been inhibited by sluggish economic growth and unfavorable changes in the terms of trade with the rest of the world. The region remains uncompetitive in many respects due to its isolated geographic position, an often unstable political environment, and vulnerability to disasters.

Overall Assessment

Overall, ADB support to the transport sector in the Pacific DMCs is *successful*. The largest subsector, roads, is *partly successful*, while the other three subsectors—maritime, aviation, and emergency transport projects, plus technical assistance—achieve ratings of *successful,* resulting in the overall assessment reaching the threshold for a *successful* rating. The strategic positioning, relevance, and effectiveness ratings achieve the second highest scores on a four-level scale. Efficiency, sustainability, and development impacts score the third highest level. These scores on one hand reflect the selectivity and the coordinated efforts at a high level. On the other hand they point mainly to the inadequacy of country resources and capacity available to resolve issues, project implementation delays, and difficulties in maintaining the quality of infrastructure once constructed.

Based on the key findings and lessons, four key recommendations are summarized:

(i) Build short-term and longer term technical capacities in the design, implementation, and maintenance responsibilities for transport infrastructure investments using a strategic approach.

(ii) Increase the viability of transport sector investments by carefully forecasting transport sector benefits and costs based on past experience and by undertaking rigorous sensitivity analysis in the light of high volatility in construction prices and foreign exchange rates.

(iii) Strengthen Pacific Aviation Safety Office (PASO) service delivery and coverage by comprehensively evaluating its operations, together with interested development partners.

(iv) Improve the effectiveness of sector investments by consolidating and coordinating communications with stakeholders and allocating more resources to

supervision, monitoring, and evaluation, based on the country context and sector portfolio.

Evaluation Approach, Scope, and Limitations

The evaluation covers loans, grants, and technical assistance completed between 1995 and 2010. It evaluates the strategic, institutional, lending, and nonlending project initiatives in the sector as a whole rather than project by project. While the focus is on completed projects, ongoing projects are evaluated to the extent possible for their relevance and potential effectiveness in achieving the targeted benefits using available project documents, and field level information. The nature and level of ADB's presence in the transport sector varies from country to country in line with their development needs and priorities, and their cooperation in multilateral and bilateral activities. In smaller countries there may be no transport-specific programmed activities, but sector assessments and transport strategies have been articulated within ADB's medium-term country strategies and operational programs for Fiji, Papua New Guinea (PNG), and Solomon Islands, where strong demand for better infrastructure exists. IED follows a similar approach in this evaluation, in that it focuses a significant portion of its assessment on those three countries.

The evaluation follows ADB guidelines for preparing such reports and uses the normal evaluation criteria for the transport sector and the road, maritime, and aviation subsectors. The criteria are strategic positioning, relevance, effectiveness, efficiency, sustainability, and development impacts. IED conducted a desk review of project reports and also carried out independent evaluation missions to the six Pacific DMCs that have received substantial support for the transport sector covering 96% of ADB transport sector lending. Data availability in many Pacific DMCs is very limited. With some notable exceptions (e.g., Vanuatu), basic data on traffic usage and road conditions, for example, were difficult to access or unavailable. Result frameworks, baseline studies, and monitoring and evaluation were often inadequate or nonexistent. Availability of data has been a major issue.

Key Findings

Strategy. ADB's strategy for engagement and operations in the Pacific region from 1995 to 2010 was articulated and updated in four papers prepared in 1995, 2000, 2005, and 2009. Prior to 1995, strategies were prepared only for individual countries. The rationale for ADB support in the transport sector is subsumed in the strategic objectives for achieving the stated goals of better access to income opportunities through efficient markets and better social service outcomes for the poor. The current Pacific approach (2010–2014) continues to focus on greater private sector investment and considers transport an operational priority aimed at fostering connectivity, supporting inclusive and environmentally sustainable growth, as well as regional cooperation and integration. To improve the effectiveness of future development operations in the region, the strategy calls for frequent high-level consultation and greater coordination between development partners, while laying the groundwork for a regional approach to the global economic crisis and responding appropriately to climate change.

Support for the transport sector in the Pacific has covered roads, maritime ports, and civil aviation subsectors. Since the start of ADB's support in the region, transport has dominated, accounting for 37.5% of the overall support from 1969 to 2010. During this period, ADB provided a total of $2.5 billion in project support (loans and grants) across all sectors in the Pacific. Other sectors that received ADB support were agriculture and natural resources (12.8% of total), public sector management (9.2%), energy (9.0%), and water supply and other municipal

infrastructure (8.4%). Within the transport support between 1969 and 2010, road transport received 62.8%, followed by ports (26.5%) and civil aviation (10.7%). ADB project support to the sector (excluding emergency assistance and cofinancing) amounted to $932.3 million from 1969 to 2010. Of that, ADB-financed grant assistance reached $103.9 million for nine grants. Timor-Leste (56.8% of total) and Solomon Islands (39.8% of total) were the main recipients of grant assistance.

The transport program focused on a few recipients. In particular, four Pacific countries accounted for 93.5% of total ADB transport sector support to the region. PNG received 67% of total support, followed by Fiji (15%), Timor-Leste (6%), and Solomon Islands (5%). Minimal to no transport sector support was provided to the Federated States of Micronesia, Nauru, Palau, and Tuvalu. ADB has not engaged in nonsovereign lending or equity operations related to the transport sector in any of the 14 Pacific DMCs.

Total sector support amounted to about $20–60 million per year during 1995–2006, and more than $100 million per year since 2007. The transport sector also received emergency assistance amounting to $81.5 million to respond to post-conflict and natural disaster situations. This support included five loans amounting to $24.3 million (for the Cook Islands, Solomon Islands, Independent State of Samoa, and Vanuatu) and grant assistance totaling $18.5 million (for Samoa and Solomon Islands). In addition, ADB administered a $38.7 million grant for the two phases of the Emergency Infrastructure Rehabilitation Project in Timor-Leste. In the recent decade, major funding agencies have been Australia, Japan, and United States.

Program. In implementing the strategy of the transport program, was challenged by the low technical capacity in the regions. At the country level, there was sometimes a disparity between vision and conditions on the ground. In PNG, for example, the CPS responded to the government's request to scale up its support for infrastructure development and management. A strong portfolio and forward pipeline was developed in road transport, maritime transport, and civil aviation, but the country is presently unable to maintain its existing system, let alone improve and/or widen it through its own resources. Pacific DMC governments' institutional capacity for construction supervision is at an early developing stage, and procurement practices are not well established. Liaison between staff responsible for private and public sector investments is also not strong.

Designing projects with ambitious scope that exceeds government staff capacity can lead to a focus on outputs rather than outcomes, a lack of realism, and a stretching of both lending and nonlending work across too many subsectors, requests, and topics. It might be more effective to concentrate on a few key objectives and stay with this plan. Major achievement thus far has been to establish special purpose institutions, such as safety agencies for maritime, aviation, or roads; or to establish transport infrastructure funds. However, in many countries, these organizations are not self-sustainable, neither financially, nor in terms of staff capacity. Other development partners have had similar experiences, and until recently the partners have not always coordinated their aid for the best results. This was recognized by the partners and led to the establishment of the Pacific Region Infrastructure Facility announced in August 2008, wherein development partners focus on a few key projects and programs with demonstration value to show what can work given the right blend of resources and expertise. The venture has the advantage of harmonizing development efforts, and while it is still young, all the development partners are optimistic about it. This approach is consistent with ADB's Pacific strategy and is relevant to the transport sector's development needs.

Capacity development continues to be a difficult issue not just for ADB, but for the wider development community in the Pacific countries. Taking into account the limited human resources available, it would be unreasonable to expect major tangible results in capacity development in the near future, despite substantial investment by both development partners and governments. This means that, unless the countries are able to retain a sufficient number of people who are educated and trained in specific disciplines, sustainable capacity within the public and private sectors will be difficult to achieve. For the longer term, greater emphasis should be placed on a strategic approach that recognizes this reality in the Pacific countries.

Lessons

Land issues have delayed projects and increased costs of project implementation. Ownership of customary land is a difficult issue in the Pacific. In some countries, particularly in PNG and Solomon Islands, disputes and lack of proper land registers seriously delayed project implementation, requiring supplementary financing to cover substantial cost increases due to a rise in prices for materials, compounded by currency fluctuations, during the delay. This poses a great risk to projects. There are deep-rooted cultural elements that need to be adjusted when land transactions are done in the Pacific. Therefore, it is best to establish that land is available and ready for upgrade and expansion, and that the ownership issue is resolved prior to development partners providing support for infrastructure development.

Physical investment needs to be complemented by equally strong support for capacity development and policy formulation in the sector. ADB's focus has been on physical infrastructure. At present, in most Pacific DMCs, there is some informal understanding that collaboration with ADB is concentrating on investments for physical improvements, while other partners focus on policy advice, staff training, and capacity development, and the focal agencies or ministries for these aspects are different. At times bilateral partners' primary focus is on provinces where they are engaged in some repair works, which are different from the areas where ADB is upgrading roads. An option to improve the sustainability of major investments would be to coordinate and clarify responsibilities for policy dialogue on maintenance and other issues.

The national maritime safety agencies set up in PNG and Solomon Islands appear to be successful institutional models that could be replicated elsewhere in the region. Under these models, there has been enactment of new laws to generate revenue streams for the agencies to pay for their costs, and to improve safety standards for vessels. A gradual increase of various fees is generally accepted in the shipping industry when supported by adequate services.

There is a need for a more organized disaster-related funding agency platform to act quickly and effectively for emergency assistance. Delays in initial collective action minimize the effectiveness of ADB emergency operations. At present, there are several bilateral initiatives or special initiatives (e.g., tsunami warning system, seismic monitoring) led by a few agencies from key funding countries. In terms of emergency assistance for rehabilitation of main infrastructure, different external partners come together, but the time of delivery is usually uncoordinated.

In estimating costs, better coverage of contingencies is useful, given the vulnerability of the Pacific to movements in global construction-related prices and exchange rates. Much time has been lost in delivering projects where poor assessments were made of costs during the preliminary design, resulting in requests for supplementary finance.

Developing and retaining ADB technical staff in the areas of ADB's focus (e.g. maritime, aviation, natural disaster and emergency) in the transport sector is essential. Each transport subsector clearly requires highly specialized technical knowledge and business experience, and therefore developing and retaining sufficient staff resources in the areas of focus becomes very important, especially given the remote and scattered geographical nature of the region.

Recommendations

Based on the key findings and lessons, the study provides the following recommendations to ADB Management for consideration when developing future strategies in the Pacific countries and region.

Build short-term and longer term developing member countries' technical capacity in the design, implementation, and maintenance responsibilities for transport infrastructure investments using a strategic approach. Options for support may follow a two-pronged approach. First, based on country context, either scale up the provision of capacity substitution in the short to medium term to mitigate the shortage of technical staff in government agencies by using international consultants, or provide training and institutional capacity development support to local staff. This first stage will facilitate skills transfer from international advisors to national staff. Second, in the medium to long term, build a pipeline of skilled personnel and develop institutional procedures and processes to sustain sector investments and strengthen incentives for retention of the capacity developed.

For this, the countries need to have in place appropriate incentives (or disincentives to resign from the agency) to retain the trained staff or ensure a sufficient pipeline of skilled personnel who could be trained quickly. The latter points to coordination with secondary and vocational education institutions for ensuring that the right mix of skills is nurtured to meet the sector's technical needs. Depending on country context, close liaison with ongoing public sector management initiatives as well as collaboration with education sector initiatives may be needed between government and development partners. Towards this goal the transport, public expenditure management, and education sector staff in ADB's Pacific Department would need to work together to conduct education needs assessment, develop educational programs, and establish measurable outcome and impact targets to assess the success of these efforts.

Increase the viability of transport infrastructure investments by realistically forecasting transport sector benefits and costs based on past sector experience and rigorous sensitivity analyses, in the light of the high volatility in construction prices and foreign exchange rates. When preparing new projects, sensitivity analyses need to be given more prominence and to be done more rigorously, based on actual experience. Prudently estimate traffic growth, tourist visits, and cargo throughput, etc., since several past calculations of economic and financial internal rates of return have tended to be based on rather optimistic estimates. The expected volumes of cargo and traffic growth figures should be examined in the light of previous performance as well as macroeconomic forecasts. They have tended to be too optimistic in the past. Road feasibility studies also assume that the completed facility will be properly maintained, but this assumption is not accurate, since in the Pacific region this has clearly not been the case.

Strengthen Pacific Aviation Safety Office (PASO) service delivery and coverage, by comprehensively evaluating its operations, together with interested development partners. This would gain the full confidence of member countries' civil aviation authorities and supporting ministries. As the Pacific's first organizational model for regional transport, PASO has good frontrunner potential in regional cooperation initiatives, but the fledgling office grapples with insufficient funding to carry out its full mandate. PASO's performance in providing services to member governments (i.e., aviation ministries) needs to have more accountability and transparency among all member countries, its board, and the host Government of Vanuatu. All key funding agencies and stakeholders (including ADB, Australia, New Zealand, and United Kingdom) need to be involved in making PASO more effective and accountable.

Improve the effectiveness of sector investments by consolidating communications with stakeholders and allocating more resources to supervision, monitoring, and evaluation based on the country context and sector portfolio. Particularly for large multitranche financing facility projects and for countries with relatively higher volume infrastructure project pipelines, regularly review the demand for ADB technical staff in the country, rather than relying mostly on the current sub-regional coverage from the Fiji or Sydney offices. In addition, where necessary, reduce the multiple communication lines with government counterparts and other aid agencies (e.g., Solomon Islands). ADB should also support governments in developing monitoring and evaluation skills to maintain necessary data, including baseline and transport investment impacts. The United States' Millennium Challenge Corporation in Vanuatu has established a good model.

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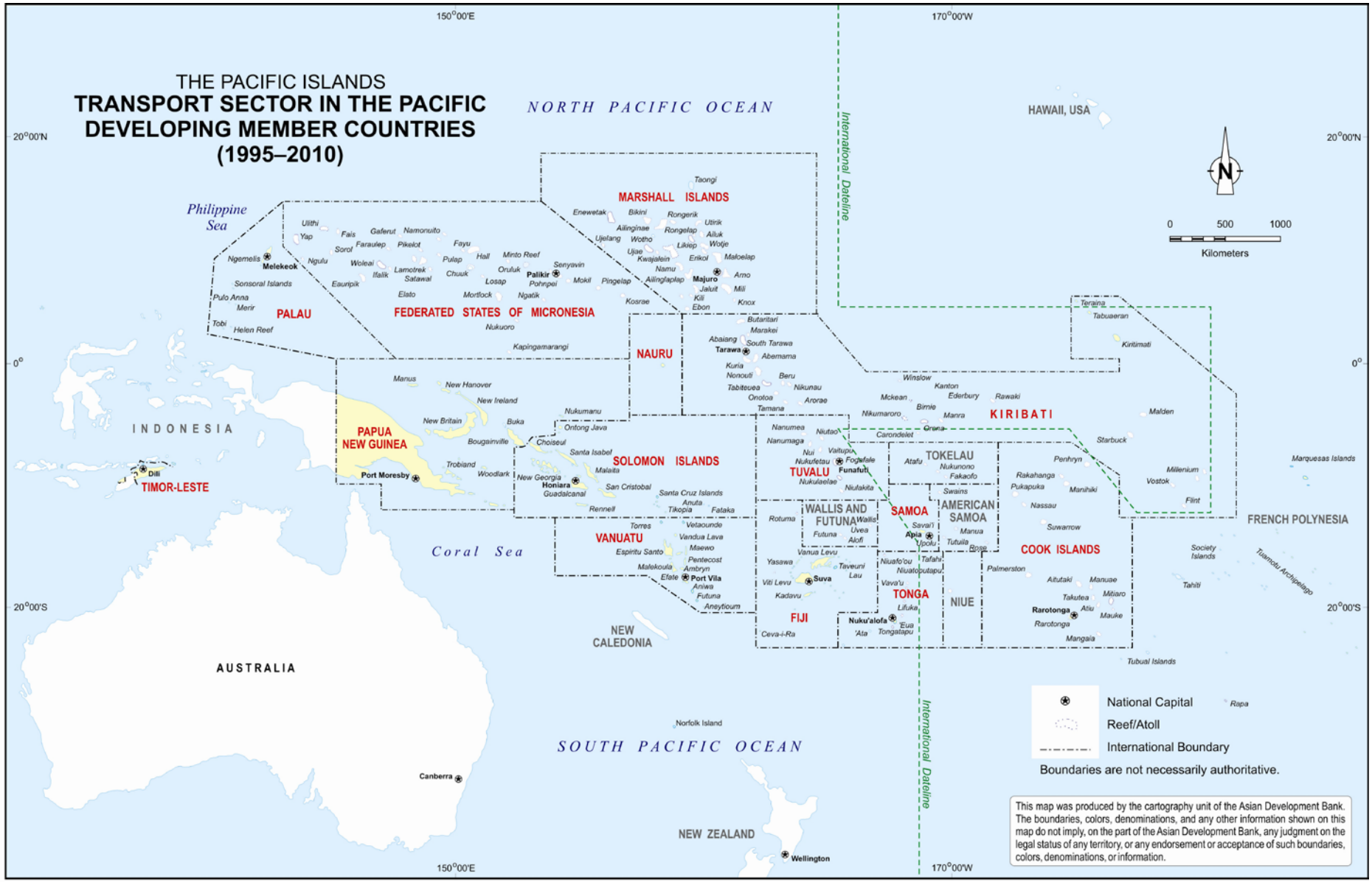
THE PACIFIC ISLANDS
TRANSPORT SECTOR IN THE PACIFIC
DEVELOPING MEMBER COUNTRIES
(1995–2010)
NORTH PACIFIC OCEAN
SOUTH PACIFIC OCEAN
Coral Sea
Philippine Sea
150°00'E
170°00'W
20°00'N
0°
20°00'S
International Dateline
HAWAII, USA
N
0 500 1000
Kilometers
MARSHALL ISLANDS
FEDERATED STATES OF MICRONESIA
PALAU
NAURU
KIRIBATI
TUVALU
TOKELAU
SAMOA
AMERICAN SAMOA
COOK ISLANDS
NIUE
TONGA
FIJI
WALLIS AND FUTUNA
SOLOMON ISLANDS
VANUATU
NEW CALEDONIA
PAPUA NEW GUINEA
INDONESIA
TIMOR-LESTE
AUSTRALIA
NEW ZEALAND
FRENCH POLYNESIA
Taongi
Bikini
Enewetak
Rongerik
Utirik
Ailinginae
Rongelap
Ailuk
Ujelang
Wotho
Likiep
Wotje
Ujae
Kwajalein
Erikol
Maloelap
Namu
Majuro
Arno
Jaluit
Mili
Ailinglaplap
Kili
Ebon
Knox
Kosrae
Mokil
Pingelap
Palikir
Pohnpei
Senyavin
Oroluk
Losap
Hall
Minto Reef
Pulap
Chuuk
Satawal
Lamotrek
Ifalik
Woleai
Faraulep
Pikelot
Fayu
Sorol
Fais
Gaferut
Namonuito
Ulithi
Yap
Ngulu
Melekeok
Ngemelis
Sonsoral Islands
Eauripik
Pulo Anna
Merir
Tobi
Helen Reef
Elato
Mortlock
Ngatik
Nukuoro
Kapingamarangi
Butaritari
Marakei
Abaiang
South Tarawa
Tarawa
Abemama
Kuria
Nonouti
Beru
Tabiteuea
Nikunau
Onotoa
Arorae
Tamana
Teraina
Tabuaeran
Kiritimati
Winslow
Kanton
Ederbury
Rawaki
Mckean
Birnie
Manra
Nikumaroro
Orona
Carondelet
Starbuck
Malden
Penrhyn
Millenium
Vostok
Flint
Marquesas Islands
Rakahanga
Pukapuka
Manihiki
Nassau
Suwarrow
Swains
Manua
Tutuila
Rose
Atafu
Nukunono
Fakaofo
Fogafale
Funafuti
Nanumea
Niutao
Nanumaga
Nui
Valtupu
Nukufetau
Nukulaelae
Niulakita
Rotuma
Wallis
Futuna
Uvea
Alofi
Savai'i
Apia
Upolu
Tafahi
Niuafo'ou
Niuatoputapu
Vava'u
Lifuka
Nuku'alofa
'Eua
Tongatapu
'Ata
Vanua Levu
Taveuni
Lau
Yasawa
Viti Levu
Suva
Kadavu
Ceva-i-Ra
Palmerston
Aitutaki
Manuae
Takutea
Mitiaro
Rarotonga
Atiu
Mauke
Mangaia
Tahiti
Society Islands
Tuamotu Archipelago
Tubuai Islands
Rapa
Manus
New Hanover
New Ireland
New Britain
Buka
Bougainville
Choiseul
Nukumanu
Ontong Java
Santa Isabel
Malaita
Woodlark
Trobiand
Port Moresby
New Georgia
Honiara
Guadalcanal
San Cristobal
Santa Cruz Islands
Anuta
Tikopia
Fataka
Rennell
Torres
Vetaounde
Vandua Lava
Maewo
Espiritu Santo
Pentecost
Ambryn
Malekoula
Efate
Port Vila
Aniwa
Futuna
Aneytioum
Dili
Norfolk Island
Canberra
Wellington
National Capital
Reef/Atoll
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I. INTRODUCTION

A. Objectives and Goal

1. The management of the Independent Evaluation Department (IED) included an evaluation of the transport sectors in the Pacific developing member countries (DMCs) in its 2011 work program. This evaluation is conducted in parallel to related evaluation studies on governance[1] to derive synergies in their evaluation frameworks as well as analyses.

2. This special evaluation study (SES) on the transport sector in the Pacific DMCs is intended to evaluate and derive lessons from the implementation of Asian Development Bank (ADB) support to transportation development in the Pacific region (Appendix 1). Its goal is to provide inputs for upcoming regional support program evaluation studies in the Pacific DMCs, and for validations of project evaluations and county partnership strategy (CPS) validations (Appendix 2).

3. The study evaluates the strategic, institutional, lending, and nonlending project initiatives in the sector. Ongoing projects are evaluated to the extent possible for their relevance and potential effectiveness in achieving the targeted benefits. The evaluation covers loans, grants, and technical assistance (TA) projects completed between 1995 and 2010.

B. Scope and Coverage

4. The evaluation focuses on ADB support to the road, maritime, and civil aviation subsectors, which make up over 90% of ADB's overall transport investment in the Pacific (Appendix 3). Rail transport is negligible and confined to the conveyance of sugar cane; and urban transport is limited because there are only a few towns with a substantial population. The study looks at issues associated with the isolation of outer islands, where applicable, and the extent of and potential for regional cooperation in the Pacific transport sector. The evaluation also covers emergency assistance, but the focus is limited specifically to support that involves the transport subsectors.

5. The nature and level of ADB's presence in the transport sector varies from country to country in line with each one's development needs and priorities (Appendix 4), and through cooperation in multilateral and bilateral activities (i.e., ADB's role and comparative advantage).[2] While in smaller countries there may be no transport-specific programmed activities, sector assessments and transport strategies have nevertheless been articulated within ADB's medium-term country strategies and operational programs for Papua New Guinea (PNG), Fiji, and Solomon Islands, where strong demand for better infrastructure exists. The IED follows a similar approach in this evaluation, in that it focuses a significant portion of its assessment on PNG, Fiji, and Solomon Islands.

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[1] ADB. 2011. Special Evaluation Study: Asian Development Bank's Support for Promoting Good Governance in Pacific Developing Member Countries (draft).

[2] At least four Pacific countries (i.e., the Cook Islands, Samoa, Solomon Islands, and Vanuatu) also received emergency assistance with transport infrastructure components during 1995–2010.

C. Evaluation Framework, Methodology, and Limitations

6. This transport sector evaluation recognizes the uniqueness of the situation in the Pacific DMCs and has endeavored to take on board the constraints they face because of the fragmented nature of their economies and their relative isolation and remoteness from world markets. The regional sector support program evaluation of transport projects follows ADB guidelines for preparing such reports and uses the normal evaluation criteria for the transport sector and the road, maritime, and aviation subsectors. The criteria are strategic positioning, relevance, effectiveness and efficiency, sustainability, and development impacts. Appendix 1 provides the evaluation framework and ratings methodology as well as a full list of the questions covering these criteria. Chief among the areas probed are:

(i) whether ADB is providing sufficient capacity development support to Pacific DMCs and whether there is enough political commitment to maintain existing infrastructure (paras. 124, 137, and 143);
(ii) whether ADB's support has provided an support program that is relevant to and consistent with the transport sector's development needs (paras. 134, 135, and 139);
(iii) the extent to which the support program has been consistent with ADB's strategy in the Pacific (para. 122);
(iv) the extent to which the targeted outputs have been achieved on budget and on time (paras. 66, 140 and 145);
(v) whether the Pacific DMCs allocate sufficient resources to finance recurrent costs, especially for maintenance, and whether, for those projects that can generate revenue, sufficient revenues are recovered (paras. 121, 125, and 145); and,
(vi) the nature and extent of development impacts attributable to ADB's transport sector support (paras. 86 and 109).

7. IED conducted a desk review of project reports in archives (Appendix 5) and then carried out independent evaluation missions to those Pacific DMCs that have received substantial support for the transport sector. The countries visited were the Cook Islands, Fiji, PNG, Solomon Islands, Timor-Leste, and Vanuatu (Appendix 6). The missions included field visits and focus group discussions to engage local stakeholders such as local consultant industry chambers of commerce and project-affected persons. The missions carried out small-scale traffic counting in the Fiji, and utilized recent data collected by other donors in Vanuatu (Appendix 7). Due to the sensitive nature of social safeguard implementation, a social safeguard expert conducted a separate, independent assessment of selected completed and ongoing transport projects (Appendix 8). An engineer also accompanied the missions to report on technical issues (Appendix 9).

8. The six primary focus countries (Fiji, PNG, Solomon Islands, and Timor-Leste)[3] selected for the missions cover 96% of transport sector lending. Taking into account the logistical difficulties of covering four subsectors that often report to different line ministries, the relatively low amounts of transport-related lending, and the cost of accessing the other Pacific countries, IED decided to cover all secondary focus countries (accounting for 6% of lending) through desk reviews, e-mail correspondence, and telephone discussions. Data availability in many Pacific DMCs was very limited. With some notable exceptions (e.g., Vanuatu), basic data on traffic usage and road condition, for example, were unavailable. Result frameworks, baseline studies,

[3] In addition to these four, the Cook Islands was added to look at emergency assistance loans, and Vanuatu for the Pacific Aviation Safety Office, latest lending developments, and monitoring and evaluation by other donors.

and monitoring and evaluation were often inadequate or non-existent. Availability of data has been a major issue owing to the lack of monitoring systems in the countries.

D. Findings of Earlier Evaluations

9. Cognizance was taken of previous evaluations in Pacific DMCs. ADB project evaluations have yielded lessons for future operations, such as (i) the importance of participation and effective development of human capacity; (ii) the need for more effective and efficient institutions for the management of infrastructure; and (iii) the need for strengthening project preparation, including appropriate modalities, capacity of implementing agencies, a realistic time frame for project implementation, and the right match between project design and country needs and capabilities. These past lessons are still very much valid in the present assessment.

10. An SES on public sector reform by IED in 2009 provided findings pertinent to the transport sector.[4] The study concluded that a lack of adequate institutional and human capacity development efforts and a weak policy environment have reduced the effectiveness of the investments in infrastructure projects. It highlighted the need for (i) ownership or commitment to reforms; (ii) support to develop the capacity for and understanding of reform; (iii) ADB's continuous support for reforms; (iv) a demand-based formulation of support to better understand and work through the political economy, incorporating risk and change management strategies; and (v) a need to improve the administrative, legal, and operating environment for private sector development. In 2002, a project performance evaluation report (PPER) on the Santo Port Project in Vanuatu rated the project successful. In 2010, IED completed the Emergency Infrastructure Rehabilitation Project (phases 1 and 2) PPER in Timor-Leste and is drafting a similar report on the Fiji Ports Development Project. These reports are used to provide inputs for the emergency assistance and maritime sections of the SES. In addition, a mission visited Dili in Timor-Leste and also collected information relating to the validation of the country strategy. This validation noted an underestimation of the complexity of transitioning from provision of emergency assistance to normal operations and, in particular, the demands involved in developing capacity in both agencies and individuals.

11. Note has also been taken, where relevant, of findings of earlier regional evaluations by other development agencies. For example the Independent Evaluation Group (IEG), World Bank published an evaluation of its support to Pacific member countries in 2005.[5] Key lessons derived for the road sector were: (i) establish policies which recognize the importance of road operation and maintenance, (ii) link maintenance with road design contracts, (iii) contract out maintenance work to the private sector, (iv) implement road user charges, and (v) create a single transport authority.

E. Structure of Report

12. The report is organized around five chapters. It commences with a short introduction covering the evaluation objectives, goal, and design. It gives background information in chapter II on the development strategies and plans in general, and specifically in the transport context. Chapter III gives the detailed evaluation findings for each subsector and also for the emergency assistance rendered. In chapter IV an overall performance rating is discussed with

[4] ADB. 2009. *Special Evaluation Study: ADB Support for Public Sector Reforms in the Pacific: Enhance Results through Ownership, Capacity, and Continuity*. Manila.
[5] OED. 2005. *Evaluation of World Bank Assistance to Pacific Member Countries, 1992–2002.* Washington, DC.

reference to the specific questions identified for evaluation. Chapter V gives the conclusions and makes recommendations based on the review. The report is supported by detailed appendixes.

II. BACKGROUND INFORMATION FOR THE SUPPORT PERIOD 1995–2010

A. Pacific Countries' Development Context

13. The small and isolated countries of the Pacific region present a development challenge that differs considerably from that of ADB's developing member countries in Asia. Although Pacific DMCs benefit from foreign aid flows and remittance income, they are more susceptible to reductions in aid or changes in the patterns of remittances.[6] They are also more sensitive to changes in the terms of trade if preferential access agreements are scaled down or discontinued. Pacific DMCs are relatively undiversified in their production and exports and thus are highly vulnerable to a decline in one of their dominant activities.

14. On the other hand, they generally have adequate resources for subsistence living, with comparatively favorable life expectancy and other social indicators. Poverty is not widespread, but the region's people are nonetheless vulnerable to declining living standards whenever global economic conditions weaken, such as during the financial and economic crisis of 2009.[7] The high rate of population growth is worrisome too because there is insufficient employment for job seekers. A comparative advantage is the Pacific DMCs' pristine environments and rich biodiversity, but this heritage, as in many parts of the world, is under threat and needs protection from adverse practices and climate change.

15. The Pacific DMCs comprise the Cook Islands, Fiji, Kiribati, the Marshall Islands, Federated States of Micronesia, Nauru, PNG, Palau, Independent State of Samoa, Solomon Islands, Timor-Leste, Kingdom of Tonga, Tuvalu, and Vanuatu. Although each of these 14 Pacific countries appears to be unique,[8] they do share some common challenges—high transport and transaction costs, limited human resource skills, and weak institutional capacity. Of these states, seven are classified as weakly performing countries and they account for 87% of the Pacific DMCs' whole population.[9] The remaining Pacific DMCs exhibit characteristics of fragility to varying degrees, even though they are not formally classified as weakly performing countries.

16. Overall economic progress of ADB's Pacific countries has been mixed. Based on their capacity to achieve self-sustained growth, ADB divides them into three categories (Table 1). The first group (category 1) comprises the Cook Islands, Fiji, Samoa, Tonga, and Vanuatu and shows some capacity for self-sustained growth. The second group (category 2), which includes PNG, Solomon Islands, and Timor-Leste, achieves resource-based growth, but struggles to accomplish economic diversity. The third group (category 3) consists of the smaller islands of Kiribati, the Marshall Islands, Micronesia, Nauru, Palau, and Tuvalu. This group finds it difficult to adopt policies and institutions to help create and sustain domestically sourced growth and thus exhibits little or no growth relative to regional performance.

17. Country data confirm small but sustained increments to aggregate gross domestic product (GDP) and per capita GDP in the Pacific region (Table 1). More recently, regional growth

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[6] ADB. 2006. *Pacific Study Series*, *Strategy for the Pacific: Policies and Programs for Sustainable Growth*. Manila.
[7] ADB. 2008. *Working in Fragile Environments: A Midterm Review of the Pacific Strategy, 2005–2009.* Manila.
[8] The countries differ in size, population, resources, social and economic achievement, to name a few.
[9] ADB. 2008. *Kiribati, Marshall Islands, Federated States of Micronesia, PNG, Solomon Islands, Timor-Leste and Vanuatu – Working in Fragile Environments: A Midterm Review of the Pacific Strategy, 2005–2009.* Manila.

has been led by category 2 countries, as the category 1 economies experienced a marked slowdown during 2006–2010. Category 2 growth was heavily influenced by the high price of commodity exports, especially minerals (PNG) and oil (Timor-Leste). The category 3 countries continue to exhibit little or no growth.

Table 1: Average Growth of Gross Domestic Product and Per Capita Gross Domestic Product, 1995–2010[a]

Country Grouping	Rate of GDP Growth (% change)			Rate of Per Capita GDP Growth (% change)			GDP Current 2008 ($ million)
	1995–2000	2001–2005	2006–2010	1995–2000	2001–2005	2006–2010	
Category 1	2.28	2.53	0.62	1.28	1.44	(0.16)	5,280.0
Category 2	0.00	1.91	5.23	(0.93)	(0.42)	2.90	9,130.5
Category 3	0.79	1.45	0.04	(0.45)	0.51	(0.81)	789.9
All Pacific Countries	0.83	2.11	3.41	(0.13)	0.28	1.68	15,200.5

GDP = gross domestic product.

[a] Weighted average based on 2008 GDP at current prices. The 2010 data are forecasts.

Sources: *Asian Development Outlook* (various issues) and Asian Development Bank's statistical database system.

B. Transport Sector Context: Pacific Region

1. Importance of Transport in the Pacific Region

18. Given the Pacific DMCs' remoteness, dispersed populations, and high transportation costs, infrastructure investment in transport is important to counteract diseconomies of scale, isolated communities, and the high costs of accessing markets. Thus, unsurprisingly, transport comprises the largest share of ADB support. Since the start of ADB support in the region, transport has predominated, comprising 37.5% of the overall support between 1969 and 2010.[10] During this period, ADB provided a total of $2.49 billion in project support (loans and grants) across all sectors in the Pacific. In comparison, other sectors that received ADB support are agriculture and natural resources (12.8% of total), public sector management (9.2%), energy (9.0%), and water supply and other municipal infrastructure (8.4%).

2. Composition of ADB Transport Support

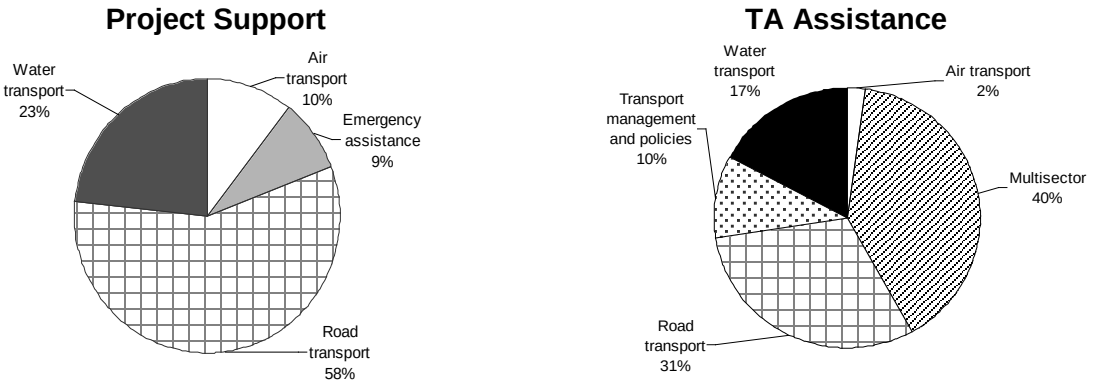
19. ADB transport support from 1969–2010 amounted to $932.3 million comprising $827.0 million in loans and $105.3 million in grants (footnote 10). A breakdown of transport support between 1969 and 2010 shows that road transport had a 62.8% share, followed by maritime (26.5%), and civil aviation (10.7%). ADB support was focused on a few recipients. In particular, four Pacific countries accounted for 93.7% of total ADB transport support to the region. PNG received 67%, followed by Fiji (15%), Timor-Leste (6%), and Solomon Islands (5%).[11]

[10] This excludes several loans and grants received by the transport sector as part of multi-sector rehabilitation initiatives to cope with post-conflict, economic crisis, and natural disaster responses. It also does not include about $170 million in cofinancing from official and commercial sources mobilized by ADB projects.

[11] The balance went to the Cook Islands (1.7%), Kiribati (1.5%), Tonga (1.0%), Vanuatu (1.0%) and the Marshall Islands and Samoa (1.1%).

20. Transport also constitutes the dominant share within each country's ADB financing program. Analyzing the loans and grants in the transport portfolio during 1969–2010 in each country, it was found that transport support formed 44% of the overall support to Fiji, but was lower and varied widely (1%–28%) in other category 1 countries (Cook Islands, Samoa, Tonga, and Vanuatu). Transport support was more consistent in category 2 countries (PNG, Solomon Islands, and Timor-Leste), averaging 48% of the portfolio. Four of the category 3 countries did not receive any transport support at all (Micronesia, Nauru, Palau, and Tuvalu) while Kiribati and the Marshall Islands received limited funding. ADB has not engaged in either nonsovereign lending or equity operations related to the transport sector in any of the 14 Pacific countries. Figure 1 shows the composition of the support for the various transport subsectors during the study period (1995–2010). Project support for roads forms the bulk of the transport sector support across the Pacific. See Appendix 4 for more details.

Figure 1: ADB Support Approved or Implemented by Subsector, 1995–2010
(% of total investment)



ADB = Asian Development Bank, TA = technical assistance.
Source: Asian Development Bank's internal database.

3. Sector Profile

21. Table 2 shows the wide disparities between the different Pacific islands. Fiji, PNG, and Timor-Leste account for 86% of the total population. The Cook Islands and Palau have the highest per capita incomes at $9,100 and $8,940 respectively, while Solomon Islands and PNG have the lowest at $910 and $1,180 respectively. However, these figures mask pockets of poverty found in the outer islands of several countries. The sector profile and institutional aspects are discussed in detail in Appendix 4. Generic institutional aspects are briefly discussed below.

Table 2: Pacific Region Selected Economic and Transport Statistics, 2009

Country	Population	GNI per Capita ($)	Paved Road Network (km)	Unpaved Road Network (km)	Airports with Paved Runways	Liner Shipping Connectivity World Rank	Merchant Fleet (dwt registered)
Cook Islands	18,000	9,100	320	33	2	-	0
Fiji	854,000	3,950	1,692	1,748	4	85	17
Kiribati	110,000	1,890	36	670	4	150	829
Marshall Islands	55,000	3,060	75	1,953	5	152	77,827
Micronesia	111,000	2,220	42	198	6	146	10

Country	Population	GNI per Capita ($)	Paved Road Network (km)	Unpaved Road Network (km)	Airports with Paved Runways	Liner Shipping Connectivity World Rank	Merchant Fleet (dwt registered)
Nauru	10,000	5,000	29	40	1	-	0
Palau	21,000	8,940	36	47	1	-	0
PNG	6,900,000	1,180	3,600	17,600	21	106	111
Samoa	179,000	2,840	332	2,005	1	120	10
Solomon Islands	535,000	910	71	1,875	2	114	8
Timor-Leste	1,200,000	2,460	2,600	3,440	2	-	0
Tonga	104,000	3,260	184	496	1	139	78
Tuvalu	12,000	3,945	8	0	0	-	1,884
Vanuatu	246,000	2,620	256	814	3	138	2,684
Total	**10,355,000**	**-**	**9,281**	**30,919**	**53**	**-**	**83,458**

dwt = deadweight ton, GNI = gross national income, km = kilometer, PNG = Papua New Guinea.
Sources: Central Intelligence Agency, United Nations Conference on Trade and Development, World Bank, public works departments.

22. Weak institutional performance can be the result of poor policies, but Pacific countries share some characteristics that make it more difficult to build strong institutions. These include dependence on aid, small population size (except PNG and Timor-Leste), ethnic diversity, and low levels of rural–urban migration.

23. How the countries manage their road network varies. Some maintain traditional "public works departments" where the department is responsible for both planning and executing works, while others have separated the two functions, often by privatizing the works arm of the department and becoming a "road agency". This latter approach is proving (worldwide) to be more effective in sustaining the road assets.[12] Some countries in the Pacific that adopt this style are PNG and Fiji. In PNG, however, lack of funds has slowed the progress, and in Fiji, recent political events have reversed the situation. National transport development plans are coordinated between transport, works, planning, and finance departments.

24. Although there have been some moves toward private sector involvement in ports, particularly in terminal operations, major ports and maritime infrastructure are usually provided by central governments, while provincial or local governments administer smaller facilities. The progress toward private sector involvement is patchy, with some examples of stop–start processes on the road to partnerships. As an example, PNG has been endeavoring to move down the path to privatization of its ports operations, only to have progress stopped for several years as political directives cut across the process. In Fiji, recent ADB finance for developments was conditional on competition in stevedoring (container terminal operations), but progress toward this goal has been more complicated and slower than expected.[13]

25. Globally, there have been moves to liberalize markets, relax ownership and control regulations, and bridge national boundaries, particularly in Europe, Africa, and Asia. Airline privatization and market liberalization have been key factors in providing the impetus for such changes. Such developments have had little impact so far in the Pacific, where aviation liberalization has progressed slowly. Some islands nations now have more frequent airlines services, especially on routes linked to the major markets of Australia and New Zealand, but

[12] IEG. 2007. *A Decade of Action in Transport: An Evaluation of World Bank Assistance to the Transport Sector.* Washington, DC: World Bank.
[13] ADB. 2007. Pacific Regional Transport Analysis, technical consultants report, 36661. Manila.

direct inter-islands connection is very limited or once a week at most.[14] Consolidation, although desirable, has made only limited progress so far and regulation is carried out through government aviation agencies. The Pacific Aviation Safety Office (PASO) was established to enable small island states to better meet international aviation safety requirements, especially in operational aspects such as air traffic control, airport inspection, aviation security, and airworthiness of aircraft. This has been a partially successful venture, but the organization is under-resourced and stretched, according to IED mission discussions with some officials from the member states.

C. ADB's Pacific and Country Partnership Strategies

26. ADB's strategy for engagement and operations in the Pacific region from 1995 to 2010 has been articulated and updated in four papers prepared in 1995, 2000, 2005, and 2009. Prior to 1995, strategies were only prepared for individual countries. The rationale for ADB support in the transport sector is subsumed in the strategic objectives for achieving the stated goals of (i) better access to income opportunities through efficient markets and (ii) better social service outcomes for the poor.

27. To raise the quality of basic social services, especially access related to gender, the vulnerable, and rural and outer island communities, there is a need to improve land, sea, and air transport links and ensure their sustainability. Appendix 2 summarizes the various transport elements in ADB's country strategies, and how regional strategy has evolved in the Pacific region.

28. ADB's strategy during the last 15 years has focused on the broader goal of creating an enabling environment for the private sector.[15] The current Pacific approach (2010–2014) continues to focus on greater private sector investment, and considers transport an operational priority aimed at fostering connectivity, supporting inclusive and environmentally sustainable growth, as well as regional cooperation and integration. To improve the effectiveness of future development operations in the region, the strategy calls for frequent high-level consultation and greater coordination between development partners, while laying the groundwork for a regional approach to the global economic crisis and responding appropriately to climate change.

29. Regional cooperation in transport advanced slowly and unevenly in the Pacific prior to 2005. The 2005 Pacific Strategy, however, assumed that the establishment of a country-driven Pacific Plan[16] would improve prospects for pursuing cooperation opportunities. The plan reflected the development aspirations of the Pacific countries, common problems and opportunities faced by such member countries, and the benefits that regional solutions could potentially offer. For safer skies, ADB provided support for the establishment of PASO through a sovereign public sector regional loan approved in 2005 and guaranteed by four participating Pacific members. Countries of the region are today working together in the following ways: (i) regional cooperation, (ii) regional provision of services, (iii) regional market integration, (iv) managing the environment, and (v) improving governance and preventing corruption.

30. In addition to the public services already being delivered regionally, there is potential for more and faster cooperation and integration in areas such as disaster preparedness, trade

[14] ADB. 2007. *Oceanic Voyages: Aviation in the Pacific*, Pacific Study Series. Manila.
[15] A 2004 ADB assessment of private sector development concluded that the private sector was essential to growth and recommended further reforms for an enabling environment that would (i) strengthen fiscal positions, (ii) improve the environment for private sector development, (iii) enhance public sector performance, and (iv) improve productivity to boost growth in the medium term.
[16] Pacific Islands Forum Secretariat. 2005. *A Pacific Plan for Strengthening Regional Cooperation and Integration.*

liberalization, communications, climate change mitigation, and capacity development. Country partnership strategies vary in scope, but have similar objectives. In PNG, for example, the main goal is to scale up support for infrastructure development and management, while in Vanuatu the emphasis is on connectivity to markets and social services.

D. Key Development Partners' Strategies

31. Constrained by limited public finances and restricted access to local private capital, Pacific DMCs have relied on development partners to provide additional support for their economies to varying degrees. This has taken the form of bilateral aid, especially from Australia, Japan, New Zealand, the United Kingdom, and the United States, and multilateral support from development partners such as ADB, the European Commission (EC), and the World Bank. Meanwhile, the United Nations Development Programme has coordinated the activities of the various United Nations agencies. During the 1990s, the aid programs in the Pacific were largely sponsor-driven and often uncoordinated, but aid coordination has progressed substantially in recent years. For example, there are regular meetings of the Pacific Region Infrastructure Facility (PRIF). PRIF has regular meetings attended by sector specialists and runs a technical assistance facility (the Pacific Infrastructure Advisory Center) implemented by ADB on behalf of other partners. It focuses primarily on transport and other infrastructure sectors (i.e., energy, telecommunications, waste management, and water supply). PRIF's coverage is almost the same as that of ADB's Pacific Department, except it does not include Fiji, PNG, and Timor-Leste, but adds Niue. The original partners were four: ADB, the Australian Agency for International Development (AusAID), the New Zealand Aid Programme, and the World Bank Group. The EC and the European Investment Bank joined in March 2011. Proposals for projects in the pipeline are shared, as are approaches to commonly faced issues. PRIF aims to deliver harmonized support, better prioritization, better policy frameworks, sustainable infrastructure, and stronger capacity in the Pacific island countries.[17]

32. Some critics have doubted whether external support has been successful in promoting economic growth and argued that the development partners contributed to weak performance in the Pacific by underwriting the cost of large but unresponsive public sectors; undermining the domestic private sector, e.g., by promoting commercial state-owned enterprises; or by delivering unsustainable prestige infrastructure projects with high recurrent costs. Aid may have actually reduced the imperative to focus on generating domestic growth. The World Bank agrees that aid dependence can weaken accountability and observes that the Pacific countries receive the highest per capita donor aid of any region. It contends that appropriate infrastructure development can only be achieved and sustained with institutional arrangements and governance structures that offer incentives for good performance. Experience elsewhere shows that the outcomes for infrastructure investment are significantly better when public sector entities operate commercially, and at arm's length from day-to-day political interference.[18] ADB notes that the production of national development plans has had a mixed effect in the Pacific, with a history of fine words too infrequently translated into sustained action, and with insufficient attention to hard choices and prioritization in the face of resource constraints. It also comments that these are not new issues and have been debated before by Pacific DMC governments. However, these issues are yet to be effectively tackled in most Pacific countries—in some cases because development-partner-driven approaches failed to cement Pacific DMC ownership.[19]

[17] Pacific Region Infrastructure Facility, 2011. www.theprif.org.
[18] World Bank. 2006. *The Pacific Infrastructure Challenge: A Review of the Obstacles and Opportunities for Improving Performance in the Pacific Islands*. Washington, DC.
[19] ADB. 2004. *Responding to the Priorities of the Poor: A Pacific Strategy for the Asian Development Bank*, 2005–2009. Manila.

III. EVALUATION CRITERIA

33. Evaluation of the Pacific region's transport sector is based on the six evaluation criteria specified by IED's Guidelines for the Preparation of Country Assistance Program Evaluations.[20] Thus, the overall assessment is based on the cumulative weighted evaluation of strategic positioning, relevance, efficiency and effectiveness, and sustainability and development impact. The sections A through F discuss these criteria with respect to transport investment project, while section G discusses the criteria with respect to technical assistance projects.

A. Strategic Positioning

34. The strategic positioning of the investment projects in the transport sector is *satisfactory.* However, ADB will have to make special efforts to overcome significant constraints that make progress difficult in some island countries. There is strong commonality in the constraints highlighted in country strategies relevant for the period of this assessment. For example, Solomon Islands' country strategies consistently indicated constraints due to limited managerial capacity; in particular, the need to improve functions related to local government planning, and financial and operational management. In the case of PNG, sound fiscal management and control of corruption were considered the most critical requirements. These constraints were also consistently targeted in the succeeding country strategies. In other countries, traditional project support supplemented by technical assistance has been provided for infrastructure, education, health, and public administration. Chief among the constraints are inadequate human resource capacity, debt commitments, and political issues that have affected all sectors. However, there are also exogenous factors such as natural disasters, global economic and financial crises, and the effects of climate change. ADB leveraged its limited resources (especially concessional loans) through joint work with other development partners. Usually, ADB took the lead among multilateral financing institutions in physical road improvement investments. On the other hand, bilateral donors (e.g., AusAID) often led capacity development and policy advisory initiatives, as their presence on the ground (in the form of placing technical advisors) was longer-term than that of ADB consultants as such ADB did not have a direct channel to address policy and longterm capacity development issues (para.104). [21]

35. ADB's approach to development in the Pacific has been guided by a common framework since 1996. The first Pacific strategy (1996–2000) [22] focused on (i) creating an enabling macroeconomic environment; (ii) reducing the size and raising productivity of the public service; (iii) creating an enabling environment for the private sector and lowering costs for domestic and foreign business; (iv) increasing returns from the productive sectors; and (v) promoting regional cooperation, including resource management, trade, and transportation. The second Pacific strategy (2000–2004)[23] recognized the disappointing growth performance and increasing poverty and included lessons from the implementation of the first strategy. The second strategy proposed continuing support for economic management, governance, and public sector reform, but sought to achieve greater country ownership.

[20] ADB. 2010. *Revised Guidelines for the Preparation of Country Assistance Program Evaluations.* Manila.
[21] There are exceptions: in recent years for instance, the United States' Millennium Challenge Corporation was the largest donor in the road sector in Vanuatu, and in PNG, AusAID is funding the physical investment along with its support on transport policy.
[22] ADB. 1996. *Strategy for the Pacific: Policies and Programs for Sustainable Growth*. Manila.
[23] ADB. 2000*. A Pacific Strategy for the New Millennium*. Manila.

36. Under the 2005–2009 Pacific strategy, ADB dealt with the environmental, economic, and political fragilities of the region, promoting inclusive and sustainable economic growth.[24] It emphasized capacity development and good governance in public sector land development. The strategy was to maintain a focus on country-specific engagement and operations with emphasis on more effective and incisive processes, but with regional cooperation playing an important complementary role. In 2009, ADB launched a fourth approach to development efforts for 2010–2014.[25] The Pacific approach, which was guided by Strategy 2020[26] and the Pacific Plan,[27] will not be directly evaluated by this study. It represents a shift toward how development support can best be delivered on the ground.

37. While the transport sector has been included under the broader umbrella of private sector development, transport features strongly in many of the individual country partnership strategies (CPSs) and the country operations business plans. The regional transport sector strategy can accordingly be imputed from these documents, the main features being: (i) fostering connectivity, supporting sustainable economic growth and creating an enabling transport environment for the private sector; (ii) improving access to income opportunities and markets for rural and outer island communities; (iii) encouraging regional cooperation and responding to climate change as appropriate, and (iv) the above to be carried out against a background of improving governance and capacity in the public sector.

38. The Pacific DMCs face, to differing degrees, diseconomies of scale in public administration, with proportionally higher costs than larger economies. The quality of public administration generally suffers from a shortage of professionally qualified staff and losses of skilled personnel to Australasia and elsewhere, attracted by higher remuneration and better conditions of service. This is most noticeable in Solomon Islands, less so in Samoa and the Cook Islands. In Fiji, there have been losses of skilled Indo-Fijians due to domestic political uncertainties. The limited institutional capacity constrains public policy formulation and effective absorption of aid flows. ADB's support for inclusion of components in its Pacific projects that tackle these shortcomings is therefore appropriate. However, such support has had less impact than it might have because it is fragmented, poorly monitored, and too limited. Pooling resources with other development partners in a regional approach could be more effective over time.

39. Solomon Islands is an example of countries where in recent decade ADB's program had to be restricted to nonlending resources pending progress in debt reduction. This was a pragmatic and sensible approach and the situation then improved to the point where lending could resume. For Vanuatu, ADB extended a program loan called VAN-1624 Comprehensive Reform Program in 1998, in response to the disarray in macroeconomic policy stemming from fiscal fragility and political instability. The situation was exacerbated by the growing public disenchantment with continuing economic stagnation, poor social services, riots, and inefficient public administration. The government demonstrated its commitment to the implementation of the reform measures, redefined commercial functions of government, and largely removed political interference in public services. From early 2000s, backed by a booming tourist sector and strong performance of the service sector, and aid flows (particularly bilateral grants), Vanuatu outperformed most other Pacific island countries, and with prudent fiscal management, did not borrow from multilateral banks, including ADB until 2009.

[24] ADB. 2005. *A Pacific Strategy for the Asian Development Bank 2005–2009: Responding to the Priorities of the Poor*. Manila.
[25] ADB. 2009. *ADB's Approach to Assisting the Pacific (2010–2014).* Manila.
[26] ADB. 2008. *Strategy 2020. The Long-Term Strategic Framework of the Asian Development Bank, 2008–2020.* Manila.
[27] Pacific Islands Forum Secretariat. 2005. *The Pacific Plan.*

40. The nature of political instability has varied considerably. In Fiji, a military coup in December 2006 prompted ADB, in concert with most other development partners, to suspend the processing of new operations, although existing commitments were allowed to be completed. Since ADB's operations were based on a CPS agreed with the previous, democratically elected government, this strategy has been on hold pending progress with a set of conditions laid down for dealing with such cases.[28]

41. In Solomon Islands, there was a period of pronounced political instability between 1999 and 2003, when inter-island conflict resulted in loss of life and damage to property. This led to various reforms aimed at reconciliation and rehabilitation, but because of deteriorating economic conditions exacerbated by natural disasters, the peace remains fragile. Other countries affected by instability include the Marshall Islands, which experienced political turmoil in 2008–2009, and PNG, where security and governance issues have hampered development progress.

42. In the **road subsector** the strategic objectives have been to improve access to support economic growth, while ensuring connectivity between resources, people, and markets. Although there is no clear partnership framework agreement for the transport sector with other major external partners, there is a "common understanding" that bilateral partners focus more on capacity development and policy advisory assistance, and multilateral development banks more on physical investment in the sector. Facilities such as PRIF and the Pacific Infrastructure Advisory Center, as well as various Pacific island forums, serve as platform to coordinate external input and discuss sector priorities and focus. The roads have generally been prioritized adequately, supplemented by establishing infrastructure maintenance funds for budget appropriation (e.g., in PNG and Solomon Islands), but in PNG, the sustainability of the completed infrastructure is threatened by lack of maintenance, inadequate capacity, and insufficient funding. A road fund was set up, but its annual collection of 16 million kina was barely enough to finance the proposed rehabilitation of the Highlands route (see also Table 2). In Solomon Islands, the lack of human resources is being tackled by establishing a central project implementation unit.

43. Two goals have prevailed in the **maritime subsector**. The first was to improve port capacity, safety, and efficiency because this directly impacts the cost of importing and exporting goods. The second goal was to improve shipping services to the often remote outer islands. ADB has long focused on the first goal, which is to upgrade key port facilities (e.g. Fiji, PNG, and Vanuatu). This was supported by other initiatives such as aid to navigational system (e.g. PNG) or establish maritime safety agency (e.g. Solomon Islands) through loans and technical assistance. In recent years, ADB initiated support to domestic shipping schemes (e.g. Solomon Islands and Vanuatu), which are facing some initial challenges. Overall, the strategic positioning has been focused and selective, aiming to foster connectivity and improving access to markets to rural and outer islands. Those are the key thrust of the Pacific approach and CPSs (para. 37). Some outer islands are at considerable distances from the more inhabited islands. Over time the populations of the outer islands have declined and this makes ferry services for goods and people uneconomical, especially given the volatility of fuel prices. A private ferry operator interviewed by the IED mission believed that he could not stay in business for more than a few years longer given the depopulation of the outer islands. Such services are usually operated under substantial government subsidies. This situation is unlikely to change in the short term.[29] IED undertook a brief literature review of other island ferry services covering the Caribbean, the

[28] ADB. 2000. *Guidelines for Dealing with De-Facto Governments*. Manila; and ADB. 2007. *Fiji Islands: Reengagement Approach*. Manila.
[29] ADB. 2007. *Oceanic Voyages: Shipping in the Pacific*, ADB Pacific Studies Series. Manila.

Maldives, the Hong Kong outer islands, and the Scottish Isles, which showed that many services are operated by the private sector on commercial principles where volumes are sufficient, but subsidization is a common policy where demand is limited or the population is very poor (as in the Pacific).[30]

44. For the **aviation subsector**, the focus has been on improving airport infrastructure, capacity, and safety. The safety issue is also monitored by the International Civil Aviation Organization (ICAO), which ensures that international standards and best practices are upheld. ADB has recognized that domestic air services are critical in countries where land transport is difficult and where, as in PNG, the development of resource extraction requires effective air transport services to remote areas. In 2007, the Pacific Islands Forum Secretariat promulgated the establishment of a single Pacific air service market through the Pacific Islands Air Services Agreement.[31] This liberalization move was only partially successful, as just six states initially agreed to participate.[32] The initiative was picked up by ADB, which led to a regional loan (2183) that established PASO with six founding members (Fiji, Kiribati, PNG, Samoa, Solomon Islands, and Vanuatu) and later added five more members (Cook Islands, Niue, Nauru, Tonga, and Tuvalu). Australia and New Zealand are non-voting members of the PASO council, but not signatories to the Pacific Island Aviation Safety and Security Treaty, which entered into force in June 2005 with five signatories and governs PASO operations.

45. **Emergency assistance** has been made available either on the basis of recovery from natural disasters such as cyclones (Cook Islands) and flooding (Fiji) or to rebuild basic infrastructure destroyed in civil unrest (Solomon Islands). However, the IED mission to the Cook Islands and Fiji reported that given the time that elapsed after the emergency before substantial funds could be deployed, it is unclear whether all of ADB's funds were spent effectively and on the right priorities. The Post-Conflict Emergency Rehabilitation Project for Solomon Islands has generally repaired the damaged roads and other key facilities on Guadalcanal and Malaita islands. This matter is discussed further under effectiveness and efficiency.

46. **Regional cooperation in transport**. ADB's strategy has been to focus resources for the transport sector primarily on four Pacific countries. It begs the question as to how effective this course of action has been. Certainly, to dilute the support program further would likely have been less effective. The assumption has been that other donors and self-financing would fill the gap in transport needs in those countries not funded by ADB. To some extent, though somewhat ad hoc, this has been correct. For example, New Zealand has been active in aviation in Kiribati and outer island transport in Tuvalu while Australia and the World Bank have been active in improving road maintenance in Tonga, Australia in climate change in Samoa, and the United States in disaster risk reduction in the Marshall Islands.

47. The Pacific Plan, endorsed by ADB, other donors, and the leaders of the member countries in 2005, has made some progress relevant to this sector review. For example, the Pacific DMCs in recent few years cooperated to promote tourism to increase the number of cruise liners visiting the region. Maritime safety regulations were improved after the tragic sinking of the passenger ferry "Princess Ashika" in Tonga in 2009. PASO continues to deliver services such as airport, aviation security, and airworthiness inspections, although the IED

[30] The motivation to subsidize is sometimes to increase tourism revenues, but this will not materialize if old and run-down ferries are used. This is an area requiring deeper investigation—attracting more tourists to the outer islands would necessitate greater private sector investment in hotels and other infrastructure, which may be unlikely since potential investors would probably have less expensive and less risky investment opportunities elsewhere.

[31] ADB. 2007. *Oceanic Voyages: Aviation in the Pacific*, ADB Pacific Studies Series. Manila.

[32] ICAP Secretariat. 2009. *Overview of Trends and Developments in International Air Transport.* Canada.

mission reported that the office appears to be under-resourced and some development partners indicated that PASO needs more powers, as it does not have sufficient political weight to enforce needed changes.[33] At the 2009 Pacific Islands Forum, however, leaders expressed concern that the Pacific region was off-track to achieve the Millennium Development Goals by 2015. This resulted in the Cairns Compact, which aims to accelerate progress toward the goals by strengthening forum countries' leadership of their own development agenda, and by encouraging development partners to work together more effectively.[34] The Cairns Compact established review and reporting processes and set out the principles to guide these processes in line with international best practice.[35]

48. While there are constraints on regional cooperation for the Pacific countries because of the distance and the very different conditions of each country, the potential for cooperation between the donors through PRIF is high. PRIF was established in 2009 and is involved in long-term transport infrastructure support in several Pacific countries. In Samoa, PRIF partners led by the World Bank helped respond to the 2009 earthquake and tsunami through the rehabilitation of more than 30 km of roads and 6 km of damaged seawalls. In Solomon Islands, ADB took the lead in supporting long-term transport sector activities that have let contracts for the maintenance of over 140 km of roads across three provinces, and have started significant rehabilitation of bridges after flooding in 2009 and 2010. In Tonga, the World Bank-led Tonga Transport Consolidation Project will improve policy, planning, and regulation across land, air, and sea transport. In Vanuatu, AusAID has initiated the Vanuatu Transport Sector Support Program, which will work with the government to strengthen systems to finance and manage infrastructure works and ensure a more reliable and better maintained transport system. The first cofinanced ADB–World Bank project in the Pacific, the Kiribati Road Rehabilitation Project, is intended to contribute to the rehabilitation and upgrading of the road network in South Tarawa; improvements to the road will mean that 42% of Kiribati's population will be better connected to clinics, markets, and services. This is an important cooperative endeavor because it includes activities to strengthen the sector, such as review of land transport-related institutional capacities, identification of cost recovery options, and preparation of legislation reflecting the chosen options.

49. From IED's discussions with other development partners, all parties appear to be strongly committed to the idea of joint action, but it will be some time before the initiative can be evaluated properly and before it can be ascertained whether all stakeholders share the same degree of commitment. However, ADB's leading role in this new direction shows insight and flexibility in its strategic positioning. Stronger partnerships are being forged and duplicative efforts reduced. Planning is being undertaken in harmony with the other development partners and this initiative could evolve into a model that can be replicated elsewhere. From time to time in the past there have been instances of misunderstandings between the development partners. In Solomon Islands, for example, ADB required that a vulnerable coastal road be redesigned along a route running further inland but, after board approval, reverted to the original coastal location. These delays led to the EC having to revise the cofinancing agreement, as it was not clear to EC on a "sector loan" modality can see location changes. A late offer from other cofinancier of grant financing in the Cook Islands delayed ADB's loan for cyclone emergency assistance while the government considered this new option. In the end, the government

[33] *Pacific Plan 2010 Annual Progress Report* and separate discussions with AusAID, New Zealand Aid Programme, and the World Bank.
[34] www.ausaid.gov.au/cairnscompact.
[35] As articulated in the Paris Declaration on Aid Effectiveness and the Accra Agenda for Action. www.OECD.org

decided to accept both the grant and the loan, but this decision took too long and could have been expedited with better harmonization. The development partners need to figure out how best to coordinate aid in instances where both grant and loan funds may be available. These issues would likely have been resolved earlier had PRIF already been operational.

50. There is, moreover, a definitional anomaly still to be ironed out. Currently PNG is not a member of PRIF, although it is a member of the Pacific Plan. The World Bank does not include PNG in its Pacific region, but ADB does. There may thus be a case for treating PNG differently since its resource-based economy accounts for two-thirds of ADB transport sector lending in the Pacific and this distorts the picture of overall lending in the remainder of the Pacific portfolio. The fourth Pacific Approach (2010–2014) refers to the importance of analytical work and awareness raising of better policy and institutional settings in partnership with development partners. While it is good that there are various channels for donor discussions, and subgrouping of countries in the region, there is a need for much clearer role demarcation (how best to complement each other beyond cofinancing) and agreements on niche areas (comparative advantage or interests) for various donors in each of the different subsectors.

B. Relevance

51. Support to the Pacific region's transport sector is *relevant* based on (i) the degree to which ADB support was consistent with country needs and its strategic priorities as articulated in the CPSs, and (ii) the quality at entry of ADB support, and harmonization with development partners. These subcriteria are closely linked with those of strategic positioning, but relevance is more focused on the support programs of loans, grants, and TA projects, whereas strategic positioning assesses the coherence and the strategic direction of the subsectors. Although ADB support to the road subsector is predominant in the transport portfolio, substantial investments were also made in the maritime subsector, besides smaller amounts for aviation and emergency assistance in line with the priorities of the development plans of the various governments. The current Pacific strategic approach focuses on greater private sector investment, supported by transport as an operational priority aimed at fostering connectivity and supporting sustainable growth, regional cooperation, and integration. In this context, the provision of transport infrastructure has been appropriate, but the success in encouraging private sector-led growth is more muted.

52. In general, ADB support has been consistent with country needs and ADB strategic priorities as presented in the national transport development plans (where appropriate) and the CPSs. For example, PNG focuses on roads in the Highlands to ensure better access for extractive industries and agriculture, on making airports more efficient and safer, improving port capacity, and strengthening transport policy reform; Solomon Islands concentrates on road improvement preceded by emergency assistance, stronger disaster recovery planning after a post-conflict emergency rehabilitation project, and maritime support; and Timor-Leste focuses on improving infrastructure availability cost-effectively and sustainably. Natural disasters often have a strong impact on particular economies, but such events are unavoidable. ADB’s intention to provide suitable emergency assistance and steps to ameliorate negative climate change effects are thus relevant to the Pacific environment.

53. ADB has introduced the multitranche financing facility (MFF) in two projects in PNG: the Civil Aviation Development Investment Program and the Highlands Region Road Improvement Investment Program. The MFF has expanded the range of ADB's financial instruments and modalities. It enables ADB to invest programmatically with flexibility, and reduces over-reliance on stand-alone project approaches that can involve repetitive and cumbersome business

processes.[36] This said, the MFF is complex and PNG's capacity is weak. It will therefore be necessary to monitor the projects carefully against performance indicators and to ensure frequent supervision as the program proceeds.

54. **Roads subsector.** ADB diagnosed the urgent need for better road maintenance practices and has been supportive of highly relevant initiatives such as the introduction of the road asset management system (RAMS) within the Department of Works of PNG. Significantly, this serves as a planning and budgeting tool that helps strengthen the credibility of the department's budget submissions. Updating of the national transport development plan for PNG was equally relevant to the need to open up the country for the export of minerals and the new $15 billion liquefied natural gas project; as was TA aimed at attracting international contractors to participate in road development in PNG to counteract a negative perception about bidding for work in the country. In Fiji, early road projects placed an emphasis on upgrading, but a shift toward rehabilitation and maintenance emerged under the Third Road Upgrading Project (FRUP 3). Underfunding of maintenance activities had led to a growing backlog of maintenance needs, reflected in rising maintenance costs. As a corollary objective, the government aimed to recover recurrent maintenance costs through user charges. These were to be levied in proportion to the costs generated by the respective road-user groups. In the long term, road charges and budget allocations were to be progressively increased. However, the advances made under this project stalled after the military coup. Another issue that needs further attention in some parts of the Pacific is the need to ensure appropriateness of road design. There is a tendency to prefer more expensive double bituminous surface treatments even on roads with lower traffic volumes. Presumably this is justified with the notion that life-cycle costs are lower, but this is difficult to confirm. Given the generally challenging terrain and climate conditions in the region, it is necessary to improve the delivery and efficiency of maintenance itself. In the Timor-Leste Emergency Infrastructure Rehabilitation Project (phases 1 and 2), ADB funded road repairs due to budget limitations, whereas the original intention was to fund road rehabilitation.

55. Other relevant initiatives include TA for infrastructure service delivery improvement in the Cook Islands; TA for road safety and traffic management in Fiji, which was relevant because of the deteriorating accident rate there; similar TA for road-user cost recovery and safety strategies in Tonga; and TA for transport sector improvement in Timor-Leste, which streamlined strategic planning in the sector. Support for transport sector development plans in Pacific DMCs also has been a basic building block.

56. Most Pacific DMC works departments recognize the dangers of not controlling heavy vehicle overloading, but there are few attempts to implement policies that enforce overloading regulations where they do exist. Vehicle overloading inflicts substantial damage to the road pavements and reduces the design life of the roads. The Second Fiji Roads Upgrading (FRUP 2)[37] included this aspect when it set up a Land Transport Authority, but overloading control is

[36] The MFF is designed to cut the financial and nonfinancial costs of doing business, and open the way for more structured cofinancing. Lessons from the implementation of one tranche can be applied to the next. MFF requires a significant assessment of the sector (called a roadmap), and a detailed investment plan and program (including attention to development impact, timing, and scope of projects), as well as an appraisal of the capacity to administer and implement all the elements, including policy or regulatory reforms. Processing an MFF requires the development of a framework financing (or partnership) agreement, which records the clear understandings and objectives of the parties, sets out the reasons the MFF is being provided, and targets a set of specific physical and nonphysical investment activities agreed. All MFF projects must comply with ADB's standard policies, including procurement guidelines, governance and anticorruption policies, and policies on safeguards and social dimensions.

[37] Details of this project and all other transport projects in the Pacific approved or implemented during 1995–2010 are in Appendix 3, Table A3.1. They are not footnoted when referred to in the text.

generally poorly enforced in the Pacific; there are few weighbridges and insufficient resources to operate them efficiently. It is likely that it will be some time before this matter receives the attention it deserves, as the political will does not appear to be there to give the issue priority. Nevertheless, ADB should continue to pursue this goal and offer TA when appropriate.

57. **Maritime subsector.** A wide range of TA and lending projects was supported during the review period according to the circumstances of individual countries. While this subsector is not the highest priority in either the long-term strategic framework or the new Strategy 2020, the needs of Pacific DMCs are unique. Institutional strengthening of port entities was important, but usually a relatively small component of the projects. In PNG this involved improving the organization of the Harbors Board, and training and institutional improvements in the areas of financial and operational management. Similar capacity development was undertaken in Solomon Islands and Tonga to enable compliance with international standards. At the same time, maritime legislation was updated. However, institutional capacity is still reportedly weak, suggesting that the scale of the interventions was and still is too small. A relevant project in PNG was the Rehabilitation of Maritime Navigational Aids. This was originally a component of the Transport Infrastructure Development Project, but the scope was too ambitious both for the capacity of PNG and the availability of counterpart finance. As a separate project it worked much better. In Fiji, there was a Port Development Project and TA for port asset management improvement, which was made more relevant because it had an inclusive process to involve all stakeholders.

58. In addition, there were projects designed to improve inter-island transport in Solomon Islands and the Marshall Islands. The latter project was aimed at improving the outer island infrastructure and navigational aids, but it failed to achieve its objectives because of escalating costs during a long preparation period and was cancelled. The former project, Solomon Islands Domestic Maritime Support, is still active and is innovatively trying to assist the implementation of a franchise shipping scheme to the various islands. While the results of this venture are as yet unclear, the concept is certainly relevant. Also on the investment side, a major project is for the PNG Lae Port Development Project to develop a new facility in the tidal basin adjacent to the existing old port. This expansion was justified, as the current Lae port is reportedly on a geological fault line and thus at risk of seismic disturbances, but progress has been delayed and additional financing will most likely be sought.

59. **Aviation subsector.** While aviation has played a small part in multimodal development plans for several Pacific countries, the PNG Civil Aviation Investment MFF is by far the largest program in this subsector. Given PNG's dependence on domestic air travel because of difficult and dangerous conditions for overland travel, this program is highly relevant, involving the upgrading of 21 national airports in four or more funding tranches. It is intended to improve compliance with ICAO safety and security standards and to prepare and administer long-term maintenance contracts. The program is also expected to build capacity in conjunction with AusAID; the total cost is estimated at $640 million. The idea of establishing PASO was relevant to the whole region. As mentioned under the maritime subsector, it may be argued that there are higher priorities than aviation, but Pacific-wide air safety issues and special circumstances in PNG (agreed in the CPS) suggest that exceptions be made.

60. **Emergency assistance.** In the Pacific, disasters are relatively frequent and ADB is cognizant not only of the humanitarian aspects, but especially of the impact of such events on the poor. Support has been given to Samoa for cyclone, tsunami, and earthquake damage repairs, to Vanuatu and the Cook Islands for cyclone emergency assistance, to Timor-Leste for emergency infrastructure rehabilitation, and to Solomon Islands for post-conflict emergency

rehabilitation. This said, a financial development institution like ADB has a rather different role than agencies that supply immediate relief to the victims of the disaster. It focuses more on restitution of infrastructure, ensuring that there is an improvement in the facilities provided. In the Cook Islands it was found that although ADB allowed retroactive financing to speed up the relief it could provide, these funds sometimes could not be disbursed because the paper trail was inadequate. One review mission noted that in hindsight it was difficult to apply "emergency" to this loan. While the five cyclones that struck the Cook Islands in 2005 without doubt caused a lot of damage, after initial cleaning-up and repairs all utilities in Rarotonga were operating within a week. As foreign aid was mobilized, the need for loan funding became less important and staff was tasked to prepare several changes in scope to respond to new and often trivial repairs. The government emphasized fiscal prudence and wanted a more substantial project to justify the ADB loan, hence the selection of Avatiu harbor as a subproject. Such support was thus only partly relevant. Similarly, renovating the harbor, which also serves as yacht marina in Avatiu may not have been the most appropriate use for the remaining funds once the immediate crisis was over.[38] Grants to Timor-Leste for emergency infrastructure rehabilitation were better targeted and in line with the government's urgent need to restore damaged roads. The concept of breaking down previously planned large projects into parcels small enough to be handled by local contractors was highly relevant, and practical lessons could be replicated elsewhere—e.g., avoiding overloading government staff, drawing on independent technical evaluations of agency needs, enhancing the role of national consultants, and linking the work plans of advisors to mutually agreed capacity indicators.[39]

C. Efficiency

61. ADB support to the transport sector in the Pacific region is *less efficient* when it comes to portfolio performance and the economic viability of the projects. Portfolio performance is based on the assessment of implementation punctuality and cost overruns. Lack of data makes it difficult to recalculate economic internal rates of return (EIRRs), but since the original EIRRs at the time of appraisal were not significantly above 12% in many cases, the chronic delays and increased costs would have brought the EIRRs even further down. Out of 17 closed projects, 29% (five projects) encountered cost overruns at an average of 46% of the original appraisal value (see Appendix 5, Tables A5.3 and A5.4). Out of 18 active projects, 2 have formal cost overruns, while 5 other projects are at serious risk after having suffered delays. A variety of reasons are put forward for such overruns, including higher global prices for major commodities such as steel, fuel, and bitumen, but some overruns were caused by inadequate due diligence in design or poor estimation of quantities at project preparation. Out of 34 projects and programs in this study, 10 (29%) were delayed by more than 5 years and 6 (18%) took more than 7 years from approval to completion (most of these 6 needed supplementary finance because costs for materials had escalated during the delays). Other delays were caused by lack of capacity on the borrowers' side. Because higher cost variations are likely given the conditions prevailing in the Pacific, there is a case for increasing the standard ADB allowance for price contingencies in this region.

62. **Roads subsector.** EIRRs calculated at completion for the Second Fiji Roads Upgrading (FRUP 2) and PNG transport infrastructure development projects are in the range of 16–28% and 7–19%, only slightly lower than estimates at appraisal. These are acceptable results, and

[38] The marina of Avatiu Port, while it is the main port in the country, is catering mainly to boats for recreational fishing, especially for tourists. It is not a facility for the very affluent, but users have to be relatively well off by Cook Island standards.

[39] ADB. 2011. *Timor-Leste: Country Strategy, 2006–2010–Final Review Validation.* Manila.

had it not been for execution and implementation problems (see Appendix 5, Table A5.2), the EIRRs could have been even higher. In Fiji's case, the vehicle operating cost values were likely overstated, because a less sophisticated highway development model was used.[40] The Timor-Leste Road Sector Improvement Project achieved an EIRR of 16%, but was completed 15 months behind the original schedule,[41] and the figure was significantly lower than the 24% estimated at appraisal because traffic growth was lower than expected. In both Timor-Leste and Fiji there has been a sharp increase in the use of motorcycles as a cheaper form of transport. Since motorcycles affect road capacity rather than strength, traffic growth figures should be treated cautiously.[42] The Timor-Leste Emergency Infrastructure Rehabilitation Project (Phase 2) was rated *less efficient* with an estimated EIRR of 10.6%, below the 12% threshold. It was completed 38 months behind the original schedule. Calculations for all these projects also assume good maintenance practice and traffic growth figures as predicted. However, traffic growth data in Fiji have been flatter than expected due to the poor performance of the economy, while in all three countries (Fiji, PNG, and Timor-Leste) the future quality and extent of maintenance is questionable. Inefficiencies show up in the delays and cost overruns. The Fiji project cost 47% more than expected and the PNG project was delayed because of insufficient counterpart funding and capacity issues. The closing date in this case was rescheduled five times and several components had to be dropped. Another PNG project, the Road Maintenance and Upgrading Project, is still active after improving only half the roads intended under the loan. A supplementary loan is now in place. Reasons for the shortfall include delays in implementation and cost estimates that were too low. Bids for contracts were much higher than expected, highlighting the lack of competition in PNG's construction industry. In Fiji, FRUP 3 required a supplementary loan of $26.8 million, which was approved in 2009. The overrun stemmed from contract delays caused by nonperformance and poor quality among the contractors. Weak supervision was partly to blame.

63. **Maritime subsector.** Results were very mixed and below expectations due to inadequate project preparation. For the Fiji Ports Development Project the EIRR is estimated at 19.8%, at project completion. Return on assets employed showed that the project could break even by 2019, but this assumes that the Fiji economy will resume growth in an uncertain political environment. Port service charges were expected to decrease, but actually increased.[43] The Marshall Islands Outer Island Transport Infrastructure Project was cancelled after suffering from long delays in the early stages of implementation. For the PNG Rehabilitation of the Maritime Navigational Aids System there were delays in establishing the National Maritime Safety Authority (NMSA) and part of the training cost could not be covered before loan closure. For Vanuatu's Santo Port Project, options to build a new wharf may not have been based on accurate cost estimates.

64. With regard to active maritime projects, Cook Islands' Avatiu Port Development has experienced a cost overrun of 31% after a 6-month delay in securing suitable consultancy

[40] The RTIM3 model used in Fiji in the 1990s calculated savings arising from road improvements to existing roads for individual cost components. Its validity is limited to rural roads carrying relatively low traffic volumes. This model has now been superseded by the HDM 3 and 4 models, which would have calculated lower EIRR values. See ADB project completion report for FIJ-22138 (1999) and the ICR 20142-FIJ (2000) by the World Bank, which was a cofinancier.

[41] ADB. 2011. *Timor-Leste: Country Strategy, 2006–2010–Final Review Validation.* Manila.

[42] Motorcycle growth is a positive development since it provides mobility for a poorer section of the population, but the nature of such two-wheeled traffic (it incurs more accidents) should be taken into account in the road safety design.

[43] In the report and recommendation of the President for this project, a key performance indicator was to achieve a reduction in the port service charge of F$150. (The charge had originally been introduced by shipping companies to put pressure on the ports to increase their efficiency and productivity.) However, the port service charge was actually increased to F$350 in February 2011.

services, while the PNG Lae Port Development Project has experienced substantial delays in the main contract and a significant cost overrun is expected by the implementing agency, Independent Public Business Corporation (IPBC). The relocation of project-affected people took longer than anticipated and there was an underestimate of the number of people needing relocation. IPBC has begun a dialogue regarding a possible supplementary loan. Finally, the PNG Community Water Transport Project has had a 24% cost increase after delays in site surveys, jetty designs, and contract approvals. The scope of work had to be reduced.

65. **Aviation subsector.** For the ongoing PNG Civil Aviation Development Investment Program, the EIRR is estimated at 45%, but the project is still in its early stages. Careful monitoring of the smaller, more marginal airports will be needed.

66. **Emergency assistance.** Again, a mixed picture emerges. Formal economic evaluations are not usually carried out due to the emergency nature of the projects, the lack of data, and sometimes because specific subprojects were not clearly prioritized during preparation (as in the Cook Islands). For the two-phase Timor-Leste Emergency Infrastructure Rehabilitation Project, extensive use of community labor for the roads program benefitted the population immediately and the roads were restored to the original productivity and efficiency levels. The PPER mission, however, undertook traffic counts along the project roads and carried out an analysis based on available data. These data should be treated with caution, but they showed an average EIRR of 10.6%. Cost overruns have also been recorded. In the case of the Samoa Cyclone Damage Rehabilitation the overrun was 13%, but in the Solomon Islands Post-Conflict Emergency Project it was a high 113%. This latter figure was the result of a combination of factors, including price escalation, delays due to political unrest, and revisions to the scope of works. During implementation, landownership issues arose as well as issues associated with community provision of road building materials. In the Cook Islands Emergency Assistance Project, once the immediate cleaning of general debris and repair of equipment had been achieved, there was a delay while the government prepared a recovery plan. The offer of grant funds from New Zealand made ADB funds less urgent to deploy. The government prepared a strategy for the use of aid funds, but this caused a delay of several months. ADB was then requested to direct its funding toward the rehabilitation of Avatiu Port, operated by the Cook Islands Port Authority. There was no estimate made of either the EIRR or the financial internal rate of return (FIRR) for this project, although it was assumed that it would generate commercial returns. However, it is questionable whether this was the best use of concessionary capital and it was certainly not directed to assist the poor.

D. Effectiveness

67. ADB support to the Pacific transport sector is *effective* based on the extent to which it achieved subsector-specific outputs and institutional development outcomes (see below). Typically, the majority of road projects can be assessed on their physical accomplishments, such as kilometers of road improved and length of road maintained. Outcomes are usually project-specific. The physical accomplishments normally result in reductions in travel time and vehicle operating costs, better all-weather connectivity, and better access from rural areas to markets and ports. Port improvements are usually assessed on the number of ships, throughput of containers, and tonnage moved of bulk shipments and break-bulk cargoes. Airport improvements are similarly assessed on the basis of aircraft movements and throughput of passengers and cargo. Given the generally prevailing lack of regular traffic data collection in the Pacific, it is not easy to verify whether the projects' investment has directly contributed to the improvements in these areas, but at least the available data show growth in the number of

registered vehicles and ships, and steady growth in air passenger numbers (although air passenger growth depends on international tourism, not necessarily on the domestic market).

68. Regarding institutional development, there is room for improvement. While individual outputs such as the establishment of a road fund or a new institution are often achieved, they are unlikely to be properly resourced due to insufficient recurrent expenditure, lack of government ownership, and lack of skilled staff. The 2009 IED Special Evaluation Study of Public Sector Reforms in the Pacific found that progress in capacity development in Pacific DMCs was more successful where existing capacity levels were reasonably robust.[44]

69. **Road subsector.** In Fiji's FRUP 2, road works by force account were undertaken through road construction units established and equipped under this project. There were some issues regarding the quality of sealing and, on the Nadi Back Road, insufficient attention to geotechnical aspects during design.[45] There were also many road accidents on Nadi Road, which eventually led to the construction of pedestrian bridges. However, according to the IED social specialist who visited the local community, the road still has a high accident rate mainly due to the speed of traffic (see Appendix 7).[46]

70. In the case of the Transinsular Road, implementation by force account[47] proved unsatisfactory due to inadequate site management of earthworks and inadequate engineering responses to slope failures. Attempts to fix these difficulties more than doubled the construction cost. The IED mission found that the Transinsular Road problem is ongoing and remains unresolved 10 years after project closure, but that the Nadi Back Road issues had at least been solved. It is interesting to see that in the subsequent FRUP 3 and in preparing the Fiji Fourth Road Upgrading Project (FRUP 4)[48] there was a gradual move away from the force-account philosophy toward using private sector contractors, even though there were problems there too because of inadequate equipment and technical expertise. The eventual outcomes of FRUP 2 were positive with savings in travel time and vehicle operating costs for road users, and better market access for a wide range of communities, including small-scale fruit, vegetable, and dairy farmers. A sealed road connection to the ferry terminal for Viti Levu, the second biggest island in Fiji, was also completed.

71. In addition to the benefits cited in the above projects, the Road Sector Improvement Project in Timor-Leste highlights among its results the lower fares on public transport and the reduced isolation of villages that can now be reached by public transport. The Tonga Infrastructure Project mentions better access to health and education facilities.

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[44] Reference Number SST: REG 2009-24, July 2009, Independent Evaluation Department, ADB.

[45] ADB was realistic enough to understand that force-account construction and maintenance under the Public Works Department could only be phased out over the long term. When FRUP 2 started, only the largest projects were undertaken through competitive tendering, and the department continued to use force account for small and medium-sized projects and for road maintenance. Despite the cost and inefficiency of force account, there was resistance to moving away from traditional methods, and concern over potential job losses. The department has a design unit and often undertakes supervision through local consultants with varying levels of expertise (funded directly by the Government of the Fiji Islands). After the geotechnical problems on the Transinsular Road showed weaknesses in both design and supervision, ADB assisted in finding suitable consultants to take the work forward. A TA project linked to FRUP 2 recommended the gradual reduction in force-account activities in favor of private sector contractors.

[46] The road safety problem was not recognized until after the Nadi Road (highway) opened. The problem was that people needed to cross the highway but the road improvement had led to higher traffic speeds. Pedestrian bridges were eventually introduced, but it was observed that some pedestrians still prefer to cross the road without using the bridges, even though traffic still travels too fast.

[47] Force account" is the term used for engagement of own (in this case, the government's) personnel and equipment to execute works, as opposed to contracting the works out to the private sector.

[48] FRUP 4 was cancelled after the military coup.

72. Although still ongoing, similar benefits can be attributed to the Road Maintenance and Upgrading Project in the PNG Highlands. The goals of improving road access, reducing user costs, and deriving time savings from the road improvements have already been achieved. Mineral and agricultural products (including tea, coffee, and vegetables) can reach the port at Lae much easier than before, and access to local markets has also improved. On the institutional side in PNG, a Road Authority and road fund have been established, and a road asset management system is now in place, but it will take a coordinated and concerted effort by all development partners over the next few years to operationalize the new systems. For the moment, the institutions remain weak owing to limited capacity and very limited funding.

73. **Maritime subsector.** In the Fiji Port Development Project, the outcome of positioning the ports to accommodate future growth in trade has been effectively achieved. The port of Suva has also been secured against possible future seismic events. Productivity has improved in crane moves per vessel hour, leading to faster vessel turnaround time. Reorganization of the container yard has allowed containers to be moved more efficiently and increased the terminal's effective storage capacity. Rigorous measurement of productivity gains was, however, impeded by the lack of baseline data for the key performance indicators. A major investment in three mobile cranes by Fiji Ports Corporation complicated the introduction of competition between stevedoring companies and the project failed to comply with a covenant on this matter since there is still only one stevedore operating. The probable effects of changes to conditions of employment arising from privatization were also not properly assessed. On the other hand, as part of the PNG Rehabilitation of the Maritime Navigational Aids System, navigational aids were repaired, upgraded, or newly constructed at 211 sites. A hydrographic office was set up as part of NMSA, navigation charts were updated, and significant cooperative agreements renewed with the Australian Hydrographic Office. However, NMSA staff need further technical training to carry out their expected duties; and all the community lighthouse committees need to strengthen their efforts to reduce vandalism.

74. **Emergency assistance.** The Cook Islands Cyclone Emergency Assistance Project funded immediate support, including the removal of debris, and repair and clean-up of roads, bridges, and harbors in Rarotonga and Aututaki. As much of this work had been completed before loan approval, this was provided as retroactive financing. The work was carried out relatively quickly and the tourist industry was barely affected. The largest subproject involved the rehabilitation of the Avatiu Port (harbor and yacht marina) in Rarotonga, which was completed in September 2008. Repairs to other harbors were undertaken either under the government's own financing or through grant financing from New Zealand.

75. The Solomon Islands Post-Conflict Emergency Rehabilitation Project was effective in achieving its outcome. Traffic increased by more than 100% between 2006 and 2008 but has now returned to normal, as far as can be judged in the absence of baseline information. The operations of local government, schools, health clinics, and other basic services have similarly normalized in the conflict areas. The project helped the government convince its constituents that it was determined to restore essential services and bring about a return to normality. The two-phase Timor-Leste Emergency Infrastructure Rehabilitation successfully restored harbor infrastructure and rehabilitated key road sections. The project was supported by training activities and provided local communities with short-term work opportunities. The Vanuatu Cyclone Emergency Rehabilitation Project, where rapid response was needed to formulate and implement rehabilitation activities, revealed the lack of "institutional memory" and data in many agencies. In this project, meteorological data were difficult to locate or were no longer available; inventories of infrastructure status and condition were unavailable; and past engineering,

hydrology, and other studies of possible value were neither categorized nor available from a central collection center. The issue is not unique to Vanuatu, of course.

E. Sustainability

76. ADB support to the Pacific transport sector is *less likely to be sustainable* based on an assessment of government financing of the recurrent costs, cost recovery practices, institutional arrangements, and past experience of maintenance in the various countries in the region. With the exception of higher per capita income countries such as the Cook Islands, infrastructure maintenance has a low priority. Much of ADB's support has been aimed at rehabilitation, but many Pacific DMCs have low budgets for maintenance, poor institutional capacity, and a shortage of skilled people, especially qualified and experienced engineers. The situation on the outer islands is worse.

77. **Roads.** All three Melanesian countries show alarming backlogs in maintenance (see Tables 3 and 4). In Timor-Leste, the actual road maintenance allocation in nominal terms has been growing over the past 5 years, but if expressed as a share of the total network improvement allocation, it has actually declined from 17% in 2006 to 2% in 2010. Solomon Islands shows a similar pattern with a decline in the maintenance share of total expenditure from 12% in 2005 to 6% in 2009. In PNG, actual expenditure on maintenance was only 30% of the estimate proposed in the 2001–2005 National Transport Development Plan,[49] and for the 2005–2006 Medium-Term Development Strategy,[50] the budget provided was less than half the requirements for reducing the maintenance backlog.

78. As IED noticed, the condition of many ADB-financed roads in PNG that are 10–12 years old indicates that further rehabilitation or even reconstruction will be necessary in the near future because of neglect of routine and periodic maintenance. This lack of maintenance drastically shortens the life of the facilities and reduces the EIRRs of the projects. Arguably some of the finance would have had a better opportunity cost if it had been deployed elsewhere. Most of the funding available for maintenance is kept for emergency repairs, be it on national, provincial, or district roads. There is a road fund managed by the National Roads Authority, but its income is so low that it will barely cover urgent maintenance work in the Highlands area. The Department of Works is the implementing agency for road construction and improvement. It transfers newly built or rehabilitated roads to the road authority for maintenance. There are 9,000 km of national roads in PNG, of which 3,200 km are sealed. The previous administration transferred 2,000 km of this to the road authority. In 2010, the road authority maintained 443 km; for 2011, it planned to increase its maintenance program to 1,000 km. Despite the road fund, the road authority may not have sufficient budget, as it does not have income from a fuel levy to fulfill its mandate. Because PNG has a relatively small vehicle population, the levy will have to be supplemented by government appropriation. Also, the road authority receives only a share of the excise on domestically manufactured diesel, and the road fund's share of revenue from the excise on imported diesel is not being remitted. The road authority's budget of 18 million kina from the road fund can cover at most 600 km of the mandated 1,000 km. The Department of Works has decided to target 4,000 km to be maintained by 2015, and road authority coverage is planned to increase to at least 2,000 km. Notably, from January 2011, the road authority has not received any appropriation from the national government. The fuel levy is collected and deposited in a

[49] PNG Department of Transport and Civil Aviation. 2000. *National Transport Development Plan 2001–2010,* Table 4, page 16. Port Moresby.
[50] PNG Department of Transport and Civil Aviation. 2000. *National Transport Development Plan 2006–2010*, Table 1, page 17. Port Moresby.

holding account in a national bank, and every month there is a release to the road fund. In Solomon Islands, the National Transport Fund was established to sustain infrastructure maintenance, but the maintenance budget for the Ministry of Infrastructure Development is much too small at about 7% of total expenditure (as seen in the table below).

Table 3: Budget Allocations for Road Maintenance in Timor-Leste, Solomon Islands, and Papua New Guinea

Timor-Leste Road Maintenance Allocation (for 2006–2010)[a]						
	2006	**2007**	**2008**	**2009**	**2010**	**Average**
Network Improvement Actual Allocation ($ '000)	6,495.0	27,301.0	24,569.0	17,177.0	71,130.0	29,334.0
Annual Growth Rate (%)		320.3	(10.0)	(30.1)	314.1	148.6
Road Maintenance Actual Allocation ($ '000)	1,357.0	2,002.0	3,253.0	1,100.0	1,500.0	1,842.0
Annual Growth Rate (%)		47.5	62.5	(66.2)	36.4	20.0
Share of Total Allocation (%)	17.3	6.8	11.7	6.0	2.1	8.8
Solomon Islands Ministry of Infrastructure Development Budget (for 2005–2009)[b]						
	2005	**2006**	**2007**	**2008**	**2009**	**Average**
Expenditures (SI$ '000)	27,501.0	49,240.0	27,501.0	50,818.0	47,343.0	40,481.0
Annual Growth Rate (%)		79.0	(44.1)	84.8	(6.8)	28.2
Road Maintenance Budget (SI$ '000)	3,186.0	2,718.0	3,098.0	3,361.0	2,958.0	3,064.0
Annual Growth Rate (%)		(14.7)	14.0	8.5	(12.0)	(1.1)
Share of Total Expenditure (%)	11.6	5.5	11.3	6.6	6.2	8.2
Papua New Guinea Land Transport Infrastructure Development (for 2006–2010)[c]						
	2006	**2007**	**2008**	**2009**	**2010**	**Average**
	Actual	Actual	Actual	Actual	Preliminary	
Department of Works-Recurrent	43,284.5	41,792.4	52,576.8	104,618.8	57,867.7	60,028.0
Maintenance of National Priority Roads*	317.8	743.9	750.9	49,780.0.	2,867.2	10,892.0
National Bridge Maintenance	0.0	0.0	0.0	0.0	0.0	0.0
Other Recurrent funding for DoW	42,966.7	41,048.5	51,825.9	54,838.8	55,000.5	49,136.1
Department of Works-Development	268,864.8	151,537.1	314,995.1	340,290.3	324,593.0	280,056.1
National Roads Authority	0.0	0.0	0.0	6,870.0	10,460.0	8,665.0
Transport Function Grant to Provincial Governments	14,399.7	15,252.8	24,647.4[d]	34,042.0	45,076.9	26,683.8
Total Funding for Road Maintenance	283,582.3	167,533.8	340,393.4	430,982.3	382,997.1	321,097.8
Total Government Expenditure and Net Lending	5,775,800.0	6,552,400.0	7,551,800.0	6,687,500.0	8,244,500.0	6,962,400.0
Total Road Maintenance/Total Expenditure (%)	4.9	2.6	4.5	6.4	4.7	5.0

( ) = negative, PNG = Papua New Guinea.

[a] Source: Directorate of Roads, Bridges, and Flood Control, Ministry of Infrastructure, 2010.

[b] Source: Solomon Islands Ministry of Finance and Treasury.

[c] Source: PNG Resident Mission, Asian Development Bank.

[d] Information not found. Thus, average of 2007 and 2009 was taken.

Table 4: Papua New Guinea Medium-Term Development Strategy Rehabilitation and Maintenance Backlog (Kina million)

	MTDS[a]			Backlog[b]		
	2006	2007	Total	2006	2007	Total
Proposed Investment in Land Transport	3,311	3,325	6,636	5,747	5,747	11,494

MTDS = Medium-Term Development Strategy.
[a] Refers to the amount the national government expects to invest in the rehabilitation and maintenance of transport infrastructure of national importance
[b] This is the anticipated investment/maintenance required to achieve infrastructure standards that ensure reliable transport services.
Sources: Medium-Term Development Strategy and Department of Works.

79. There is also a need for large international companies to come in on a joint-venture basis with local firms to help build the local industry, but until recently international firms had been reluctant to commit themselves when faced with the high risks of doing business in PNG, which include poor governance, a difficult climate and terrain, and unresolved land issues in many areas. Although the force-account labor model is not the best economically, the World Bank agreed recently to allow force account on two of the road projects it was funding. The rationale was that it was difficult to persuade small contractors to work in isolated areas and using local communities directly for labor may increase buy-in for local road projects. ADB has adopted labor-based community road maintenance in Solomon Islands, and AusAID had similar arrangements in PNG and Timor-Leste. There is short-term cash and income for the local community, but there are also negative consequences and shortcomings in the scheme.[51] Filling potholes by hand over a period of time results in a very rough road surface that needs earthmoving equipment to rectify, such as grader, roller, and water truck. In summary, labor contractors need to be educated and monitored in handling the financial side of contracting, further thought needs to go into the details of repaying the advance payment, how to transport maintenance materials over the distance, and how to define the frequency of a road section's need for a re-trim and compaction with proper earthmoving equipment. Long-term road maintenance contracts for major roads may have merit. ADB and AusAID have been promoting the road asset management system (RAMS), established in PNG through ADB technical assistance. AusAID has provided the costs to cover a full-time RAMS advisor since 2008, but the system is seriously understaffed. RAMS is used internationally and involves a significant cost upfront, but once established simplifies planning, programming, budget preparation, and maintenance control. Normally such a system for a country the size of PNG would need four engineers to run it, but presently there is only one. The set-up thus remains vulnerable. It raises the issue that ADB needs to assess the long-term (both financial and technical) sustainability during programming, using a public finance framework to gauge the affordability of investments in assets and their maintenance. This may be a complementary area where ADB can support AusAID's policy advisory assistance to the Department of Transport under the Transport Sector Support Program. A current initiative in Solomon Islands—under the new Transport Sector Development Project supported by ADB, AusAID, and New Zealand Aid Programme under PRIF—appears likely to make faster progress along the same lines. In this case, a possibly

[51] Continuity of work becomes a problem—(i) work usually stops when a contractor runs out of funds and cannot buy material or pay wages; (ii) normally, 30% of a contractor's monthly claim is deducted from the progress payment as repayment for the initial advance, but there are serious complaints from contractors that they find it difficult to continue with such reduced amounts; and (iii) contracts were over section of road up to as long as 6 km long, using hand tools only with no cartage vehicle. The other major concern is that the labor gangs can fill potholes and clean out table drains, but that is not all the maintenance required on an unsealed road pavement.

replicable idea is to have a consolidated project management unit instead of one unit for each project.

80. In Fiji, reasonably good progress was being made toward giving maintenance more importance. This involved in-principle agreement to phase out force-account maintenance, build up the domestic construction industry, and establish a fuel levy to fund road maintenance. The establishment of a Land Transport Authority was a positive development since it improved road safety, reducing the number of accidents, but progress on the other matters was halted after the military coup. Although the Department of Works, Transport and Public Utilities, like many other works departments in the Pacific, resists moving to small contractors because there are not enough of them, this is part of the problem. There are not enough contractors *because* there is insufficient work. This applies to other Pacific countries and also some countries in Asia, such as Indonesia,[52] and is often linked to the related issue of road standards—there is a preference for sealed roads as opposed to gravel even when traffic volumes are quite low, partly due to political influence and partly to poor gravel-road maintenance capability.

81. **Maritime.** The viability of port projects and shipping services in the Pacific depends on continuing growth in the various countries' economies, which have been lackluster in the last decade. Trade, nevertheless, has increased in several ports and the emphasis needs to be on more efficient operations. Suva and Lautoka in Fiji, Lae in PNG, Queen Salote in Tonga, and Avatiu in the Cook Islands all look to be viable; for the Fiji Ports Development Project, the FIRR over the life of the loan is estimated at 12.8%, while in the ports component of the Tonga Transport Infrastructure Project, the FIRR was revised upwards after completion to 10.5% (from 3.5%) thanks to better than expected cost savings and additional revenue from a new tariff schedule.

82. On the other hand, the financial viability of Dili in Timor-Leste, Santo in Vanuatu, Honiara in Solomon Islands, and of many smaller ports looks marginal. The Vanuatu Santo Port Project had a 47% cost increase and an FIRR with a return of only 0.1% after the government failed to implement higher port charges as planned.[53] Dili in Timor-Leste has seen a decline in containers handled and has not adjusted its port charges since 2003. Regular shipping services to remote communities are not economically viable and the migration from the outer islands is likely to continue, thus worsening the situation. The extent to which shipping services should be subsidized is a political decision. The private sector may be able to offer suitable services subsidized by government. An interesting proposal in the Cook Islands is for a part sail–part diesel inter-island operation offering a high level of service for adventurous tourists and at the same time a service to move local cargo. This venture will be interesting to monitor if it gets off the ground. So far Solomon Islands' inter-island maritime services have made limited progress. Most of the seven proposed inter-island franchised shipping schemes could not attract as many private sector operators as had been originally envisaged.[54] The PNG Community Water Transport Project has had a 24% cost increase after delays in site surveys, jetty designs, and contract approvals. The scope of work had to be reduced accordingly. The project took longer to get started than anticipated and there are as yet no concrete results.

[52] World Bank. 2011. *Indonesia: Road Subsector Public Expenditure Review.* Washington, DC.

[53] The project completion report calculated a negative FIRR, but following better than expected operating profits, this was revised to 0.1%. See also IED Audit Report.

[54] Initially, there was problem with finding insurance company to the shipping operation. After much delay and searching, an insurance company offered to provide insurance coverage for Ship Owner's Association in March 2011. So far, there is only one interested company in the market.

83. The future of Lae Port in PNG is not clear. The new port, once developed, will be more expensive than planned. In parallel PNG Ports Corporation is redeveloping parts of the old port.[55] The mission was not able to find a holistic long-term operational plan for the two ports to co-exist in close proximity. The resident mission explains that the current renovation and improvements to the old port are temporary measures until the new port is completed, but various sources indicate that both the two ports will remain operational.[56] Nationally, NMSA has made steady progress toward being a self-funded statutory authority. Its revenues come mainly from ships calling at PNG ports, but it still receives an annual appropriation. It also receives technical advice from ADB and the Australian Maritime Safety Authority. This may be a model to replicate elsewhere in the Pacific.

84. **Aviation.** PASO has limited capacity and resource problems. Some member states are in arrears with payments or pay late, which affects the cash flow of the organization. PASO has proposed a plan whereby each state should pay 50% upfront each year, but it remains to be seen how well this will work in practice. Meanwhile, Australia and New Zealand aviation authorities assist the various Pacific aviation authorities with capacity development and advice. The large PNG Civil Aviation Development Investment Program MFF has not yet sufficiently progressed for IED to make a call on its future sustainability.

85. **Emergency assistance.** Much of the restoration undertaken in emergency projects is aimed at returning the local economy to a sound footing. In some cases repairs to machinery and replacement equipment, for example, may even leave the beneficiaries in a better position than before the disaster. However, disasters in the Pacific region are inevitable and will recur from time to time. Sustainability therefore depends on the readiness of each island country to better cope with crises as they occur. To this end, at least three countries have put in place national action plans.[57] These are essential to minimize loss of life and to ensure that there are plans for immediate action in the aftermath of a disaster. They can cover a multitude of issues from ensuring that additional capacity is mobilized from outside the country, to formalizing a management structure to handle the emergency and even to modify infrastructure designs in the interim. ADB has been proactive in supporting such initiatives and also mobilized additional funds for climate-proofing new infrastructure. A rise in sea levels could be very harmful for island communities.[58] Sustainability, however, is also a function of the effectiveness of the maintenance capability of the country concerned, and this is variable. In the Cook Islands there is a strong likelihood of sustainability, but the Emergency Flood Recovery Project in Fiji gives reason for considerable concern, as trade volume is stagnant due to political situations.

F. Development Impacts

86. ADB's contributions to transport-specific development impacts are *partly satisfactory*. This review assesses the extent to which ADB's cumulative interventions contributed to Pacific DMCs' long-term development results. Although it is difficult to disaggregate the specific impact of ADB support in the development context, this report analyzes, to the extent possible, positive

[55] Current works being undertaken at the old port comprise remedial maintenance works, extension of overseas berth No. 6, and container yard reorganization, including old building demolition and gates.

[56] Subsequent to the IED mission, on 26 October 2011, IED received a letter from the Chief Executive Officer of PNG Corporation saying that both the Lae new port and the current port will form one operation and complement each other. The long-term master planning exercise is under development.

[57] For example, Government of the Cook Islands. 2008. *Cook Islands National Action Plan for Disaster Risk Management 2009–2015*. Avarua.

[58] Further information can be found in ADB. 2005. *Climate Proofing: A Risk-Based Approach to Adaptation*, Summary for Policy and Decision Makers. Manila.

and negative impacts associated with the improvements. This task is made harder by the lack of baseline information and routine collection of data in the road sector. Traffic counts and condition surveys are not carried out regularly in some countries, so it is difficult to assess what has happened since such projects closed. While completion reports contain descriptive and sometimes anecdotal information to support their conclusions, hard figures against targets are rare for roads, except for data to support the calculation of EIRRs. For ports, information is somewhat better because port authorities are obliged to report for customs and immigration control purposes, as well as to shipping companies and to their own shareholders. Airports and airlines are also obligated to make returns to ICAO to ensure their continued operation. The impacts are assessed across ADB's transport portfolio in the following key thematic areas: better access to markets and services; impact on trade; vehicle overloading and transport safety; and social and environmental impacts.

1. Better Access to Markets and Services

87. Most road projects set out to improve market access and reduce the user costs of travel, particularly vehicle operating costs and time costs (which were measured in most projects). Many of the projects involved rehabilitation of existing roads or upgrading existing gravel roads with a bitumen seal. Some projects also mentioned better connectivity and better public transport, others referred to better access to schools, medical facilities, and other services. A few projects referred to likely improvements to community health because of better access to clinics, and HIV/AIDS mitigation measures in road and port construction projects. Perhaps the best example of an attempt to measure the socioeconomic benefits was in the Timor-Leste Road Sector Improvement Project, which recorded that there was a 20% increase in visits to health facilities, a 56% increase in food trade volume, and a 2.7% increase in job opportunities. Figures given for improvements in the GDP growth rate, however, are more dubious because of attribution issues. A social specialist engaged by IED visited some of the areas where roads had been improved and produced some anecdotal before-and-after evidence. Under FRUP 3, a farmer growing ginger, *dalo*, *tavioka*, and vegetables increased his income by 35% after the Serea–Saswani road was improved. The agricultural office in Nausori showed large increases in cassava production, vegetables, and fruit after the road was completed, but some of these increases were due to other factors such as switching from one crop to another. In Solomon Islands, after the upgrade of the east–west Guadalcanal road, six farmers estimated that their incomes had since increased by 2.5–6 times. A women's focus group discussion in Saivou village showed that women could now sell their cash crops to buyers at the roadside for three or four times the price prevailing before the road improvement.

88. Many road improvement projects concerned main roads and did not name any particular group of beneficiaries or communities. No specific links were made to poverty alleviation, either, although this may have been an indirect benefit. This may change as newer projects extend the benefits of road network improvement—the currently active PNG project links rehabilitation of 80 km of rural feeder roads to the participation of 400 local community members.

89. Of concern, however, is that the general condition of the project roads in the three large countries of PNG, Fiji, and Timor-Leste ought to have contributed to an improvement in general road condition (i.e., a percentage of main roads in good condition). Existing condition data are unreliable, but indications from sources during IED missions suggest that the situation is getting worse. This is primarily because of a shortage of funds for infrastructure maintenance. Indeed, IED observed that in some parts of the networks some road sections had reverted to gravel from bitumen, and that some ADB-funded roads completed only 7 or 8 years ago (e.g., Hula road in PNG under L1153) are now in urgent need of rehabilitation due to lack of routine and

periodic maintenance. While important work has been done to introduce road asset management, and road funds and road authorities, progress remains slow, government commitment appears half-hearted, and funds have been insufficient to date to carry out this reform process successfully. In PNG, for example, the IED mission found that RAMS is able to work nationally thanks to a small number of dedicated staff in the Asset Management Branch. However, the majority of provincial administration officials that signed a memorandum of understanding in respect of RAMS have changed and there is no budget at that level to routinely undertake RAMS-related work.

2. Impact on Trade

90. Several port projects in Pacific DMCs have been designed to ensure that the countries concerned are able to trade effectively and competitively by being able to handle the cargo throughput generated by economic growth and investment. In addition, the ports have to be able to meet tourism demand, including calls by cruise ships, and at the same time provide connectivity to the outer islands, where applicable. The Fiji Ports Development Project met most of these criteria. Trade growth in Suva and Lautoka initially equaled or exceeded forecasts made in the report and recommendation of the President for the project. For example, container ship calls in Lautoka increased from 211 in 2002 to 325 in 2006. This resulted in less inefficient land bridging of containers. However, after the military coup trade stagnated. Foreign cargo throughput (by value) at Fiji ports in 2006 was F$4.3 million, but in 2009 this shrank to F$4.0 million.[59] Until the economy picks up again the ports have excess capacity. Tourism arrivals in officially quoted figures appear to be increasing, but they include a significant number of tourists arriving on cruise ships who do not disembark. A more reliable indicator is “days in beds,” which has apparently declined by 1.7 from 2009 to 2010, meaning the average tourist is staying 1.7 days less than before. Hotel occupancy is no longer included in official statistics.[60]

91. The PNG Lae Port Development Project has not yet commenced due to cost overruns, but is intended to relieve a bottleneck to trade.[61] The increasing volume of imports, especially heavy equipment and machinery, destined for the liquefied natural gas project is already causing big stress on the port. Ship owners currently have to pay port congestion charges.[62]

92. The Vanuatu Santo Port Project provided a new earthquake-resistant wharf for export of agricultural produce (mainly copra, beef, timber, and cocoa) and imports of consumer goods and fuel. This has avoided expensive disruption to economic activity despite the old wharf being near collapse and in danger of ceasing operations. The restoration of Dili Port in Timor-Leste Emergency Infrastructure Rehabilitation (Phase 1) relieved chronic port congestion.

93. Overall, the category 2, resources-based economies such as Timor-Leste and PNG are benefitting most from port improvements, because further economic expansion had been constrained by port bottlenecks. Improvements in other ports will only pay off when the economies of the countries achieve better growth. ADB needs to give more attention to ensuring that baseline data are collected and results frameworks are in place so that port projects can be better monitored over time. The importance of sensitivity analyses is also highlighted, since the forecasts of future passenger and cargo movements tend to be on the optimistic side.

[59] The official inflation rate is around 5.5%. Fiji Bureau of Statistics: www.statsfiji.gov.fj.
[60] www.fijitoday.wordpress.com.
[61] www.islandsbusiness.com.
[62] www.ingworldnews.com.

3. Transport Safety

94. Road safety initiatives on the other hand have met with more success—accidents and casualties have decreased in both Fiji and Kiribati. Fiji experienced a 39% decline in road fatalities (despite an increase in the number of licensed vehicles) after establishing an accident data system and introducing a road safety action plan. In PNG, however, although it is known to have about 4,500 reported road accidents annually, there is only a very limited budget for road safety. The National Road Safety Council receives funding from a levy on motor vehicle insurance, but this is only enough to fund operations in Port Moresby. To extend the council's activities nationwide, the levy would have to be quadrupled or alternative finance obtained to cover the costs. ADB can and should do more to assist road safety measures and institution building in Pacific DMCs.

95. Maritime safety has likely improved because of better navigational aids, more modern port facilities with better safety equipment, and better safety measures for ferry transport. Aviation safety in the Pacific should be improving after the establishment of PASO. This office has conducted safety inspections and issued recertification for 11 Pacific DMCs to put each airline in compliance with international regulations. In addition, the harmonization and updating of the legislative and regulatory frameworks for each PASO member has been completed. Specifically in PNG, the ADB-funded Civil Aviation Development Investment Program will ensure that all national airports will be certified to meet ICAO safety and security standards. Feedback to the IED team, however, was that PASO is under-resourced and ADB should discuss with development partners how best to strengthen the agency and its service.[63]

96. Regarding emergency assistance, three countries have put in place national action plans to cope with future disasters such as cyclones, floods, earthquakes, and tsunamis, while others are to follow suit. The support that ADB has given in this area through increasing awareness and making available financial support has been satisfactory. Nevertheless, the job is not done until all member states have plans in place.

4. Social Impact

97. From the access discussion above (paras. 87–89) it can be seen that better roads do indeed assist farmers in increasing their incomes. People also value greater accessibility to clinics, schools, police stations, and government offices. Women have benefitted especially from the sale of cash crops, although only to a small extent from construction activities, according to survey work by IED (Appendix 8). While occasionally women are given casual work on roads to fill gabion baskets with stones or assist with traffic control and surveying activities, such direct job opportunities are minimal.

98. Most road projects in Pacific DMCs have involved rehabilitation of existing roads and therefore the number of household relocations has been quite small; such roads are usually treated as environmental category B.[64] The PNG Lae Port Resettlement Program involved the relocation of 543 families and was of a highly sensitive nature. The land users had no legal title, but had

[63] Pacific Department produced the completion report (self evaluation) in June 2011. The assessment does not show views of many stakeholders. IED considers comprehensive assessment should be conducted, covering views of all member countries (especially smaller island states), and of other key external partners (e.g. New Zealand and United Kingdom).

[64] Category A projects are likely to have significant adverse environmental or social impacts that are sensitive, diverse, or unprecedented. Category B projects can have potentially adverse impacts, while Category C projects have minimal or no adverse impacts.

resided on land earmarked for future port development for 22 years. The state and IPBC acknowledged the settlers' rights to compensation and after a valuation process set a figure of K15,000 per household. ADB determined that a higher amount for resettlement support should be paid in agreement with ADB's Involuntary Resettlement Policy. Accordingly, the amount more than doubled to K31,116 per household. This amount excluded in-kind support such as training and transportation to the affected persons' destinations. IPBC strongly condemned the level of compensation in discussions with the IED mission, saying that (in its view) a precedent had been set that was unaffordable. The initial survey of affected households was poorly done and included 117 households outside the project zone. By the time this mistake was realized it was too late and ADB had to fund the full number of 543 families. Other problems arose. House owners who gave or rented their homes to the affected persons wanted compensation, several youths claimed to be part of certain households and thus entitled to compensation, while customary landowners appeared with historical claims on the land. This illustrates the difficulties involved, but they are not unique to PNG. Solomon Islands also has numerous land disputes. Some practitioners and academics have suggested that it may be beneficial for ADB to support an in-depth study on land issues in Pacific countries. Following up on the compensation issue will also be important since there are parties who do not understand or agree with the rates paid under the Involuntary Resettlement Policy. There are deep-rooted cultural elements that need to be adjusted in doing business in these societies. Among them is the notion of "*wantok business,*" which literally means "speaking the same language or coming from the same area". Local people make friends and become "*wantoks*", then have access to the friends' *wantoks*. At the initial stage of a feasibility study, there is a great need to investigate how many clans and tribes are going to be involved in land acquisition or voluntary donation. It would require a series of initial approaches, discussions, and awareness campaigns to verify the land boundaries. Areas of potential dispute have to be recognized, and the key chiefs need to be identified to negotiate and formulate draft compensation agreements and land access agreements. Firstly, projects that would involve land acquisition for new right-of-way or road widening would require more time and resources to conduct feasibility study; and PPTA planning should factor that in. There may be some new mechanisms (e.g. expeditious arbitration procedure, an escrow account type of funds while there is dispute), which concerned donors can jointly encourage governments to improve the implementation difficulty. Otherwise, ADB will not be able to engage in road width expansion that need new right-of-way.

99. The IED's social specialist also observed that there are often fewer disputes in project implementation when local contractors are used, as opposed to foreign contractors, and when the contracts let are smaller. Local contractors speak the local languages, understand the community issues better, and are less likely to be held hostage to unreasonable demands for compensation.[65] The specialist also suggested that a budget line to fund minor but feasible local requests could ensure true partnership arrangements and cement trust and ownership of the main project.

[65] Customary land tenure reform has been a politically sensitive and unpopular policy matter for incumbent politicians. It was extremely difficult to pursue policies aimed at reforming the system. Despite the high sensitivity combined with the complexities associated with low skill levels, high illiteracy rates, and scarce financial resources in the country, land reform has so far succeeded in PNG. The passing of two pieces of legislation aimed at mobilizing land held under customary tenure for development by the PNG National Parliament on 19 March 2009 was a significant milestone in PNG's endeavors to undertake fundamental microeconomic reforms aimed at achieving broad-based economic growth and development. These laws underpin fundamental reforms to the customary land tenure system. The principles underlying the legislation were conceived at the National Land Summit and formulated by the National Land Development Taskforce. The discussions at the summit provided the following guiding principles: (i) that, under any form of registration, the customary ownership of the land was never to be lost but remain with the traditional landowners; and (ii) that any system of titling was as good as a state title.

5. Environmental Impact

100. Many Pacific DMCs have a pristine environment, but are vulnerable to pressures from high population growth rates and limited financial resources. Challenges include unsustainable practices in some industries such as fishing and logging, and impacts on coral reefs and maritime life from coastal-based tourism, land development, and the degradation of natural resources.

101. As the debate on the effects of global warming takes center stage it is increasingly obvious that some Pacific countries, especially those with coral atolls, are vulnerable to a rise in the sea level. Six Pacific DMCs are assessed as facing extreme environmental vulnerability, with a further three rated highly vulnerable. Evidence suggests that extreme events such as drought, violent winds, and storm surges are becoming more frequent and that a rising sea level exacerbates all the risks.[66] ADB has been proactive in supporting initiatives to better understand the risks and has mobilized additional funds to climate-proof new infrastructure. For example, the design of Avatiu Port Development Wharf in the Cook Islands was modified to allow an extra 500 millimeters (half a meter) in height in response to the threat of future storm surges.

102. An analysis of projects in the transport portfolio that had environmental issues flagged shows that no serious problems were encountered that could not be minimized through using appropriate mitigation measures. ADB environmental specialists ensured spoil management control, reduction of noise and dust near construction camps, proper management of borrow pits, correct disposal of hazardous materials, and proper disposal of dredged sediment.

G. Technical Assistance

103. ADB provided technical assistance funding to many countries and all transport subsectors. Since the analysis of this aspect tends to get submerged in the preceding evaluation discussions, this short section is intended to look at the totality of technical assistance support in the context of the overall strategy and constraints. Technical assistance covers both preparatory and advisory assignments. It differs from the loan portfolio in that 40% of TA is for multisector support. The details of the technical assistance projects are summarized in Appendix 5, Tables A5.6 and A5.7.

104. **Strategic positioning.** Overall strategic positioning is *highly satisfactory* and generally supportive of the lending programs. Recognizing the problems of insufficient capacity and institutional weaknesses, recently the TA projects have been focused on reform initiatives ranging from ensuring disaster preparedness; to the establishment of road funds, semi-autonomous road authorities, and asset management systems; to transport sector planning and feasibility studies. The TA projects encountered the same issues as the lending projects, including insufficient resources (human and financial), political instability, and debt problems and different designs may need to be considered for sustainable capacity development and policy reforms. TA to support reforms was perceived as useful, but tended to support policy advice and creation of new systems rather than organizational capacity development which would sustain the initiatives undertaken. The IED study on public sector reforms in the Pacific[67] recommended more effective TA designs based on demand-driven approaches with longer time frames. Only four of 29 the advisory TA projects reviewed in this evaluation were aimed at

[66] ADB. 2008. *Working in Fragile Environments, A Midterm Review of the Pacific Strategy, 2005–2009*. Manila.
[67] ADB. 2009. *ADB Support for Public Sector Reforms in the Pacific: Enhance Results through Ownership, Capacity, and Continuity.* Manila.

organizational capacity development, echoing the findings of the public sector study. The TA projects also extended to other issues such as proposed improvements of inter-island ferry services. While the TA projects are in line with the aspirations of the governments as expressed through their national development plans. It would be useful to engage jointly or directly in core capacity development and policy dialogue on key issues of maintenance. Establishing PRIF to ensure better coordination of support through the Pacific Infrastructure Advisory Center, are good initiatives. It led to having a regular forum for external partners to exchange direction and focus, and seek better coordination to minimize duplication and overlap. While in theory, the bilateral donors' efforts on policy dialogue and capacity development efforts seem to be linked with the physical investment efforts of ADB, there is room for improvement. For instance in PNG, bi-laterals are focusing capacity development efforts in provinces where bi-laterals are engaged in some repair works, which is different from where ADB is upgrading roads. Therefore such complementary efforts could be further strengthened to clearly outline and coordinate the focus of development partner actions and commitments enabling better outcomes in maintenance and other policy issues.

105. **Relevance.** TA support is *highly relevant*. If the TA projects were not taken further or the recommendations were not implemented, it was often for reasons beyond the control of ADB (such as the military coup in Fiji). A good use of TA in PNG was to support the rehabilitation of navigational aids with support for the mentoring of technical officers to facilitate the safe handling of shipping through a Maritime Sector Authority, which was the centerpiece of the maritime reform program. Similarly, the study on domestic civil aviation in PNG was in line with the national development strategy to improve safety and prepare the way for the MFF to upgrade civil aviation infrastructure.

106. **Efficiency.** TA is rated *less efficient*. Project preparatory TA was noticeably more efficient than the advisory support in that these projects were usually completed fairly quickly since they were driven by the need to start the associated lending projects. This said, some borrowers (e.g., Vanuatu, PNG) were critical of the quality of preparation with regard to project feasibility. Three-quarters of the advisory TA projects were delayed for a variety of reasons. Some were late by just a few months, but no less than 14 were late by more than 1 year and five by 3 years or more. In some cases there were changes in scope, or delays in reaching agreement on proposed legislation. Particularly, Fiji, PNG, Timor-Leste, and Tonga experienced significant delays. In Fiji, the Road Sector Reform and Safety Improvement Project[68] suffered a 3.5-year delay due to the political situation. In PNG, the Road Asset Management System Project was extended by more than 2 years. In Timor-Leste, the Transport Sector Improvement Project had to be extended by more than 5 years due to poor performance of consultants, and the Infrastructure Sector Capacity Development Project (another 5 years) due to political unrest. In Tonga, the Road Cost Recovery and Safety Strategies Project, and the institutional development under the Ports Sector Project were delayed due to late enactment of legislation.

107. **Effectiveness.** On balance, TA is rated *effective*, although results are mixed. The TA outputs in the form of reports were normally clear, succinct, and technically accurate, but the outcomes were sometimes unclear or only partially supported. Aviation support to the Marshall Islands was successful in that there was a change in the airline's strategic direction and financial performance, but although a Roads Trust Fund was created, it was not funded. The TA to assist with creating an enabling environment for the private sector in PNG was overtaken by events when the huge gas project began to attract a large number of international contracts.

[68] Details of this project and all other transport TA grants in the Pacific approved or implemented from 1995 to 2010 are in Appendix 3, Table A3.2. They are not footnoted when they are referred to in the text.

However, since there was a need to develop capacity of national contractors for road maintenance, the emphasis of the project shifted. The attempt to strengthen the Department of Transport in PNG did not work because constant reorganizations within the department frustrated progress, along with a lack of capacity and counterpart funding. In the end the project was abandoned. On the other hand, the establishment of maritime safety authorities in Solomon Islands and PNG was effective and accomplished the goals that had been set. Upgraded seafarers' training facilities in Tuvalu are not fully utilized, and the new dormitories built for the trainee seafarers are not used as living quarters due to a number of problems with the building.

108. **Sustainability.** TA support is rated *less likely to be sustainable*. As with investment lending, the major issue is the lack of capacity and funding to follow through with reforms, which in some instances were also interrupted by political instability. Many of the Fiji reforms are on hold and because of significant changes in staff, the reform process will virtually have to start over once a normal relationship between ADB and the government resumes. In PNG, the progress of reform in the road sector depends on sufficient commitment by the government to allocate funds for maintenance and to support the new road authority. In Timor-Leste, the benefits from the Emergency Infrastructure Rehabilitation Project's road components are unlikely to be sustainable.[69] The IED mission generally observed a lack of even basic maintenance on the project roads (e.g., vegetation control, drain cleaning, repair of embankments, and slope protection works). There is strong emphasis on road rehabilitation or capital expenditures by the government, but maintenance is not a priority at the moment. This is also compounded by a lack of technical equipment and management capacity for road maintenance, especially at the provincial level. Weak human resources in government agencies are also an issue.

109. **Impact.** The impacts of advisory TA projects have been more mixed.[70] On the positive side, PNG was able to establish the NMSA with TA support; Fiji reduced accident rates and established a capability to better handle police enforcement, driver training and testing, vehicle roadworthiness, and emergency rescue services; and Tonga introduced port legislation and a new port tariff schedule. In Timor-Leste, user charges were put in place for port and aviation services. More negatively, despite good groundwork in PNG in establishing a national roads authority, road fund and management system have still insufficient income to properly maintain the roads. The provincial governments rely on donor initiatives and support to maintain roads. A similar shortage of maintenance funds applies to Fiji. In the Marshall Islands the airport authority and the roads subsector remain dependent solely on the government for funds, which was not the intention of the TA project. In Solomon Islands, it was expected that through involving the private sector, airline costs could be reduced, but the government was unwilling to endorse this proposal.

H. Asian Development Bank and Borrower Performance

110. **ADB performance** in the transport sector in the Pacific region is *partly satisfactory*. ADB has been one of the leading development agencies in this sector, assisting governments in planning and implementing projects. Its main value addition has been in providing inputs for capital investment projects and in capacity development. This is consistent with the needs in the region, but in helping to build capacity the resources available have been far short of needs. Underlying the whole problem of insufficient maintenance is the inadequate capacity of the

[69] ADB. 2010. *Project Performance Evaluation Report. Timor-Leste, Emergency Infrastructure Rehabilitation Project (Phases 1 and 2).* Manila.

[70] In Marshall Islands, TA 2756-RMI: Institutional Strengthening in the Transport Sector tried to create an administration that will have the capacity to manage the sector more efficiently (rated partly successful).

borrowing countries. Given their isolation and relatively small economies this situation is unlikely to change without a shift in thinking about how to tackle the challenge. Every project without exception mentions the limited capacity of the borrower. The project completion report (PCR) for the PNG Transport Infrastructure Development Project questions the wisdom of large multi-sector loans where implementation capacity is limited.

111. To some extent ADB compounds the problem because its staff, though highly qualified, is thinly stretched too (Table 5). The average number of international professional staff deployed for Pacific transport projects has been 9.6 over the last 5 years, compared with 10.8 during the previous period, and these had to deal with average annual approvals of $127.40 million, compared with $16.28 million previously. Even allowing for inflation, this is a significantly higher figure. While such efficiency is commendable, the table also reveals that fewer engineers and specialists are used, although more staff is hired based in the resident missions. Between 2000 and 2006, 13.6% of staff was located in resident missions. This figure has now grown to 25%. Deploying more people locally is likely a good move because it usually leads to better relations with the countries concerned, but the reduction in engineers and specialists overall means that a greater number of consultants have to be hired to do the same job or else the quality of preparation and supervision suffers. Statistics also show that nominal internal administrative expenses per project under implementation have declined by 56.3% over the decade, but only by 5.3% since 2006.

Table 5: Number of ADB International Staff Deployed for Pacific Transport Projects

	Transport Approvals	Total	Headquarters			Resident Missions		
Year	($ million)	Staff	Engineers	Economists	Specialists	Engineers	Economists	Specialists
2000	24.22	11	5	1	3	2	0	0
2001	2.15	11	5	1	3	2	0	0
2002	33.20	11	4	1	5	1	0	0
2003	1.01	11	4	1	6	0	0	0
2004	24.65	10	3	2	3	1	1	0
2005	12.45	11	2	2	5	1	1	0
Average	**16.28**	**10.8**	**3.8**	**1.3**	**4.2**	**1.2**	**0.3**	**0**
2006	70.10	9	1	2	2	3	1	0
2007	108.21	10	2	2	4	2	0	0
2008	138.38	10	3	2	3	2	0	0
2009	211.94	9	3	2	2	2	0	0
2010	108.36	10	3	1	4	2	0	0
Average	**127.40**	**9.6**	**2.4**	**1.8**	**3.0**	**2.2**	**0.2**	**0**

Source: Pacific Department of the Asian Development Bank.

112. Inadequate supervision is specifically mentioned in four PCRs: for PNG Rehabilitation of Maritime Navigational Aids, Samoa Cyclone Damage Rehabilitation, Timor-Leste Emergency Infrastructure Rehabilitation (Phase 2), and Vanuatu Santo Port. More staff in local offices would be helpful. The former ADB coordination office based in Vanuatu, for example, used to have a full-time transport person who helped support the borrower's limited capacity in administrative and technical matters. Since scaling down the Vanuatu office, transport and other technical oversight for Solomon Islands, Vanuatu, and Nauru is covered from the Pacific Liaison and Coordination Office in Sydney. In Honiara in Solomon Islands, ADB and the World Bank jointly set up a small coordination office in 2009. AusAID staff has, to some extent, taken up the day-to-day coordination function in the transport sector.[71] Of course, ADB must balance

[71] ADB coordination is through a long-term consultant whose primary focus is on the Coordination Working Group for Macro and Budgetary Issues. ADB's Sydney office staff visit Solomon Islands on average every quarter, which

resources, staffing, and needs with the work program and the degree of productivity, but the sense is that to move up to another level, ADB will need to augment its capacity. PNG and Timor-Leste are large countries with relatively inaccessible interiors whose lending programs are growing rapidly despite weak borrower capacity. This suggests that ADB will have to rethink its own resource support to ensure successful outcomes. Innovative pooling arrangements with other development partners and some capacity substitution may increase available capacity.

113. Although not widespread, some Pacific DMCs may experience difficulties with the ADB procurement process because of insufficient procurement capacity. Misprocurement is not common, but there are occasions such as in the Cook Islands (Loan 1588-COO) where, had timely guidance been given, the procurement issue would not have arisen at all.[72] Of more concern is a recent procurement capacity assessment for PNG by the Central Supply and Tenders Board as part of the ongoing reform efforts undertaken by the government in the procurement area. This assessment is in accordance with PNG's commitment to strengthen its procurement capacities and the country system in line with the Paris Declaration. The report, dated March 2010, uses OECD-DAC methodology[73] and states that "as the assessment shows, challenges remain in most parts of the procurement cycle, and there is a general lack of compliance with the legal framework." This is worrisome given the size of ADB's PNG portfolio, which includes two huge ongoing MFFs for roads and civil aviation. Until 2010, ADB hinged its procurement capacity assessment on a joint evaluation (2007) with the World Bank. ADB Central Operations Services Office has been involved in the review of the national standard bidding documents prepared by the PNG Central Supply and Tenders Board (CSTB) in 2010. Currently, UN and CSTB are updating the PNG country procurement capacity assessment (2010) which followed OECD-DAC benchmark methodology.

114. There are positive factors about ADB performance that should be acknowledged. In particular, ADB deserves credit for the rapid response in appraising and approving emergency loans and allowing retroactive financing. In FRUP 2, there was good cooperation between ADB and the World Bank in pooling expertise. Most borrowers are generally very appreciative of ADB support because of the expertise and advice brought to bear on their problems. Examples are numerous, but a typical one in the Solomon Islands Post-Conflict Emergency Rehabilitation Project was ADB's advice to reinstate road pavements rather than simply patching, resulting in a more durable road with a longer life. Sometimes difficulties are encountered because of a conflict between ADB policy and that of a particular government—e.g., land compensation values in PNG, protection of stevedores in Fiji, and deviation from ADB guidelines in Timor-Leste—but on the whole such instances are uncommon.

115. **Borrower performance.** As mentioned above, this has been highly constrained by inadequate capacity. Sometimes there was reluctance because of poor capacity to undertake baseline surveys and performance monitoring. This was specifically mentioned in the PCR of the Fiji Ports Development Project. Similarly, the Fiji Public Works Department's lack of expertise was evident in undertaking road construction with in-house labor despite difficult soil and environmental conditions. There also was little follow-up to ensure compliance with vehicle weights and axle load legislation. Discussing the Department of Transport and Public Works in

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appears adequate for project implementation consultants, but for donor coordination a full-time technical person or a full-time project implementation officer might be more effective.

[72] A domestic consulting firm was appointed without following adequate recruitment procedures and there were a few cases of misprocurement involving a barge and small track excavator.

[73] Organisation for Economic Co-operation and Development. 2005. *Paris Declaration on Aid Effectiveness.* Paris; and Development Co-operation Directorate. 2008. *The Accra Agenda for Action*. Paris.

the PNG Transport Infrastructure Development Project, the PCR states: “Staffing changes were frequent and haphazard, resulting in lack of continuity. Positions did not seem to be assigned by merit and the jobs were not held long enough for individuals to be held accountable for poor supervision. Contractors under departmental supervision performed poorly. To avoid this, too much work was undertaken on a force-account basis.”

116. Another issue, especially in PNG and the Marshall Islands, has been a lack of counterpart funding. The main reason for the cancellation of the latter country’s Outer Islands Transport Infrastructure Project was that it was already falling into arrears with its loan repayments to ADB and its indebtedness was (at the time) 70% of GDP. In both PNG and Solomon Islands there have been several delays due to customary land ownership issues.

117. On occasion there are also conflicts or delays because of unclear reporting structures. In the Timor-Leste Emergency Infrastructure Project (both first and second phases), procurement was late because of a requirement, over and above ADB procurement clearance, for the recipient’s tender committee to approve contracts. In Fiji, the Ministry of Finance has created a Central Coordinating Authority of Roads reporting directly to Finance. It handles mainly urban roads, but has confused existing reporting lines.

IV. OVERALL ASSESSMENT AND PERFORMANCE RATINGS

118. Overall, ADB support to the transport sector in the Pacific is *successful* (see Tables 6 and 7). The largest subsector, roads, is below the score threshold for successful rating, but the other subsectors (maritime, aviation, and emergency assistance, plus TA) achieve slightly better ratings, therefore resulting in the overall assessment reaching the threshold for a successful rating. It should be noted that the civil aviation MFF project is in its early stage.

119. The high scores are for strategic positioning, relevance, and effectiveness. The lower scores are for sustainability and efficiency, while development impacts are modest. These scores reflect the selectivity and the coordination efforts at a higher level. On the other hand they point mainly to the inadequacy of country resources and capacity available to resolve the issues, project implementation delays, and difficulties in maintaining the quality of infrastructure once constructed. Except for the countries exporting minerals and gas, the region has been inhibited by sluggish economic growth and unfavorable changes in the terms of trade with the rest of the world. It remains uncompetitive in many respects due to its isolated geographic position, an often unstable political environment, and vulnerability to disasters. The weighting given to project lending is 90% and to TA 10%. And this is reflected in the overall summary ratings shown in Table 8.

Table 6: Rating for Loans and Technical Assistance

Description Summary Assistance	Project Lending	Technical Assistance
Strategic positioning	Satisfactory	Highly satisfactory
Relevance	Relevant	Highly relevant
Efficiency	Less efficient	Less efficient
Effectiveness	Effective	Effective
Sustainability	Less likely	Less Likely
Development impact	Partly satisfactory	Partly satisfactory

Source: Independent Evaluation Department.

Table 7: Summary Rating Results by Subsector

Evaluation Criteria	Criteria Weights	Subsector Percentage Shares for Projects								Technical Assistance 10%	
		Roads 58%		Maritime 23%		Aviation 10%		Emergency 9%			
		Rating	WAS	Rating	WAS	Rating	WAS	Rating	WAS	Rating	WAS
1. Strategic Positioning	0.1	2.0	0.2	3.0	0.3	2.0	0.2	2.0	0.2	3.0	0.3
2. Relevance	0.1	2.0	0.2	2.0	0.2	2.0	0.2	2.0	0.2	3.0	0.3
3. Efficiency	0.2	1.0	0.2	1.0	0.2	2.0	0.4	1.0	0.2	1.0	0.2
4. Effectiveness	0.2	2.0	0.4	2.0	0.4	2.0	0.4	2.0	0.4	2.0	0.4
5. Sustainability	0.2	1.0	0.2	1.0	0.2	1.0	0.2	2.0	0.4	1.0	0.2
6. Impact	0.2	1.0	0.2	2.0	0.4	2.0	0.4	2.0	0.4	2.0	0.4
All criteria combined	1.0		1.4		1.7		1.8		1.8		1.8

WAS = weighted average score.
Source: Independent Evaluation Department.

Table 8: Overall Projects, Technical Assistance, and Sector Ratings

Subsector	Weight (%)	Rating	Weighted Score
Roads	58	1.40	0.81
Maritime	23	1.70	0.39
Aviation	10	1.80	0.18
Emergency	9	1.80	0.16
Overall project rating			**1.55**
Project rating (wtd)	**90**	**1.55**	**1.39**
TA rating (wtd)	**10**	**1.80**	**0.18**
Overall transport sector rating			**1.6**

TA = technical assistance, wtd = weighted.
Note: subsector percentage shares are based on the amount of lending during the evaluation period and account for 90% of the weight. A further 10% is allowed for technical assistance. The evaluation scoring system rates the overall sector performance based on the weighted performance in each subsector (see Appendix 1 for criteria on evaluation).
Source: Independent Evaluation Department.

V. CONCLUSIONS, LESSONS, AND RECOMMENDATIONS

A. Conclusions

1. General

120. The following paragraphs answer, in summary, the questions raised in para. 6 of this report. ADB has been a long-standing development partner in the transport sector for many of the Pacific DMCs. Notwithstanding, and without exception, these countries still find it difficult to attract and retain skilled staff, many of them budget insufficiently for infrastructure maintenance, and most are struggling to remain competitive and achieve economic growth in the face of their isolation in a globalizing world. From time to time there are also security and governance issues affecting some development partners and, since the Pacific is an area prone to extreme weather conditions and seismic events, disasters continue to strike.

121. In such circumstances, and with limited resources itself, ADB has chosen to focus its lending program primarily on four countries—they account for 93.7% of ADB transport lending in the Pacific—but still its support is insufficient to eliminate the capacity bottlenecks. The other countries are not neglected; apart from small amounts of support from ADB, especially for disaster recovery loans, virtually all receive financial aid through often long-standing arrangements with other development partners, especially Australia, the EC, Japan, New Zealand, the World Bank, and the United States. Even Fiji, which after a military coup has not received further funds from these sources, has managed to secure financing from the People's Republic of China and Malaysia. Naturally, IED observed a closer dialogue and information sharing in countries where ADB has either a resident mission or a liaison office (Fiji, PNG, Solomon Islands, Timor-Leste, and Vanuatu). While ADB's South Pacific Subregional Office (Fiji) and Pacific Liaison and Coordination Office (Sydney) carry out regional oversight for the smaller countries, diligently and efficiently filling in for the absence of local staff through review missions. However, for those countries that offer prospects for a larger lending portfolio (e.g., Solomon Islands, Vanuatu) will require regular ADB staff with an engineering background for supervision and day-to-day coordination.

122. In the Pacific countries, there was sometimes a disparity between vision and conditions on the ground. The transport program was wide compared to the capacity in the region. In PNG, for example, the CPS responded to the government's request for ADB to scale up its support for infrastructure development and management. A strong portfolio and forward pipeline has been developed in road transport, maritime transport, and civil aviation, but the country is presently unable to maintain its existing system, let alone an expanded system. Pacific governments' continued commitment to supervision and procurement will be needed, and a special intervention to ensure capacity expansion should be considered. Greater liaison between staff responsible for private and public sector investments is also suggested. So far ADB support in private sector development has been confined to simple contracting out, such as (i) franchise shipping scheme through private boat operators in maritime subsector and (ii) local based employment system in rural road management, and some technical assistance in legal issues through private sector infrastructure development (PSID) initiative.

123. Even within a subsector, designing projects with ambitious scope that exceed government staff capacity can lead to a focus on outputs rather than outcomes, and a stretching of both lending and nonlending work across too many requests, and topics. It might be more effective to concentrate on a few key objectives and stay with this plan. While ADB understands, what steps are needed to transform institutions, reform legislation and inefficient practices, and ensure sustainability, the achievement thus far been establishment of special purpose institutions, such as safety agencies for maritime, aviation, and road, or establish transport infrastructure funds. However, in many countries, these organizations are not self-sustainable, both financially and, in terms of staff capacity. Other development partners have had similar experiences, and until a few years ago the partners had not always coordinated their aid for best results. This was recognized by the partners and led to the establishment of PRIF, announced in August 2008, where development partners have focused on a few key projects and programs with demonstration value to show what can work given the right blend of resources and expertise. The arrangement has the advantage of harmonizing development efforts, but it is still young. The EC and the European Investment Bank recently joined the founding partners: ADB, AusAID, New Zealand Aid Programme, and the World Bank Group. Whether PRIF will be able to deliver a higher level of development assistance coordination, or serve as a "stage platform" to just show the sum of donor contribution is as yet uncertain, but it deserves full support. A regional engagement framework focused on a few select thematic and sector objectives may prove highly beneficial and should be nurtured by ADB as far as possible.

All the development partners are optimistic about this initiative. It is an approach consistent with ADB's Pacific strategy and is relevant to the transport sector's development.

124. Capacity development continues to be a difficult issue not just for ADB, but for the wider development community in Pacific countries. Taking into account the limited human resources available, it would be unreasonable to expect major tangible results in capacity development in the near future, despite substantial investment by both development partners and governments. This means that unless the countries are able to retain a sufficient numbers of people who are educated and trained in specific disciplines, sustainable capacity within the public and private sectors will be difficult to achieve. In view of this, it is suggested that ADB be innovative in its support by (i) exploring ways to develop public sector supervision and monitoring capabilities in the short-to-medium term, so that there is a clear transmission of skills and knowledge from international consultants and firms to Pacific DMC nationals; and (ii) assisting the governments in outsourcing noncore activities such as procurement, project management, or technical supervision in addition to construction activities. This could ensure that the broader development agenda is achieved despite the limited in-house capability of the public sector. In the Pacific, ADB provided two vocational training projects, one in PNG (Employment-Oriented Skills Development Project) [74] and one in the Marshall Islands (Skills Training and Vocational Education Project)[75] (answer to question i).

125. In PNG, ADB has pursued the route of approving large MFF programs (civil aviation and roads). In theory, this approach gives greater flexibility and the funds are only released in tranches as the work proceeds and goals are met. This could be very successful if extra supervision is provided, but if it is not, the consequences may be severe should major capacity shortcomings delay or hinder implementation. The issue of the appropriateness of capacity substitution should be revisited in the context of a special intervention.

126. For the longer term, greater emphasis should be placed on providing appropriate technical education to meet the needs of the Pacific countries. The transport sector needs people with technical skills, and national education policies must be encouraged to produce the skills necessary for the sector to perform. In this regard ADB's support for teacher training, building more capacity in the civil service, and engendering technical skills, especially in materials and design, appears to be the right approach. Setting up a vocational training institute in PNG and supporting skills training and vocational education in the Marshall Islands are apposite examples. Education facilities are expensive and so a culture of cooperation among the Pacific countries may be encouraged. Examples are Solomon Islands staff sent to the Fiji Institute of Technology and Timor-Leste staff training in Indonesia. ADB could develop an incentive program that would allow long-term staff involved in ADB-funded projects to have recurrent training and skills development opportunities at various institutes, seminars, and events in the Pacific and beyond; it should do so in cooperation with other international and regional development partners, including bilateral arrangements. This would also discourage brain drain, especially in countries like Fiji, PNG and some Micronesian countries. In addition

[74] The project aimed to provide quality informal, competency-based skills training to improve wage employment and self-employment opportunities. It was to train 40,000 participants. Key institutional arrangements were in place and funding was available to sustain employment-oriented skills development. The project achieved its overall intended impact, but on a smaller scale than planned.

[75] The project aimed to implement an integrated and articulated national skills training system that will strengthen career awareness and skills training options, and increase skills training oriented on short-term employment and self-employment, with a special emphasis on women and youths. Though civil works and curriculum development have laid some foundation for a skills and vocational education program in the Marshall Islands, the full impact of the project was unlikely to be sustained because of endemic institutional weaknesses.

"bonds" may be used for scholarship scheme (these are commonly practiced in some Micronesian countries). AusAID and other partners may be keen to support such an initiative and the impact of a coordinated approach could be considerable.

127. Lastly, the region could do much more on monitoring and evaluation. The paucity of data in Pacific countries is disturbing, since proper planning cannot be done in the absence of baseline information and key indicators. IED found it difficult to obtain reasonable information in most countries it visited and this is an area that deserves more attention.

2. Subsector

a. Roads

128. ADB continues to follow best international practice in encouraging—through advice, TA, and project components—the establishment of autonomous road agencies or road authorities funded through independent road funds. These organizations ideally have performance-based structures not tied to civil service remuneration, with accountability to management boards representing the public and private sectors, and priorities driven primarily by economic considerations. Internationally, another significant reform with considerable savings and improvements in efficiency has been to change from force account (own labor force) to contracting out road maintenance works. Some countries have gone further and have introduced performance-based maintenance instead of the traditional method-based maintenance. This is reported to have resulted in additional savings of 15% or more.

129. However, even if first steps have been taken—such as in PNG, where a national road authority, road asset management system, and road fund were created—no real progress can be made unless the initiatives are properly resourced. In the case of PNG, there may be too few licensed vehicles in operation to fully fund the system, so the necessary funding may have to be supplemented by budget allocation.

130. Throughout the Pacific there was a reluctance to move away from force-account activities. This was partly because it was initially an additional burden on already stretched local staff and because allegedly there were not enough local contractors. However, to nurture the local contracting industry there has to be sufficient work, so this is a "chicken and egg" situation and a gradual transition is necessary. In the Cook Islands, there was still a basic force-account unit, although much is put out to contract now. All in all, and encouraged by ADB, the South Pacific is belatedly following world trends to move away from this practice.

b. Maritime

131. Port infrastructure has been supported in several instances by ADB, but the level of efficiency has sometimes been less than anticipated. Trade predictions and forecasts of imports and exports are not easy, but estimates have tended to be over-optimistic—economic growth in many Pacific countries has in fact been disappointing. There have also been some bad miscalculations concerning the cost of port improvements, and these calculations ought to be prepared more diligently with better sensitivity analyses, especially when relocation of people is involved. The opportunity costs of participating in these projects may not be worthwhile if the support that ADB can give is stretched too thinly.

132. Support for ferries to outer islands should be a peripheral area of involvement for ADB. The tendency worldwide is for such services to be operated by the private sector based on

demand, but in many outer island communities the declining population means that continued operation will require a subsidy, the extent of which becomes a political issue. The long-term trend of depopulation is likely to be irreversible and ADB would probably do better to focus on areas where it can have a bigger impact.

c. Aviation

133. The establishment of PASO was a positive move in regional cooperation and has important implications for airline safety, but PASO is being criticized by Pacific DMCs because it has insufficient funds. ADB, in consultation with other development partners, needs to review this situation and help member countries find a workable solution. The project completion evaluation by ADB's Pacific Department[76] also listed several shortcomings: (i) low demand from some states that often seek to delay or cancel agreed work; (ii) resistance to PASO's fees, which some states consider to be expensive, although its services are cheaper than those provided by more technically-advanced civil aviation authorities in the region (e.g., Australia and New Zealand); (iii) failure by some states to include oversight and inspection charges in their annual budget; and (iv) inability or unwillingness of some states to collect inspection costs from their airlines and airports. If PASO work output cannot improve from 2010 levels, it will continue to make losses and will be unable to cover its establishment cost and loan repayments. Key stakeholders in the region (e.g., Australia, New Zealand, and United Kingdom aviation agencies) also indicated concerns about the current operations. Meanwhile, the civil aviation MFF in PNG is in its early stages, but needs careful monitoring given the history of inadequate capacity in that country.

3. Emergency assistance

134. ADB naturally wishes to play a role in emergency assistance, but is not really geared up to immediate relief operations because of its rigorous procurement policies. It has accelerated its reaction to emergencies, introduced retroactive financing, and fast-tracked its support, but current financial instruments and procurement procedures do not necessarily optimize the potential support that ADB can render. This area needs further analysis.

135. Once the immediate crisis is under control, ADB can become involved in rebuilding activities, but the choice of subprojects may not necessarily reflect the highest priority perceived initially and should be reaffirmed. What was a crisis becomes less so over time as governments have to take capacity, aid coordination and management problems, and immediate response does not happen. In these circumstances a normal grant or loan might be more effective. However, ADB does play a positive role in encouraging preparedness for future disasters and for mobilizing resources to help alleviate issues caused by climate change (answer to question iv).

B. Lessons

136. **Land issues have delayed projects and increased costs of project implementation.** Ownership of customary land is a difficult issue in the Pacific. In some countries, particularly in PNG and Solomon Islands, disputes and lack of proper land registers seriously delayed project implementation, requiring supplementary financing to cover substantial cost increases due to a rise in prices for materials, compounded by currency fluctuations, during the delay. This poses a great risk to projects. There are deep-rooted cultural elements that need to be adjusted when

[76] ADB. 2011. *Completion Report: Establishment of the Pacific Aviation Safety Office Project* (Loan-2183 REG). Manila.

land transactions are done in the Pacific. Therefore, it is best to establish that land is available and ready for upgrade and expansion, and that the ownership issue is resolved prior to development partners providing support for infrastructure development (paras. 97 and 98).

137. **Physical investment needs to be complemented by equally strong support for capacity development and policy formulation in the sector.** ADB's focus has been in physical infrastructure. At present, in most of PDMC countries, there is some informal understanding that collaboration with ADB is concentrating on investments for physical improvements, while other partners focus on policy advice, staff training and capacity development and the focal agencies or ministries for these aspects are different. At times, bilateral partners' primary focus is on provinces where they are engaged in some repair works, which are different from the areas where ADB is upgrading roads (e.g. PNG, Vanuatu). An option to improve the sustainability of major investments would be to coordinate and clarify responsibilities for policy dialogue on maintenance and other issues (paras. 34, 48, 79, and 109) and for ADB to ensure adequate maintenance arrangements exist.

138. **The national maritime safety agencies set up in Solomon Islands and PNG appear to be successful institutional models that could be replicated elsewhere in the region.** Under these models, there has been enactment of new laws to generate revenue streams for the agencies to pay for their costs, and improve safety standards for vessels. A gradual increase of various fees is generally accepted in the shipping industry when supported by adequate services (paras. 47, 63, 95, and 107; Appendix 5).

139. **There is a need for a more organized disaster-related donor platform to act quickly and effectively for emergency assistance.** Delays in initial collective action will minimize the effectiveness of an ADB emergency operations (para. 60). At present, there are several bi-lateral initiatives or special initiatives (e.g., tsunami warning system, seismic monitoring) led by a few agencies from key donor countries. In terms of emergency assistance for rehabilitation of main infrastructure, different external partners come together, but the time of delivery is usually uncoordinated.

140. **In estimating costs, better coverage of contingencies is useful, given the vulnerability of the Pacific to movements in global construction-related prices and exchange rates.** Much time has been lost in delivering projects where poor assessments were made of costs during the preliminary design, resulting in requests for supplementary finance. (paras. 64, 91, and 93).

141. **Developing and retaining ADB technical staff in the areas of ADB's focus (e.g. maritime, aviation, natural disaster and emergency) in the transport sector is essential**. Each transport subsector clearly requires highly specialized technical knowledge and business experience, and therefore developing and retaining sufficient staff resources in the areas of focus becomes very important. especially given the remote and scattered geographical nature of the region (paras.91, 93, 112).

C. Recommendations

142. Based on the key findings and lessons, the study provides the following recommendations to ADB Management, for consideration when developing future strategies in the Pacific countries and region.

143. **Build short-term and longer term developing member countries' technical capacity in the design, implementation, and maintenance responsibilities for transport infrastructure investments using a strategic approach.** Options for support may follow a two-pronged approach**.** First, based on country context, either scale up provision of capacity substitution in the short to mid-term to mitigate the shortage of technical staff in government agencies by using international consultants, or provide training and institutional capacity building support to local staff. This first stage will facilitate skills transfer from international advisors to national staff. Second, in the medium to long-term, build a pipeline of skilled personnel and develop institutional procedures and processes to sustain sector investments and strengthen incentives for retention of capacity developed.

144. For this, the countries need to have in place appropriate incentives (or disincentives to resign from the agency) to retain the trained staff or ensure sufficient pipeline of skilled personnel who could be trained quickly. The latter points to coordination with secondary and vocational education institutions to ensuring that the right mix of skills is nurtured to meet the sector technical needs. Depending on country context, close liaison with ongoing public sector management initiatives as well as collaboration with education sector initiatives may be needed between government and development partners. Towards this goal the transport, public expenditure management, and education sector staff in ADB's Pacific Department would need to work together to conduct education needs assessment; develop educational programs, and establish measurable outcome and impact targets to assess the success of these efforts (paras. 104 and 126).

145. **Increase the viability of transport infrastructure investments by carefully forecasting transport sector benefits and costs based on past sector experience and rigorous sensitivity analyses, in the light of high volatility in construction prices and foreign exchange rates.** When preparing new projects, sensitivity analyses need to be given more prominence and done more rigorously, based on actual experience. Prudently estimated traffic growth, tourist visits, and cargo throughput, etc., since several past calculations of EIRRs and FIRRs have tended to be based on rather optimistic economic estimates. The expected volumes of cargo and traffic growth figures should be examined in the light of previous performance as well as macroeconomic forecasts. They have tended to be too optimistic in the past. Road feasibility studies also assume that the completed facility will be properly maintained, but this assumption is not accurate, since in the Pacific region this has clearly not been the case (paras. 64, 91 and 93).

146. **Strengthen Pacific Aviation Safety Office (PASO) service delivery and coverage, by comprehensively evaluating its operations, together with interested development partners.** This would gain the full confidence of member countries' civil aviation authorities and supporting ministries. As the Pacific's first organizational model for regional transport, PASO has good frontrunner potential in regional cooperation initiatives, but the fledgling office grapples with insufficient funding to carry out its full mandate. PASO's performance in servicing member governments (i.e., aviation ministries) needs to have more accountability and transparency among all member countries, its board, and the host Government of Vanuatu. All key donors and stakeholders (including ADB, Australia, New Zealand, and the United Kingdom) need to be involved in making PASO more effective and accountable (paras. 84, 95, and 133).

147. **Improve the effectiveness of sector investments by consolidating communications with stakeholders and allocating more resources to supervision, monitoring and evaluation, based on the country context and sector portfolio.** Particularly for large MFF projects and for countries with relatively higher volume of infrastructure project

pipeline, regularly review the demand for ADB technical staff in the country, rather than relying mostly on the current sub-regional coverage from Fiji or Sydney. In addition, where necessary reduce the multiple communication lines with government counterpart and other donors (e.g. Solomon Islands).[77] ADB should also support governments in developing monitoring and evaluation skills to maintain necessary data, including baseline and transport investment impacts. The United States' Millennium Challenge Corporation in Vanuatu has established a good model (paras. 34 and 112).

[77] In the case of Solomon Islands four lines of liaison between government and ADB: local liaison officer (long-term consultant) in Honiara, processing mission staff from PATE, review mission officers from PLCO in Sydney, and programming and cross-sectoral matters from PAOD and/or PLCO, which raised concerns about the complexity of communications from ADB.

SUMMARY OF EVALUATION APPROACH AND EVALUATION FRAMEWORK

1. The objective of the evaluation is to assess the relevance, efficiency and effectiveness, sustainability and impact of the support of the Asian Development Bank (ADB) for the transport sector in the Pacific.

2. Phase I of the special evaluation study (SES) adopted a meta-evaluation approach, involving a desk review of Pacific Department documents and other reports, and a review of the program completion reports and program performance evaluation reports. The SES augmented existing work by further desk reviews and a trend analysis of studies and data using the program loan impact and outcome statements, and indicators to assess prior and present conditions.

3. Phase II of the SES involved in-country validation and assessments of transport sector projects and reforms, with a view to understanding factors that influenced the reform agenda, achievement of reforms, institutional capacity to effect reforms, and reform sustainability. Interviews were held with ADB staff and key stakeholders involved in the design and implementation process—officials, politicians, members of civil society, and representatives of international development partners in the Pacific developing member countries—to draw on their experience. In addition to reviews of the project loans, the evaluation assessed technical assistance (TA) projects carried out in support of reforms as part of a broad assessment of capacity development. The key questions are shown in Table A1.1.

4. The assessment of TA projects specifically responds to the following four questions:
   (i) Have the targeted outputs and outcomes been achieved?
   (ii) Have the TA projects been implemented efficiently?
   (iii) Will the outcomes of the TA projects be sustained given the institutional and funding constraints?
   (iv) What has been the overall success of the TA projects?

5. The evaluation scoring system rates the overall sector performance based on the weighted performance in each transport subsector. A weighted average score is calculated for each subsector's percentage share, which is based on the amount of lending during the evaluation period.

6. If the overall weighted average score for criteria combined is greater or equal to 2.7, then the overall performance is highly successful; if it is less than 2.7, but greater than or equal to 1.6, the overall performance is successful; if it is less than 1.6, but greater than or equal to 0.8, the overall performance is unsuccessful, and if it is less than 0.8, the overall performance is unsuccessful. See Tables 7 and 8 in the main text.

Table A1.1 Evaluation Framework for the Special Evaluation Study—Transport Sector in Pacific Developing Member Countries

Questions	Methodology	Data Requirements and Sources
1. Strategic Positioning Transport Sector		
1.1 To what extent has the program been consistent with ADB's strategy in the Pacific and with the current Pacific Approach?	Desk review	ADB's country strategies, Pacific-wide strategies Governments' development plans
1.2 To what extent has the sector strategy been consistent with the sector's development needs for domestic connectivity and international links?	Discussions with ADB staff, government officials, and other development partners	The Pacific Plan 2005
1.3 Has the sector strategy been consistent with the government plans (including government absorptive capacity)?		
1.4 ADB's Pacific strategy in 2005 as well as the current one focus on private sector development. To what extent can this continued focus be deemed appropriate? In other words, has the economic development in general and the transport sector development in particular improved under this focus?		
1.5 The 2005 strategy stated that ADB's most important contribution and primary mode of assistance will be its knowledge products and services, provided mainly through grant-financed TA, economic, thematic, and sector analytic work, and policy advice. To what extent has this strategic focus been effective in achieving the development goals in the transport sector?		
1.6 To what extent were the transport sector strategies positioned to result in long-term continuity of the benefits of ADB's assistance in terms of institutional development within the public and private sectors, as well as leading to sustainability of the outcomes?		
1.7 **Aid coordination.** To what extent did ADB develop partnerships with other development partners with proper modalities, to create synergies and avoid duplicative efforts—at the planning stage?		

Questions	Methodology	Data Requirements and Sources
1.8 **Selectivity.** ADB has focused on few subsectors in a few countries in the Pacific. To what extent has this focus been consistent and effective in ensuring development effectiveness? 1.9 What is the quality of the design of sector strategies' results frameworks (e.g., sufficiency of indicators on results, risks, and mitigations, as well as availability of baseline data)? **Emergency Assistance** 1.10 Owing to the nature of the emergency assistance, it cannot be evaluated using the above criteria.		
2. Relevance of the Program **Transport Sector Assistance** 2.1 To what extent has ADB assistance translated the strategies into an assistance program that is relevant to and consistent with the sector's development needs? 2.2 Were the road, port, and airport designs and technologies used for ADB projects appropriate to achieving their objectives? 2.3 What is the design quality of key projects' DMFs (e.g., adequacy of sector indicators on results and availability of baseline data); and design quality of M&E systems and PIUs and PMUs of key projects or programs (e.g., whether they were designed to have adequate numbers and quality of personnel to integrate into the sector and/or country's normal operation systems, etc.)? **Emergency Assistance** 2.4 Was the emergency assistance designed to enable quick recovery from the conflict or natural disaster? 2.5 To what extent did the emergency assistance focus on select subsectors and geographic areas to enable development effectiveness and implementation efficiency?	Desk review Discussions with ADB staff, government officials, and other development partners	ADB's RRPs, project feasibility studies ADB's operations business plans ADB publications on Pacific governments' development plans The Pacific Plan 2005 Reports from other development partners

Questions	Methodology	Data Requirements and Sources
3. Effectiveness **Transport Sector** 3.1 To what extent have the targeted outputs been achieved (outputs in terms of number of km of roads improved, ports or wharves constructed, airports improved, etc.)? 3.2 **Accessibility.** To what extent have these outputs resulted in the development outcomes in terms of improving access to basic services—health, education, etc.? For ongoing projects, effectiveness will be assessed by the extent to which "*evolving*" outcomes have progressed toward full, targeted outcomes. 3.3 To what extent have these outputs resulted in triggering new economic activities or enhancing existing ones? 3.4 The extent to which cumulative projects/TAs achieved intermediate "*institutional development outcomes*" in the transport sector, which contributed to improving sector management and facilitating the achievement of sector-specific outcomes. What has been the change in the institutional capacities attributable to ADB assistance? 3.5 What has been the level of achievement of the outcomes mentioned in the CPS sector roadmaps? **Emergency Assistance** 3.6 To what extent have the targeted outcomes been achieved in terms of post-conflict and/or post-disaster recovery?	3.1–3.4 Assessment of the outcomes during field visits. The field visits included consultations and focus group discussions 3.5 Consultations with ADB staff in resident missions and headquarters 3.6 Consultations with government officials and other development partners	Field visits to select project sites Secondary data – recent feasibility reports Anecdotal evidence 3.6 Meetings in the country capitals as well as select project locations
4. Efficiency **Transport Sector** 4.1 The Pacific program has seen several supplementary loans and/or grants. To what extent has this supplementary financing demonstrated efficient use of ADB funds? 4.2 For completed projects, what is the EIRR of key projects (inclusive of the extent of utilization of project facilities, e.g., traffic on the roads)? 4.3 What is the quality of M&E implementation for key projects or programs in each sector and/or theme (e.g., timely data collection, adequacy	4.1 Review of ADB documents The field work included a rough estimate of traffic growth on select roads and did not recalculate the EIRR	Project site visits RRPs, PCRs, BTORs, PPERs Discussions with portfolio management specialists in headquarters and resident missions

Questions	Methodology	Data Requirements and Sources
of indicators available for use at midterm reviews and after project or program completion)? **Implementation Efficiency** 4.4 Portfolio performance of cumulative projects or programs in each sector and/or theme (e.g., PPERs; contract awards; actual versus projected disbursements; the extent of delayed implementation, cost overruns, and their resolutions). *Note:* If key projects were delayed by more than 1 year, this sub-criterion would be considered *less efficient*; and *inefficient* if delayed by more than 2 years. 4.5 How do the level of implementation delays and cost overruns compare with the ADB average? 4.6 Were the outcomes achieved in an efficient manner—cost and time efficiency? **Emergency Assistance** 4.7 Were least cost estimates adopted for all projects?		
5. Sustainability 5.1 What is the extent to which the governments of the Pacific DMCs allocated sufficient resources to finance recurrent costs (road maintenance, port and airport maintenance, and operations) after project completion? For port and airport projects—is the tariff structure robust to ensure sufficient revenues for O&M? 5.2 To what extent were appropriate institutional and human resource arrangements created to reinforce the financial capacity in 5.1 and to mitigate risks against sustainability of key projects in the transport sector? 5.3 What is the level of political commitment (e.g., policy/legal/legislative arrangements) to reinforce the financial capacity in 5.1 and to mitigate risks against sustainability of key projects in the transport sector; and evidence of past sustainability efforts? **Emergency Assistance** 5.4 Long-term sustainability might not be the purpose of emergency assistance. In some	Data collection in each country Discussions with government officials and staff from development partners Site visits of select projects	Funding allocations for road maintenance over the last 10 years Legislations and policies per country for road maintenance. Meetings in the Pacific DMCs with government officials and development partners Technical assessment by consultants

Questions	Methodology	Data Requirements and Sources
cases, it might be an underlying rationale, e.g., in a post-conflict situation. In all cases, to what extent was the emergency assistance sustained to enable long-term benefits?		
6. Impacts 6.1 What have been the typical development impacts attributable to ADB's transport sector assistance in particular and to the transport sector improvement in general?	Stakeholder consultations in select project areas using focus group discussions	Secondary data on change in socioeconomic patterns Reports from other development partners and NGOs Anecdotal evidence
6.2 What has been the contribution to broader development goals such as sustainable growth, poverty reduction, or gender development?	Discussions with government officials	
6.3 ADB's Pacific strategy has targeted improved private sector environment as a key goal in its past and current strategy. To what extent has the transport sector assistance contributed to this goal?		
6.4 To what extent has ADB's transport sector assistance enabled regional cooperation impacts?		
6.5 What have been the intended or unintended resettlement impacts of ADB assistance?		
6.6 What are the broad socioeconomic impacts of the projects?		
6.7 To what extent has ADB's transport sector assistance been climate-change proof?		
Emergency Assistance 6.8 To what extent has the emergency assistance enabled medium-term to long-term development impacts?		

ADB = Asian Development Bank, BTOR = back-to-office report, CPS = country partnership strategy, DMC = developing member country, DMF = design and monitoring framework, EIRR = economic internal rate of return, km = kilometer, M&E = monitoring and evaluation, NGO = nongovernment organization, O&M = operation and maintenance, PCR = project completion report, PIU = project implementation unit, PMU = project management unit, PPER = project performance evaluation report, RRP = report and recommendation of the President, TA = technical assistance.
Source: Independent Evaluation Department.

ASSESSMENT OF ADB'S PACIFIC DEVELOPMENT STRATEGIES FOR THE TRANSPORT SECTOR

A. Background

1. The approach of the Asian Development Bank (ADB) to development in the Pacific has been guided by a common framework since 1996. Despite the differences in their economic and social characteristics, the Pacific developing member countries (DMCs) share several challenges posed by their geography. Below is a summary of ADB's key strategies in the Pacific. ADB has adopted a two-pronged approach—a Pacific-wide strategy to create consistency in its work with the various countries, and a country-specific strategy in select Pacific DMCs.

B. ADB's Pacific Strategies

2. **First and second Pacific strategies**. The first Pacific strategy (1996–2000) was prepared in 1995.[1] Prior to this, strategies were prepared for individual countries. In the mid-1990s, ADB, in consultation with development partners, developed strategies to tackle constraints to reform and development. These focused on (i) creating an enabling macroeconomic environment; (ii) reducing the size and raising productivity of the public service; (iii) creating an enabling environment for the private sector and lowering costs for domestic and foreign business; (iv) increasing returns from productive sectors; and (v) boosting regional cooperation, including resource management, trade, and transportation.

3. The second Pacific strategy (2000–2004) was prepared in 2000.[2] In recognizing the continued disappointing growth performance and increasing poverty, it included lessons from the implementation of the 1996–2000 strategy, i.e., the need to boost ownership of policy reform and investment programs. Specifically, there was a need to (i) promote Pacific DMCs' ownership of the policy reform and investment programs, (ii) design development interventions that take into account local culture and local capacities, (iii) pace and sequence governance and economic reforms to ensure effective institutionalization, and (iv) use consultants judiciously without creating dependency. The strategy proposed continuing support for economic management, governance, and public sector reform, and called for the continued use of program and sector loans to support reform initiatives.

4. **Third and fourth Pacific strategies.** The strategy that covered 2005–2009 emphasized support for (i) the creation of a conducive environment for the private sector, (ii) the supply of and demand for quality basic social services, and (iii) the promotion of effective development processes. Under the 2005–2009 strategy, ADB tackled environmental, economic, and political fragilities of the region, promoting inclusive and sustainable economic growth.[3] Its assistance emphasized capacity building and good governance in public sector land development. The strategy maintained a focus on country-specific engagement and operations, albeit with emphasis on more effective and incisive processes and with regional cooperation playing an important complementary role.

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[1] ADB. 1996. *Strategy for the Pacific: Policies and Programs for Sustainable Growth*. Manila.
[2] ADB. 2000. *A Pacific Strategy for the New Millennium*. Manila.
[3] ADB. 2005. *A Pacific Strategy for the Asian Development Bank 2005–2009: Responding to the Priorities of the Poor*. Manila.

5. In 2009, ADB launched a new approach for development efforts during 2010–2014.[4] The Pacific Approach, which was guided by the Strategy 2020[5] and the Pacific Plan,[6] is currently being implemented and will not be covered by this special evaluation study (SES). It represents a shift from paying attention only to the type of development assistance provided to how best it can be delivered on the ground. The strategy focuses on promoting consensus and ownership of initiatives by governments, civil society, and local communities. Specifically, it aims to improve assistance effectiveness by creating an environment that will lead to greater productivity, increased private sector investment, and sustained economic growth. It requires ADB to take a more proactive role in reaching agreements with governments and other aid agencies on how to establish and implement more effective policies. It also supports stronger regional cooperation, the regional provision of services, and better policies.

C. Country Strategies in the Pacific

6. In addition to the Pacific-wide strategies, ADB adopted several country strategies that incorporated investments in transport. Tables A2.1–A2.6 provide a summary of transport sector elements in these country strategies.

Table A2.1: Transport Sector Components in the Country Strategy for Cook Islands

Item	2008 Country Partnership Strategy (2008–2012)
Strategic thrust	The strategic focus proposed for the Country Partnership Strategy (CPS) 2008–2012 was derived from the National Sustainable Development Plan (NSDP) and addressed the binding constraints to private sector-led, environmentally sustainable economic growth, through better economic and social infrastructure and public sector service delivery. For transport, in particular—strengthened and affordable basic infrastructure and utilities to support national development.
Program focus area	The improvement of public sector service delivery and provision of an enabling environment for private sector growth started from a secure and efficient port infrastructure in Rarotonga.
Transport strategy/roadmap	Sector strategy aimed to improve infrastructure capacity to promote private sector growth and improve access to and delivery of basic services through the expansion of Avatiu Port and secure and efficient port services.
Specific transport intervention	Loan for Infrastructure Development Project Phase 1 (Avatiu Port)
Specific targets versus baseline	Rehabilitated and strengthened wharf facilities at Avatiu Port on Rarotonga with capacity for catering for 100-meter vessels (increased from 60-meter vessels).

Source: Asian Development Bank's internal database.

[4] ADB. 2009. *ADB's Approach to Assisting the Pacific (2010–2014).* Manila.
[5] ADB. 2008. *Strategy 2020. The Long-Term Strategic Framework of the Asian Development Bank, 2008–2020.* Manila.
[6] Pacific Islands Forum Secretariat. 2005. *The Pacific Plan.* Suva.

Table A2.2: Transport Sector Components in the Country Strategy for the Fiji

Item	2004 Country Strategy and Program Update (2005–2007)	2006 Country Strategy and Program Update (2006–2008)
Strategic thrust	The government had made considerable progress in accelerating growth and restoring political harmony, but improvements in several areas were necessary. The strategy for the transport sector was encapsulated in the need to support more public investments in productive physical infrastructure development in key sectors to stimulate economic growth and poverty reduction.	Same strategic thrust as in the Country Strategy and Program Update (2005–2007).
Program focus area	With chronic lack of investment in physical infrastructure, the focus was to expedite road development to improve connectivity through road upgrading, safety, and sector reforms. Build–operate–transfer legislation was to be in place soon to ensure the effective funding options for the country's transport sector development, in airports, ports, and roads.	The focus was on increased access to affordable transport and energy services.
Transport strategy/roadmap	No specific transport strategy.	No specific transport strategy.
Specific transport intervention	Third Road Upgrading (1997), Fiji Ports Development (2002), Fourth Road Upgrading (2005), Airports Rehabilitation and Upgrading (2005), Civil Aviation and Airports Improvement (2003)-PPTA, Fourth Road Upgrading (2004)-PPTA	Fiji Ports Development (2002), Fourth Road Upgrading (2005), Airports Rehabilitation and Upgrading (2005), Civil Aviation and Airports Improvement (2003)-PPTA, Fourth Road Upgrading (2004)-PPTA
Specific targets versus baseline	None available.	Increase in road asset value: sealed kilometer/total network; improved port cargo handling efficiency; more effective road sector management framework: Fiji Road Authority, with cost recovery system, established by 2008; enhanced capacity at international airports measured in square meters of terminal space/passenger; and number of passengers landed.

PPTA = project preparatory technical assistance.
Source: Asian Development Bank's internal database.

Table A2.3: Transport Sector Components in the Country Strategy for Papua New Guinea

Item	2006 Country Strategy and Program Update (2006–2010)	2009 Country Strategy and Program Update Medium-Term Review (2006–2010)	2010 Country Partnership Strategy (2011–2015)
Strategic thrust	Transport sector strategy was encompassed in the goals of export-driven economic growth and fostering of rural development, poverty reduction, and human resource development.	Same as CSPU 2006–2010	This CPS responded to the government's request for ADB to scale-up its support for infrastructure development and management. A strong portfolio and forward pipeline has been developed in road transport, maritime transport, civil aviation, and power.
Program focus area	Focus was on transport infrastructure rehabilitation and maintenance of Highlands Highway, district roads, community water transport, and airport maintenance to promote income-earning opportunities; improved alignment of infrastructure and improved national framework for road maintenance and rehabilitation; improved accessibility and reduced transport cost in Highlands region; and more effective and efficient ports, wharves, and airports.	Same as CSPU 2006–2010	Transport infrastructure support will account for over 80% of ADB's PNG program.
Transport strategy/roadmap	Rehabilitation and maintenance of transport infrastructure; implementation of a national system of roads subsector cost recovery; maintained, rehabilitated and improved roads in the 5 Highlands provinces; maintained and improved Lae Port, operating efficiently and profitably; maintained, rehabilitated and improved maritime and river transport infrastructure in 8 coastal provinces.	Same as CSPU 2006	More efficient, safer movement of people and goods on roads in the Highlands region; more efficient and safer movement of people and goods through the 21 National Airports Corporation airports; and more efficient, safer, movement of people and goods through Lae and other ports and by water transport among remote communities.

Item	2006 Country Strategy and Program Update (2006–2010)	2009 Country Strategy and Program Update Medium-Term Review (2006–2010)	2010 Country Partnership Strategy (2011–2015)
Specific transport intervention	TA Road Authority Development, TA Transport Sector (2008), Road Maintenance and Upgrading Sector Project (2006), Highlands Highway/Feeder Roads Project (2008), Lae Port Development Project (2007), TA Road Authority Development for Road Maintenance/Upgrading Project	Road Maintenance and Upgrading Sector Project: loans 1709, 2242, and 2243; Highlands Region Road Improvement Investment Program MFF: loans 2496 and 2487; National Road Authority Capacity Development TA; Increasing Road Maintenance Financing and Improving Private Sector Participation in Road Development PATA (2009); Assistance for Bridge Replacement Program PPTA (2010); Expanding Road Safety Initiatives ADTA (2010); Lae Port Development Project- Tidal Basin Phase I PPTA; Lae Port Development Project: loans 2398 and 2399; Lae Port Livelihood and Social Improvement: grant 9113; National Airports Development PPTA (2009); National Airports Development Sector Project (2009); Rehabilitation of Maritime Navigation Aids: loan 1754 (2008); Community Water Transport Project: loan 2079.	Land transport policies and reforms; road maintenance and upgrading; airports, air navigation and security; development of civil aviation capacity; ports and terminal facilities; small landings and shipping; and community water transport
Specific targets versus baseline	None available.	Overall transport: Long-Term National Transport Plan Strategy and Medium-Term Transport Plan (2011–2016) in place by the end of 2010 Roads: (i) NRA delivering 1,000 km of national highway maintenance by the end of 2010 (from 0 km in 2006), (ii) start by 2010 in the Highlands provinces of long-term maintenance contracts, (iii) start of implementation of ADB's 2008 governance risk assessment and management plan prepared for the road sector Transport costs in the Highlands: (i) at least five international contractor bids received for road rehabilitation works by the end of 2010 (from 0 in 2006), (ii) 150 km in road rehabilitation works completed annually by the end of 2010 (18 km as of the end of 2008); (iii) by the end of 2010, share of National Highway sections assisted by ADB in good condition increased to 45% (from 13% in 2006), and share in fair condition increased to 45% (from 30% in 2006) Ports, wharves, and airports: (i) construction works at the Lae Port Tidal Basin 25% completed by the end of 2010,	Roads: Triple length of national roads to 25,000 km, 100% of national roads in good condition, and 100,000 people benefiting from a 25% reduction in their travel time from their communities to nearest market from 2011 levels; Airports: All international airports meet international certification standards; 10 airports upgraded to allow them to be used by jets with higher seating capacity at 116,000 passengers per year (2011 baseline: 100,000); Ports: Triple the number of water transport routes serviced and the number of vessels, and upgrade ports; reduce

Item	2006 Country Strategy and Program Update (2006–2010)	2009 Country Strategy and Program Update Medium-Term Review (2006–2010)	2010 Country Partnership Strategy (2011–2015)
		(ii) detailed engineering and design under way by the end of 2010 for the upgrading of up to three national airports Safe water transport: (i) Maritime navigational aids network operational by the end of 2010; (ii) seven community water transport franchise schemes tendered by the end of 2010; and (iii) 40 small coastal and river landings, jetties, and wharves restored by the end of 2010	international port turnaround time to 1 day, 4.0 million revenue tons of break-bulk throughput in Lae (2011 baseline: 2.8 million revenue tons)

ADB = Asian Development Bank, ADTA = advisory technical assistance, CSPU = country strategy and program update, km = kilometer, NRA = National Roads Authority, PATA = project preparatory technical assistance, PNG = Papua New Guinea, TA = technical assistance.
Source: Asian Development Bank's internal database.

Table A2.4: Transport Sector Components in the Country Strategy for Solomon Islands

Item	2006 Country Strategy and Program (2006–2010)	2007 Country Operations Business Plan (2008–2010)	2009 Interim Country Partnership Strategy (2009–2011)
Strategic thrust	To provide transportation infrastructure and services	No change from CSP 2006–2010.	No change from CSP 2006–2010.
Program focus area	ADB was to assist the government to sustainably manage development fund and managing an NTP. ADB was to assist in the implementation of a franchise scheme for uneconomic routes to facilitate improved availability and efficiency of inter-island transport services.	No change from CSP 2006–2010.	No change from CSP 2006–2010.
Transport strategy/ roadmap	ADB's transport strategy aimed to address institutional constraints, including improving the capacity of MID for strategic planning, procurement, and management; developing the capacity of private sector contractors; providing grant-financed road rehabilitation projects; creating a franchise tendering scheme for inter-island shipping; restructuring or privatizing Solomon Airlines; preparing an NTP; creating a national transport fund; and creating a national	No revisions to the CSP 2006–2010 transport strategy.	No revisions to the CSP 2006–2010 transport strategy.

Item	2006 Country Strategy and Program (2006–2010)	2007 Country Operations Business Plan (2008–2010)	2009 Interim Country Partnership Strategy (2009–2011)
	maritime safety authority.		
Specific transport intervention	Post-Conflict Emergency Rehabilitation Project (2000); ADF Grant: Road Improvement Sector Project (2006); Institutional Strengthening for the Ministry of Infrastructure Development (MID) (2004), Diagnostic Study of Interisland Transport (2004), Implementation of Interisland Transport Reforms (2005), Strengthening Interisland Shipping (proposed for 2006), MID Technical Support Program (proposed for 2008), Establishment of the Pacific Aviation Safety Office (2005) (participating member, but not a borrower or guarantor): Regional TA for Civil Aviation Safety and Security (2003), Regional TA for Pacific Regional Transport Analysis (2004), Regional TA for Partnering to Improve Delivery of Infrastructure Services (2005), Regional TA for Aviation Legislative and Regulatory Review (2005), Regional TA for Improving Delivery of Infrastructure Services (2005)	Establishment of the Pacific Aviation Safety Office (Loan 2183-REG 2005), Preparing the Domestic Maritime Support Project and Technical Support Program (TA, 2007), Domestic Maritime Support Project (ADF Grant, 2008), Establishment of Maritime Authority (TA, 2008), Preparing Rural Transport Infrastructure Project (TA 2009), Rural Transport Infrastructure Project (ADF Grant 2010), Supporting Rural Transport Infrastructure Development (TA 2010), Regional TA for Aviation Legislative and Regulatory Review (2005), and Improving Delivery of Infrastructure Services (2005)	Solomon Islands Road Improvement Project (ADF Grant 0048/0049/0050 SOL, 2006), Emergency Assistance Project (ADF Grant 0078-SOL, 2007), Strengthening Disaster Recovery Planning and Coordination (TA 4944-SOL, 2007), Preparing the Domestic Maritime Support Project and Technical Support Program (TA 4980-SOL, 2007), Domestic Maritime Support Project (ADF Grant 0127-SOL, 2008) Establishment of the Solomon Islands Maritime Administration (TA 7178-SOL, 2008), Preparing the Transport Sector Development Project (TA 2009), Rural Transport Infrastructure Project (ADF Grant, 2010), Supporting Rural Transport Infrastructure Development (TA, 2010), Strengthening Ministry of Infrastructure Development (TA, 2011), Establishment of the Pacific Aviation Safety Office (Loan 2183-REG, 2005), Improving Delivery of Infrastructure Services (TA 6257-REG, 2007)
Specific targets versus baseline	Solomon Islands Road Sector Improvement Project approved in 2006; a functional franchise scheme within 1 year for inter-island shipping; cabinet decision on Solomon Airlines restructuring/ privatization by end of 2006; a functional national transport fund within 1 year; a functional maritime safety authority within 3 years	Current transport infrastructure stock operates to design standards (to be specified in the NTP); air and sea transport service frequencies to all provinces meet an agreed upon minimum standard (to be specified in the NTP); NTP to be updated every 2 years and NTP funding channels and mechanisms to be finalized by 2008; transport agreement(s) for uneconomic routes signed between the government and operators, in accordance with due	100 km of rural roads and 12 rural wharves rehabilitated by 2012; road maintenance via labor-based methods and community contracting implemented in five provinces by 2010; NTP updated every 2 years; NTP funding channels and mechanisms finalized by 2009; franchise shipping agreement(s) for at least six uneconomic routes signed between the government and operators by 2009; critical constraints to rural accessibility alleviated through rehabilitation of

Item	2006 Country Strategy and Program (2006–2010)	2007 Country Operations Business Plan (2008–2010)	2009 Interim Country Partnership Strategy (2009–2011)
		process; and critical constraints to rural accessibility alleviated through rehabilitation of feeder roads and improved interisland shipping services	feeder roads, rural wharves; and improved interisland shipping services.

ADB = Asian Development Bank, ADF = Asian Development Fund, CSP = country strategy and program, km = kilometer, MID = Ministry for Infrastructure Development, NTP = national transport plan, REG = regional, TA = technical assistance.
Source: Asian Development Bank's internal database.

Table A2.5: Transport Sector Components in the Country Strategy for Vanuatu

Item	2003 Country Strategy and Program Update (2004–2006)	2008 Country Operations Business Plan (2009–2011)	2009 Country Partnership Strategy (2010–2014)
Strategic thrust	To create an enabling environment for private sector development through adequate physical (transport) infrastructure to support private sector growth	Same as CSPU 2004–2006.	ADB's strategic support for Vanuatu can be divided into three core sectors and one core theme. The core sectors are: (i) transport to improve connectivity to markets and social services; (ii) urban development; and (iii) energy efficiency. ADB's core theme is improving the enabling environment for the private sector.
Program focus area	Sector support was to focus on addressing: infrequent shipping services in some islands; high cost of shipping and handling; poor quality of infrastructure; unreliable air transport in some places; high cost of international air transport; lack of road access; high cost of road access; and wear and tear on vehicles	Three areas had been identified for future engagement, all of which address binding constraints to the country's development: (i) sustainable development of Port Vila, which is of critical importance for tourism, public health, environmental stability, and employment creation; (ii) inter-island shipping, with a view to unlocking access to opportunities for the 80% of the population residing in the outer islands; and (iii) strengthening of urban–rural links by expanding and developing more efficient road and air services.	ADB's sector support will focus on maritime transport, since the constraints are severe, the payoffs to improved access to markets and services are high, and there are clear opportunities to complement external assistance provided by other development partners in road transport and civil aviation.
Transport strategy / roadmap	No specific transport strategy available	No specific transport strategy available	Sector strategy focuses on reforming interisland shipping

Item	2003 Country Strategy and Program Update (2004–2006)	2008 Country Operations Business Plan (2009–2011)	2009 Country Partnership Strategy (2010–2014)
Specific transport intervention	Loan 1448-VAN Urban Infrastructure Project: road and wharf rehabilitation due to earthquake damages of 3 January 2002	None mentioned.	Proposed programs include: Interisland Shipping Service Reforms PPTA, Interisland shipping project focusing on: improvement to interisland shipping services, shipping infrastructure investment and institutional strengthening and capacity development
Specific targets versus baselines	More frequent shipping services for villages served only once or twice a year; reduced costs of both stevedoring and sea transport; restoration of wharfs; fewer airline cancellations; 33% reduction from the $200 per person-hour cost of travel; increased road access for villages and reduced road access costs; and improved quality of road surfaces	None mentioned.	Improved access to markets in target areas; operational shipping support scheme by 2011; rehabilitation or construction of priority rural wharves by 2013; increased compliance with safety regulations; all vessels inspected and passing mandatory safety surveys by 2012; greater predictability and reliability of services to outer islands; increased frequency for all destinations to at least one voyage per quarter and performance to within 48 hours of scheduled voyages by 2012; improved access to shipping services, and thereby markets for goods, for rural women

ADB = Asian Development Bank, CSPU = country strategy and program update, PPTA = project preparatory technical assistance, VAN = Vanuatu.
Source: Asian Development Bank's internal database.

Table A2.6: Transport Sector Components in the Country Strategy for Timor-Leste

Item	2003 Country Strategy and Program Update (2003–2004)	2005 Country Strategy and Program Update (2006–2008)
Strategic thrust	Improved public infrastructure (including transport) to support private sector growth and basic social services.	Create opportunities for economic participation
Program focus area	Rehabilitate key infrastructure, including roads and water supply and sanitation, rural electrification and other rural infrastructure.	Provide roads and bridges for the movement of people and goods, orderly and efficient functioning of markets, and sustainable development
Transport strategy/ roadmap	No specific transport strategy available	No specific transport strategy available

Item	2003	2005
Specific transport intervention	Transport Sector Improvement (2000) worth $0.5 million	TFET Grant 8181- TIM: Emergency Infrastructure Rehabilitation Project II, ADF Grant-TIM: Transport Sector Improvement Project, TA-TIM: Preparation of Road Sector Improvement Project II
Specific targets versus baseline	Improved accessibility to markets and services; and enhanced access to essential public services	Improved availability of efficient, cost-effective, and financially sustainable transport infrastructure to increase connectivity and thus support social and economic development, in particular: (i) 360 km of main roads and bridges rehabilitated and maintained to satisfactory levels (including portions of ongoing projects carrying over to 2006−2008); and (ii) transport costs (vehicle operating costs plus travel time) on main roads reduced by 15%.

ADF = Asian Development Fund, km = kilometer, TA = technical assistance, TFET = Trust Fund for East Timor, TIM = Timor-Leste.
Source: Asian Development Bank's internal database.

Table A2.7: Selected Pacific Developing Member Countries Key Indicators

Key Indicators	Period	COO	FIJ	FSM	KIR	PNG	RMI	SAM	SOL	TIM	TON	VAN
National Income Accounts, Period Average												
Real GDP (US$, million)												
	1993–1997	104.2	1,509.6	218.1	52.1	3,646.6	122.7	204.9	479.1	...	167.2	235.7
	1998–2001	80.8	1,672.5	220.4	65.2	3,548.9	107.7	240.6	463.2	290.4	185.6	270.4
	2002–2007	136.7	1,866.5	230.7	73.9	3,786.0	123.3	304.4	454.9	298.7	207.1	293.8
	2008–2009	156.6	1,892.3	223.1	74.9	4,580.3	128.8	334.9	575.8	364.4	210.2	367.2
Real GDP Growth (%)												
	1993–1997	(0.8)	2.5	0.7	3.6	4.9	(3.1)	3.2	4.3	...	2.4	3.6
	1998–2001	(5.8)	2.6	2.5	4.1	(1.1)	1.7	4.7	(5.2)	0.6	3.5	1.8
	2002–2007	15.1	1.9	0.3	2.4	3.0	2.9	3.8	5.3	2.5	0.9	3.8
	2008–2009	(8.1)	(1.4)	(2.2)	(0.9)	5.6	(1.0)	(0.3)	2.5	7.5	0.8	5.2
Balance of Payments, Period Average (% of GDP in current market prices[a])												
Exports												
	1993–1997	...	26.8	9.5	10.7	49.8	15.4	4.4	47.1	...	7.7	12.0
	1998–2001	...	29.0	9.7	9.0	56.2	7.5	14.5	34.7	...	6.4	9.7
	2002–2007	...	24.6	8.3	4.7	65.6	10.7	5.5	32.3	2.3	6.7	8.4
	2008–2009	...	24.4	9.9	5.7	63.5	10.5	2.0	34.3	2.2	2.7	6.9
Imports												
	1993–1997	...	(39.3)	(56.6)	(57.1)	(26.6)	(56.8)	(51.6)	(47.7)	...	(33.3)	(34.0)
	1998–2001	...	(42.6)	(53.5)	(54.7)	(30.0)	(62.8)	(102.3)	(37.3)	...	(35.1)	(28.8)
	2002–2007	...	(47.8)	(51.3)	(60.8)	(35.3)	(58.6)	(62.6)	(36.5)	(37.5)	(37.0)	(32.1)
	2008–2009	...	(57.6)	(56.9)	(53.8)	(37.4)	(59.8)	(42.6)	(48.8)	(63.8)	(40.8)	(40.5)
Balance on Goods												
	1993–1997	...	(12.5)	(47.0)	(46.4)	23.3	(41.4)	(47.2)	(0.7)	...	(25.5)	(22.0)
	1998–2001	...	(13.7)	(43.8)	(45.7)	26.2	(55.3)	(87.8)	(2.6)	...	(28.8)	(19.1)
	2002–2007	...	(23.3)	(43.0)	(56.2)	30.3	(47.9)	(57.1)	(4.2)	(35.3)	(30.4)	(23.7)
	2008–2009	...	(33.2)	(47.1)	(48.1)	26.2	(49.3)	(40.6)	(14.4)	(61.6)	(38.1)	(33.7)

Key Indicators	Period	COO	FIJ	FSM	KIR	PNG	RMI	SAM	SOL	TIM	TON	VAN
Current Account Balance												
	1993–1997	...	(0.9)	(9.2)	(1.8)	8.2	3.5	(1.5)	(1.5)	...	(3.9)	(8.9)
	1998–2001	...	(2.5)	(15.5)	4.5	6.0	(1.5)	(7.7)	(3.9)	...	(5.9)	(6.5)
	2002–2007	...	(9.0)	(3.2)	(8.1)	4.3	(1.8)	(12.1)	(2.0)	230.7	(2.3)	(7.1)
	2008–2009	...	(17.9)	(6.3)	(32.3)	1.8	(8.0)	(1.5)	(22.3)	318.2	(8.3)	(7.0)
Overall Balance of Payments												
	1993–1997	...	0.6	(0.4)	(1.1)	1.2	(3.2)	0.5	1.2	...	(1.2)	(0.3)
	1998–2001	...	2.4	(6.2)	11.2	5.5	(3.0)	(0.4)	(1.0)	...	(0.8)	(5.4)
	2002–2007	...	(1.9)	3.7	(1.9)	4.2	(5.3)	0.6	0.1	7.8	2.3	3.3
	2008–2009	...	(5.6)	3.8	...	2.6	(9.7)	4.6	2.4	1.4	3.5	1.5
Government Finance, Period Average (% of GDP at current market prices, unless otherwise indicated)												
Total Revenue												
	1993–1997	36.1	25.6	26.1	80.5	24.5	28.9	32.0	27.0	...	25.9	23.0
	1998–2001	31.1	27.6	23.9	99.3	24.3	21.8	25.5	25.4	...	21.7	18.8
	2002–2007	28.9	25.1	22.1	77.7	27.0	24.4	24.2	25.6	57.5	23.0	17.9
	2008–2009	31.0	25.3	21.9	...	27.3	25.7	26.5	33.0	96.6	24.3	20.2
Taxes												
	1993–1997	33.3	21.4	10.0	19.4	21.2	18.0	24.6	20.1	...	15.1	19.4
	1998–2001	25.3	20.6	12.2	20.7	22.1	16.1	20.9	19.4	...	15.8	16.0
	2002–2007	25.0	21.5	11.5	21.3	24.9	17.4	21.3	22.6	9.6	19.4	16.0
	2008–2009	26.5	21.8	11.6	...	24.7	17.2	22.8	29.2	7.8	20.6	18.2
Total Expenditure												
	1993–1997	44.1	29.2	75.0	80.3	29.0	74.2	47.7	30.1	...	26.5	27.0
	1998–2001	37.1	31.4	72.5	92.5	31.5	56.0	32.9	30.5	...	23.1	24.9
	2002–2007	34.1	29.0	65.2	139.0	32.4	62.2	31.0	37.0	43.9	23.2	19.7
	2008–2009	36.7	25.1	60.8	...	32.8	66.7	35.3	39.7	99.7	25.6	24.4
Overall Fiscal Surplus/(Deficit)												
	1993–1997	(1.7)	(3.3)	0.0	25.6	(1.5)	(5.5)	(6.6)	(4.2)	...	1.1	(2.1)
	1998–2001	(1.4)	(3.8)	(4.6)	39.8	(2.5)	10.0	(0.2)	...	...	(0.7)	(4.1)
	2002–2007	0.3	(3.9)	(3.1)	13.7	0.5	2.2	(0.5)	(4.4)	13.6	2.5	(0.1)
	2008–2009	0.7	0.5	(1.7)	...	(1.2)	3.8	(3.0)	(1.8)	(3.1)	2.5	2.1

Key Indicators	Period	COO	FIJ	FSM	KIR	PNG	RMI	SAM	SOL	TIM	TON	VAN
External Debt[b] (US$ million)												
	1993–1997	23.4	184.8	127.5	7.6	2,732.7	139.7	155.3	150.3	...	56.9	46.3
	1998–2001	48.8	165.3	90.6	8.2	2,597.6	90.5	150.4	159.6	...	65.3	69.0
	2002–2007	57.5	222.7	64.8	12.6	2,337.9	94.0	189.7	175.1	...	81.6	94.6
	2008–2009	38.0	379.0	...	10.1	1,417.7	92.1	256.8	164.8	...	90.3	138.1
Other Indicators												
Governance Indicators (Percentile Rank)												
Government Effectiveness												
	2000/2002	61	39	26	50	34	17	66	13	25	36	33
	2009	16	18	35	27	22	4	56	16	11	43	45
Regulatory Quality												
	2000/2002	64	28	17	14	30	22	53	8	10	24	33
	2009	19	20	21	8	32	16	45	8	11	29	25
Control of Corruption												
	2000/2002	54	62	45	48	15	32	56	20	37	35	26
	2009	33	26	55	55	4	44	61	44	16	29	69
Ease of Doing Business (Ranking 1–183[c])												
	2009	...	61	139	91	108	123	67	106	174	66	59
	2010	...	62	141	93	103	108	61	96	174	71	60

( ) = negative, ... = not available or applicable, COO = Cook Islands, FIJ = Fiji, FSM = Federated States of Micronesia, GDP = gross domestic product, KIR = Kiribati, PNG = Papua New Guinea, RMI = Marshall Islands, SAM = Samoa, SOL = Solomon Islands, TIM = Timor-Leste, TON = Tonga, VAN = Vanuatu.

[a] For Solomon Islands, % of gross domestic product in current factor cost.

[b] Refers to total debt outstanding and disbursed.

[c] With 1 as the easiest and 183 as the most difficult.

Sources: World Bank databank, Asian Development Bank Statistical Database System..

Table A3.1: ADB Loans and Grants to Transport Sector Approved or Implemented, 1995-2010

S. No.	L/GR No.	DMC	Project Name	Sub Sector	Financing ($ million) OCR	ADF	Others	Source	Amount	Approval Date	Closing Date	Performance Rating PCR	PCRVR	PPER
		1	**Road Transport**						524.59					
1	L 1164	FIJ	Second Road Upgrading	Road	18.00				18.00	18-Jun-92	09-Mar-99	1999 GS	x	x
2	L 1530	FIJ	Third Road Upgrading (Sector)	Road	40.00				40.00	26-Aug-97	15-Oct-09	{ x	x	x
	L 2514	FIJ	Third Road Upgrading (Sector) (Supplementary)	Road	26.80				26.80	23-Mar-09		{		
3	L 2541	FIJ	Emergency Flood Recovery (Sector)	Road	17.56				17.56	27-Aug-09				
4	L 2718	KIR	Road Rehabilitation	Road		12.00			12.00	10-Dec-10				
5	L 1153/54	PNG	Transport Infrastructure Development	Road	39.00	30.00			69.00	14-Jan-92	23-Mar-01	{ 2002 PS	x	x
6	L 1709	PNG	Road Maintenance and Upgrading (Sector)	Road	63.00				63.00	16-Nov-99	10-Nov-10	{ x	x	x
7	L 2242/43	PNG	Road Maintenance and Upgrading (Sector) (Supplementary Loans)	Road	35.00	18.00			53.00	29-Jun-06		{		
8	L 2496/97	PNG	Highlands Region Road Improvement Investment Program - Tranch	Road		100.00			100.00	22-Dec-08				
9	L 1303	TON	Transport Infrastructure	Road		10.00			10.00	28-Jun-94	29-Nov-00	2001 HS	x	x
10	GR 9130	PNG	Extending the Socioeconomic Benefits of an Improved Road Networ	Road			2.00	JFPR	2.00	02-Mar-09				
11	GR 48	SOL	Road Improvement (Sector)	Road		0.35			0.35	08-Aug-06				
	GR 49	SOL	Road Improvement (Sector)	Road			6.10	AUS	6.10	08-Aug-06				
	GR 49	SOL	Road Improvement (Sector) (Supplementary)	Road			0.47	AUS	0.47	30-Apr-08				
	GR 49	SOL	Road Improvement (Sector) (Supplementary)	Road			0.21	AUS	0.21	19-Jan-09				
	GR 49	SOL	Road Improvement (Sector) (Supplementary)	Road			1.87	AUS	1.87	20-May-09				
	GR 50	SOL	Road Improvement (Sector)	Road			9.75	NZL	9.75	08-Aug-06				
12	GR 175	SOL	Second Road Improvement (Sector)	Road		15.00			15.00	12-Nov-09				
	GR 176	SOL	Second Road Improvement (Sector)	Road			3.34	EC	3.34	12-Nov-09				
	GR 177	SOL	Second Road Improvement (Sector) (Supplementary)	Road			4.50	AUS	4.50	20-May-10				
	GR 207	SOL	Second Road Improvement (Sector) (Supplementary)	Road			0.36	NZL	0.36	20-May-10				
	GR 210	SOL	Second Road Improvement (Sector) (Supplementary)	Road			0.28	AUS	0.28	20-May-10				
13	GR 243	SOL	Transport Sector Development	Road		12.00			12.00	15-Dec-10				
14	GR 17	TIM	Road Sector Improvement	Road		10.00			10.00	27-Sep-05	29-Apr-10	2010 S	x	x
15	GR 180	TIM	Road Network Development Sector	Road		46.00			46.00	20-Nov-09				
16	GR 9142	TIM	Our Roads Our Future-Supporting Local Governance and Communi	Road			3.00	JFPR	3.00	20-Nov-09				
		2	**Water Transport**						207.78					
17	L 843	VAN	Santo Port	Water		5.75			5.75	29-Sep-87	15-Sep-91	{ 1999 GS	x	2002 S
	L 1080	VAN	Santo Port (Supplementary)	Water		3.40			3.40	19-Mar-91	25-Sep-98	{		
18	L 1754	PNG	Rehabilitation of the Maritime Navigation Aids System	Water	19.80				19.80	12-Sep-00	23-Oct-08	2009 S 2010	S	x
19	L 1902	FIJ	Fiji Ports Development	Water	16.80				16.80	05-Mar-02	01-Mar-07	2008 S	x	x
20	L 1948	RMI	Outer Island Transport Infrastructure	Water		7.00			7.00	28-Nov-02	23-Jan-07	2008 US 2010	US	x
21	L 2079	PNG	Community Water Transport	Water		19.01			19.01	25-Mar-04				
22	L 2398	PNG	Lae Port Development Project	Water	60.00	40.00			100.00	18-Dec-07				
23	L 2472	COO	Avatiu Port Development	Water	8.63	6.88			15.51	20-Nov-08				
24	GR 102	PNG	Lae Port Development	Water			0.36	HIV/AID	0.36	18-Dec-07				
	GR 9113	PNG	Lae Port Livelihood and Social Improvement	Water			1.50	JFPR	1.50	18-Dec-07				
25	GR 127	SOL	Domestic Maritime Support (Sector)	Water		14.00	4.65	EC	18.65	25-Nov-08				
		3	**Air Transport**						96.50					
26	L 2183	REG	Establishment of the Pacific Aviation Safety Office	Air		1.50			1.50	22-Sep-05	03-Sep-10	x	x	x
27	L 2588	PNG	Civil Aviation Development Investment Program - Project 1	Air	25.00				25.00	01-Dec-09				
	L 2589	PNG	Civil Aviation Development Investment Program - Project 1	Air		50.00			50.00	01-Dec-09				
	L 2590	PNG	Civil Aviation Development Investment Program - Project 1	Air		20.00			20.00	01-Dec-09				
		4	**Emergency Assistance**						81.51					
28	L 1193	SAM	Cyclone Damage Rehabilitation	Multi		8.64			8.64	19-Nov-92	22-Apr-98	1998 NR	x	x
29	L 1588	COO	Cyclone Emergency Rehabilitation	Multi		0.80			0.80	08-Dec-97	16-Jun-00	2000 S	x	x
30	L 1684	VAN	Cyclone Emergency Rehabilitation	Multi		2.00			2.00	20-Apr-99	19-Dec-00	2001 S	x	x
31	L 1823	SOL	Post-Conflict Emergency Rehabilitation	Multi		10.00			10.00	21-Dec-00	23-Jun-08	2009 S 2011	S	x
32	L 2174	COO	Cyclone Emergency Assistance	Multi		2.83			2.83	30-Jun-05	13-May-10	2010 S 2011	S	x
33	GR 8181	TIM	Emergency Infrastructure Rehabilitation Project Phase 1	Multi			29.76	TFET	29.76	13-Apr-00	25-Jul-05	2005 PS 2010	{ PS	
	GR 8198	TIM	Emergency Infrastructure Rehabilitation Project Phase 2	Multi			8.99	TFET	8.99	18-May-02	17-Oct-07	2008 S	{	
	GR 43	SOL	Post-Conflict Emergency Rehabilitation (Supplementary)	Multi			2.00	AUS	2.00	08-Feb-06	25-Apr-08	2009 S		
	GR 44	SOL	Post-Conflict Emergency Rehabilitation (Supplementary)	Multi			6.50	NZL	6.50	08-Feb-06	16-Sep-08	2009 S		
34	GR 78	SOL	Emergency Assistance	Multi		4.95			4.95	27-Jun-07				
	GR 78	SOL	Emergency Assistance (Supplementary)	Multi			4.04	EC	4.04	27-Aug-09				
35	GR 165	SAM	Earthquake and Tsunami Disaster Response	Multi			1.00	APDRF	1.00	02-Oct-09	14-Dec-10			
			Total						**910.38**					
			Loans						717.40					
			Grants						192.98					

ADB = Asian Development Bank, ADF = Asian Development Fund, APDRF = Asia Pacific Disaster Response Fund, AUS = Australia, COO = Cook Islands, DMC = developing member country, EC = European Commission, FIJ = Republic of Fiji, GR = grant, GS = generally successful, HS = highly successful, JFPR = Japan Fund for Poverty Reduction, KIR = Kiribati, L = loan, Multi = multisector, NR = not rated, NZL = New Zealand, OCR = ordinary capital resources, PCR = project completion report, PCRVR = project completion report validation report, PNG = Papua New Guinea, PPER = project performance evaluation report, PS = partly successful, REG = regional, RMI = Republic of Marshall Islands, S = successful, SAM = Samoa, SOL = Solomon Islands, TFET = Trust Fund for East Timor, TON = Tonga, VAN = Vanuatu.
Source: Asian Development Bank's internal database.

Table A3.2: ADB Technical Assistance Grants to Transport Sector Financially Closed, Approved, or Implemented, 1995–2010

TA No.	TA Name	DMC	Sub Sector	Type		Total ($000)	Fund Source	Approval Date	Completion Date Exp/Rev	Completion Date Financial	Performance Rating Year	Performance Rating TCR	Performance Rating Year	Performance Rating TPER
						1,425								
7022	Infrastructure Development	COO	Multi	PP		700	JSF/NZL	12-Dec-07	31-May-09	14-Oct-09 }	–	–	–	–
7022	Infrastructure Development (Supplementary)	COO	Multi	PP		125	TASF	30-Dec-08		}				
7287	Infrastructure Services Delivery Improvement	COO	Multi	CD		600	JSF	19-May-09	31-Mar-12					
						5,630								
4099	Civil Aviation and Airports Improvement	FIJ	Air	PP		710	JSF	28-Apr-03	30-Nov-05	30-Nov-05	–	–	–	–
1715	National Transport Sector Plan	FIJ	Road	AD		400	TASF	18-Jun-92			–	–	–	–
1716	Road Safety and Traffic Management	FIJ	Road	AD		150	TASF	18-Jun-92	15-Aug-97	31-May-98 }	–	–	–	–
1716	Road Safety and Traffic Management (Supplem	FIJ	Road	AD		70	TASF	18-Jun-97		}				
2251	Third Road Upgrading	FIJ	Road	PP		600	JSF	20-Dec-94		31-May-98	–	–	–	–
2747	Road Sector Cost Recovery Improvement	FIJ	Road	AD	*	100	TASF	07-Jan-97	31-Mar-00	30-Jun-00	–	–	–	–
2850	Road Sector Reform and Safety Improvement	FIJ	Road	AD		1,400	JSF	26-Aug-97	30-Jun-05	16-Aug-05	2006	PS	–	–
4540	Fourth Road Upgrading (Sector)	FIJ	Road	PP		600	JSF	23-Dec-04	30-Sep-09	31-Dec-09 }	2010	S	–	–
4540	Fourth Road Upgrading (Sector) (Supplementa	FIJ	Road	PP		50	TASF	23-Dec-08		}	–	–	–	–
2321	Transport Sector Institutional Strengthenin	FIJ	TMP	AD		600	TASF	12-Apr-95	31-Jul-96	30-Nov-98	1997	GS	–	–
3199	Port Asset Management Improvement	FIJ	Water	AD		250	TASF	31-May-99	31-Dec-04	21-Apr-05	2005	S	–	–
4850	Improving Infrastructure Services	FIJ	Multi	AD		700	JSF	17-Oct-06	30-Jun-05	12-Jan-10	–	–	–	–
						1,765								
2068	Transport Infrastructure Development	RMI	TMP	PP		600	JSF	11-Mar-94		30-Sep-97	2000	GS	–	–
2756	Institutional Strengthening in the Transpor	RMI	TMP	AD		575	TASF	30-Jan-97	31-Oct-99	31-Mar-00	–	–	–	–
3506	Outer Island Transport Infrastructure	RMI	Water	PP		340	JSF	29-Sep-00	31-Dec-02	31-May-03	–	–	–	–
4004	Improving the Delivery of Sea and Air Trans	RMI	Water	AD		250	TASF	28-Nov-02	31-Oct-05	30-Apr-06	2006	PS	–	–
						650								
4045	Omnibus Infrastructure Development	FSM	Road	PP		650	JSF	18-Dec-02	30-Apr-05	31-Jul-05	–	–	–	–
						11,088								
7263	Civil Aviation Development Investment Progr	PNG	Air	PP	*	225	TASF	08-Apr-09	31-Dec-10					
1658	Institutional Strengthening of the Departme	PNG	Road	AD		750	TASF	14-Jan-92		30-Apr-98	–	–	–	–
3004	Road Asset Management System	PNG	Road	AD		1,000	JSF	03-Apr-98	31-Jul-01	30-Sep-03	2004	S	2002	S
3037	Road Upgrading and Maintenance	PNG	Road	PP		750	JSF	02-Jul-98	31-Oct-01	31-Dec-01	–	–	–	–
3191	Road Sector Cost Recovery Improvement	PNG	Road	AD		350	TASF	06-May-99	30-Nov-00	31-May-01	2001	S	–	–
3378	Road Asset Management System in the Provinc	PNG	Road	AD		581	JSF	28-Dec-99	31-Dec-03	19-Oct-04	2004	S	2002	PS
3716	Road Authority Development	PNG	Road	PP		700	JSF	11-Sep-01	30-Jun-09	11-Sep-09	–	–	–	–
3717	Southern Road Maintenance and Upgrading	PNG	Road	PP		400	JSF	11-Sep-01	30-Jun-03	19-Oct-04	2007	PS	–	–
4945	Highlands Highway (Southern Highlands and E	PNG	Road	PP		500	JSF	27-Jun-07	31-Mar-09	22-Jul-09	–	–	–	–
7214	National Transport Development Plan (2011-2	PNG	Road	AD		700	JSF	16-Dec-08	31-Mar-11					
7420	Improving Road User Charges and Private Sec	PNG	Road	PA		800	JSF	08-Dec-09	31-Dec-11					
7594	Bridge Replacement for Improved Rural Acces	PNG	Road	PP		800	TASF	03-Sep-10	31-Aug-11					
1390	Institutional Strengthening of the Ports Su	PNG	Water	AD		367	TASF	18-Oct-90		30-Sep-95	–	–	–	–

TA No.	TA Name	DMC	Sub Sector	Type		Total ($000)	Fund Source	Approval Date	Completion Date Exp/Rev	Completion Date Financial	Performance Rating Year	Performance Rating TCR	Performance Rating Year	Performance Rating TPER
3162	Rehabilitation of the Navigation Aids Syste	PNG	Water	PP		500	JSF	01-Feb-99	30-Jun-00	31-Aug-02	–	–	–	–
3615	Community Water-Transport Project	PNG	Water	PP		580	JSF	21-Dec-00	31-Jan-03	15-Nov-04	–	–	–	–
3619	Rehabilitation of the Maritime Navigation A	PNG	Water	AD		800	AUS	19-Dec-00	30-Jun-05	28-Dec-05	2009	S	–	–
4793	Lae Port Development-Tidal Basin Phase I	PNG	Water	PP		900	JSF	30-May-06	31-Oct-08	30-Oct-08 }	–	–	–	–
4793	Lae Port Development-Tidal Basin Phase I (S	PNG	Water	PP		160	TASF	08-Jun-07		}	–	–	–	–
7755	Second Community Water Transport Sector	PNG	Water	PP		225	TASF	22-Dec-10						
						350								
1790	Monitoring and Management of the Cyclone Re	SAM	Multi	AD		350	TASF	19-Nov-92	28-Apr-95	30-Nov-99	–	–	–	–
						6,495								
4944	Strengthening Disaster Recovery Planning an	SOL	Road	AD		800	TASF	27-Jun-07	30-May-10	31-Aug-10	2010	S	–	–
7335	Transport Sector Development	SOL	Road	PP		650	TASF/AUS	21-Aug-09	15-Dec-10		–	–	–	–
4527	Diagnostic Assessment of Interisland Transp	SOL	Transp.	AD		350	TASF/AUS	23-Dec-04	31-Mar-07	30-Jun-07	2008	PS	–	–
1780	Upgrading the Solomon Islands Ports Authori	SOL	Water	AD	*	100	TASF	06-Nov-92	31-Oct-93	30-Nov-09	–	–	–	–
4588	Implementation of Interisland Transport Ref	SOL	Water	AD		495	TASF	20-May-05	31-Mar-08	12-Sep-08	2008	S	–	–
4980	Preparing the Domestic Maritime Support	SOL	Water	PP		2,500	JSF	20-Sep-07						
7178	Establishment of the Solomon Islands Maritime	SOL	Water	AD		1,600	TASF/EC	25-Nov-08	30-Jun-11					
						18,125								
7100	Road Network Development	TIM	Road	PP		800	JSF	23-Jul-08	30-Nov-09	28-Feb-10	–	–	–	–
7698	Supporting Road Network Development	TIM	Road	PA		225	JFPR	13-Dec-10						
3401	Transport Sector Restoration	TIM	TMP	AD		1,000	TASF	10-Feb-00	30-Nov-02	23-May-05	2005	S	–	–
3731	Transport Sector Improvement	TIM	TMP	AD		500	JSF	01-Oct-01	31-Mar-08	31-Mar-08	2008	S	–	–
4609	Infrastructure Sectors Capacity Development	TIM	Multi	AD		600	TASF	14-Jul-05	30-Nov-08	22-Feb-10	2009	PS	–	–
4942	Infrastructure Project Management	TIM	Multi	AD		15,000	TASF/AUS	21-Jun-07	12-Nov-11					
						570								
2113	Road Cost Recovery and Safety Strategies	TON	Road	AD		170	JSF	28-Jun-94	30-Jun-99	31-May-01	–	–	–	–
2114	Institutional Development of the Ports Sect	TON	Water	AD		400	JSF	28-Jun-94	31-Dec-99	31-May-01	–	–	–	–
						650					–	–	–	–
2536	Study on Domestic Civil Aviation	TUV	Air	PP	*	100	TASF	22-Feb-96	31-May-96	28-Feb-97	–	–	–	–
2238	Transport Infrastructure	TUV	TMP	PP		300	JSF	14-Dec-94		31-May-98	2000	PS	–	–
3565	TA to Upgrade the Tuvalu Maritime Training	TUV	Water	PP		250	JSF	11-Dec-00	10-Apr-02	31-Oct-02	–	–	–	–
						1,350								
3224	Outer Islands Infrastructure Development	VAN	TMP	PP		750	TASF	14-Jul-99	30-Sep-03	31-Aug-04	2009	PS	–	–
1974	Structural Survey of Port Vila Wharf	VAN	Water	PP	*	100	TASF	10-Nov-93		31-Mar-95	–	–	–	–
7288	Interisland Shipping Support	VAN	Water	PP		500		25-May-09	30-Jun-11					
	Total					48,098								

* = small scale. – = not available, AD = advisory, AUS = Australia, CD = capacity development, COO = Cook Islands, DMC = developing member country, EC = European Commission, Exp/rev = expected/revised, FIJ = Fiji, GR = grant, GS = generally successful, JFPR = Japan Fund for Poverty Reduction, JSF = Japan Special Fund, L = loan, Multi = multisector, NZ = New Zealand, PNG = Papua New Guinea, PP = project preparatory, PS = partly successful, S = successful, SAM = Samoa, SOL = Solomon Islands, TA = technical assistance, TASF = Technical Assistance Special Fund, TCR = technical assistance completion report, TIM = Timor-Leste, TMP = transport management and policies, TON = Tonga, TPER = technical assistance performance evaluation report. TUV = Tuvalu

Table A3.3: Distribution of ADB Transport Sector Assistance to the Pacific Region by Country Category (Loan Approvals 1969–2010)
($ million and %)[a]

	Total ADB Assistance ($ million)	Transport Sector Assistance ($ million)	DMC as % of ADB Transport Assistance	Transport as % of Total ADB Assistance
Category 1	**701.48**	**176.78**	**18.96**	**25.20**
Cook Islands	55.01	15.51	1.66	28.19
Fiji Islands	317.26	139.16	14.93	43.86
Samoa	198.88	2.96	0.32	1.49
Tonga	79.09	10.00	1.07	12.64
Vanuatu	51.25	9.15	0.98	17.85
Category 2	**1,533.14**	**732.74**	**78.59**	**47.79**
Papua New Guinea	1,337.53	624.36	66.97	46.68
Solomon Islands	130.61	49.38	5.30	37.81
Timor-Leste	65.00	59.00	6.33	90.77
Category 3	**224.70**	**21.30**	**2.28**	**9.48**
Kiribati	27.14	14.30	1.53	52.69
Marshall Islands	89.39	7.00	0.75	7.83
Micronesia	76.12	-	0.00	0.00
Nauru	5.00	-	0.00	0.00
Palau	16.00	-	0.00	0.00
Tuvalu	11.06	-	0.00	0.00
Regional	**29.50**	**1.50**	**0.16**	**5.08**
Total	**2,488.82**	**932.31**	**100.00**	**37.46**

ADB = Asian Development Bank, DMC = developing member country.
Note: The first group (Category 1) comprises the Cook Islands, Fiji, Samoa, Tonga, and Vanuatu and shows some capacity for self-sustained growth. The second group (Category 2), which includes Papua New Guinea, Solomon Islands, and Timor-Leste, achieves resource-based growth, but struggles to accomplish economic diversity. The third group (Category 3) consists of the smaller states of Kiribati, the Marshall Islands, Federated States of Micronesia, Nauru, Palau, and Tuvalu. This group finds it difficult to adopt policies and institutions to help create and sustain domestically sourced growth and thus exhibits little or no growth relative to regional performance.
[a] Includes loan and grant assistance.
[b] Transport assistance excludes assistance received by the transport sector as part of multisector rehabilitation efforts to cope with post-conflict situations, economic crises, and natural disasters. Excludes cofinancing from official and commercial sources.
[c] Includes $38.8 million for the Trust Fund for East Timor-financed Emergency Infrastructure Rehabilitation Project (phases 1 and 2).
Source: Asian Development Bank internal database.

PROFILE OF THE TRANSPORT SECTOR IN SELECTED PACIFIC COUNTRIES

A. Composition of ADB transport assistance

1. Asian Development Bank (ADB) project assistance to the sector (excluding emergency assistance and cofinancing) from 1969 to 2010 totaled $932.3 million. Of that amount, ADB financed grant assistance worth $103.9 million (11.1%) for nine grants. Timor-Leste (56.8% of total) and Solomon Islands (39.8%) were the main beneficiaries of the grant assistance. Recent lending continues along the same lines. Cumulative ADB assistance for transport sector development that was either approved or implemented between 1995 and 2010 was $910.4 million and covered 35 projects. It comprised 30 loans totaling $717.4 million and 22 grants amounting to around $193.0 million. The bulk of this assistance was spread over Papua New Guinea (PNG, 57%), Fiji (13%), Solomon Islands (11%), and Timor-Leste (11%). This is in line with the overall assistance trend since 1969. Appendix 3 provides a summary of ADB assistance for transport sector projects and technical assistance (TA) projects between 1995 and 2010.

2. The transport sector also received emergency assistance amounting to $81.5 million to relieve post-conflict and natural disaster situations. This assistance included five loans amounting to $24.3 million (for the Cook Islands, Solomon Islands, Samoa, and Vanuatu) and grant assistance totaling $18.5 million (for Samoa and Solomon Islands). In addition, ADB administered a $38.7 million grant for the two phases of the Emergency Infrastructure Rehabilitation Project in Timor-Leste. A characteristic feature of the road subsector assistance, and to a certain extent emergency assistance, has been the supplementary funding provided for several projects. Appendix 2 shows details of such supplementary assistance.

3. During 1995–2010, ADB approved 60 TA projects (including four supplementary approvals) consisting of $46 million for project preparation (28 TA projects including three supplementary approvals) and the balance for advisory assistance (32 projects including one supplementary approval). Road and water transport together accounted for 47.8% of such approvals, while multi-sector assistance received 39.6%. Key recipients of this assistance were Timor-Leste with $18 million from 6 TA grants (40% of total), PNG with $11 million from 19 TA projects (25%), Fiji with $6 million from 12 TA projects (12%), while Solomon Islands accounted for $4 million from 6 TA projects (9%). Information on TA projects was derived mainly from their final reports. In a few cases, completion and performance evaluation reports were available and provided additional information.

B. Roads

4. The road networks in the Pacific region cover approximately 40,200 kilometers of which about 23% are sealed. On the islands of Nauru, Palau, and Tuvalu the road networks are small, often consisting of compacted coral sand, with few surfaced roads except in the vicinity of the main towns. The larger Melanesian countries such as PNG, Solomon Islands, and Vanuatu have particularly low road density per square kilometer of land, and road access is often limited to lower-lying coastal areas and major cities or towns. Fiji, PNG and Timor-Leste have large networks, but all show symptoms of neglect, i.e., poor routine and periodic maintenance. This, as discussed later in this evaluation, is due mainly to inadequate budgets and capacity. Fiji's roads are in better condition than those of PNG and Timor-Leste, but have deteriorated recently following economic difficulties and a decline in international aid after the 2006 military coup. PNG has limited connectivity in its network, which worsens after heavy rains that render many roads impassable. Expansion of road capacity is difficult because customary land tenure

systems make acquiring land more difficult than where freehold title is available. In Vanuatu, a significant number of people live in the interior of Efate Island and Espiritu Santo Island, but have no road access from their settlements to the coastal road.

5. Few statistics are readily available on the number of vehicles in the region, but Fiji has a vehicle population of 163,500, of which about one-third are trucks and buses—a problem in a country where overloading regulations are poorly enforced. The Cook Islands has 35,800 vehicles, which is larger than the resident human population, but this is explained by the higher per capita income and the fact that the country accommodates over 90,000 tourists annually. Solomon Islands, the Pacific country with the lowest per capita income, has recently revised its data and records ownership of just below 4,000 vehicles. In PNG, some 4,378 road accidents were reported in 2007 as well as 270 fatalities and 1,412 serious injuries. However, there is no budget for road safety measures. Both the Cook Islands and Fiji have recorded a fall in the number of road accidents and fatalities after successful road safety campaigns.

C. Ports and Maritime

6. The isolation of the Pacific region is exemplified by the low rankings scored by the individual countries in terms of liner shipping connectivity. Even the best ranked, Fiji, is only 85th in a worldwide comparison. Kiribati, the Marshall Islands, and the Federated States of Micronesia rank among the most isolated countries globally. It therefore is surprising that the Marshall Islands rank in the top 10 for size of merchant fleet. However, many ships register in the Marshall Islands as a “flag of convenience” because of less stringent oversight regulations and lower registration costs for the owners. In PNG, which has 6,500 kilometers of coastline, the maritime provinces are accessible only by sea. Ferry services to the outer islands in some Pacific countries are inadequate in both quality and frequency of service. Because of their dependence on trade, all Pacific countries acknowledge that their port facilities are important, but some countries urgently need to upgrade and modernize both their ports and navigational aids. Greater productivity and efficiency in port operations normally results in lower import costs and higher export returns, with a positive effect on the countries’ economies.

7. For many of the countries of the southern Pacific, the most important trading relationships are with Australia and New Zealand, and this is reflected in the pattern of shipping services to and from these countries. For the countries further north, the predominant trading relationships are with the United States and the major economies of North and East Asia. For Timor-Leste, and to a lesser extent PNG, Solomon Islands, Fiji, and Vanuatu, the member countries of the Association of Southeast Asian Nations are also important trading partners. In May 2011, the Prime Minister of Samoa announced that his country would move the International Date Line in December 2011, shifting it to the east of the country so that Samoa would have the same date as Australia, New Zealand, and Asia, to ease trade with what have become its primary partners.

D. Airports and Aviation

8. There are 53 airports in the Pacific region with surfaced runways and 40% of these are found in PNG, where domestic air connections are especially important because of the poor state of the roads and security considerations. Mount Hagen in the Highlands area of PNG has seen a steady increase in aircraft movements after an expansion of operations to extract minerals and natural gas. The global recession of 2009–2010 has affected Fiji, which reports an 8% decline in passenger throughput and a 10% decline in freight traffic, while volumes in the Cook Islands and Vanuatu have remained static. Solomon Islands, however, reported an 18%

increase in passenger throughput and 18% growth in freight traffic in the same period, reflecting a recovery from the difficult economic conditions that followed the internal conflict, unrest, and natural disasters in 2007.

9. Air services are vital to Pacific countries, and airport capacity plays an important role in accommodating passenger and high-value cargo traffic. Larger Pacific airports such as the main airports in Fiji and Samoa can accommodate long-haul flights on wide-bodied aircraft, while smaller airports such as Bonriki International in Kiribati can only accommodate smaller aircraft. Although anecdotal evidence suggests that airport capacity is constrained at peak times on major routes, capacity appears to be adequate at most airports for existing annual passenger and aircraft traffic volumes. While Pacific airports do not often suffer from overcrowding, terminal facilities like retail, car rental, and other services are lacking at many of the smaller airports. These services can be important sources of non-aeronautical revenue for airports and help finance maintenance and upgrades or expansion. They also provide a more positive experience for tourists and business passengers.

E. Other Transport

10. Rail transport is negligible (mainly confined to the conveyance of sugar cane in Fiji, from the cane-growing areas to the mills). Urban transport, on the other hand, is becoming more important, although not yet a major concern. Few cities have more than 50,000 inhabitants. Port Moresby has a population of about 300,000 people, Suva has 173,000, Dili 150,000, Lae 78,000 and Honiara 56,000. The road density in these cities is generally manageable given the size of the population and the traffic levels. The implementation of modern traffic management measures such as coordinated traffic signals, bus lanes, and better parking policies could go a long way toward handling urban traffic flow problems in the short-to-medium term, although some capacity expansion may eventually be required. As urbanization progresses, it can be expected that there will be increased demand for more and better maintained urban roads in Pacific island countries. Public transport options include buses—mostly private, but some publicly owned—and private taxis, some operating on a shared-ride basis. Most buses run on diesel fuel, which increases pollution on major roadways.

F. Emergency Assistance

11. The tsunami that hit Samoa, American Samoa, and Tonga in late September 2009 is a distressing reminder that the Pacific is one of the most natural-disaster-prone regions of the world. According to the World Bank, Pacific island countries have reported 207 disaster events, affecting almost 3.5 million people and costing more than $6.5 billion since the 1950s. The World Bank estimates that reported natural disasters cost the Pacific region $2.8 billion in the 1990s alone. The small size of the island economies means that disasters have disproportionately high effects on Pacific communities. One-off events can be exceptionally harmful. The Government of Samoa estimated that direct impacts of the 2009 tsunami accounted for about 5% of gross domestic product. The 2007 earthquake and accompanying tsunami that struck Solomon Islands cost the country around 90% of the 2006 recurrent government budget. Pacific countries recognize the importance of planning for and dealing with natural disasters and have developed several strategies to manage the issue. The Pacific Disaster Risk Reduction and Disaster Management Framework for Action 2005–2015 outlines the major policy imperatives needed in the region to support the management of disaster. This regional framework was approved at the Pacific Islands Forum leaders' meeting in 2005. Additionally, the Pacific Plan, which is the overarching strategic development policy document

for the Pacific region, emphasizes the need for stronger disaster risk management practices and policies to bolster sustainable development.

12. National action plans are the vehicles through which Pacific countries can actively pursue the mainstreaming of disaster risk and climate change risk considerations through their national and sector planning processes and budgets, thereby ensuring that relevant measures are introduced to reduce the potential impact of future disasters on their national economies. National actions plans have been developed for Vanuatu (2006), Marshall Islands (2007), and Cook Islands (2008). Major donors such as the Australian Agency for International Development (AusAID) and European Union are providing dedicated funding through organizations like the Pacific Islands Applied Geoscience Commission to support the development and implementation of national action plans. Other donors and development partners have made available additional opportunities in support of such plans. Processes are underway to develop plans for Fiji, the Marshall Islands, Palau, Samoa, and Tonga. .

G. Institutional Issues

13. Management of the road network varies between countries. Some maintain traditional "public works departments" where the agency is responsible for planning and executing work, while others have separated planning and executing functions, often by privatizing the works arm of the department and becoming a "transport agency". Three main regional maritime bodies are operating currently. The Regional Maritime Program is based in Suva and operates under the auspices of the Secretariat of the Pacific Communities within the Marine Resources Division, which also includes the coastal and oceanic fisheries programs. The objective of the Regional Maritime Program is to strengthen the capacity of Pacific islanders to manage, administer, regulate, control, and gain employment in, the maritime transport sector in a socially responsible manner.

14. The Pacific Islands Maritime Association is the successor to the Association of Pacific Islands Maritime Training Institutions and Maritime Administrations, which was founded in 1995. Up to 2005, the Regional Maritime Program acted as a secretariat for the maritime association and in this role organized meetings and sourced support funding for it. In 2003 the association became the key regional advisory body for maritime issues and membership was broadened to include ship and port operators.

15. In parallel, the Association of Pacific Ports has been active in developing training programs for its members. It also promotes measures to increase port efficiency and safety, and to foster harmonious development of ports in the region. Training has been delivered through seminars on containerization, maritime legislation, handling of dangerous goods, the Law of the Sea, and computerization.

16. The Pacific Aviation Safety Office (PASO) is a region-specific international organization that provides regulatory advice and assistance on aviation safety and security matters in the Pacific islands using guidelines provided by the International Civil Aviation Organization (ICAO). PASO was created in 2005, as a result of the Pacific Islands Civil Aviation Safety and Security Treaty, and is managed by permanent staff based in Port Vila, Vanuatu. States that are currently parties to the treaty are: Cook Islands, Fiji, Kiribati, Niue, Nauru, PNG, Samoa, Solomon Islands, Tonga, Tuvalu, and Vanuatu. Countries that are members of PASO but not parties to the treaty are Australia and New Zealand. Associate member organizations of PASO are ADB, the Association of South Pacific Airlines, the United States Federal Aviation Agency, and the Pacific Islands Forum Secretariat.

17. PASO was established to enable small island states to better meet international aviation safety requirements, especially on operational issues such as air traffic control, airport inspection, aviation security, and airworthiness of aircraft. This has been a partially successful venture, but the organization is under-resourced and struggling to fulfill the mandate, according to discussions between the Independent Evaluation Department's mission and some officials from member states.

EVALUATION FINDINGS AND PERFORMANCE RATINGS BY EVALUATION CRITERION AND BY SUBSECTOR

Table A5.1: Planned versus Actual Implementation by Project

S. No.	L/GR No.	DMC	Project Name	Ongoing Project's Status (%) Elapsed Time[a]	Disbursement[b]
		1	**Road Transport**		
1	L 1164	FIJ	Second Road Upgrading		
2	L 1530	FIJ	Third Road Upgrading (Sector)		
	L 2514	FIJ	Third Road Upgrading (Sector) (Supplementary)	54%	22%
3	L 2541	FIJ	Emergency Flood Recovery (Sector)	54%	9%
4	L 2718	KIR	Road Rehabilitation	2%	0%
5	L 1153/54	PNG	Transport Infrastructure Development		
6	L 1709	PNG	Road Maintenance and Upgrading (Sector)		
7	L 2242/43	PNG	Road Maintenance and Upgrading (Sector) (Supplementary Loans)	113%	43%
8	L 2496/97	PNG	Highlands Region Road Improvement Investment Program - Tranche 1	45%	3%
9	L 1303	TON	Transport Infrastructure		
10	GR 9130	PNG	Extending the Socioeconomic Benefits of an Improved Road Network	46%	11%
11	GR 48	SOL	Road Improvement (Sector)	90%	66%
	GR 49	SOL	Road Improvement (Sector) (Supplementary)	90%	66%
	GR 50	SOL	Road Improvement (Sector)	90%	66%
12	GR 175	SOL	Second Road Improvement (Sector)	48%	14%
	GR 176	SOL	Second Road Improvement (Sector)	48%	14%
	GR 177	SOL	Second Road Improvement (Sector) (Supplementary)	48%	14%
	GR 207	SOL	Second Road Improvement (Sector) (Supplementary)	48%	14%
	GR 210	SOL	Second Road Improvement (Sector) (Supplementary)	48%	14%
13	GR 243	SOL	Transport Sector Development	1%	0%
14	GR 17	TIM	Road Sector Improvement		
15	GR 180	TIM	Road Network Development Sector	20%	2%
16	GR 9142	TIM	Our Roads Our Future-Supporting Local Governance and Community-B	27%	5%
		2	**Water Transport**		
17	L 843	VAN	Santo Port		
	L 1080	VAN	Santo Port (Supplementary)		
18	L 1754	PNG	Rehabilitation of the Maritime Navigation Aids System		
19	L 1902	FIJ	Fiji Ports Development		
20	L 1948	RMI	Outer Island Transport Infrastructure		
21	L 2079	PNG	Community Water Transport	82%	73%
22	L 2398	PNG	Lae Port Development Project	67%	1%
23	L 2472	COO	Avatiu Port Development	51%	4%
24	GR 102	PNG	Lae Port Development	67%	29%
	GR 9113	PNG	Lae Port Livelihood and Social Improvement	87%	4%
25	GR 127	SOL	Domestic Maritime Support (Sector)	20%	10%
		3	**Air Transport**		
26	L 2183	REG	Establishment of the Pacific Aviation Safety Office		
27	L 2588	PNG	Civil Aviation Development Investment Program - Project 1	30%	2%
	L 2589	PNG	Civil Aviation Development Investment Program - Project 1	30%	2%
	L 2590	PNG	Civil Aviation Development Investment Program -	30%	2%

S. No.	L/GR No.	DMC	Project Name	Ongoing Project's Status (%) Elapsed Time[a]	Disbursement[b]
			Project 1		
		4	**Emergency Assistance**		
28	L 1193	SAM	Cyclone Damage Rehabilitation		
29	L 1588	COO	Cyclone Emergency Rehabilitation		
30	L 1684	VAN	Cyclone Emergency Rehabilitation		
31	L 1823	SOL	Post-Conflict Emergency Rehabilitation		
32	L 2174	COO	Cyclone Emergency Assistance		
33	GR 8181	TIM	Emergency Infrastructure Rehabilitation Project Phase 1		
	GR 8198	TIM	Emergency Infrastructure Rehabilitation Project Phase 2		
	GR 43	SOL	Post-Conflict Emergency Rehabilitation (Supplementary)		
	GR 44	SOL	Post-Conflict Emergency Rehabilitation (Supplementary)		
34	GR 78	SOL	Emergency Assistance	140%	88%
	GR 78	SOL	Emergency Assistance (Supplementary)	140%	88%
35	GR 165	SAM	Earthquake and Tsunami Disaster Response		

COO = Cook Islands, DMC = developing member country, FIJ = Fiji, GR = grant, KIR = Kiribati, L = loan, PNG = Papua New Guinea, REG = regional, RMI = Marshall Islands, S = successful, SAM = Samoa, SOL = Solomon Islands, TIM = Timor-Leste, TON = Tonga, VAN = Vanuatu.

[a] Elapsed time between approval and original completion date

[b] Cumulative disbursements to total bank loans net of cancellations (except for GR 9113, GR 9130, and GR 9142 where it is cumulative disbursements to approved bank loan).

Source: Asian Development Bank's internal database.

Table A5.2: Implementation Issues by Project

Loan/Grant Title	Implementation Issues	Environmental and/or Social Issues
L1164: Second Road Upgrading Project FIJI Roads	The delays resulted from (i) the delay between appraisal and loan signing; (ii) inadequate appraisal estimates that led to a revised financing plan; (iii) insufficient design capacity in Public Works Department; (iii) the long time taken to obtain permission for the Nabua section of the Suva–Nausori road; (iv) land acquisition problems and difficult access to gravel pits; and (v) slow performance of contractors selected through international competitive bidding. A cost overrun of $36.5 million was due to inaccurate estimation of project cost at appraisal.	Inadequacy of mitigating measures and spoil management control, and the design weaknesses of the Transinsular Road led to slope failures and extensive road damage during heavy rainfall. Another slope failure on the Nadi Back Road was due to an undetected geotechnical weakness.
L1530: Third Road Upgrading Project FIJI Roads	There was a gradual move away from the force-account philosophy toward using private sector contractors, although there were problems due to: inadequacy of the maintenance budget for road preservation; inadequacy of counterpart funds for the completion of the subproject; and slow progress on the Kings–Lodoni ICB contract due to poor performance and subsequent abandonment of the Kings–Lodoni Road.	There were no environmental or social issues for this project.
L2514: Third Road Upgrading Project (Supplementary) FIJI Roads	Apart from delays carried over from L1530, the project was set back by weak supervision through the project management unit.	
L2541: Emergency Flood Recovery (Sector) FIJI Roads	No data available.	No data available.
L1902: Fiji Ports Development FIJI Water Transport	There was a delay of 16 weeks before civil works began owing to a global shortage of steel.	There were no environmental or social issues for this project.
L2472: Avatiu Port Development COOK ISLANDS Water Transport	The delay of about 6 months was due to slow procurement of consulting services.	The climate-proof design of the wharf will allow it to be raised by 500 millimeters (half a meter) in response to the rising sea levels in the Pacific.

Loan/Grant Title	Implementation Issues	Environmental and/or Social Issues
L1588: Cyclone Emergency Rehabilitation Project COOK ISLANDS Multisector	Delays resulted from changes in implementation arrangements; early difficulties with procurement; limited implementation capacity in the Ministry of Finance and Economic Management and other agencies; and delays in the associated projects for cyclone shelters, power supply, and telecommunications.	The Ministry of Marine Resources stepped in to clean up the Manihiki lagoon pearl farm as a result of the contractor's inadequate resources to execute a thorough clean-up. The project assisted in the relief and recovery of the local population, especially in the rehabilitation of schools. Health services have been overlooked in the recovery planning, with little done to improve such services since the cyclone.
L2174: Cyclone Emergency Assistance Project COOK ISLANDS Multisector	Project implementation was slow overall, with delays due to capacity constraints in government agencies; lack of qualified and experienced engineering consulting firms or individuals; and government's decision to defer its commitment to a large subproject (pending a review of its disaster recovery strategy) in light of a NZ$10 million grant from New Zealand.	The related technical assistance for the project included preparing a 20-year integrated and environmentally sustainable infrastructure master plan that incorporated climate change adaptation in its infrastructure development planning and programming.
L2718: Road Rehabilitation KIRIBATI Roads	Approval was attained in December 2010. Implementation ongoing. No updates available.	The main potential environmental impacts include (i) disturbance from dust arising from transport of construction materials, (ii) noise, (iii) erosion and sedimentation during construction that may affect the lagoon environment, (iv) risks from the use and disposal of hazardous materials such as used fuel and lubricants, and (v) increased risk of accidents from more vehicle movements. No major resettlements or relocations are expected.
L1153: Transport Infrastructure Development PAPUA NEW GUINEA Roads	Delays in preconstruction activities and implementation resulted from insufficient budget appropriations from counterpart funding. The shortfalls in disbursement resulted in significant delays, with the closing date rescheduled five times and several components of the project deleted.	No adverse environmental consequences resulted from the project.
L1709: Road Maintenance and Upgrading (Sector) PAPUA NEW GUINEA Roads	Project completed with only minor delays in awarding of contract packages.	Significant environmental impacts from the project are unlikely to occur. No relocation or resettlement of households will be required.

Loan/Grant Title	Implementation Issues	Environmental and/or Social Issues
L2242: Road Maintenance and Upgrading (Sector) (Supplementary Loans) PAPUA NEW GUINEA Roads	Implementation ongoing. No updates available.	Significant environmental impacts from the project are unlikely to occur. No relocation or resettlement of households will be required.
L2496: Highlands Region Road Improvement Investment Program - Tranche 1 PAPUA NEW GUINEA Roads	Implementation ongoing. No updates available.	Significant environmental impacts from the project are unlikely to occur. No relocation or resettlement of households will be required.
GR9130: Extending the Socioeconomic Benefits of an Improved Road Network PAPUA NEW GUINEA Roads	Implementation ongoing. No updates available.	Significant environmental impacts from the project are unlikely to occur. No relocation or resettlement of households will be required.
L1754: Rehabilitation of the Maritime Navigation Aids System PAPUA NEW GUINEA Water Transport	Institutional bottlenecks such as the required Cabinet approval for public service contracts exceeding $4.0 million and the required approval for the establishment of the National Maritime Safety Authority delayed the project by 2 years. The late hiring of the consulting firm and substandard work of contractors caused further delays.	No adverse environmental consequences resulted from the project.
L2079: Community Water Transport PAPUA NEW GUINEA Water Transport	Awarding of construction contracts for some sites was delayed and escalation of costs led to deficiency of counterpart funding. The lack of a maintenance contract also remains an issue.	Significant environmental impacts from the project are unlikely to occur. No relocation or resettlement of households will be required.

Loan/Grant Title	Implementation Issues	Environmental and/or Social Issues
L2398: Lae Port Development Project PAPUA NEW GUINEA Water Transport	Implementation ongoing. No implementation issue cited.	Port expansion necessitates the relocation of 482 households from the project area to the Malahang area of Lae. Relocation is expected to significantly improve living conditions of the affected households. Other interventions include (i) assistance in small-scale agriculture and animal husbandry; (ii) assistance in community-based fish culture; (iii) provision of microcredit; and (iv) provision of livelihood, health, nutrition, and vocational training. The disposal of 3.4 million cubic meters of dredged material is a major environmental concern. To mitigate this, the disposal option will be an integral part of the bidding documents and will be implemented through the construction contract.
GR0102: Lae Port Development PAPUA NEW GUINEA Water Transport GR9113: Lae Port Livelihood and Social Improvement	Implementation ongoing. No updates available.	The project aims to extend the benefits of the Lae Port Development Project to some of the poorest communities in Lae in Papua New Guinea, and to strengthen the project's impact on poverty reduction. The project will provide (i) better social infrastructure and services; (ii) income-generating opportunities to 3 Labu villages that live on subsistence agriculture and fishery; (iii) livelihood enhancement training; and (iv) independent monitoring by a nongovernment organization.
L2588: Civil Aviation Development Investment Program - Project 1 PAPUA NEW GUINEA Air Transport L2589: Civil Aviation Development Investment Program - Project 1 L2590: Civil Aviation Development Investment Program - Project 1	Implementation ongoing. No updates available.	Any environmental impact is expected to be insignificant, temporary, and reversible, and can be mitigated with available methods.

Loan/Grant Title	Implementation Issues	Environmental and/or Social Issues
L1948: Outer Island Transport Infrastructure MARSHALL ISLANDS Water Transport	Long delays in the early stages of implementation were attributable to a lack of capacity and urgency in the Ministry of Transport and Communications, compounded by the government's failure to provide the required counterpart funds, which coincided with a period of rapidly escalating project input costs. The appropriateness of project design was also an issue. As a result, the project did not proceed with construction.	The project had no significant environmental impact. And the socio-cultural impact was positive.
L1193: Cyclone Damage Rehabilitation SAMOA Multisector	Delay in the bidding process resulted from ADB and government's unfamiliarity with the design–build approach. Meanwhile, construction delays were due to relocation of electricity and water services and poor contractor performance. A cost overrun of $1.5 million was due to contract variations and unaccounted value-added and services tax.	The project had no significant environmental impact. Minor disputes on land access rights delayed project implementation.
GR0165: Earthquake and Tsunami Disaster Response SAMOA Multisector	No reports available.	No reports available.
GR0048: Road Improvement (Sector) SOLOMON ISLANDS Roads	Implementation ongoing. No updates available.	No adverse social impacts are expected from the project. Environmental effects are expected to be minimal, and adequate mitigation measures are in place.
GR0049: Road Improvement (Sector)		
GR0050: Road Improvement (Sector)		
GR0175: Second Road Improvement (Sector) SOLOMON ISLANDS Roads	Implementation ongoing. No updates available.	No adverse social impacts are expected from the project. Environmental effects are expected to be minimal and adequate mitigation measures are in place.

Loan/Grant Title	Implementation Issues	Environmental and/or Social Issues
GR0176: Second Road Improvement (Sector)		
GR0177: Second Road Improvement (Sector) (Supplementary)		
GR0207: Second Road Improvement (Sector) (Supplementary)		
GR0210: Second Road Improvement (Sector) (Supplementary)		
GR0243: Transport Sector Development SOLOMON ISLANDS Roads	Implementation ongoing. No updates available.	Adverse environmental impacts are expected to be minimal and adequate mitigation measures are in place.
GR0127: Domestic Maritime Support (Sector) SOLOMON ISLANDS Water Transport	Implementation ongoing. No updates available.	Adverse environmental and social impacts are expected to be minimal and adequate mitigation measures are in place.
L1823: Post-Conflict Emergency Rehabilitation SOLOMON ISLANDS Multisector	A cost overrun of about $11.4 million occurred due to an increase in the prices of fuel and bitumen. Recruitment of consultants delayed the project by about 1 year, and a revision of scope of works added another 9 months. A riot in Honiara in mid-April 2006 prompted the contractor to repatriate his workforce and added 2 months of delay and costs. During implementation, landownership issues arose and issues associated with communities' provision of road-building materials, which also delayed construction.	The project has had no adverse environmental impacts and only positive social impacts.
GR0043: Post-Conflict Emergency Rehabilitation (Supplementary)		
GR0044: Post-Conflict Emergency Rehabilitation (Supplementary)		

Loan/Grant Title	Implementation Issues	Environmental and/or Social Issues
GR0078: Emergency Assistance SOLOMON ISLANDS Multisector	Implementation ongoing. No updates available.	The project has minimal adverse social and environmental consequences.
GR0017: Road Sector Improvement TIMOR-LESTE Roads	The project was delayed by 15 months due to civil unrest, intermittent law and order problems, and poor weather conditions. Cost overruns of around $1 million were from additional inputs necessitated by implementation delay.	The project had no adverse social and environmental consequences.
GR0180: Road Network Development Sector TIMOR-LESTE Roads	Implementation ongoing. No updates available.	Mitigation measures are in place to minimize expected environmental consequences.
GR9142: Our Roads Our Future-Supporting Local Governance and Community-Building TIMOR-LESTE Roads	Implementation ongoing. No updates available.	The project had no adverse social and environmental consequences.
GR8181: Emergency Infrastructure Rehabilitation Project Phase 1 TIMOR-LESTE Multisector	There were only minor delays in project implementation.	The project had no adverse social and environmental consequences.
GR8189: Emergency Infrastructure Rehabilitation Project Phase 2	The project encountered a series of delays in the (i) preparation of the civil works procurement plan, and (ii) selection of consulting firms, engineer, and chief technical advisor. Political instability in 2006 delayed the project by around 2 months.	
L1303: Transport Infrastructure TONGA Roads	Delays were mostly due to ratification and loan approval, and operational difficulties in road construction.	The project had no adverse social and environmental consequences.

Loan/Grant Title	Implementation Issues	Environmental and/or Social Issues
L0843: Santo Port VANUATU Water Transport L1080: Santo Port (Supplementary)	A cost overrun of $3.35 million was due to a piling failure (outside of government's control). Poor design work resulted in delays in pile construction, more remedial works, and the need for additional financing.	The project had no adverse social and environmental consequences.
L1684: Cyclone Emergency Rehabilitation VANUATU Multisector	Delays were caused by late hiring of consultants and procedural bottlenecks within government.	The project had no adverse social and environmental consequences.
L2183: Establishment of the Pacific Aviation Safety Office REGIONAL Air Transport	No data available.	Unlikely to have adverse environmental and social impacts.

ADB = Asian Development Bank, GR = grant, L = loan.
Source: Asian Development Bank's internal database.

Table A5.3: Status of Cost Increases for ADB's Closed Pacific Transport Projects

Loan No.	Title	Country	Sector	Cost Overrun (%)	Cost Overrun ($ million)	Original Estimate ($ million)	Actual Disbursement ($ million)
	Closed projects with cost overruns						
L1823	Post-Conflict Emergency Rehabilitation	SOL	Multi	113%	11.3	10.0	21.3
GR0043	Post-Conflict Emergency Rehabilitation (Supplementary)						
GR0044	Post-Conflict Emergency Rehabilitation (Supplementary)						
L1164	Second Road Upgrading Project	FIJ	Road	47%	36.5	78.0	114.5
L0843	Santo Port	VAN	Water	47%	3.4	7.2	10.5
L1080	Santo Port (Supplementary)						
L1193	Cyclone Damage Rehabilitation	SAM	Multi	13%	1.5	10.8	12.3
GR0017	Road Sector Improvement	TIM	Road	9%	1.0	11.4	12.4
	Closed projects without cost overruns						
L1902	Fiji Ports Development	FIJ	Water				
L1588	Cyclone Emergency Rehabilitation Project	COO	Multi				
L2174	Cyclone Emergency Assistance Project	COO	Multi				
L1153	Transport Infrastructure Development	PNG	Road				
L1709	Road Maintenance and Upgrading (Sector)	PNG	Road				
L1754	Rehabilitation of the Maritime Navigation Aids System	PNG	Water				
L1948	Outer Island Transport Infrastructure	RMI	Water				
GR0165	Earthquake and Tsunami Disaster Response	SAM	Multi				
GR8181	Emergency Infrastructure Rehabilitation Project Phase 1	TIM	Multi				
GR8189	Emergency Infrastructure Rehabilitation Project Phase 2						
L1303	Transport Infrastructure	TON	Road				
L1684	Cyclone Emergency Rehabilitation	VAN	Multi				
L2183	Establishment of the Pacific Aviation Safety Office	REG	Air				

COO = Cook Islands, FIJ = Fiji, GR = grant, L = loan, PNG = Papua New Guinea, REG = regional, RMI = Marshall Islands, SAM = Samoa, SOL = Solomon Islands, TIM = Timor-Leste, TON = Tonga, VAN = Vanuatu.
Source: Asian Development Bank's internal database.

Table A5.4: Status of ADB's Ongoing Pacific Transport Projects

Loan No.	Title	Country	Sector	Risk of Cost Overrun	% Overrun	Risk of Delay	% Delay	Number of Red Flags[a]
Ongoing projects with risk of cost overrun								
L2472	Avatiu Port Development	COO	Water	Y	31%			1
GR0127	Domestic Maritime Support (Sector)	SOL	Water	Y	0%			2
GR0043	Post-Conflict Emergency Rehabilitation (Supplementary)		Multi					
GR0044	Post-Conflict Emergency Rehabilitation (Supplementary)							
Ongoing projects with risk of delay								
L1530	Third Road Upgrading Project	FIJ	Road			Y	28%	2
L2514	Third Road Upgrading Project (Supplementary)							
L2541	Emergency Flood Recovery (Sector)	FIJ	Road			Y	20%	2
L2242	Road Maintenance and Upgrading (Sector) (Supplementary Loans)	PNG	Road			Y	12%	1
L2496	Highlands Region Road Improvement Investment Program - Tranche 1	PNG	Road			Y	7%	1
L2079	Community Water Transport	PNG	Water			Y	24%	1
Ongoing projects without implementation problems								
GR9130	Extending the Socioeconomic Benefits of an Improved Road Network	PNG	Road					0
L2718	Road Rehabilitation	KIR	Road					
L2398	Lae Port Development Project	PNG	Water					0
GR102	Lae Port Development	PNG	Water					0
GR9113	Lae Port Livelihood and Social Improvement							
L2588	Civil Aviation Development Investment Program - Project 1	PNG	Air					0
L2589	Civil Aviation Development Investment Program - Project 1							
L2590	Civil Aviation Development Investment Program - Project 1							
GR0048	Road Improvement (Sector)	SOL	Road					0
GR0049	Road Improvement (Sector)							
GR0050	Road Improvement (Sector)							

Loan No.	Title	Country	Sector	Risk of Cost Overrun	% Overrun	Risk of Delay	% Delay	Number of Red Flags[a]
GR0175	Second Road Improvement (Sector)	SOL	Road					0
GR0176	Second Road Improvement (Sector)							
GR0177	Second Road Improvement (Sector) (Supplementary)							
GR0207	Second Road Improvement (Sector) (Supplementary)							
GR0210	Second Road Improvement (Sector) (Supplementary)							
GR0243	Transport Sector Development	SOL	Road					
GR0078	Emergency Assistance	SOL	Multi					0
GR0180	Road Network Development Sector	TIM	Road					0
GR9142	Our Roads Our Future-Supporting Local Governance and Community-Building	TIM	Road					0

COO = Cook Islands, FIJ = Fiji, GR = grant, KIR = Kiribati, L = loan, Multi = multisector, PNG = Papua New Guinea, SOL = Solomon Islands, TIM = Timor-Leste, Y = yes.

[a] Red flags refer to potential problems as indicated in the project performance reports. A project is rated high-risk when red flags reach 4 of the 11 rating criteria.

Source: Asian Development Bank's internal database.

Table A5.5: Summary of Impacts of ADB-Funded Pacific Transport Projects

Loan/Grant Title	Approved Impacts and Outcomes	Performance Indicators/Targets	Actual Project Performance
L1164: Second Road Upgrading Project FIJI Roads	- Improved road maintenance practices, improved road safety and traffic management, and control of overloaded vehicles.		- Project roads were upgraded to international standards. - Economic rates of return were satisfactory. - Road user costs were reduced. - Road fatalities fell by 39% despite a 30% increase in the number of licensed vehicles.
	- Improved access between markets and agricultural areas, and urban and industrial centers.		- Improved access resulted in (i) growth to 20 households from an initial three-house settlement, and better access to schools and medical facilities in the village of Laloma (3 km up the mountains); and (ii) telephone and electricity connection, and establishment of a police post reduced the crime rate in the villages along the Wainikoro Road.
L1530: Third Road Upgrading Project FIJI Roads	- Economic growth through improved efficiency of transport sector	- Better access to markets and social services improving socioeconomic welfare - Reduction of VOC, travel time, and freight rates, and passenger fares that carry opportunity value affecting economic development - Road safety improvement and economic savings from avoided injury and damage; improved effectiveness of road maintenance	
	- Improved economic returns to road assets	- Upgrading of approximately 100 km of roads	- Most roads completed. Kings Road 89% completed (BTOR September 2009).

Loan/Grant Title	Approved Impacts and Outcomes	Performance Indicators/Targets	Actual Project Performance
		- Rehabilitation of approximately 80 km of central roads	- Completed
		- Road safety improvement	- Completed
	- Improved living conditions	- Improved access to markets and social services and induced agricultural production	
L2514: Third Road Upgrading Project (Supplementary) FIJI Roads	- Reduced economic losses and social disruption from future extreme weather events	- Less damage to infrastructure from future extreme weather events	- All targets to be evaluated upon completion.
	- Economic and social activities in affected areas restored to pre-disaster levels	- Road transport services operate at pre-disaster levels on rehabilitated road	
		- Water supplies operate at pre-disaster levels	
		- Agricultural production in the areas of the rehabilitated drainage schemes at pre-disaster levels	
L1902: Fiji Ports Development FIJI Water Transport	- Economic growth through port sector support in trade, investment, and competitiveness	- Increased trade through Suva and Lautoka	- Trade growth in Suva and Lautoka has equaled or exceeded forecasts of RRP.
		- Increased container ship calls at Lautoka	- Container ship calls in Lautoka increased from 211 in 2002 to 325 in 2006.
		- Reduced port services charge of F$150	- Port service charge has increased to US$250.
		- Reduced level of ocean freight rates	- No data available
	- Sustained improvement in port efficiency and in port productivity	- Increased cargo-handling rates to 15 containers per hook per hour	- Average crane rate increased from 8 to over 12 lifts per hour
		- Reduced deterioration of Queen's Road	- Reduction in land-bridging traffic due to more ship calls at Lautoka will reduce deterioration.

Loan/Grant Title	Approved Impacts and Outcomes	Performance Indicators/Targets	Actual Project Performance
		- More effective use of container-stacking areas	- Reorganization of the container-stacking area (container yard) has increased the effective storage capacity.
		- Increased competition in stevedoring services	- Ports Terminal Ltd retains monopoly.
	- Extension of the life of King's Wharf	- Physical life of wharf extended	- King's Wharf at Suva was rehabilitated and strengthened
		- Increased port capacity	- Improved cargo handling performance has increased effective port capacity
L2472: Avatiu Port Development COOK ISLANDS Water Transport	- Continued economic growth and improved welfare of the population	- Sustained average annual GDP growth above 2.5%	- All targets to be evaluated upon completion.
		- Protection from disproportionate price increase of imported goods, especially of the lower socioeconomic group	
	- Secure and efficient Rarotonga port infrastructure	- A limit of 10% increase in international freight rates for cargo delivered to Avatiu for the period 2008–2016	
		- Compliance with international maritime structures standards (BS6349 and AS4997) by April 2012	
		- Zero marine accidents in the harbor environs by April 2013	
		- Increased capacity to accommodate vessels of up to 6,000 deadweight tons by April 2012	
		- Increased number of cruise ships berthing from 2 (2007) to 25 per year by 2012	
		- Increased number of larger (>I00 meter length overall) vessels calling: at least 12 per year by end 2012	

Loan/Grant Title	Approved Impacts and Outcomes	Performance Indicators/Targets	Actual Project Performance
		- Systematic asset management planning and implementation	
		- Reduced cost of port services in real terms	
		- Operating profit above 2% to be earned by Cook Islands Ports Authority	
		- Minimized cost of wharf repairs due to calamities	
L1588: Cyclone Emergency Rehabilitation Project COOK ISLANDS Multisector	- Rapid recovery of pearl industry	- Rehabilitation of the water supply, sewerage systems, and other infrastructure	- Key achievements include: cyclone-induced losses reduced by about NZ$2 million, basic social infrastructure re-established, and roads and landing facilities rehabilitated.
		- Restoration of public transportation facilities	
		- Procurement of pearl farming equipment	
		- Provision of rudimentary fishing equipment; lagoon environmental monitoring and management equipment; and agricultural equipment	
		- Air and sea freight and transport for abovementioned targets	
L2174: Cyclone Emergency Assistance Project COOK ISLANDS Multi	- Sustainable economic growth through minimized damage of the 2005 cyclones	- Rehabilitation of infrastructure conforming to cyclone-resistant standards. (This includes buildings, roads, ports, water supply, waste management, power, materials and supplies)	- Outcomes completed. All physical activities under the loan have been completed.

Loan/Grant Title	Approved Impacts and Outcomes	Performance Indicators/Targets	Actual Project Performance
L2718: Road Rehabilitation KIRIBATI Roads	- Improved socioeconomic conditions in South Tarawa	- Reduced basic needs poverty incidence in South Tarawa from 24.2% (2006) to 18% by 2016	- All targets to be evaluated upon completion.
		- Stable public transportation costs	
		- Increased average travel speed from 20 km to 40 km per hour by April 2013	
	- Sustainable access to a safe, well-maintained road network in South Tarawa	- Decreased road casualties from 7 (2007) to 5 per year (2013)	
		- Adequate financing for road maintenance (from $1,000 to $1,500 per km by 2013)	
L1153: Transport Infrastructure Development PNG Roads	- Reduced vehicle operating costs and road maintenance costs		- Frequent scope changes were made and several roads were deleted from the project, which was replaced by a road maintenance component.
	- Improved Lae port facilities, reduced ship turnaround time, and reduced equipment maintenance and damage to cargo		- Overall implementation of port improvement went smoothly.
	- Navigational safety and reduced ship operating costs		- This component was subject to organizational problems and funding shortfalls. Construction and rehabilitation of the proposed component for 62 navigational aids was dropped from the project.
L1709: Road Maintenance and Upgrading (Sector) PNG Roads	- Sustainable and effective road network maintenance operation in the Highlands Region through (i) improvement of road conditions, and (ii) establishment of an effective road maintenance operation through Highlands Region Management Group.		- The following road sections were completed: Oliguti–Lufa 1, Kundiawa–Goro, Chuave–Move, Ogulbeng–Mt. Ambra, Mt. Ambra–Kotna, Kisenopoi–Ialibu, Korifegu–Nupura and Kiapau–Kandep. They have effectively integrated the communities around the areas. Considerable increase in passenger traffic is highly evident, and travel time has been reduced significantly.

Loan/Grant Title	Approved Impacts and Outcomes	Performance Indicators/Targets	Actual Project Performance
L2242: Road Maintenance and Upgrading (Sector) (Supplementary Loans) PNG Roads	- Ditto		- The following road sections were completed: Koronigle–Kerowagi (7km) and Kindeng–Kondopina (11 km). This has resulted in an increase in traffic volumes, reduced passenger waiting times but added comfort; and also reduced public motor vehicle operating and maintenance costs.
L2496: Highlands Region Road Improvement Investment Program - Tranche 1 PNG Roads	- Sustainable road system in the Highlands region that will enable the maximum use of its natural, mineral, and human resources.		- Impacts to be evaluated upon completion.
	- To contribute to the government's MTDS, 2005-2010 objectives of (i) export-driven economic growth; (ii) rural development, and poverty reduction; (iii) good governance; and (iv) promotion of sustainable agriculture, forestry, fisheries and tourism.		
GR9130: Extending the Socioeconomic Benefits of an Improved Road Network PNG Roads	- Local communities adjacent to HRRIIP will gain social and economic benefits from road improvement in the Southern Highland and Enga provinces		- Impacts to be evaluated upon completion.
	- Improved accessibility to social services and local market for the local community	- Rehabilitation of 80 km of community-based rural feeder roads and 8 rural infrastructures	
	- Increased basic livelihood skills for road maintenance and income generating activities for rural poor communities	- Participation of 400 local community members in consultation and consensus building training	

Loan/Grant Title	Approved Impacts and Outcomes	Performance Indicators/Targets	Actual Project Performance
	- Understanding of basic health and sanitation, STI, and HIV for local communities	- Training and skills development, community awareness and behavior change on health-related issues of 400 local community members	
	- Improved gender-responsive means of transportation for access to social services and local market	- Carrying out of 8 pilot interventions for gender-responsive transportation.	
L1754: Rehabilitation of the Maritime Navigation Aids System PNG Water Transport	- Enable maritime sector to contribute to geographical integration of Papua New Guinea; improved distribution of goods and services to the rural poor; affordability, reliability, and safety in travel along the coastal areas; and development of local markets and trade with mainstream centers and with outside world	- Reduced cost of maritime transport - Improved safety of maritime cargo and passenger movements - Faster and more frequent distribution of goods and services - Increased number and type of exchanges, markets, and prices - Increased income opportunities in remote and impoverished coastal rural areas - Improved confidence among mariners navigating in PNG waters	- With a rehabilitated and functioning system of navigational aids, maritime transport is now much safer and more efficient. The project has only just been completed, however, and there will be a lag before all of the expected benefits are generated. The community engagement component has contributed directly to better income generation in remote coastal areas.
	- Reconstruct the network of navigation aids to an acceptable international maritime standard	- Operational navigation system of 201 navigation aids established	- Operational system consisting of 211 navigation aids established, exceeding original target. - Survey agreements with Royal Australian Navy revitalized.
	- Establish a self-reliant hydrographic service	- Sustainable capacity for hydrographic services to survey seabed and coastal areas	- 34 hydrographic charts updated and digitized.
		- Accurate hydrographic charts for use by global positioning system produced	- State-of-the art data storage system purchased, installed and in use in NMSA hydrographic unit.
	- Institutionalize sustainable operation and maintenance of the navigation aids and have community programs that are effective in maintaining the network	- Autonomous maritime safety authority established with independent financial management, including land compensation system	- NMSA established and functioning on an autonomous basis since 2005.

Loan/Grant Title	Approved Impacts and Outcomes	Performance Indicators/Targets	Actual Project Performance
L2079 Community Water Transport PNG Water Transport	- Poverty reduction among the marginalized maritime and river-based communities through enhanced access to markets and social services	- Reduced share of people with income less than $1 a day by 50% - Reduced number of people without sustainable access to clean water supply by 50%; reduced deaths from preventable causes by 15%, malaria and gastroenteric diseases by 50%; improved immunization rates by 25% - Increased AIDS awareness - Reduced proportion of population with nutritional deficiency by 50% - Improved educational attainment with 50% increase in primary school age children graduating; 50% increase in share of grade 6 student continuing to high school	- Impacts to be evaluated upon completion.
	- Affordable water transport services to marginalized communities	- Improved access to markets—reduced passenger travel cost and freight by 50%	
	- Induced linkages between remote maritime and river-based communities with rural development programs; improved vessel efficiency and safety and reverse the current reduction in shipping services to marginally viable routes	- Improved access to medical services—cost of travel to the nearest aid post reduced by 50%; retention of medical staff in aid posts in communities - Reduced loss of value of goods to zero at unloading/loading at sites of restored infrastructure - Reduced unloading/ loading time for vessel calls by 75% at sites of restored infrastructure.	

Loan/Grant Title	Approved Impacts and Outcomes	Performance Indicators/Targets	Actual Project Performance
		- Reduced cost of shipping operations in the country by 20%	
	- Safety mentality among community water transport users and operators; Reduced incidence of small-craft distress, loss of life, and value of goods	- Increased use of safety equipped in small craft—100% for new boats; 50% for existing fleet - Enhanced regularity of vessel calls with the support of radio communications to 1 day from radio call. - Enhanced rate of successful rescue operations to 90% of undertaken operations.	
L2398: Lae Port Development Project PNG Water Transport	- Enabling environment for industrial and commercial development	- Establishment of 15–20 new industrial and commercial enterprises by 2020–generating 1,000 jobs	- Impacts to be evaluated upon completion.
	- Removal of port bottleneck constraints to trade	- Increased Lae port cargo handling capacity by about 1.4 million revenue tons per year after completion - Increased Lae port cargo handling rate to 210 tons per hour by 2015 (from 140) - Increased ship calls from 600 to 900 by 2017	
GR102: Lae Port Development PNG Water Transport	- Effective public-private partnership modalities for sustainable mitigation of the health and social/gender impacts associated with the anticipated increase in sea traffic in Lae ports		- Impacts to be evaluated upon completion.

Loan/Grant Title	Approved Impacts and Outcomes	Performance Indicators/Targets	Actual Project Performance
	- Expanded reach of HIV prevention and care initiatives in Lae/Huon districts, through private sector and civil society organizations; expanded gender focus of future interventions		
GR9113: Lae Port Livelihood and Social Improvement	- Extended coverage of Lae Port Development Project to the poorest communities in Lae - Enhanced social infrastructure and services to people resettled from a swamp and other poor communities - Income-generating opportunities to 3 Labu villages that live on subsistence agriculture and fishery - Livelihood enhancement training for women and men - Independent monitoring by a nongovernment organization		- Impacts to be evaluated upon completion.
L2588: Civil Aviation Development Investment Program - Project 1 PNG Air Transport	- Economic growth and poverty reduction in project areas	- Average annual economic growth of 5% in project areas; decreased number of people below the poverty line by 20%; increased formal and non-formal vendors income of 20%	- Impacts to be evaluated upon completion.
	- Safer, more efficient and more accessible all-weather air transport services in the project area	- All national airports certified to meet ICAO safety and security standards - Seven national airports suitable for larger jet aircraft - Growth in passenger demand increased from 3% to 5% annually and in freight demand increased from 1% to 3% annually	

Loan/Grant Title	Approved Impacts and Outcomes	Performance Indicators/Targets	Actual Project Performance
		- Decreased airport incidents (delays, diversions, and closures) due to safety or security from an average of 4 per month to 1 per month	
L2589: Civil Aviation Development Investment Program - Project 1	- Ditto	- Ditto	- Ditto.
L2590: Civil Aviation Development Investment Program - Project 1	- Ditto	- Ditto	- Ditto.
L1948: Outer Island Transport Infrastructure MARSHALL ISLANDS Water Transport	- Poverty reduction in the outer islands through improvements to transport infrastructure	- Raised personal and household income levels in the project area above the United Nations Development Programme international poverty line of $1 per day by 2010 - Improved human development indicators in the project areas to levels of the main population centers - Reduced disparity in prices of store goods from on-board merchants between outer islands and Majuro - Increased employment and reduce levels of unemployment in the islands of the project area	- Impact was limited to the institutional changes effected by the TA attached to the loan. These institutional changes should enable the Ministry of Transportation and Communications to operate a more efficient commercialized service and to better maintain its fleet. 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.

Loan/Grant Title	Approved Impacts and Outcomes	Performance Indicators/Targets	Actual Project Performance
		- No increase in price subsidy to copra from budget	
	- 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 transport services	- Shipping Service: 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 shipping cost to government by 25%	
		- Air Transport: achieve a net surplus on operations; achieve a full-cost recovery position; maintain one service per week minimum to outer islands; reduce administrative and overhead costs by 25%	
		- Outer Islands: prices of goods no more than 10% above mainland prices	
L1193: Cyclone Damage Rehabilitation SAMOA Multi	- Improved access to services		- The improved roads serve an estimated 11% of Samoa's population and have improved access to education, health services, agricultural extension and markets. The Leone Bridge reduced congestion and travel time in Apia.
	- Reduced risk of flood damage		- Protection of Vaisigano and Falevao riverbanks greatly reduced risk of floods.
	- Improved water quality		- The benefits from the reforestation of watersheds in terms of erosion control are likely to be minimal.

Loan/Grant Title	Approved Impacts and Outcomes	Performance Indicators/Targets	Actual Project Performance
GR0165: Earthquake and Tsunami Disaster Response SAMOA Multi	- No reports available		- No reports available.
GR0048: Road Improvement (Sector) SOLOMON ISLANDS Roads	- Economic growth and poverty reduction	- Increased job opportunities by 20% in the project area by completion	- Impacts to be evaluated upon completion.
		- Increased income by 20%	
	- Improved road transport for economic and social activities	- Decreased vehicle operating cost by 20%	
		- Decreased travel time to schools by 20% in 2011	
		- Decreased in travel time to health facilities by 20% in 2011	
		- Increased frequency of road transport services by 20% by 2011	
	- Improved Ministry of Infrastructure and Development capabilities for project appraisal, management, supervision, and monitoring	- Ministry capable of completing subproject assessments by end-2008	
		- Independent ministry monitor and report by end-2011	
		- Project implementation and completion as scheduled	
		- Increased maintenance budget to $1.6 million in 2007, and increased annually by 20%	
GR0049: Road Improvement (Sector)	- Ditto	- Ditto	- Ditto.
GR0050: Road Improvement (Sector)	- Ditto	- Ditto	- Ditto.

Loan/Grant Title	Approved Impacts and Outcomes	Performance Indicators/Targets	Actual Project Performance
GR0175: Second Road Improvement (Sector) SOLOMON Roads	- Economic growth, social development, and poverty reduction	- Increased job opportunities in the project area by 20% - Increased household income by 20%	- Impacts to be evaluated upon completion.
	- Improved road transport for economic and social activities	- Target of less than 4 days per year of subproject roads not passable by four-wheel-drive vehicles - Fair or good condition of 100% of subproject road length - Reduced travel time to markets, schools, and health facilities by 20% - Increased public transport services by 25%	
Second Road Improvement GR0176: (Sector)	- Ditto	- Ditto	- Ditto.
GR0177: Second Road Improvement (Sector) (Supplementary)	- Ditto	- Ditto	- Ditto.
GR0207: Second Road Improvement (Sector) (Supplementary)	- Economic and social development, and poverty reduction - Improved access to services and markets		- Impacts to be evaluated upon completion.
GR0210: Second Road Improvement (Sector) (Supplementary)	- Ditto		- Ditto.
GR0243: Transport Sector Development SOLOMON Roads	- Improved access to socioeconomic opportunities	- Decreased travel time to markets, schools, and health care facilities in target areas by 20% from 2010 to 2015	- Impacts to be evaluated upon completion.

Loan/Grant Title	Approved Impacts and Outcomes	Performance Indicators/Targets	Actual Project Performance
		- Increased interisland cargo volume and number of passengers by 20% for marine traffic and 10% for air traffic from 2011 to 2015	
	- Sustainable transport infrastructure	- Regular maintenance of 80% of roads	
		- Regular inspection and maintenance of 100% of wharves	
		- Regular maintenance of 100% of airstrips	
		- Reduced reported poor asset condition by 30% from 2010 to 2015	
GR0127: Domestic Maritime Support (Sector) SOLOMON Water Transport	- Frequent, reliable and safe interisland shipping services		- Impact to be evaluated upon completion.
L1823: Post-Conflict Emergency Rehabilitation SOLOMON Multi	- Return to pre-conflict level of production and productivity - Resumption of normal transportation and social services in areas affected by the civil strife	- Return to normal levels of economic indicators within 1 year of project completion - Return to normal traffic density observed, with the resumed operations of local government, schools, clinics, and other basic services in affected areas	- Completed repairs of main road and selected urban roads in Honiara including rural roads and bridges on East and West Guadalcanal and Malaita has improved access of the communities to social service centers and markets within the two provinces. The roads have linked the major economic activity areas of Palm Oil Plantation and Gold Ridge Mine. Production of palm oil and gold mining operations are in progress. There is considerable improvement in passenger traffic, travel time and market activity.
GR0043: Post-Conflict Emergency Rehabilitation (Supplementary)	- Ditto	- Ditto	- Ditto.

Loan/Grant Title	Approved Impacts and Outcomes	Performance Indicators/Targets	Actual Project Performance
GR0044: Post-Conflict Emergency Rehabilitation (Supplementary)	- Ditto	- Ditto	- Ditto.
GR0078: Emergency Assistance SOLOMON Multi	- Normal economic and social activities and accessibility in affected areas	- Employment and income opportunities back to pre-disaster levels in the project area by completion	- Impacts to be evaluated upon completion.
		- Accessibility of public services reinstated to pre-disaster levels in the project area by completion	
		- Damage to repaired infrastructure minimized in event of future natural disasters	
	- Restored access to markets for agricultural and fisheries products, social services, and tourism areas via land transport	- Road transport services operate at pre-disaster levels on rehabilitated roads	
	- Reduced risks to public health caused by unreliable and unsafe town water system	- Interisland ships resume services to ports with rehabilitated wharves and jetties	
	- Effective disaster recovery coordination	- Improved safety and reliability of water supply to meet minimum government standards	
	- Reduced vulnerability of infrastructure to hazards	- Adoption of revised coordination processes	
		- Reduced maintenance for rehabilitated facilities	
GR0017: Road Sector Improvement TIMOR-LESTE Roads	- Economic growth and poverty reduction	- Annual GDP growth rate of 5% by 2008	- Achieved. The GDP growth rates were 6.2% in 2005, –5.8% in 2006, 8.4% in 2007, 12.8% in 2008, and 12.2% (estimated) in 2009.

Loan/Grant Title	Approved Impacts and Outcomes	Performance Indicators/Targets	Actual Project Performance
		- Increased job opportunities by 10% in the project area over 3 years	- Partly achieved. The number of employed persons in the project areas was slightly increased from 10,907 (2007) to 11,200 (2009), a 2.7% rise.
		- Increased income by 10% in the project area over 3 years	- Achieved. The estimated per capita income per month in the project areas was increased from $11.8 (2007) to $20.6 (2009), a 74.5% increase.
		- Increased freight traffic by 5%	- Partly achieved. The overall traffic volume in project areas was increased by 26.8% from 2005 to 2009.
	- Improved road transport for economic and social activities	- Reduced vehicle operating cost by 20%–25% after project completion	- Achieved. The vehicle operating cost was reduced by 20%–30% from 2005 to 2009.
		- Increased food trade volume by 15% over 5 years	- Achieved. The food trade volume in project areas was increased from 3,271 tons (2007) to 5,100 tons (2009), a 56.0% increase.
		- Increased school enrolment by 10% by 2011	- Not achieved. The gross student attendance rate decreased from 83% (2007) to 70% (2009).
		- Increased visits to health facilities by 10%	- Achieved. The average annual visits to a health facility rose from 1.5 (2007) to 1.8 (2009), a 20% increase.
		- Increased range and frequency of transport services	- Achieved.
GR0180: Road Network Development Sector TIMOR-LESTE Roads	- Economic growth and poverty reduction in the project areas	- Decreased number of people living below the poverty line in the project areas by 10% (national average in 2007: about 49%)	- Impacts to be evaluated upon completion.

Loan/Grant Title	Approved Impacts and Outcomes	Performance Indicators/Targets	Actual Project Performance
		- Job opportunities of about 22,000 person-months generated in the project areas, for both men and women	
		- Increased cross-border trade by 10% (exports to Indonesia in 2008: about $2.12 million)	
	- Improved access to social and economic facilities in project areas	- Reduced average travel time to primary schools in project areas by 10%, for both men and women (national average: 28 minutes for primary school and 56 minutes for secondary school)	
		- Reduced average travel time to clinic in project areas, for both men and women by 10% (national average: 54 minutes)	
		- Reduced average travel time to bus terminal or stop in project areas by 10%, for both men and women (national average: 49 minutes)	
		- Reduced road closures due to severe climate	
		- More efficient land border crossing (crossing the land border now takes about 1 hour)	
GR9142: Our Roads Our Future-Supporting Local Governance and Community-Building TIMOR-LESTE Roads	- Local communities along the Road Network Development Project gain social and economic benefits from national and feeder road improvement	- Reduced poverty in the project areas by at least 5% relative to 2007 baseline data	- Impacts to be evaluated upon completion.
		- Increased household income and/or ownership of durable goods in the project areas by 5% relative to 2007 baseline data	

Loan/Grant Title	Approved Impacts and Outcomes	Performance Indicators/Targets	Actual Project Performance
		- Increased education attainment and enrollment rates (for both boys and girls) in the project areas by 5% relative to 2007 baseline data	
		- Decreased child mortality rates in the project areas by at least 10% relative to 2008 baseline	
	- Increased access to social services and economic activities through improvements in the capacity of local government and roadside communities to jointly maintain rural roads and small-scale infrastructure	- Reduced travel time to schools and health clinics in the project areas by 10% relative to 2007 baseline data	
		- Increased antenatal care and assistance by 10% relative to 2008 baseline	
		- Increased labor force participation (for both men and women) by 5% relative to 2007 baseline data	
GR8181: Emergency Infrastructure Rehabilitation Project Phase 1 TIMOR-LESTE Multi	- Transport and power infrastructure that allow access to humanitarian assistance, health care, and water supply	- Humanitarian assistance to population centers facilitated	- Achieved. Restoration of road access allowed humanitarian and reconstruction activities to proceed.
		- Road sector viability that induce revival of economic activity	- Partly achieved. Land access restored but the Government could not undertake the required routine maintenance and repairs required. The road maintenance system developed by JICA was also not utilized.
		- Reduced port congestion urgently to enable effective and economical logistics for humanitarian goods	- Partly achieved. Extension of the wharf missed the peak of port traffic in 2001 but has benefited from continuous growth of port traffic over the years.

Loan/Grant Title	Approved Impacts and Outcomes	Performance Indicators/Targets	Actual Project Performance
		- Restored power supply to revive basic services in communities	- Partly achieved. Most of the newly installed power plants were not operational at completion because of discontinued diesel fuel supply. Operation was restored with the takeover of the state-owned utility. The IEM found power plant operation limited to 6–12 hours per night and that a number of the power plants showed substantial wear and tear and poor maintenance.
		- Increased local labor employment and income generation	- Achieved.
GR8189: Emergency Infrastructure Rehabilitation Project Phase 2	- Ditto	- Ditto	- Ditto
L1303: Transport Infrastructure TONGA Road	- Reduced road and port user costs and road maintenance costs, greater efficiency and safety in Tonga's land and sea transport systems as a result of greater reliability of transport, and safer handling of maritime cargo and passengers. - Rural and remote communities will have greater opportunities for employment and income generation, particularly through increased agricultural production, improved access to health and education facilities, and integration into the mainstream of economic development		- Achieved. The road upgrading reduced the required recurrent maintenance costs, reduced VOCs and time savings for the rural roads. Port infrastructure upgrading reduced shipping delays and port user costs.

Loan/Grant Title	Approved Impacts and Outcomes	Performance Indicators/Targets	Actual Project Performance
L0843: Santo Port VANUATU Water Transport	- Reduced ship service time - Zero investment costs for lighterage - Zero recurrent costs for lighterage - Reduced cargo damage		- Satisfactorily achieved. The overseas wharf has provided an effective marine facility that has enhanced the operational performance of the port and will provide adequate cargo-ship handling facilities for at least the next 20 years.
L1080: Santo Port (Supplementary)	- Ditto		- Ditto
L1684: Cyclone Emergency Rehabilitation VANUATU Multi	- Return to prior levels of production and productivity	- Economic indicators return to normal levels within one year of project completion	- Gross domestic product growth resumed in 2000, after negative growth in the year of the cyclone, but cannot be attributed to the Project, since the works were not completed until September 2000.
	- Resumption of normal transportation services	- Return to normal observed levels of traffic density	- Achieved.
L2183: Establishment of the Pacific Aviation Safety Office REGIONAL Air Transport	- The Pacific aviation sector meets all international requirements for safety and security regulation and oversight	- Full compliance with all relevant ICAO safety and security SARPs by all PASO member countries by 2009	- Completed are the following: (i) harmonization and updating of the legislative and regulatory frameworks in each PASO member; (ii) aviation safety inspections have been conducted and recertification issued for all 11 Pacific DMCs to put each airline in compliance with international requirements; and (iii) full set of official procedures and manuals has been developed with New Zealand's assistance and promulgated among the members.
	- Implement an effective and sustainable approach to improvement of aviation safety and security, based on regional cooperation, shared capacity, and economies of scale	- Establishment of PASO as an operational agency by 2005 - Appointment of a general manager by the second quarter of 2005 - Appointment of four internationally qualified technical specialists (one each in airworthiness, flight operations, security, and aerodromes) by the third quarter of 2005 - Commencement of inspections in each technical discipline by the end of 2005	

Loan/Grant Title	Approved Impacts and Outcomes	Performance Indicators/Targets	Actual Project Performance
		- Recovery of costs for inspections by 2006 - Achievement of financial self-sufficiency by 2010	

BTOR = back-to-office report, DMC = developing member country, GDP = gross domestic product, ICAO = International Civil Aviation Organisation, HRRIIP = Highlands Region Road Improvement Investment Program, IEM = independent evaluation mission, km = kilometer, MTDS = medium-term development strategy, NMSA = National Maritime Safety Authority, PASO = Pacific Air Safety Office, PNG = Papua New Guinea, RMI = Marshall Islands, RRP = report and recommendation of the President, SARP = standards and recommended practices, STI = sexually transmitted infection, TA = technical assistance, VOC = vehicle operating cost.
Source: Asian Development Bank's internal database.

Table A5.5: Project Preparatory Technical Assistance Pacific Transport Projects: Assessment by Criterion

TA No. and Name	Relevance	Effectiveness	Efficiency	Impact	Overall Assessment
7022-COO: Infrastructure Development	**Relevant.** The TA is included in the business plan for the DMC in 2007. There is government ownership, as extensive consultation has been conducted.	**Less effective**. There was no ensuing ADB loan to this TA, but investment was extended by PRC and Malaysia instead. However, that is also experiencing slow progress.	**Efficient**. Delayed by 4.5 months from expected date of completion.	**Not assessed.** Due to the change in government, impact of this TA in areas of sector reforms would have to be examined and briefings to be conducted to review expected outcomes.	**Successful bordering on partly successful**
4099-FIJ: Civil Aviation and Airports Improvement	**Relevant.** This TA is in line with government priorities for improving and constructing additional airport facilities.	**Less effective.** There was no ensuing loan for this TA. There is also no indication of whether other activities were done as planned.	**Highly efficient.** The TA was completed on time, as planned. There was no cancellation of any portion of the TA amount.	**Negligible.** The expected impact could not be achieved because it was directly related to successful implementation of an ensuing loan project.	**Successful**
2251-FIJ: Third Road Upgrading (FRUP 3)	**Highly relevant**. This TA is in line with the National Transport Sector Plan. It also supports the government's economic objectives detailed in its 1993 publication *Opportunities for Growth – Policies and Strategies for Fiji in the Medium Term.*	**Effective.** The TA resulted in a loan, covering the targeted areas for road construction and improvement.	**Efficient**. There was no cancellation of any portion of the TA amount. There is no information, however, that the schedule was met as planned.	**Significant.** Implementation of recommendations helped ease some congestion on the main thoroughfares in the country.	**Successful**
4540-FIJ: Fourth Road Upgrading (FRUP 4)	**Relevant.** It supported the government's objectives of balanced regional development and private sector endeavors, taking account of intermodal considerations.	**Less effective**. The TA did not result in an ensuing loan; there was failure in loan negotiations. However, all specified outputs were delivered and contributed to a draft RRP on a proposed loan	**Efficient**. The TA was completed 4 months late.	**Negligible.** The expected impact could not be achieved because it was directly related to successful implementation of an ensuing loan project.	**Successful bordering on partly successful**

TA No. and Name	Relevance	Effectiveness	Efficiency	Impact	Overall Assessment
		and technical assistance grant for FRUP 4.			
2068-RMI: Transport Infrastructure Development	**Relevant**. The government was aware of the lack of information on demand for transport services and on cost efficiency of the existing facilities. The TA was designed to establish a transport infrastructure development plan for the Marshall Islands that would be based on demand and cost–benefit analyses.	**Effective**. A plan was formulated and feasibility studies done to incorporate various information needed on macroeconomic conditions, demand for transport services, and environmental and social conditions.	**Efficient**. The TA utilized funds within 3 years.	**Significant.** Recognizing the areas where the transport system could be improved and the cost of such improvements would boost the impact on the country's economic development.	**Successful**
3506-RMI: Outer Island Transport Infrastructure	**Relevant**. Design of the TA is consistent with the goal of the government to improve the outer islands, particularly in the port sector.	**Effective.** The TA was translated into a loan that covered construction, improvement, and installation of other works related to the port sector.	**Efficient**. TA completion was delayed by 6 months. The amount was fully utilized.	**Negligible**. The ensuing loan was cancelled due to continuing delays, rising cost estimates, and lack of government support. The intended impact was not realized.	**Successful**
4045-FSM: Omnibus Infrastructure Development	**Relevant.** The TA was in response to the request of the Government of the Federated States of Micronesia to assist in the preparation and formulation of an omnibus infrastructure development project that would attend to the specific and immediate needs for rehabilitation and improvement of	**Effective**. A loan resulted from this TA that enabled wastewater improvement in Pohnpei, power rehabilitation in Chuuk, and upgrade (in Kosrae) and development (in Yap) of the water supply system.	**Efficient**. Completed 3 months late, with TA amount fully utilized.	**Significant.** The ensuing loan will improve environmental conditions, reduce health risks, and enhance amenities for about 5,700 residents, a working population of 3,600, and several thousand visitors coming annually to Kolonia.	**Successful**

TA No. and Name	Relevance	Effectiveness	Efficiency	Impact	Overall Assessment
	infrastructure in each of its four states: Pohnpei, Chuuk, Yap, and Kosrae.				
7263-PNG: Civil Aviation Development Investment Program	**Relevant.** Inputs from the TA were to be used for project formulation; project implementation to feed into the New National Transport Development Plan.	**Effective**. A loan resulted from this TA that would ensure delivery of safe, reliable, and cost-effective air travel services for passengers and cargo traffic.	**Efficient**.	**Significant.** The ensuing investment program will establish a sustainable civil aviation network to support economic growth.	**Successful**
3615-PNG: Community Water-Transport Project	**Relevant.** The TA is aligned with the government's objectives of poverty reduction and maximum involvement of the private sector.	**Effective**. An ensuing loan provides a source of financing to subsidize water transport to remote and disadvantaged communities, restore water transport infrastructure, improve small-craft safety, and boost the ability of the affected communities to maximize the benefits of the transport provided.	**Efficient.** Delayed by less than 2 years and funds utilized as intended.	**Significant.** The resulting loan will improve the living standards of Papua New Guinea's remote maritime and river-based communities, which are currently nearing absolute poverty.	**Successful.**
3037-PNG: Road Upgrading and Maintenance	**Relevant.** In line with the government's plan for the transport sector; primarily, to maintain good road conditions.	**Effective**. The TA translated into a loan that covers the upgrade of 935 km of road and rehabilitation of 776 km of critical national and provincial road links in the five Highlands provinces.	**Efficient.** The TA was done mostly on time.	**Significant.** The road improvement under the resulting loan is essential for the delivery of poverty-reducing services such as health clinics, education, and food. The project contributes to poverty reduction in the Highlands region. The road restoration program targets economic growth to	**Successful**

TA No. and Name	Relevance	Effectiveness	Efficiency	Impact	Overall Assessment
				improve the efficiency of resource allocation, market dynamics, and employment.	
3162-PNG: Rehabilitation of the Navigation Aids System	**Highly relevant.** In line with the government's strategy for 1999–2001, since maritime transport is used extensively in PNG, with numerous vessels operating on coastal, inter-island, and inland river routes. The government has highlighted development and maintenance of the country's maritime infrastructure as a development priority. The Transport Infrastructure Development Plan of 1992 contains a Maritime Infrastructure Plan that specifies high priority for the establishment of a reliable system of navigation aids.	**Effective**. A loan resulted from this TA, developing a rehabilitated, efficient, and safe navigation system and providing timely information on maritime conditions.	**Less efficient**. TA completion delayed by more than 2 years.	**Significant.** The results are likely to include greater confidence in the country within the private sector, and a higher level of maritime safety.	**Successful**
4945-PNG: Highlands Highway (Southern Highlands and Enga Provinces Network) Rehabilitation	**Highly relevant.** The TA is included in the nonlending program for 2007 in the 2006–2010 PNG country strategy and program. The government recognizes that the decline in the quality of the country's transport infrastructure	**Effective**. Resulted in a program loan that focuses on the Highlands core road network of 2,500 km of major national and some provincial roads, which carry the bulk of the traffic in the region.	**Efficient**. Completion delayed by 3.5 months.	**Significant.** The resulting program loan will make ports, markets, and livelihood opportunities more accessible, and will lead to savings in travel time and transport costs.	**Successful**

TA No. and Name	Relevance	Effectiveness	Efficiency	Impact	Overall Assessment
	has had a major adverse impact on service delivery and the capacity of Papua New Guineans to earn cash incomes. Accordingly, in its 2005–2010 Medium-Term Development Strategy, the government states that maintenance and rehabilitation programs for roads, wharves, and airstrips, particularly in rural areas, will be a powerful force for economic growth and development by linking markets and reducing costs.				
7594-PNG: Bridge Replacement for Improved Rural Access	**Relevant**. The TA is important in promoting road safety and reducing travel time, since it will involve the removal of temporary bridges from the national road network and the construction of permanent bridges in their place.	**Not rated.** Consultants just recruited.	**Less efficient.** There seems to be a very short time allocated for the TA's completion, which was only approved in September 2010 but expected to be completed by August 2011. Based on the expected completion, disbursement to date is just over 10% of expected contract amount.	**Not assessed.**	**Not rated.**
3716-PNG: Road Authority	**Relevant**. The TA was important in laying the	**Less effective**. According to the completion report,	**Less efficient.** It took the project	**Significant**. (i) National Roads	**Partly successful**

TA No. and Name	Relevance	Effectiveness	Efficiency	Impact	Overall Assessment
Development	groundwork for centralized transport planning and institutional capacity development in an autonomous authority that will manage and maintain the national, provincial, and district roads more efficiently and effectively.	the TA did not result in a project and was extended eight times over 8 years.	another 8 years of extension to complete the needed outputs.	Authority established, (ii) Road Fund established, but (iii) still a shortage of revenue.	
3717- PNG: Southern Road Maintenance and Upgrading	**Relevant**. The deteriorated state of road infrastructure constrained rural development and poverty reduction. Poor transport infrastructure hindered access to markets and social services, imposed high costs on businesses, and reinforced the economic isolation of large sections of the population by limiting income earning opportunities and hindering access to health and education services.	**Less effective.** A feasibility study was done for the project. However, the government was under considerable fiscal stress and was also facing political pressures at the time. Therefore, the bureaucracy was reluctant to pursue aggressive reforms for a sustainable, streamlined, management mechanism for road maintenance. Processing of the proposed loan project did not advance beyond loan fact-finding.	**Efficient**. It took 1.3 years beyond the targeted date of completion to finish the project.	**Negligible**. Impact not achieved because of the government's lack of will to establish reforms, and because the proposed loan did not result.	**Successful, bordering on partly successful**
4793-PNG: Lae Port Development-Tidal Basin Phase I	**Relevant**. The TA was included in the country strategy and program update 2005−2006, due to the importance of Lae Port as an economic hub. The city of Lae is PNG's industrial and commercial trade center. Lae Port, the largest port in PNG, is	**Effective**. Inception report and progress report were completed. Other reports submitted: (i) Analysis and Assessment of Lae Port, (ii) Poverty Reduction and Social Strategy, and (iii) Macroeconomic and Sector Analysis; and (iv) interim report.	**Highly efficient.** Completed on time with funds utilized.	**Significant.** The ensuing project's aim is to support the government's overarching development strategy of export-driven economic growth, rural development, and poverty	**Successful**

TA No. and Name	Relevance	Effectiveness	Efficiency	Impact	Overall Assessment
	centrally located and is on most Pacific shipping routes. It serves as the principal gateway for the highlands region, which is the most populous region in the country and richly endowed with natural resources such as gold, oil, and gas; and eco-conditions for growing coffee, cocoa, and tea.			reduction.	
7755-PNG: Second Community Water Transport Sector	**Relevant.** The TA was drawn from government's Development Strategic Plan 2010–2030 and Medium-Term Development Plan 2011–2015.	**Not rated**. Still ongoing	**Less efficient**. There seems to be a very short time allocated for the TA's completion, which was only approved in December 2010 and expected to be completed by July 2011. Based on the expected completion, disbursements to date are only about 15% of the contact awarded.	**Not assessed.**	**Not rated**
4980-SOL: Preparing the Domestic Maritime Support Project	**Highly relevant.** The TA was included in ADB's current country strategy and program update for Solomon Islands, which supports the government's strategic development plans.	**Effective.** A grant resulted from the TA. As of the end of 2010, most of the outputs are achieved, except for: establishment of resource center is 30% complete; improvements in quality assurance has not	**Efficient.** The TA has been extended for 2 years and was slated to close by the end of September with a 75% disbursement rate.	**Significant.** Given the needs of the DMC, the impact of the project will be less economic disadvantage in remote rural areas. The outcome will be	**Successful**

TA No. and Name	Relevance	Effectiveness	Efficiency	Impact	Overall Assessment
	ADB's country assistance strategy aims to achieve rapid, pro-poor, rural-focused development and economic growth by (i) providing transport infrastructure and services, and (ii) strengthening the enabling environment for private sector development. The TA will directly support both objectives, and is consistent with ADB's Pacific Strategy.	started yet; training is 65% complete.		inter-island shipping services that are frequent, reliable, and safe.	
7335-SOL: Transport Sector Development	**Relevant**. The TA is important in defining physical activities and institutional reforms required to implement the National Transport Plan.	**Effective.** Translated into a grant that covers the rehabilitation and maintenance of land, sea, and air transport infrastructure, including those prioritized in the National Transport Plan.	**Efficient.** Completed 4 months after the targeted date.	**Significant.** The impact of the ensuing project would be more sustainable accessibility via better land, sea, and air transport throughout Solomon Islands. This would invariably translate to having access to socioeconomic opportunities.	**Successful**
7100-TIM: Road Network Development	**Highly relevant.** The TA is included in the country strategy and program update (2006–2008) and the country operations business plan (2008–2010) for Timor-Leste. As the primary mode of transport carrying 70% of	**Effective.** The TA was completed and an ensuing grant approved in 2010, which primarily involves the improvement of about 232 km of national roads to maintainable condition, and the establishment of a road maintenance	**Efficient**. Completed 3 months behind target schedule, but fully utilized TA contract amount.	**Significant.** The resulting grant will support road sector development and thereby contribute to economic growth in the project areas. It will have an impact on (i) poverty	**Successful**

TA No. and Name	Relevance	Effectiveness	Efficiency	Impact	Overall Assessment
	freight and 90% of passengers, roads play a vital role in the country's economic development and integration. Recognizing its importance, the government was keen to develop the road network.	program.		reduction, (ii) direct and indirect job creation, and (iii) cross-border trade. The project will ease access to social and economic facilities in the project areas, improve the efficiency of cross-border activities, reduce travel time and costs, and make the road network less vulnerable to severe climate.	
2536-TUV: Study on Domestic Civil Aviation	**Relevant**. The TA was in line with government's development objectives as stated in the National Development Strategy 1995–1998 and as part of an overall transport plan.	**Effective**. A feasibility study resulted in this TA, which included costs and revenues of various operations, traffic forecasts, and suitable organizational forms of operating the air services.	**Efficient.** Completed 8 months later than targeted.	**Not assessed.**	**Successful**
2238-TUV: Transport Infrastructure	**Relevant**. Economic development is heavily dependent on efficient transport operations, particularly on international and inter-island shipping. The irregularity, infrequency, and high cost of these services have constrained growth in all sectors of the economy. The TA was designed to provide technical support	**Less effective.** All the required reports were submitted to ADB and the government. The TA reports were clear, succinct, and technically accurate. However, although the consultants made some reasonable recommendations, others were neither economically viable nor financially sustainable in such an extreme environment.	**Less efficient.** Consultants did well, although the project took more than 4 years to finish, considering that only a feasibility study was required.	**Negligible.** Training institution and other facilities for seafarers are not being utilized.	**Partly successful**

TA No. and Name	Relevance	Effectiveness	Efficiency	Impact	Overall Assessment
	to the Ministry of Transport to improve the efficiency and efficacy of the sector.	Moreover, concern over the country's loan repayment capacity and the change of government interrupted the finalization of the feasibility studies for road reconstruction and wharf deck replacement.			
3565-TUV: TA to Upgrade the Tuvalu Maritime Training	**Relevant.** Seafarers trained at the Tuvalu Maritime Training Institute are by far the most important source of remittances to the islands. The remittances are the major part of household income, financing dwelling construction, school fees, business investment, and consumption; they are also a valuable source of foreign exchange. The Tuvalu seafarers have traditionally enjoyed a comparative advantage in employment due to their strong physique, and three recruitment agencies have been established in Funafuti. However, the training institute urgently needs to upgrade its equipment, housing and training facilities, and general infrastructure if the 1995 Standards of Training,	**Effective**. The TA translated into a loan that covers the upgrading of present infrastructure and provision of training equipment, critical infrastructure improvements, and advisory services to the Marine Department.	**Less Efficient.** Almost half of the expected TA amount was not utilized.	**Significant.** The main impact from the ensuing loan would be poverty reduction. The project would maintain the pool of international seafarers and ensure earnings and level of remittance income. The improvement in the standards of living on the outer islands or quality of life must counteract the pressure to migrate to Funafuti and further afield. Employment as a seafarer provides a tax-free, income-earning opportunity that far exceeds the remuneration from working in Tuvalu, while time providing relaxation time in their home communities between jobs.	**Successful**

TA No. and Name	Relevance	Effectiveness	Efficiency	Impact	Overall Assessment
	Certification and Watch-keeping for Seafarers requirements are to be met. The upgrade must be successful, as Tuvalu seafarers will not qualify for employment if the standards are not met.				
3224-VAN: Outer Islands Infrastructure Development	**Relevant**. The TA was requested by the government to facilitate equitable economic development and trade among Vanuatu's outer islands. The TA will help assess in more depth the infrastructure constraints of the outer islands, particularly those related to the expansion of markets; development of tourism, agriculture, forestry, and fishing; better operation and maintenance; and stronger policies and institutional arrangements.	**Less effective**. The TA has completed required feasibility studies but was unable to result in a loan. The ensuing loan would have comprised: (i) policy reforms; (ii) high-priority infrastructure investments; and (iii) institutional strengthening, capacity building, and finance. The infrastructure investments were anticipated to include rehabilitation or upgrades of main roads, feeder roads, airstrips, and wharves.	**Less efficient.** The TA was significantly delayed: from 10 months at approval to 41 months at physical completion, and 53 months by TA closing.	**Negligible.** Impact not achieved since no investment resulted from the assistance.	**Partly successful**
7288-VAN: Interisland Shipping Support	**Relevant.** The TA is essential to determine detailed regulatory reforms; and operational and financial assessment of the franchise tendering scheme, including criteria for designating uneconomic routes,	**Effective**. Fact-finding for the ensuing loan was conducted on 19–28 April 2010. During the mission, the government requested additional project components to rehabilitate a major existing wharf and two existing outer island jetties.	**Less efficient**. Fund utilization was only 50% of the approved amount, given that TA completion was expected by the end of June 2011.	**Significant.** The ensuing project is expected to improve shipping services to support rural development, spur economic growth, and reduce poverty by making access to markets and	**Successful**

TA No. and Name	Relevance	Effectiveness	Efficiency	Impact	Overall Assessment
	affordability to users, and required service standards.			economic and social services easier.	
1974-VAN: Structural Survey of Port Vila Wharf	**Not rated**	**Not rated**	**Efficient.** TA fund was fully utilized.	No information	**Not rated**

ADB = Asian Development Bank, COO = Cook Islands, DMC = developing member country, FIJ = Fiji, FSM = Federated States of Micronesia, km = kilometer, PNG = Papua New Guinea, PRC = project completion report, RMI = Marshall Islands, SOL = Solomon Islands, TA = technical assistance, TIM = Timor-Leste, TUV = Tuvalu, VAN = Vanuatu.
Source: Asian Development Bank's internal database.

Table A5.6: Advisory Technical Assistance for Pacific Transport Projects: Assessment by Criterion

TA No. and Name	Relevance	Effectiveness	Efficiency	Sustainability	Impact	Overall Assessment
7287-COO: Infrastructure Services Delivery Improvement	**Relevant.** The TA is included in the country partnership strategy 2008–2012. The expected effective delivery of environmentally sustainable infrastructure and infrastructure services is attuned with ADB's Strategy 2020.	**Less effective**. As of the end of 2010, there has been slow progress, primarily because the new government seems not to be in a position yet to implement the recommendations of the TA. A midterm report for the TA was produced, but outcomes are yet to be realized.	**Less efficient.** The TA was approved in the first half of 2009 and is due for completion in the first quarter of 2012. However, passage of necessary legislation and the need for institutional changes in the Ministry of Infrastructure and Planning are not yet in place, jeopardizing on-time completion.	**Less likely sustainable**. Delay in the passage of legislation would make it impossible to sustain the envisaged institutional changes.	**Negligible**. The expected impact has not yet been realized due to slow progress in the implementation.	**Partly successful**
1715-FIJ: National Transport Sector Plan	**Relevant.** In the medium term, the government is committed to full implementation of the Fiji National Transport Sector Plan recommendations to promote efficiency through corporatization and to boost the role of the private sector in providing and maintaining transport infrastructure and services.	**Effective**. The TA was able to determine several high-priority land-transport projects and provided directions on various policies that are crucial for a vibrant transport sector. The intended formation of a transport planning unit under this TA, however, did not materialize. It was formed under another donor.	**Efficient**. The TA did neither overspend nor underspend; funds were spent where originally earmarked.	**Likely sustainable**. Although the transport planning unit was not created under the TA, its eventual creation likely assured the sustainability of implementing the goals under the transport sector plan.	**Significan**t. The TA contributed adequately to the government's investment program through recommendations of policy and capacity building initiatives in the transport sector.	**Successful**
1716-FIJ: Road Safety and Traffic Management	**Relevant.** In line with government initiatives to improve road safety and traffic management to reduce incidence of traffic accidents.	**Effective.** Comparison of before and after: road deaths and accidents dropped by 34% in 1997 and a further 9% in 1998. There were revised laws, better accident data recording,	**Efficient.** The TA was completed 10 months later than planned.	**Likely sustainable.** Passage of laws and implementation of activities ensure some sustainability of road safety programs.	**Significant**. Institutional capacity is continuously being built for accident data system, national road safety council infrastructure improvements, land transport bill, traffic	**Successful**

TA No. and Name	Relevance	Effectiveness	Efficiency	Sustainability	Impact	Overall Assessment
		consistent road marking and signage, and elimination of black spots.			police enforcement on national roads, road safety education and publicity, driver training and testing, vehicle roadworthiness, and emergency rescue services.	
2321-FIJ: Transport Sector Institutional Strengthening	**Relevant**. Attuned with the recommendations of the National Transport Sector Plan, which was drawn up in accordance with the government's policy objectives for transport. These included the growing role of the private sector in building, operating, and maintaining the transport infrastructure.	**Effective**. The TA reports were clear, succinct, and technically accurate. A franchising scheme was put in place and a review of the Public Works Department was done. The Fiji Roads Authority was formed to ensure more cost-effective road maintenance, but it was not able to execute its mandate due to change of government. A shortfall of the TA output was that the consultants were not able to test the proposed internal cost control, budgeting, and estimating systems because of delays in implementing the accrual accounting system.	**Less efficient**. The TA experienced delay in the accrual accounting system, lagging expected completion by 2.4 years.	**Less likely sustainable**. Institutional changes need a champion to gain higher grounds. The change of government did not support the implementation of the Fiji Roads Authority's mandate, which should have been the administration of the institutional changes.	**Moderate**. The growth of private sector participation in the sector is the biggest source of transport services, providing cheap public transport in the country. However, reforms in the overall transport sector would need to happen to entice more of this participation.	**Successful, bordering on partly successful**
2747-FIJ: Road Sector Cost Recovery Improvement	**Relevant.** Road infrastructure is allocated only 6% of total budget resources, and current funding of the maintenance program is not	**Less effective.** Collection of vehicle tax upon registration, in 2009 but goes to the general revenue fund. Vehicles are taxed according to weight.	**Efficient.** The project has been delayed by 2 months from expected completion.	**Less likely sustainable.** For roads to be properly maintained, there is a need for sufficient operation and	**Moderate.** Due to lower than anticipated revenue from the road fund, maintenance of roads has not been regular. Road conditions	**Partly successful**

TA No. and Name	Relevance	Effectiveness	Efficiency	Sustainability	Impact	Overall Assessment
	adequate to meet the maintenance requirements of the national road network. This small-scale TA was approved to assist the government in revising its cost recovery measures in the immediate future.	(known as vehicle–weight tariff; part of the road fund). A road user levy is collected annually (part of the road fund). However, the fund is not sufficient for road maintenance. More so, the road fund as intended under this TA should have also been fed by levying a fuel tax. But this has not materialized due to the already-high fuel prices. So government would have to absorb maintenance, which is $7–8 million a year.		maintenance funds. Unless there is a way of boosting collections, proper road conditions will not be achieved, let alone sustained.	seemed inadequate for high-level economic activity.	
2850-FIJ: Road Sector Reform and Safety Improvement	**Relevant.** The government's objective is to improve the efficiency of road administration and commercialize the delivery of road transport services. To accomplish its sector reform goals and to reduce accidents, the government requested that ADB, in conjunction with the proposed project, provide technical assistance.	**Less effective**. The expected outputs were delivered and the intended objectives were generally achieved. The Public Works Department was reorganized to the satisfaction of the ministry through the preparation of an inception report, various working papers for the department, and a final report. However, institutional reform was only partially accomplished.	**Less efficient.** The TA implementation time was extended considerably, by more than 3.5 years. The physical completion of the TA was delayed as a result of the political conditions in the country.	**Less likely sustainable**. Unless reforms and sufficient capacity levels are achieved, there is little room left for sustainability of programs for the road sector.	**Moderate.** Reforms did not yield enough capacity. It has to be developed and nurtured within the country. Courses pertaining to transport and general engineering were imported from other countries like PNG or New Zealand. The capacity of taking on reforms has not yet reached an efficient level.	**Partly successful**
3199-FIJ: Port Asset Management Improvement	**Relevant.** The TA design, objectives, and terms of reference were considered relevant, and stakeholder	**Effective.** The TA outputs spearheaded the diagnostic and analytical assessment that led to a confident implementation process	**Efficient**. The project was delayed by 5 months.	**Likely sustainable**. The introduction of a centerpiece for private participation and the upgrading	**Significant.** The TA left a road map for new sector agencies to introduce competition in the stevedoring	**Successful**

TA No. and Name	Relevance	Effectiveness	Efficiency	Sustainability	Impact	Overall Assessment
	participation and ownership, particularly that of the executing agency and the port sector agencies, was keen.	of the government's port sector reform. It supported consensus building on the content of the reform program and helped retain focus on the improvement of port productivity. The TA outputs provided the basis for upgrading the financial and operational asset management systems to support client orientation and effective port business management, maximize private sector involvement, and attract port business with a view to developing Fiji as the center for the region's port services.		and continued development of operational and financial systems would ensure the sustained management of port assets.	operations. This would ensure efficiency of operations and services of the port system, which would contribute to better economic activity in the country.	
2756-RMI: Institutional Strengthening in the Transport Sector	**Relevant.** The provision of such TA is critical to the Public Sector Reform Program, given the government's limited implementation capacity. The reforms need to be implemented to create an administration that will have the capacity to manage the country more efficiently, and will be capable of implementing the next round of reforms.	**Less effective.** The TA supported reform and strengthening of the Marshall Islands Ports Authority, and the successful creation of the Marshall Islands Airport Authority. The former is self-financing, but the latter remains reliant on government financial support. The government created a Roads Trust Fund, but no resources were allocated.	**Efficient**. The TA took 6 months longer to complete than anticipated.	**Less likely sustainable**. Lack of funds can hamper the implementation of reforms, despite the creation of implementing agencies.	**Moderate.** The expected impact was to improve the quality of service by commercializing transport operations of ports and airports, and improving cost recovery and maintenance funding of roads. However, due to the lack of funds and lack of self-sufficiency of the airport authority this was not realized.	**Partly successful**
4004-RMI: Improving the Delivery of Sea	**Relevant.** In the 2002 ADB country programming mission	**Less effective.** The aviation component was successful, mainly	**Efficient.** The TA took 6 months longer to complete than	**Less likely sustainable**. Proper targeting of	**Moderate**. More follow-up policy dialogues on the	**Partly successful**

TA No. and Name	Relevance	Effectiveness	Efficiency	Sustainability	Impact	Overall Assessment
and Air Transport Services	to the Marshall Islands, the government, through the Ministry of Transportation and Communications, requested TA to improve the operational and commercial systems of the ministry and the airline, Air Marshall Islands.	due to Air Marshall Islands' focus on changing its strategic direction and financial performance. The shipping component has yet to demonstrate its overall success.	planned.	subsidies to the deserving is required for funds to be efficiently diverted. The government might be strapped for cash.	optimal use of the direct and indirect subsidies to the outer islands would be required to reduce subsidies eventually and properly target the poor on the outer islands without distorting the domestic transport service and crowding out private operators.	
3004-PNG: Road Asset Management System and 3378-PNG: Road Asset Management System in the Provinces	**Highly relevant**. The TA projects were the starting point for a road asset management system within the Department of Works. The system serves as a planning and budgeting tool that helps strengthen the credibility of the department's budget submissions. At the national level, it was a part of the annual budget cycle where the department collects annual road and bridge data to develop a funding program. This contributes to a proposed transport sector budget. The RAMS output also attracted donor interest. AusAID and the World Bank have used RAMS-generated outputs for their	**Less effective**. The installed RAMS works well for maintenance planning. In general, there were no changes in TA outputs except for how data is collected. While functionality of the whole RAMS remains untested due to lack of data, it delivers the primary data to the road agencies for annual programming and planning activities. Areas for system improvement include customizing computation of user needs and updating of associated software to ensure compatibility. TA 3004 is rated *effective* while TA 3378 is *ineffective*. RAMS is able to operate for national roads through the Asset Management staff. On the other	**Less efficient.** Both TA projects were implemented within budget. However, **i**mplementation processes for both were marked by delays. TA 3004 is *less efficient* based on a delay of more than 2 years, while TA 3378 had a delay of less than 1 year due to a change in scope whereby savings were used to finance the training of technical staff of the Department of Works. TA 3378 is assessed *efficient*.	**Less likely sustainable.** Budget considerations remain the biggest factor. Unless there is regular allocation, the actualization programs and plans envisioned are unlikely.	**Moderate (low side).** There has been low impact on the policy side. Indeed, RAMS is accepted as a critical tool for guidance, strategic, tactical, and operational work planning, and medium-term strategy development. However, while it provides planning data for the road agencies, road allocations (despite increases) continue to fall below actual maintenance needs. In terms of capacity, TA 3004 met expectations. The RAMS is operated by in-house staff with AusAID advisory assistance. However, impact from TA 3378 is negligible. In the	**Partly successful.** TA 3004 is *successful* while TA 3378 is *partly successful*. Critical to RAMS sustainability is adequate budget, personnel, and training. Asset Management staff estimated that K4 million is now the minimum requirement to update one-third of the network. However, the RAMS unit received K400,000 or 10% of the required amount in 2011. Last year, there was no operational funding. As a

TA No. and Name	Relevance	Effectiveness	Efficiency	Sustainability	Impact	Overall Assessment
	economic analyses.	hand, there are no updates in the provinces (despite the presence of RAMS coordinators) unless a request is made. The majority of MOU signatories have left and there is no budget to routinely undertake RAMS work.			absence of funding, provincial governments do not operate RAMS. They will only do so if the national government provides technical assistance to shoulder related costs or when donors allow them to tap into loans or grants.	result, the national RAMS unit has looked to ADB for help in collecting data on traffic road conditions. The national RAMS unit also has a critically small number of staff, in particular technical personnel.
3619-PNG: Rehabilitation of the Maritime Navigation Aids (Nav Aids) System	**Highly relevant**. PNG as an island nation relies heavily on shipping. This TA was instrumental in enabling government to successfully legislate for, establish, and build an autonomous and sustainable National Maritime Sector Authority. It is the centerpiece of the country's maritime sector reform program. NMSA considered TA 3619 to be useful since it needed somebody then to mentor its technical officers. As an attached TA to Loan 1754-PNG (Rehabilitation of the Maritime Navigation Aids Project), it supported the project with necessary reforms to ensure the efficient	**Effective.** It achieved its key sector reform outcomes: (i) sustainable operation and maintenance of a Nav Aids system and (ii) community programs that effectively maintain the network (which cover only the main ports). NMSA is performing what is required under its mandate. As a self-funded statutory authority, it is responsible for government regulatory functions to ensure a safe, efficient, and environmentally responsible shipping sector for government, industry, and the community. NMSA draw revenues from three levies—navigational aids, oil spill, and regulation	**Efficient.** TA outputs were delayed by up to 1 year, but this was due to project start-up delays, not to implementation problems. It was expected that NMSA would reduce the costs to the maritime industry while ensuring that internationally agreed standards of safety and marine environmental protection were being maintained. In March 2006, NMSA reviewed and assessed some of its functions. It selected one for market testing. Identified was the service associated with the maintenance of the Nav Aids network and this service was outsourced as a result of the review. Although	**Likely sustainable.** Thanks to financial independence of the key institution, there is continuance of the reform programs. The presence of funding sources would adequately ensure operationalization of envisioned plans.	**Significant.** When NMSA was established by an act of parliament in 2003, it was a reform process aimed at boosting efficiency and containing costs in the delivery of safety and other services to the PNG shipping industry. NMSA took over the marine regulatory and operational functions of the Marine Transport Division of the Department of Transport and Civil Aviation. The objective of establishing NMSA was to improve performance and accountability through the structure of a statutory authority with an	**Successful.** Since its inception, NMSA has received assistance mainly from ADB. Australia first provided support to establish NMSA through this TA. Now it is providing assistance through AusAID's Transport Support Sector Program. There is also cooperation with the Australian Maritime Safety Authority. Both ADB and AusAID supported NMSA efforts at governance and

TA No. and Name	Relevance	Effectiveness	Efficiency	Sustainability	Impact	Overall Assessment
	and sustainable operation of the maritime Navigation Aids system.	levies. It is nonprofit and operates under community service obligations. Now, 5 years since it began operations, key issues for the future relate to: i) achieving revenue self-sufficiency and reducing reliance on annual appropriation (i.e., recurrent costs), and (ii) retaining adequate staffing capacity, including keeping technical staff that the current budget cannot afford.	the maintenance services have been outsourced, the responsibility for the strategic planning and capital works program of the Nav Aids network remains with NMSA.		appropriate commercial charter. Notably, there is now increasing interest in the potential of marine transport. Recent developments associated with the LNG project have presented a challenge to this regulatory authority in terms of human resources (e.g., ship inspection).	transparency. Meanwhile, NMSA recently assisted Solomon Islands through site visits and information sharing (e.g., annual lease agreements) as to what the country did in respect to its own Nav Aid program, in particular on community engagement.
7214-PNG: Preparation of the National Transport Development Plan (2011–2020)	**Highly relevant.** The TA was to support the Department of Transport (the lead agency in policy and planning in the sector) in preparing a successor document to the NTDP 2006–2010 with the aim of being approved by the minister, endorsed as government policy by the National Executive Council, and ready for publication by December 2010, with a start date of 1 January 2011. ADB's contribution to this exercise will be closely coordinated with Transport Sector Support Program	**Effective**. In February 2011, overall progress in preparing a national transport strategy and MTTP was about 60% compared with the original schedule of completion by the end of 2010. A delay of over 6 months in an AusAID-financed transport infrastructure priority study has affected the strategy schedule. The study includes methodology to prioritize investments and a proposed list of investments in the transport sector. The suggested methodology is reportedly not fully supported by government agencies	**Less efficient.** The expected original completion date of 31 December 2010 was extended to 31 December 2011 (including increasing input of international transport specialist and team leader). TA disbursements (as of 4 May 2011) were only 79.6%. The existing NTDP will be in effect until the new plan is prepared.	**Likely sustainable.** The expected completion of this plan will enable the continuation of strategies and programs started**.**	**Not rated.** Not much was reportedly achieved under the NTDP 2006–2010. The aim of the new national transport strategy (2011–2020) is essentially what was in the NTDP and that is maintenance and rehabilitation of existing transport infrastructure. A key issue relating to the NTDP's lack of delivery relates to resource constraints, in particular lack of funding. The national strategy tries to be more comprehensive and linked to the government's long term-vision. It is	**Successful**

TA No. and Name	Relevance	Effectiveness	Efficiency	Sustainability	Impact	Overall Assessment
	inputs in particular. The new NTDP will cover transportation policy, strategies, and infrastructure development plans. The Transport Sector Coordination, Monitoring, and Implementation Committee will guide and oversee this work.	responsible for the transport sector. AusAid and the Department of Transport agreed that the Transport Investment Programme Study would be finalized in its current shape and that the department would undertake further work, if needed. It was also agreed that the first draft of the national strategy would be circulated for review by May 2011, and after consultation with all stakeholders (workshops) would be submitted to government for review.			described to be a sector strategy, unlike the hurriedly prepared NTDP, which is more of an investment plan rather than a clear strategy and policy document.	
3191-PNG: Road Sector Cost Recovery Improvement	**Relevant**. The TA was to develop a policy framework and formula for establishing sustainable road maintenance financing using international best practice and experience. There was broad support for the establishment of a road fund then, and there was acknowledgement of a grave need for such an instrument as a key to improving sector management and	**Effective**. The TA reports provided a good analysis for preparing a cost recovery policy. They identified an appropriate policy for a second-generation road fund to finance road maintenance, while fiscal resources fund major rehabilitation and capital investments. Likewise, road fund governance and accountability would be made acceptable to the users by having an independent board manage the fund. This	**Efficient.** TA outputs were delivered on time and were of excellent quality. While consultant outputs were according to terms of reference, there was a need to focus on consultations. An action plan for a work program to ensure implementation of a road fund with user charges in PNG was prepared. The action plan could not be implemented due to the inability of the bureaucracy to	**Likely sustainable (low side).** While the road fund is working, regular income from a diesel levy (now lacking) to perform upgrading works would be an important factor in sustaining improvements in the road network.	**Moderate to significant.** A road fund for providing maintenance services on sections of rehabilitated national roads is now being managed by the National Roads Authority. While this road fund is working, the authority reportedly does not have the mandated income (from diesel levy) necessary to fulfill its mandate.	**Successful.** The major output of establishing a fully self-sustaining fund could not be implemented since it represented a major policy initiative that required time and extensive effort, as well as full internalization and ownership by the national body politic and

TA No. and Name	Relevance	Effectiveness	Efficiency	Sustainability	Impact	Overall Assessment
	performance.	was appropriate to PNG's circumstances. The selection of roads for maintenance projects would be based on the RAMS, which would determine priorities according to agreed, primarily economic, criteria.	execute or discuss major policy initiatives in a continuously changing political environment.			civil society.
7420-PNG: Improving Road User Charges and Private Sector Participation in Road Development	**Relevant.** It was to tackle pressing issues for the sector: (i) sustainable financing of road maintenance, and (ii) enabling environment for the private sector (international contractors) to participate in improving and maintaining roads. The TA was reformulated as the scope of the Public Service Program was reduced with time due to the government's huge LNG project, which has attracted a significant number of international contracts to PNG. The need for road shows was reviewed and it was agreed that these can be deleted. The Public Service Program specialist is still needed, but in a different role of advising the National Roads Authority on	**Less effective**. Discussion with the National Roads Authority indicated that changes are needed to make the TA responsive to the current needs and boost effectiveness. These are (i) extending the inputs of the international road user charge specialist to include further work on institutional and regulatory reforms for land transport and incorporating terms of reference for the international road fund specialist; (ii) reducing the input of the international Public Service Program specialist, as the road shows will not be needed now that international contractors are showing significant interest in PNG due to the LNG project; (iii) deleting the input of the national	**Less efficient**. With just a few months left before expected completion on 31 December 2011, there has been no recorded disbursement yet for the TA. In particular, no contract has been awarded to date. The TA completion date will likely be extended. Implementation was delayed due to (i) the ongoing road user charge study under the Highlands Regional Road Improvement Investment Program, which was to contribute to the road user charge component of the TA; and (ii) the difficulties in finding a suitable consultant for the private sector participation component.	**Not rated.** Since the project has undergone some reformulation, there is not enough basis for evaluating its sustainability.	**Not rated**. As planned, the TA had 2 components: (i) increasing road user charges to enable financing of national road network maintenance and (ii) reducing barriers to international and national contractors' participation in the long-term opportunities for road improvement and maintenance in PNG. The National Roads Authority Act provides for the agency to tap revenues from diesel levy, petroleum levy, license fees, and road damage charges through a road fund mechanism. The fuel levy is not adequate to cover all good roads transferred from the Department of Works. Along with the need to prioritize	**Partly successful** at this time due to the major delay. Notably, TA was reformulated in February 2011 with greater focus on the road user charge component. This reflected changing sector needs and priorities.

TA No. and Name	Relevance	Effectiveness	Efficiency	Sustainability	Impact	Overall Assessment
	private sector participation in road maintenance. In addition, the authority needs a national consultant to develop capacity of national contractors to participate in road maintenance.	legislation specialist, as this work is being done by the transport department's legal team; and (iv) extending the scope of the national taxation specialist and converting the position to international.			between future construction and maintenance, this is an issue for future road maintenance.	
1390-PNG: Institutional Strengthening of the Ports Subsector	**Relevant.** The government requested ADB technical assistance for the Papua New Guinea Harbours Board to improve its organization and management structure, train its personnel, upgrade its financial and operational management, and to prepare detailed instructions for draft legislation to amend the Harbours Board Act of 1976.	No information	No information	No information	No information	**Not rated**
1658-PNG: Institutional Strengthening of the Department of Transport	**Relevant.** The TA is attached to a project that aims to improve the maintenance facilities of the roads and would be supported by institutional upgrading, such as training. In view of this, this TA would strengthen the planning and administration capacity of the Department of Transport.	**Ineffective**. While a considerable amount of time was spent on developing the transport strategy and the traffic safety measures by the consultants fielded, they failed to undertake any capacity-building exercises, due to lack of counterpart staff and funds. The Department of Transport was subjected to repeated	**Inefficient**. The funds were not utilized for their purpose due to the termination of the project. A little less than half of the TA amount was not disbursed.	**Unsustainable.** Since the TA centers on capacity building, the lack of staff to train and implement the activities, and the lack of funds would mean non-continuation of efforts for institutional strengthening.	**Negligible.** No impact since the objectives did not materialize.	**Unsuccessful**

TA No. and Name	Relevance	Effectiveness	Efficiency	Sustainability	Impact	Overall Assessment
		reorganization and could not make the provision for counterpart staff and required funds.				
1790-SAM: Monitoring and Management of the Cyclone Rehabilitation Program	**Highly relevant**. This TA grant for cyclone rehabilitation program monitoring and management is vital in the aftermath of Cyclone Val. Facing depressing prospects of severe deficits in budget and balance of payments, the government has to keep its macroeconomic policy targeted at maintaining stability in line with the Seventh Development Plan and with strategies for rehabilitation. The government thus needs assistance in improving its capabilities in economic management over the next few years by strengthening the departments responsible for supervising and implementing aid-financed projects under the rehabilitation program.	**Effective**. The TA fell short of establishing an effective and sustainable performance monitoring and evaluation system. However, it achieved most of its intended objectives of institutional strengthening—government's capacity to analyze key macroeconomic developments, and define and develop a comprehensive long-term TA program in support of disaster management.	**Less efficient**. Completion was delayed by 4 years.	**Likely sustainable**. The installation of needed systems for institutional strengthening, in terms of analyzing developments and determining programs to support disaster management would ensure continuation of rehabilitation efforts.	**Moderate**. Perceived macroeconomic and fiscal stability in the aftermath of the cyclone.	**Successful**
4527-SOL: Diagnostic Assessment of	**Relevant.** The TA supported the government's policy	**Less effective**. Three of the four components were successful. In the	**Less efficient**. All inputs were provided successfully, but the	**Less likely sustainable**. The political situation	**Moderate**. In view of the government's decision not to	**Partly successful**

TA No. and Name	Relevance	Effectiveness	Efficiency	Sustainability	Impact	Overall Assessment
Interisland Transport	framework by complementing the national development plan's focus on transport development.	fourth component, activities and outputs did not result in positive government action with respect to privatization of the airline.	total duration expanded to nearly 2 years due to the government's changing policy stance and inability to reach clear decisions through Cabinet. The TA was intended to provide a 6-month program of assistance in the first half of 2005. In the aviation sector, however, due to political instability and a fluid and uncertain policy environment, activities were put on hold at about the midpoint of the work near the end of 2005.	hampers continuation of action to support the TA's activities of institutional changes.	pursue the privatization of the airline, there is less room for deregulating the industry. This means less impact in terms of effecting institutional and organizational change and in reducing airline costs for the customers.	
4944-SOL: Strengthening Disaster Recovery Planning and Coordination	**Relevant**. The TA was formulated as a response by ADB to assist the government in strengthening disaster recovery planning and coordination. The TA was approved simultaneously with the Solomon Islands Emergency Assistance Project. This came in the aftermath of the 2007 disaster, which revealed a need to improve the governments' capacity to manage emergency response, and improve infrastructure planning and analysis.	**Effective**. Achieved outputs and outcomes. An initial Recovery Action Plan, Shelter Strategy, and Rehabilitation Strategy and Program were successfully completed. The subproject feasibility studies in the areas affected by the 2007 tsunami were completed and are under physical implementation under the Emergency Assistance Project.	**Efficient.** Timely completion of the TA and adequate inputs given.	**Likely sustainable**. The formation of recovery planning and coordination systems to respond to disaster management would enable the sustainability of efforts in this area.	**Not assessed**. Impact and outcome assessments of the subprojects will be undertaken in 2011, upon completion of the Emergency Assistance Project following the monitoring and evaluation framework developed under the TA.	**Successful**

TA No. and Name	Relevance	Effectiveness	Efficiency	Sustainability	Impact	Overall Assessment
4588-SOL: Implementation of Interisland Transport Reforms	**Relevant**. ADB's country program in Solomon Islands aims to support rapid, pro-poor, private sector-led economic growth by providing transport infrastructure and services, and by strengthening the enabling environment for the private sector. The national economy relies on forestry, fisheries, and cocoa and copra production, all conducted in rural areas and mostly transported by sea. However, interisland transport is characterized by long distances, infrequent and unreliable schedules, and unsafe vessels.	**Effective**. By the end of 2006 (7 months after inception) the TA had conducted nearly all activities as planned. Institutional, financial, and sector analyses had been undertaken. Training of government staff and private sector operators had been conducted through a series of workshops and one-on-one mentoring, through an innovative partnership with the Papua New Guinea Maritime College. A high-quality and comprehensive final report was produced documenting all analyses and recommendations, and accepted by the government.	**Efficient.** Shortly after approval, the government requested that inception be delayed to focus on a separate study for reform of the aviation sector. Inception was therefore delayed by 9 months, and the completion date extended by 1 year.	**Likely sustainable.** The implementation of reforms ensures the sustainability of programs for administration of the inter-island transport system.	**Significant.** The government continued with the implementation of reforms, by proceeding with project preparation for a franchise shipping scheme and the proposed institutional restructuring. Future capacity development TA should be undertaken over a longer term to include more follow-up activities and ensure substantial impact, particularly for reforms initiated.	**Successful**
7178-SOL: Establishment of the Solomon Islands Maritime Safety Administration	**Relevant.** Marine transport is a vital transportation mode for connecting the six main islands and smaller island groups, and remote communities where there is no road alternative. The lack of institutional capacity causes deficiencies in maritime infrastructure maintenance, safety, and administration. To comply with international standards	**Effective.** The safety administration was established on schedule on 1 July 2010. The training plan has been completed and approval will be sought. It has been developed as a module of the transition plan. Two new items, the development of a draft transition plan and the development of a policy and procedures manual, were added	**Efficient**	**Likely sustainable**. The establishment of a training program in the sector contributes to the continuation of institutional strengthening activities.	**Significant.** The impact of the TA is frequent, reliable, and safe marine transport.	**Successful**

TA No. and Name	Relevance	Effectiveness	Efficiency	Sustainability	Impact	Overall Assessment
	and protocols, it is necessary to improve the government's capacity.	and are 90% complete.				
1780-SOL: Upgrading the Solomon Islands Ports Authority	No record on file for project progress.					
7698-TIM: Supporting Road Network Development	No relevant progress yet. Approved only in December 2010.					
3401-TIM: Transport Sector Restoration	**Relevant.** The TA was relevant considering the situation of East Timor at the time. It was designed to allow maximum flexibility in the use of resources through engagement of individual consultants. TA was a main source for the preparation of the multi-donor-funded Transport Sector Investment Program, which is now the government's guiding policy document for the sector.	**Effective**. The executing agency was satisfied with the outputs, since they responded to its needs. The TA assisted in the preparation of (i) user charges for the port and airport sectors, (ii) management contracts for the operation of the port and the airport sectors, (iii) competitive and sustainable shipping services to Oecussi and Atauro, (iv) institutional organization of the transport sector, (v) legislative framework for the transport sector, (vi) reviews and (vii) a multi-modal transport plan. The latter provided background and support documentation for the preparation of the national transport plan.	**Less Efficient.** There was a delay in closing the TA due to the post-conflict situation of Timor-Leste. The project was closed 2.5 years later than intended.	**Likely sustainable.** The satisfactory completion of the outputs and the presence of funding ensure the sustainability of intended programs in the delivery of transport services.	**Significant.** A well-managed transport system that will improve the delivery of services.	**Successful**
3731-TIM: Transport Sector	**Relevant.** The ADB-financed TA 3401,	**Effective.** The findings and recommendations	**Less efficient**. The TA had to be extended by	**Likely sustainable**. The	**Moderate.** Increased impact of transport	**Successful**

TA No. and Name	Relevance	Effectiveness	Efficiency	Sustainability	Impact	Overall Assessment
Improvement	Transport Sector Restoration, prepared an approach for transport sector establishment with requirements to implement effective sector institutions and regulatory frameworks. As a follow-up action, this TA for Transport Sector Improvement was prepared to support the operational improvement of the sector toward autonomous and effective service delivery. However, on 2 September 2004, ADB approved a minor change in scope and in implementation arrangements to update the TA and differentiate it from other, concurrent assistance. Updates included: define an optimal level of program to increase expenditure and management capability for sustainable road maintenance; offer recommendations on road use charges; and prepare basic information that will serve the longer-term road planning and management needs of the government.	of this TA are helpful in preparing future road projects in Timor-Leste. The outputs effectively enabled the strategic planning of transport sector, specifically road development and management. The final TA reports are of high quality and resulted in two ADB publications as knowledge products. The government was satisfied with the outputs and approved the road sector investment program. Major achievements under this TA include: (i) road inventory and survey (ii) road investment program (iii) road rehabilitation project preparation (iv) labor-intensive maintenance (v) community empowerment initiative	more than 5 years beyond the original target. The contract administration of the international consultant firm was poor and delayed the financial closing of this project significantly.	presence of guiding principles in the implementation of future projects ensures the continuation of programs for the sector.	improvement on poverty reduction.	

TA No. and Name	Relevance	Effectiveness	Efficiency	Sustainability	Impact	Overall Assessment
4609-TIM: Infrastructure Sectors Capacity Development	**Relevant.** The political crisis during TA implementation seriously reduced the relevance of the original design. However, ADB and the government made timely adjustment to the scope to make it meet the needs of that time. In particular, the government was contending with the ongoing humanitarian crisis associated with internally displaced persons. Based on a request by the government that the TA concentrate on helping improve capacity for budget execution, ADB approved a major change in scope on 14 February 2007, replacing some outputs.	**Less effective.** While the TA provided solid support to the government's capital development program after the civil unrest, the integrated multi-infrastructure-sector strategic policy and execution frameworks had to be removed from the TA, and the road engineering capability of the private sector was only marginally improved.	**Less efficient**. Due to political unrest, the TA was extended twice, with a 5-year completion. In particular, the component related to technical capacity building for the road sector needed more time to be accomplished.	**Less likely sustainable**. The absence of a strategic framework to enhance capacity lessened the sustainability of efforts in this TA.	**Negligible.** It did not achieve the impact originally intended, which was to improve infrastructure services and make them available to people in all urban and rural areas.	**Partly successful**
4942-TIM: Infrastructure Project Management	**Relevant.** ADB's country strategy and program update 2006–2008 for Timor-Leste focuses on infrastructure support and leadership. The strategy and program aligns with ADB's Pacific Strategy 2005–2009, which has key result areas for providing infrastructure	**Effective**. A project database and monitoring system is being developed in the Directorate General of Corporate Services, and was expected to start operation in the second half of 2010. An ADB–Ministry of Infrastructure joint mission visited Indonesia to consult on the scholarship	**Less efficient**. With 5 months to go before completion, the TA still has to disburse more than 50% of the original amount contracted. While the procurement program was completed in 2009, its efficiency and transparency still have room for improvement.	**Likely sustainable**. Capacity improvements contribute to the success of project management activities and ensure a degree of continuation for programs started.	**Moderate.** The expected impact of the TA is greater opportunities for economic participation, and better access to basic social services for all East Timorese.	**Successful**

TA No. and Name	Relevance	Effectiveness	Efficiency	Sustainability	Impact	Overall Assessment
	and improving water supply and sanitation. Infrastructure development and management have been the backbone of ADB operations in Timor-Leste since 2000 and remain appropriate.	program under the TA. The mission visited seven institutes and found that their academic programs were generally adequate for the purpose of capacity development of the ministry's staff.				
2113-TON: Road Cost Recovery and Safety Strategies 2114-TON: Institutional Development of the Ports Sector	**Relevant.** These TA subprojects are attached to the Transport and Infrastructure Project and are important to its sustainability and efficient management.	**Effective**. Progress with the introduction of a road cost recovery mechanism has proceeded slowly. However, the government has considered the consultant's report. Likewise, the report on road safety strategies resulting from the TA led to funding by AusAID for a road safety program. The TA for institutional development of the port sector provided valuable inputs to the port authority legislation and a new port tariff schedule. The legislation was found suitable and could serve as a model for other Pacific DMCs.	**Less efficient.** It took 7 years to complete the TA subprojects due to the delays in legislative action and in the plan for an effective recovery program.	**Likely sustainable**. The presence of a funding source, adequate institutional reforms, and safety programs would ensure continuation of this TA outcome.	**Significan**t. Well-maintained infrastructure (i.e., roads and ports) has an economic impact and most positive effects on economic development.	**Successful**

ADB = Asian Development Bank, AusAID = Australian Agency for International Development, COO = Cook Islands, DMC = developing member country, FIJ = Fiji, LNG = liquefied natural gas, MOU = memorandum of understanding, MTTP = Medium-Term Transport Plan, NMSA = National Maritime Safety Authority, NTDP = National Transport Development Plan, PNG = Papua New Guinea, RAMS = road asset management system, RMI = Marshall Islands, SAM = Samoa, SOL = Solomon Islands, TA = technical assistance, TIM = Timor-Leste, TON = Tonga.
Source: Asian Development Bank's internal database.

TECHNICAL OVERVIEW OF KEY ISSUES BASED ON FIELD VISITS

INDEPENDENT EVALUATION MISSION'S TECHNICAL EVALUATION OF TRANSPORT SECTOR IN PACIFIC ISLAND MEMBER COUNTRIES (MARCH–APRIL 2011)

A. General Overview

1. The Pacific island countries visited by the evaluation mission of the Independent Evaluation Department (IED) were the Cook Islands, Fiji, Papua New Guinea (PNG), Solomon Islands, Vanuatu, and Timor-Leste, and covered a total of 35 projects, of which 17 had been completed and 18 were ongoing. The projects all fell under the classifications of roads, ports and maritime, or airports. This document groups the findings country by country to assist the reader's assessment of each country, and also includes some non-Asian Development Bank (ADB) projects that were visited and evaluated because they were transport sector projects that had similar conditions, problems, and stakeholders to ADB projects.

B. Review of Documents

2. The technical evaluation included a review of ADB documents such as country operations business plans, country partnership strategy, project reports and recommendation of the President, and project completion reports (PCRs) and project or program performance evaluation reports (PPERs) where available, as well as some ADB-internal documents. Engineering technical design drawings and specifications were not included; but in some cases, officials who had been involved in the projects were available for detailed discussions.

C. Summary of Transport Sector Infrastructure Conditions

1. Papua New Guinea

3. **Port Moresby roads.** Most main arterial roads were divided, sealed, well-maintained, high-design-standard roads complete with lighting, guardrail where warranted, and other road furniture. Some secondary roads were in good condition and well maintained, while others had sections that were potholed or otherwise eroded, not adequately maintained, lacked sufficient stormwater drainage, or had unsealed road shoulders, and there was commonly a drop from the bitumen-surfaced pavement to the unsealed shoulder. Heavy bus traffic contributed greatly to the poor condition of road shoulders. Most major intersections had roundabouts or traffic lights.

4. Minor roads were both sealed and unsealed, badly or not maintained with numerous potholes, some had scoured pavements from inadequate and uncontrolled drainage, and at numerous places rubbish was dumped along the roadside. Roads in the older residential areas on the hillsides around Port Moresby, the upmarket areas, were normally sealed and well maintained.

5. Feeder roads on the outskirts of the city area were generally in poor condition but improved further away from the city.

6. **Roads south of Port Moresby (Magi Highway and Hula Road).** Generally, rehabilitated road pavements were in good condition and well maintained, although some sections had high vegetation up to the edge of the bitumen while others showed vegetation

clearing along the verges and shoulders. There were examples where culverts had been clogged with debris during heavy rainfall and flooded the overlying pavement and bitumen.

7. There was one multi-cell culvert that had failed and washed out a large section of embankment, roadway, concrete causeway, and reinforced concrete pipes, creating a very dangerous hazard for road users.

8. The original road to the south, which had not been rehabilitated, was in poor condition with many potholes from years of no maintenance.

9. **Roads around Lae (start of highlands highway).** Rehabilitated roads around Lae normally displayed evidence of patching, which in most cases had an excess of bitumen; road shoulders were worn to a lower level than the adjacent bitumen-surfaced pavement, indicating that gravel resurfacing of road shoulders is not on the maintenance list.

10. At the time of inspection, a private contractor was undertaking other maintenance that included some significant work, i.e., installing gabion baskets at a bridge abutment, which involved closing off half the road with traffic control in place. Also, one section of the highway had been closed off (a detour was in place) while the maintenance contractor reconstructed that section of highway.

11. Although the cross-section of the rehabilitated road was generally in good shape, there were considerable lengths of longitudinal pavement patching—usually in the outer 1.5 meters of each lane, i.e., adjacent to the edge of bitumen in both directions. This may have resulted from widening the original pavement with a pavement that was inferior to the original and not suitable for the existing traffic conditions. Sections of bridge guardrail had been damaged and were in need of repair.

12. There were a number of areas where the edge of the bitumen-surfaced pavement had encroached into the travel lane due to non-maintenance of the edge and adjacent road-shoulder gravel surfacing.

13. Line marking had not been maintained and was worn to a state where it was difficult to discern.

14. At a number of locations, table drains at the toe of cut batters had been stone pitched, usually in steep terrain, and often the bitumen surfacing was also carried across the road shoulder up to the edge of the table drain. This proved very successful as it needed very little maintenance and vegetation growth was not a problem. This concept could also be used in very flat country if it is not possible to construct the road on top of a purpose-built embankment.

15. **Mt. Hagen roads.** Rehabilitated roads around Mt Hagen are fairly consistently displaying common defects such as:

(i) some potholes, with eroded road shoulders exposing the edge of bitumen-surfaced pavement,
(ii) areas where long grass extends up to the edge of pavement,
(iii) badly potholed approaches to Bailey bridges, and
(iv) Bailey bridge decks at lower level than approaches.

16. It was observed that the horizontal alignment of some Bailey bridges was inconsistent with the design standard for the remainder of the road—this was no doubt caused by upgrading

the road and leaving the bridges in their original locations for upgrading at a later date. Unfortunately, this practice creates a traffic hazard until the original bridge has been replaced and the alignment upgraded.

17. Sections of road in flat terrain had not been maintained resulting in excessive potholing, blocked and overgrown table drains, blocked culverts and no delineation of culvert inlets and outlets. In such conditions rainwater is prevented from draining off the road surface and is also prevented from draining away from the road, which ultimately results in complete destruction of the roadway.

18. At several locations landowners have maintained the table drains and road shoulders, but they have also turned these areas into gardens by planting trees and shrubs, which may be visually attractive but prevents their intended purpose.

19. One area in steep terrain had geotechnical instability that resulted in slip failures along the roadway, creating longitudinal steps in level along the road pavement coupled with voids under the pavement. Such failures can be compounded by further sudden failures after periods of heavy rain and/or earth tremors.

20. **Some good points observed.** The cross-section of rehabilitated roads usually displayed a good profile with an intact bitumen seal, indicating that the pavement structure was sound, although there were occasional potholes in the road surface and erosion along the edge of the bitumen. In this case, more regular maintenance would keep the roads in much better shape for longer periods.

21. Once again, stone-pitched table drains with a full-width bitumen seal gave much better performance with much less maintenance. It was noted that some sections that had been resealed still had good shape and were still structurally sound, and will last well if they are regularly maintained.

22. **Old Lae Port.** Most of the hardstand areas are paved with interlocking concrete paving blocks, which are very common for port areas. However, the pavers are generally broken (crushed) and quite often displaced by settlement, and the whole hardstand area needs replacement in the very near future. PNG Ports is the responsible agency and has development plans in place to redevelop the old port—there is construction work progressing at the moment. PNG Ports is planning 3 berths of 180 meters, 170 meters, and 150 meters with three quay cranes and rubber-tired gantry cranes. PNG Ports has no guarantee that it will be the operator of the new port and is going it alone on the redevelopment of the old port.

23. PNG Ports needs a new 6-kilometer (km) access road built from the northwest corner of their site to the Highlands Highway

24. **New Lae Port.** The agency responsible for the management of the development of the New Lae Port is Independent Public Business Corporation (IPBC). It has completed the resettlement of the squatters from the new port site back to their home provinces.

25. The civil works contract was due to proceed on 21 April 2011, but additional financing is necessary to cover the revised additional costs of about $84 million, and IPBC advised that it requires confirmation from ADB that supplementary finance will be available before the civil contract can proceed. IPBC said that the civil works documentation for the revised construction contract was now completed and ready for construction to commence.

26. IPBC also advised that PNG Ports will probably be included in the list of companies to be considered for operating the new Lae Port.

27. It is not clear whether the government wants the two ports to operate independently or will combine them into one—the report and recommendation of the President documentation indicates that the new port will handle all port throughput in Lae.

2. Solomon Islands

28. **Road west of Honiara (White River).** The first section of this road is sealed and has a few potholes, the road width is 7–8 meters, and it was noted that vegetation on road shoulders and in table drains had been maintained. Some creek crossings still have temporary structures after the original structures were washed away about 2 years ago. A construction contract has just been awarded to Kitano Construction Corp for the replacement of temporary and damaged bridges and culverts, and for re-sheeting and sealing the roadway. Very few traffic signs, warning signs, and hazard signs were noted, and the limited line marking that was evident was only just visible due to wear. Culvert inlets and outlets were not marked by guideposts and delineators.

29. **Road east of Honiara (Henderson Airfield).** The road was sealed with a formation width of 7–8 meters, there were some potholes but the road was generally well maintained. Vegetation on road shoulders and in table drains was maintained in places.

30. Some warning signs and give-way signs were missing at bridge approaches, and there were sections of steel beam guardrail at bridge approaches that had been damaged.

31. At one location a twin-cell reinforced concrete box culvert had been constructed, but a land dispute prevented the road approaches from being built, necessitating traffic to use a sub-standard access track around the culvert; this needs upgrading for better alignment and smooth traffic flow.

32. **Road south of Auki (Bina Harbor Road).** The road pavement had been re-sheeted with coronus material—this material is used extensively in the Pacific islands for road pavements and is naturally cementing (comprising old coral-reef limestone) which results in a dense hard surface, but is susceptible to potholes and if not maintained regularly, the pavement layer will be destroyed. Numerous potholes were observed, although it was the end of the wet season and potholes were expected. There was evidence of maintenance patching done in some areas.

33. The most serious deficiency in the road was the complete absence of any form of traffic safety and warning signs, such as directional signs, advisory speed signs, hazard boards, delineator posts, guideposts, or give-way signs at one-way bridges; many bridges did not have guardrails or handrails and line markings.

34. Most river or creek crossings were single-lane bridges and in many cases the approach roads were much wider than the single lane of the bridge, and there was no signage to tell the driver what to expect on the bridge. The potential for serious accidents and loss of life was immense. It was only due to the fact that almost all traffic is local traffic (with local knowledge) that there have not been many serious accidents.

35. Many road sections had overgrown vegetation up to the edge of the road, which prevents rainwater from getting into the table drain and results in pavement damage. It also does not allow the driver to see culvert inlets or outlets when he or she has to get off the road for any reason. Guideposts with delineators should mark all culvert inlets and outlets.

36. It was noted that some sections of steep table drains had vertical bamboo stops driven into the ground at regular intervals to limit rainwater velocities and prevent scouring of the table drain invert.

37. **Road from Auki to Maluu (starting from airport road turnoff).** The first section of road heading north had been resurfaced under AusAID's Community Sector Project. Some potholes had developed during the recent wet season and the table drains were overgrown with vegetation.

38. The purpose of the IED mission was to check the general condition of road investment in Malaita, because ADB also plans to have 8 km of road upgraded under the Second Road Improvement (Sector) Project.

39. The first 23 km took 35 minutes to travel; the next 42 km (to Maluu) took almost 2 hours due to its severely deteriorated state.

40. A contract had been awarded for the reconstruction of the last 20 km to Maluu, but the local community rejected the appointment of the construction contractor and the project is now in limbo. The Ministry of Infrastructure Development could not say when they expect to be able to award the contract to another company that is acceptable to both parties.

41. The planned 8 km road under the second road improvement project will have climate change adaptation design. This segment was to be cofinanced by ADB and the European Union. However, there is a land dispute over the proposed new road location and this in turn resulted in the European Union having to revise the cofinancing agreement, which led to some delay. If the road is reconstructed in its present location along the top of the beach using rock-filled gabion baskets to protect it from erosion, it is extremely unlikely that it will withstand severe weather events such as wave action from cyclones.

42. **Auki development prospects.** The Japan International Cooperation Agency (JICA) has awarded a contract for the construction of community markets in Auki (similar to the one they did for Honiara in 1997) and an adjacent domestic wharf. Construction has just started and is expected to be completed in 2012.

43. For many years the government has been talking about the development of a new international port at Bina Harbor, about 24 km south of Auki. It is a large natural harbor lined by vast areas of flat land that would be suitable for all kinds of industrial and commercial development. There is also a large supply of fresh water available and some potential for a hydropower project. However, there are many customary landowners and all attempts to date to get them around the discussion table have failed.

3. Vanuatu

44. **Santo Port project.** Wharf No. 1 (1955 era) is no longer used. Run-down and unsafe to use, it ceased operations in 2006. It is not even used to moor waiting vessels due to its extremely dilapidated state. The main wharf structure has failed and part of it has moved

seaward, and erosion of the western end has exposed failed steel sheet piling and taken away a large section of hardstand.

45. Wharf No. 2 commissioned in 1991 (with ADB funding) showed no evidence of maintenance being done to any part or section of the Port Infrastructure Works Ltd. except that a new storage shed was nearing completion in the old wharf area.

46. The harbor master advised that the stevedoring company (one only at this port) was responsible for the maintenance of the port infrastructure and had completely ignored its responsibility.

47. Items in need of maintenance included storage sheds, loose pavement in heavily trafficked hardstand areas, hardstand areas that had settled and were ponding water, water mains (firefighting mains) that are located under the wharf's reinforced concrete deck, hardstand wearing surface, area high mast lighting, fenders along the front of the wharf, wharf furniture items including vehicle stopping blocks, bollards, etc.

48. It was mentioned that there are no firefighting facilities at the port, but heavy steel covers along the lines of the water mains at the wharf suggest that "spring" fire hydrants are in place, and only hydrant risers and hoses are needed to have firefighting capability. The steel covers could not be removed due to them being in place for 20 years without maintenance.

49. The port is equipped with a hazardous goods storage area.

50. At the front of the wharf, one fender is missing and several others have been dislodged by a fuel tanker trying to moor in rough weather. The same incident resulted in some damage to the reinforced concrete deck at the front of the wharf.

51. The harbor master commented that a tugboat was needed at the port to prevent a repeat of such events, but this may not be financially viable. The pilot boat attached to the port is very old and in need of replacement.

52. There is some minor settlement of the hardstand along the rear of the concrete wharf, i.e., along the line of the steel sheet piling (retaining wall). However, it is only minor and does not suggest any serious settlement.

53. The most recent survey of the submerged batter in front of the steel sheet piling (retaining wall) was done in 2006 but the results were not available in Santo. Tidal currents are strong along the front of the wharf.

54. Imported fuel is delivered to the wharf in fuel tankers and discharged into road tankers for transport to the storage facility, which is located outside the port area. This arrangement could easily be changed in future, as the storage facility is within sight of the wharf and it would not be too difficult to install a pump and pipeline to deliver fuel directly to the storage area.

55. Storage space is limited and sometimes not all the copra delivered for export can be stored. However, the storage shed nearing completion should rectify this situation. The existing wharf appears to operate satisfactorily under the current demand, but planning for replacement of the old wharf should be put into place. It appears that there is no master plan for future development of the port facilities, and in fact some of the port landholding has already been sold

off to private developers. The existing bitumen-surfaced access road into the port area is not wide enough for two trucks to cross each other and therefore needs upgrading.

56. **General road conditions in Efate Island.** Generally, there is a mix of unmaintained (or very poorly maintained) roads and some newer roads that are maintained, and a lot of unsealed, unmaintained roads. There are many narrow roads carrying heavy traffic volumes with intersections that are old and completely unsuitable and unsafe for present volumes. A lot of these old roads are badly potholed in the town areas and do not have stormwater drainage systems that meet modern standards. However, there is a draft report produced under TA 7345–VAN called Vanuatu Drainage Report that points out the inadequacies in the Port Vila urban area. The report also discusses the sanitation systems in Port Vila and environmental issues associated with urban stormwater discharge and sewerage treatment, and disposal of treated effluents. An overabundance of local buses in the Port Vila urban area is largely responsible for the traffic congestion experienced downtown. These vehicles are also primarily responsible for the numerous potholes and damage to unsealed road shoulders in the feeder roads around Port Vila. One of the better roads on the outskirts of town is the road funded by JICA, which is of a higher standard than most other roads in Efate Island.

57. **International and domestic wharfs and container area.** JICA has just completed an upgrade to the International Wharf, which is used by the numerous cruise ships that visit Vanuatu each year and also by the cargo and container ships for the country's imports and exports. Unfortunately, the container storage area is separated from the wharf area, which necessitates long container movements on the road between the two areas. This road, which is congested by stalls for cruise ship passengers, taxis and buses, is not maintained and presents a safety hazard for all road users. The domestic wharf is about to close, as the landowner is proceeding with a redevelopment project that does not include a replacement wharf. Domestic shipping will be mooring offshore to load and unload cargo until a new wharf is built. It is probable that a new international wharf complex will include facilities for domestic shipping as well, and also a modern container terminal and storage facility. JICA and AusAID are in fact involved in negotiations with the government for the funding of proposed new international and domestic shipping terminals and associated infrastructure, as well as redevelopment of the container area.

58. **Cyclone Emergency Rehabilitation Project.** The project work included restoration of the riverbank close to the western end of Beaufield Airport runway and construction of rock-filled gabion basket retaining walls to secure the restoration works. It also included rehabilitation of the Prima Bridge on the La Colle River, of the Mele Bridge on the Tepwukoa River, and of the Epoc River crossing, and provision of river training works and installation of debris fenders at Morona crossing.

59. **Observations.** The Beaufield Airport restoration works appear completely satisfactory and in good condition. The rehabilitation of the Prima Bridge was completed but suffered heavy damage from a severe rainfall. The contractor carried out repairs at his own cost and the works looked satisfactory and were being maintained. The Mele Bridge works looked satisfactory and were being maintained, as did the rehabilitation of the Epoc River crossing. Equally satisfactory and seemingly maintained were the river training works and debris fenders at Morona River crossing.

60. Note: At the time of the inspections, the wet season had just ended and the vegetation growth was prolific – all other maintenance items appeared in order.

61. **The Millennium Challenge Corporation Project—ring road around Efate Island, Vanuatu.** Construction was only recently completed; the contractor's equipment is still on the site in the hope of winning further construction contracts. The design standard appears superior to that of most other roads in Vanuatu and suitable to the terrain around Efate Island.

62. However, there are still a few old bridges and culverts that need to be replaced to achieve better horizontal and vertical geometry and give the new road a more uniform design standard. In the mountainous areas, steep sections of the road are concrete-paved to improve the safety of the road, minimize maintenance, and ensure longevity.

63. The recently formed Millennium Challenge Account office for proper and continuous maintenance of the road will also ensure longevity.

4. Fiji

64. **ADB portfolio and observations.** The ADB transport portfolio in Fiji has been dwindling as no new loans are being processed. Only one transport project is still in implementation, the Third Road Upgrading Project (FRUP 3), which cannot be completed without supplementary loans due to cost overruns. There is also an Emergency Flood Recovery Project, which is making very slow progress. The Ports Development Project (Loan 1902) was closed in March 2007. IED conducted a project performance evaluation report (PPER) in August 2011, and rated it successful (the report is currently in draft stage).

65. Technical assistance (TA) associated with FRUP 3 was completed in June 2005. The TA was rated partly successful in the 2006 completion report. It assisted the Ministry of Works and Transport in developing and implementing institutional and policy reform through establishing the Land Transport Authority and the Department of National Roads. The latter was the first stage of a two-step process to establish a Fiji Roads Authority. But the institutional reforms had only been partly accomplished before the military coup of 2006.

66. The FRUP 3 investment project for road upgrading experienced difficulties because of severe cost overruns and two cases of misprocurement. The reform efforts were to be continued under a proposed loan for the Fourth Road Upgrading Project (FRUP 4) and associated TA for road sector performance improvement. Together, these projects were intended to support the transition of the roads authority from a public sector road agency to a statutory authority, with maximum involvement from the private sector and performance-based management. However, ADB's reengagement strategy after the political crisis excluded new loans and thus the processing of FRUP 4. Much of the momentum for the reform of the road transport sector was lost.

67. Currently, most road maintenance is carried out by force account. Insufficient funds are allocated to road maintenance, and the ability to adequately process documentation pertaining to procurement and financial management is lacking given the insufficient technical capacity of the ministry.

68. The coup effectively stopped the initial progress of the TA toward phasing out force-account work, building up the domestic construction industry, and establishing a fuel levy to fund road maintenance. Funds are insufficient, staff has moved on, and there is no longer a local champion. Discussions on phasing out force-account work are sensitive and there is a difference of opinion between ADB and Fiji on this matter.

69. More thorough preliminary engineering and geotechnical studies, as well as better use of regional cost comparators (in addition to local estimates) should improve the robustness of project cost estimation during preparation, which has been a weakness. Better supervision during implementation would also likely improve the quality of work, especially of force-account work.

70. The establishment of the Land Transport Authority has been a positive development and figures show that there has been a decrease in road accidents and fatalities, despite an increase in the number of vehicles on Fiji's roads.

71. The momentum toward phasing out force-account work and establishing more small contractors is likely dormant until ADB resumes lending, at which point it will have to restart discussions with new players.

72. The Chamber of Commerce confirmed that there were two active small road contractors, but said that more would be available if the work was there. Some potential small contractors are now working on other islands because of such little opportunity in Fiji itself.

73. The capacity of the Works Department is very thin. There are few engineers and the preference is business as usual. The Ministry of Finance has little confidence in the Works Department and has created a Central Coordinating Authority of Roads reporting directly to Finance and focused primarily on urban roads. This has confused reporting lines and planning.

74. Although a road fund was established, it receives money only from license fees, which is totally inadequate for maintenance purposes. There is little control of overloaded trucks. Timber, sugar cane, and bottled water trucks are severely damaging parts of the network. Some road sections have reverted to gravel through lack of maintenance.

75. There has been a drive against corruption since the coup, but it is difficult to assess how much corruption still exists.

76. Government-owned ferries serving the outer islands are old and inefficient. There is only one stevedoring company; it is questionable whether there is enough business for a second company even though competition would be desirable.

77. There is some traffic congestion between Suva and Nausori. This could probably be resolved with reversible lanes in the peak hours, but currently the peak hours are quite short and such measures are probably not justified yet.

78. A detailed transport master plan being produced under a TA consultancy may prove to be an important document given the current deterioration in capacity and lack of direction.

79. Experiences with financing from the People's Republic of China and Malaysia for road habilitation have not been fully satisfactory; but Fiji has nowhere else to go for funds at present.

5. Cook Islands

80. **Transport sector overview.** Most roads (64%) serve the islands of Rarotonga and Aitutaki, the two most populous islands and the main tourist destinations. For the most part the road network of 394 km is appropriate and in reasonable condition. There are some issues

related to inadequate staff capacity, as well as insufficient budget and equipment, but on the whole the road system is adequate and experiences mostly light traffic. Gravel materials are good and the main roads are sealed.

81. The roads on the outer islands are mostly unsealed, made of compacted coral sand. Some are reportedly in poor condition and only receive maintenance funds after an emergency. Vehicles are for the most part in satisfactory condition. Most serious road accidents involve motorcycles, but there is a reluctance locally to wear crash helmets.

82. The gateway international airport is in Rarotonga, with airstrips on several of the outer islands catering to domestic air traffic. The Aitutaki Airport was originally developed by the United States during the Second World War. Air Rarotonga runs reliable inter-island services without subsidy.

83. The main harbor at Avatiu in Rarotonga was rehabilitated under the Emergency Assistance Project and a revenue-raising private marina was established; the port area at Atutaki was repaired at the same time. The New Zealand Agency for International Development repaired the small port and jetty facilities in the outer Islands. The new ADB-funded Avatiu Port Development Project will rehabilitate and expand the capacity of Avatiu Port. The project comprises (i) widening the harbor entrance, (ii) dredging to increase the depth alongside the wharf plus dredging and enlarging the ship turning area, and (iii) reconstructing and realigning the quay and repairing the adjacent wharf deck (augmented by climate change funds to raise the height of the wharf).

84. The ports at Avatiu and Aitutaki are operated by the Cook Islands Ports Authority, and the outer island ports are under the jurisdiction of the Office of the Minister of Island Administration and the individual island administrations. The office is a government department granted an annual budget allocation to provide essential services to the outer islands, including transportation, energy, and water.

85. **ADB portfolio.** The Emergency Assistance Project initially focused on clean-up, repair, and rehabilitation of general infrastructure. These activities began before loan approval, with the expectation that reimbursement would be provided under the loan's retroactive financing provisions. However, some documentation, especially from the outer islands, was incomplete and could not be processed. Road repairs included some roads in Rarotonga and Matavera, three bridges, as well as repairs to guardrails, culverts, footpaths, and drain clearing.

86. Repairs at Aitutaki harbor encompassed the wharf storage shed, floodlights, navigation lights, ramps, pavements, fenders, and bollards. At Avatiu harbor, debris was removed while the western marina was constructed through an international competitive bidding contract ($1.93 million). The breakwater could only be partially restored with the original amount allocated, but after a favorable move in the exchange rate an additional $300,000 became available. However, since a new environmental impact assessment was required for further work on the breakwater, this could not be completed prior to loan closure.

87. TA projects for disaster management preparedness and an infrastructure master plan were successfully carried out. The former resulted in a government-endorsed National Action Plan for Disaster Risk Management (2009–2015). The latter covered recommendations for governance, and policy frameworks for planning, delivering, maintaining, and climate-proofing infrastructure.

88. The Avatiu Port Development Project approved in November 2008 (before Cook Islands graduated to an ordinary capital resources-only country) was a blended loan, i.e., $8.6 million from ordinary capital resources and $6.9 million from the Asian Development Fund, with a $2.7 million contribution by the borrower. This loan was based on the preliminary design; now that the detailed design is complete and taking into account increases in construction material prices, a supplementary loan of $4.0 million is required. Work was tendered in May 2011.

89. **Observations.** While capacity is an issue and there is a leakage to more developed countries, Cook Islands can cope with normal operations, but when a large project or emergency situation arises, additional support is necessary. After the cyclone emergency the Aid Management Steering Committee did not meet frequently enough and government was indecisive about where to direct aid after an offer of NZ$10 million in New Zealand grant money. Perhaps ADB could have done more to move matters along.

90. There is clearly scope for more private sector involvement in infrastructure, including transport. Small contractors are evident in Rarotonga and equipment can be hired as needed.

91. There may be potential for more regular inter-island ferry services combining freight and passengers. The private sector is exploring this. The remoteness of some communities makes development very costly.

6. Timor-Leste

92. Timor-Leste emerged from a series of conflicts that caused heavy destruction of the country's infrastructure. The Trust Fund for East Timor was established in 1999 under the trusteeship of the International Development Association to assist in the provision of emergency assistance and help expedite a return to normalcy. The two trust fund-financed phases of the Emergency Infrastructure Rehabilitation Project contributed to the repair and rehabilitation of the roads, port, and power infrastructure. ADB prepared the two phases and managed them following ADB procedures. Phase 1 was approved in April 2000 and completed in December 2004, phase 2 was approved in August 2002 and completed in February 2007.

93. The main rational of phase 1 (grant amount $29.8 million) and phase 2 (grant amount $9.0 million) was to support humanitarian assistance in Timor-Leste by improving infrastructure facilities and by creating a foundation for setting up new institutions. The expected results comprised long-term contributions to the future economic development of Timor-Leste and, more significantly, contributions to expedite a return to normalcy toward the formation of a government. For the latter result, the immediate outcomes were to constitute (i) transport and power infrastructure, allowing access to humanitarian assistance, health care, and water supply; and (ii) a sustainable road transport system, promoting economic and social activities.

a. Phase 1 Outputs

94. **Roads.** The independent evaluation mission confirmed the PCR observations that phase 1 carried out only repair work on 1,249 km of core road network (which included 600 km of key district and subdistrict roads). Four regional road maintenance depots (Baucac, Dili, Maliana, and Same) were provided with the necessary equipment for routine maintenance and minor road repairs.

95. Neither phase 1 nor phase 2 involved a complete rehabilitation of the road (i.e., the works did not improve the quality of roads). The project undertook mainly minor repairs on

various road sections to enable restoration of connectivity. It is acknowledged, however, that it was designed as an emergency assistance project and not as a road rehabilitation project.

96. The objective to provide road repairs in various locations across the country resulted in stretching the emergency assistance thinly. There could have been room for simpler and more focused interventions. This was true for both phase 1 and phase 2.

97. Most of the roads are in bad to poor condition, limiting average vehicle speeds to less than 30 km per hour. Although subject to heavy rain, the roads have not been maintained efficiently.

98. **Port.** Construction of the extension (48.7 meters by 12.1 meters) to the main wharf, repair of the slipway in the eastern hardstand area, and upgrade of the eastern container yard were successfully completed. Problems with the quality of the concrete delayed the wharf extension by 1 year. The upgrade of the container yard was carried out in two steps by first providing gravelling to strengthen the area and then paving it. Finally, phase 1 provided security fencing, floodlights, firefighting equipment, and power outlets for refrigerated containers.

99. **Power.** Phase 1 envisaged rehabilitation of 15 power plants. Instead, it installed (i) 16 new power plants (13 single-generator plants, one with two generators, and two with three generators, of varying capacities); (ii) 10 step-up power transformers; (iii) 31 distribution transformers; (iv) 83 km of new and rehabilitated 20-kilovolt sub-transmission lines; (v) 82 km of low-voltage distribution lines; (vi) 120 km of low-voltage home connection cables; (vii) 5,203 consumer connections; (viii) 1,000 single-phase and 300 three-phase meters, for consumers with no or defective meters in mid-2001; and (ix) materials for generation and distribution rehabilitation works by the United States in Baucau, Manatuto and Oecusse districts. Support for the power sector's financial management was provided, but the outputs were rated unsatisfactory when the consultant contracted to undertake the component abandoned the work in October 2001. At the request of the government, ADB assisted in the recruitment of a management contractor to take over Electricidade de Timor Lorosae (EDTL, the state-owned power utility). Since the selection process and the award of the management contract deviated from ADB procurement guidelines, ADB withdrew participation in the process.

100. **Studies.** The PCR provided details of several studies conducted under Phase 1. However, the IED mission could not validate the outputs and outcomes of these studies due to a lack of adequate records within the project management unit. These studies were (i) a computerized road asset management inventory and routine maintenance planning system installed at the Department of Roads; (ii) an accounting system for roads; (iii) provision of tug and tow services for Dili’s port; (iv) river stabilization studies for bridge sites; (v) preparation for procedures for labor-based road maintenance; (vi) preparation of a legal framework for selection and contracting of an EDTL management contractor; (vii) tariff and manpower review for EDTL; (viii) asset valuation for EDTL; (ix) a management review on power sector institutional reform and governance; and (x) review of broad technical and institutional needs of the subdistrict power stations.

b. Phase 2 Outputs

101. Phase 2 was also implemented as envisaged. It achieved three of four intended targets: (i) road restoration (where engineering solutions can be viably maintained over time); (ii) fixing of landslips to ease access; and (iii) establishment of a routine maintenance regime. The

objective of empowering the local contracting industry and developing a routine maintenance organization was only partly achieved.

102. **Civil works.** The specific locations for the civil works were based on a tentative list of project roads, which was finalized after grant approval. The works undertaken covered; (i) improvement of road conditions from the level of embankment to the base course and, on some sections, up to the surface works; (ii) new construction and rehabilitation of four critical bridges—Cassa, Gleno, Malushun, and Vikida; (iii) slope protection works and retaining walls with an approximate total volume of 29,443 cubic meters; (iv) drainage improvement works, which included 61 meters of box culverts, 442 meters of pipe culverts plus 3,582 meters of surface drains; and (v) bioengineering works of 5,269 meters. The cross and side drains at Laclubar on the Manatuto–Natarbora road were destroyed by a landslide in March 2008. Minor damage caused by erosion was visible on the subgrade of the road approaches to the Cassa and Vikida bridges.

103. **Establishment of routine maintenance regime**. During appraisal, Phase 2 aimed to provide technical support to establish a community-based maintenance program and related technical capacity in field organization. This component was not implemented.

104. **Training.** Phase 2 provided on-the-job training for selected personnel who were assigned as counterpart staff to the supervising consultants during the implementation of civil works, as envisaged at appraisal. The counterpart staff were located in the Baucau and Maliana offices established under the project.

c. Technical Assistance

105. TA on transport restoration assisted in the preparation of (i) user charges and management contracts for the port and airport; (ii competitive, sustainable shipping services to Atauro Island and Oecusse District; (iii) an institutional organization and legislative framework for the transport sector; (iv) assessment of port and airport investment and restoration needs; and (v) a multimodal transport plan, which provided background and support documentation for the preparation of the national transport plan.

106. Related to Phase 2 was the TA on transport sector improvement, which was amended to focus on preparation of an updated comprehensive development strategy for the road system. The updated outputs included (i) identification of optimal levels of expenditure on road construction and maintenance; (ii preparation of a road investment program; (iii) development of a program to boost expenditure and management capability for sustainable road maintenance; (iv) recommendations on road user charges, and (v) preparation of basic information that will serve the government's longer-term road planning and management needs.

D. Project Implementation

107. Although ADB’s contribution has enabled positive outcomes, there remains room for improvement in the implementation of projects, many of which have been delayed and face cost overruns. Out of 17 completed projects, seven have encountered significant delays (greater than 2 years) due to capacity constraints within the government agencies, inadequate counterpart funding, and poor contractor performance. External factors included political instability, particularly in Solomon Islands and Timor-Leste, and land ownership issues in the former.

108. Cost overruns were mostly due to inaccurate project costing at appraisal, owing to insufficient information available and resources deployed during project preparation. The lack of adequate resources during project preparation was marked in the Lae Port project in PNG and the Avatiu Port project in Cook Islands. External factors such as increases in steel, fuel, and bitumen prices in the global market also contributed to the overruns.

109. Of the 18 ongoing projects, two are at risk of cost overrun, and one has already incurred an overrun of 31% of the original amount. Four projects are at risk of delays at an average of 18% of scheduled time due to procedural issues and late engagement of consultants.

E. Sustainability

110. The lack of adequate budgetary allocations for infrastructure maintenance is consistent across all countries. What makes Pacific countries different is the lack of maintenance regimes to guide the public sector in prioritizing investments, e.g., there is a need to prioritize road maintenance based on degree of roughness. Although PNG and Timor-Leste have seen recent improvements in their fiscal positions, these have not yet translated into more allocations to the transport sector. Discussions with transport ministry officials indicated that they have limited resources to ensure sustainability of projects.

THE STATE OF MONITORING AND EVALUATION OF TRAFFIC GROWTH

1. The Independent Evaluation Department (IED) tried to look at the economic impact of road investment in the Pacific developing member countries (DMCs), but it turned out that very few, if any at all, had established baseline data or maintained project performance management or monitoring and evaluation (M&E) systems.

2. In light of this, this study looked at what have been the original estimates or assumptions used for traffic growth in the original feasibility studies and consultant reports, as compared with the actual trend of traffic growth at project completion. Here we look at three Pacific DMCs in particular—Vanuatu, Fiji, and Solomon Islands (in the order of IED visit).

A. Vanuatu

3. Vanuatu, under the Millennium Challenge Corporation (MCC),[1] has conducted more proper M&E for its road investments in the Efate Ring Road and Santo East Coast Road.

4. The MCC Vanuatu operation initially consisted of two principal projects: (i) civil works for the construction and reconstruction of priority infrastructure such as roads, wharfs, airstrips, and warehouses on eight islands; and (ii) institutional strengthening in the Public Works Department, including the provision of plant and equipment for the maintenance of infrastructure. However, due to unforeseen economic developments during implementation of the MCC program, construction costs escalated and translated to a drastic reduction in the scope of work—down to two road projects on the islands of Efate and Santo, and a similar reduction in the scope of institutional strengthening. Given the funding constraints, the rescaled MCC Vanuatu road project covered the upgrade of 92 kilometers (km) of Efate Ring Road and 57 km of Santo East Coast Road to two-lane bitumen-seal-standard roads with improved drainage systems.

5. MCC estimated the economic internal rate of return (EIRR) of the two road projects through a forecast of the value-added benefits of each relative to project costs. With the rescoping of the entire program and escalation of project costs, MCC recalculated the EIRRs for the two projects to ensure their economic viability.

Table A7.1: Millennium Challenge Corporation's Revised Economic Internal Rates of Return

Project	**Updated Project EIRR** (%)
Efate Ring Road	15.2
Santo East Coast Road	28.5
Program Total	20.7

EIRR = economic internal rate of return.
Source: Millennium Challenge Corporation. www.mcavanuatu.gov.vu/mcc.html

6. MCC identified the expected benefits for each project and quantified these through estimating the induced value-added impact of two outcomes: (i) reduced transport costs, and (ii) improved reliability of access to economic activity in the tourism and agriculture sectors.

7. The general assumptions used for the computation of the EIRRs include:
   (i) default growth rate for benefits of 3% (International Monetary Fund projection),

[1] This is not ADB.

(ii) tourism growth rate applied to tourism benefits of 7% (World Trade and Convention Centre projections),
(iii) economic conversion factor of 1.0,
(iv) annual Inflation of 3% (2002–2003),
(v) exchange rate of 108 vatu/$,
(vi) time horizon of 20 years,
(vii) tourism expenditure factor (percent of tourism expenditure that benefits the local economy) of 72% (based on Fiji estimate),
(viii) local value-added construction factor (percentage of local construction costs that directly benefit the local economy through worker wages and local purchases) of 50%, and
(ix) Operation and maintenance cost was excluded from individual project EIRRs to avoid double counting, as it was treated in the national maintenance-strengthening EIRR.

8. For the original traffic growth projection, MCC assumed that reduced vehicle operating costs would translate into an extra 15% increase in traffic for 2008–2011. However, recent field data gathered from Asian Development Bank (ADB) missions to the region revealed that the original assumption (of 15%) has been too conservative and significantly lags the actual growth in traffic for the two roads.

Table A7.2: Actual Average Traffic Growth in 2008–2011[2]

Project	**Growth Rate** (%)
Efate Ring Road	106.1
Santo East Coast Road	20.6

Source: Millennium Challenge Corporation. www.mcavanuatu.gov.vu/mcc.html

B. Fiji

9. This assessment of traffic trends in Fiji is based on a desk review of available traffic and vehicle data. As a small island state, Fiji has a relatively significant vehicle population for private and commercial use. Between 2000 and 2003, the number of registered vehicles progressively increased from 112,873 to 130,878 units. (Table A8.3) These comprised mainly light vehicles (largely private cars), which accounted on average for about 56% of total vehicles. Cargo vehicles and buses accounted for around 32% of total vehicles. The observed growth in the overall vehicle fleet is likely to have continued over the last decade due to population and income growth, and likely economic development in areas served by the project roads—residential development, commerce, industry. Notably, around 39% of total vehicles were for commercial, public transport, and tourism-related purposes. These include rental cars and taxis, cargo vehicles and passenger buses. The presence of a large and urban-based vehicle fleet has resulted in high traffic levels in the country's busiest streets, i.e., 18,000–22,000 vehicles per day (vpd).

[2] Field data gathered by ADB missions to the region.

Table A7.3: Registered Vehicles in Fiji

Vehicle Type	2000	2001	2002	2003
Private car	52,344	57,702	61,410	66,028
Rental car and taxi	8,222	8,435	8,792	9,240
Goods vehicle	35,706	36,365	37,111	38,025
Bus	1,910	1,936	1,972	2,019
Tractor	5,543	5,572	5,598	5,619
Motorcycle	4,541	4,587	4,636	4,670
Other	4,607	4,757	5,083	5,277
Total	**112,873**	**119,354**	**124,602**	**130,878**
Population (midyear, million)	0.795	0.802	0.807	0.810
Vehicle per capita	0.1420	0.1488	0.1544	0.1616
Light vehicles[a]	60,566	66,127	70,202	75,268
% of total vehicles	53.7	55.4	56.3	57.5
Goods vehicles and buses	37,616	38,301	39,083	40,044
% of total vehicles	33.3	32.1	31.4	30.6

[a] cars and taxis.
Source: Land Transport Authority website and Asian Development Bank Statistical Database System (population).

10. Traffic seems concentrated around urban areas. Traffic volumes in and near Suva (e.g., central business district) and Nadi are higher, reflecting extensive urban commuting and commercial movements. Traffic in Suva ranged from 7,500 vpd to 23,000 vpd in 1999 (Table A8.4). In 2009, this was reestimated by Fiji's road asset management system to range from 11,409 vpd to 15,012 vpd. The traffic in Nadi was estimated at 6,600–9,400 vpd in 1999.

11. Traffic levels on 11 ADB-financed project roads seem to have changed to various degrees. The Suva–Nausori corridor continues to be a heavily used route. At appraisal in 1999 (Loan 1194-FIJ), it was estimated to carry 23,000 vpd at Nabua, 17,000 vpd at Samabula, and 7,500 vpd at the Nausori end. By 2009, traffic counts in Nabua were 15,012 vpd and in Samabula 14,254 vpd. Similarly, the Nadi Back Road shows a slight reduction from its 1999 estimates of around 5,000 vpd. On the other hand, traffic at the Nausori end managed to grow to 11,489 vpd by 2009 from 7,500 vpd in 1999. Also increasing were traffic levels along Cunningham and Khalsa roads. These short links provide connections between the Kings and Prince roads, which are alternative main roads in the Suva–Nausori corridor. The Cunningham road section shows a hefty jump from 3,404 vpd in 1999 to 26,180 vpd by 2009. Traffic at Khalsa grew from 2,796 vpd in 1999 to 6,203 vpd in 2009. The Nabouwalu and Wainkoro road sections also reflected increases. In particular, Nabouwalu traffic increased from 704 vpd in 1999 to 5,262 vpd by 2009.

12. Traffic growth forecasts on ADB-financed roads seem relatively optimistic. Overall, only 3 of the 11 ADB-financed roads show traffic levels comfortably above forecast levels. A deeper analysis may be necessary to determine the reasons for variability in traffic trends along the roads. These may be attributed to factors such as the presence of alternative routes, congestion due to limitations in carrying capacity of a road section, road conditions, and developments in economic activity in the road influence areas.

Table A7.4: Traffic Levels on Select Fiji Roads

Road Section	Traffic (vpd) 1999	2008 [a]	2009 [b]
Highly frequented main route			
1. Kings Road (Fiji Institute of Technology–Nausori)	...	...	18,019
2. Kings Road (Grantham Road–Nausori)	25,778[c]	30,807	21,371
3. Kings Road (Mead Road–Nausori)			22,058
ADB-financed project roads			
4. Divisional Engineer Northern—Transinsular Road at West Coast Road Junction	473 [d]	770	247
5. Divisional Engineer Western–Nadi Back Road at Nausori Highland Road Junction	4,887	6,956	4,629
6. Divisional Engineer Central Eastern–Lodoni Road at Korovou R/A	...		1,356
7. Suva–Nausori (Nabua)	23,000[d]	30,910	15,012
8. Suva–Nausori (Samabula)	17,000[d]	22,847	14,254
9. Suva–Nausori (Nausori end)	7,500[d]	10,079	11,489
10. Cunningham	3,404[d]	5,039	26,180
11. Khalsa	2,796	4,139	6,203
12. Dama-Navolau	870[d]	1,288	447
13. Nabouwalu	704[d]	1,147	5,262
14. Wainikoro	1,180[d]	1,922	1,274

... = data not available, ADB = Asian Development Bank, vpd = vehicles per day.
[a] Traffic forecasts based on estimates at the appraisal period as cited in the project completion report of Loan 1164-FIJ (1999). Annual growth on road sections ranged from 2% to 5% per year: 3% per year for Suva Nasuori Road sections; 4% per year for Cunningham and Khalsa; and 5% per year for Nabouwalu and the Transinsular Road.
[b] Average annual daily traffic based on 12-hour count from the Fiji road asset management system database.
[c] Refers to 1999 traffic data for Kings Road (Grantham Road–Mead).
[d] Refers to 1998 traffic data from the project completion report of Loan 1164-FIJ (1999).
Source: Independent evaluation mission.

C. Solomon Islands

13. For the Solomon Islands transport sector, M&E faces three main limitations: (i) very limited or, at worst, no data available on both forecast and actual numbers, (ii) mismatch of available traffic data, and (iii) measurement problems on existing available data.

14. Accurate data for traffic count and other indicators is scarce or simply unavailable. Citing the project preparatory technical assistance (TA) report on Preparing the Transport Sector Development Project, there are no current reliable estimates on numbers of passengers or vehicles on various road segments. ADB projects—Solomon Islands Road Infrastructure (Sector) Project I and II—had no project preparatory TA attached and hence no baseline data on which to perform any comparative growth analysis. Meanwhile, the feasibility study on both projects was conducted as part of ongoing loan implementation. As the first project was prepared during Post-Conflict Emergency Rehabilitation (Loan 1823), ADB never had traffic counting to do any EIRR analysis. The series of subsequent road investments in Solomon Islands were prepared as part of ongoing loans and were on different road networks. Hence, no comprehensive system to monitor traffic growth was put in place, as there was no baseline, and road coverage changed in the subsequent projects.

15. The methodology for forecasting road traffic growth in the project preparatory TA (also due to lack of better information) made use of base year population and expected population growth over the period of analysis as basis for the forecast of the number of vehicles.

Furthermore, based on the survey consultations used in the project preparatory TA, an upper limit (expressed as a percentage of the subproject road impact area population) was assumed for annual passenger voyage demand projections.[3] Due to the lack of information, the forecast methodology resorted to a very crude estimation methodology.

16. The mismatch of available traffic data makes comparative growth analysis impossible. Currently, on-hand traffic data collated through various ADB and non-ADB reports are very few and are limited to a short time horizon so that growth trends are difficult to surmise. Point locations as well as stretches of road segments where traffic counts were performed also differ, resulting in non-comparable traffic data and inaccurate growth calculations (Tables A8.3–A8.6).

Table A7.5: St. Martin Road Traffic Data

Item	Traffic Data
Existing traffic	Circa 50 vehicles per day
Projected traffic, 2030	Circa 100–110 vehicles per day
Estimated traffic growth rate	2.0%–3.0% per annum

Source: ADB. 2010. *Initial Environmental Examination: Transport Sector Development Project in the Solomon Islands—PART I. Land Transport Infrastructure Subproject (St. Martin Road)*. http://www.adb.org/Documents/IEES/SOL/41171/41171-02-sol-iee-01.pdf

Table A7.6: Reporting of Vehicles Using St. Martin Road

	% of Respondents Reporting No. of Vehicles				
Timeframe	1 to 5 vehicles per week	6 to 10 vehicles per week	11 to 15 vehicles per week	16 to 20 vehicles per week	> 21 vehicles per week
Currently	51.4	28.8	11.2	8.5	0.0
About 5 years ago	15.8	6.1	9.8	9.8	58.5

Source: Project preparatory technical assistance household survey (July 2010).

Table A7.7: Malaita Traffic Growth Rates[a]

Road Location	Apr 2006	Nov 2006	May 2007	Nov 2007	Jun 2008	Growth per Year (%)
North Malaita Road						
0–11 km	120	159	183	184	259	99
11–24 km		124	132	214	91	117
Beyond 24.1 km	68	109	118	143	64	141
92 km	0	0	2	18	58	
South Malaita Road						
Near Auki	179	249	410	614	732	78
Up to 27 km		24	61		50	
27 km–30 km						
Beyond 30 km			6		12	

km = kilometer.
Source: ADB. 2009. *Completion Report: Post-Conflict Emergency Rehabilitation Project.* Manila (Loan 1823).

[3] TA 7335-SOL: Preparing the Transport Sector Development Project–Final Report.

Table A7.8: Guadalcanal and Malaita Traffic Counts
(Annual Average Daily Traffic)

Road	Average Daily Motorized Traffic	Average Daily Non-Motorized Traffic
West Guadalcanal		
6 km west	1,262	437
19 km west	539	385
26 km west	1,497[a]	1,366
44 km west	78	98
54 km west	72	388
East Guadalcanal		
10 km east	3,487	253
20 km east	860	316
33 km east	449	181
North Malaita		
12 km north	446	
27 km north	199	
78 km north	256	
94 km north	179	
South Malaita		
1 km south	1,808	
20 km south	147	

km = kilometer.
[a] This very high average daily traffic consists of a large number of trucks and it is probable that it reflected road-rehabilitation work after flood damage in this section of the road and/or possibly logging.
Source: ADB. 2009. *Completion Report: Post-Conflict Emergency Rehabilitation Project in the Solomon Islands*. Manila (Loan 1823).

17. Available traffic count data from consultant reports, in particular the feasibility study for the Solomon Islands Road Improvement Project done by Cardo Acil[4] (and as limited as it was), contained inaccuracies due to the measurement methodology used (Table A8.7).

18. According to the report, "it should also be noted that both the traffic surveys undertaken were only done over a single two-day period. The 2008 survey was conducted over a weekend, while one day of the 2009 survey was conducted on a Saturday and the other on a Tuesday. Subsequently, it is difficult to ascertain whether there is significant intra-week variability, and whether the samples taken can be considered as representative transport patterns. As the local and regional markets occur on a number of different days, and there are large schools and church attendances within the area, it is considered likely that there may be other factors influencing traffic levels which are not identifiable within the limited traffic count survey." Hence, data collated in independent consultants' reports prove inaccurate and problematic.

[4] This study was performed by an independent consultant, Cardo Acil, and was sponsored by the Ministry of Infrastructure of Solomon Islands.

Table A7.9: West Guadalcanal Traffic Trend
(Pre-flood Annual Average Daily Traffic 2008)

Location	Pedestrian	Bike	Motor-cycle	Car	4WD	Bus	Truck			Total
							Small	Medium	Large	
Kakabona	362	76	2	591	180	225	263	8	0	1,707
Tamboko	378	7	0	83	95	174	186	3	4	930
Aruligo[a]	1,365	1	48	194	284	458	514	204	63	3,131
Visale	88	10	0	4	29	4	41	1	2	179
Selwyn College	346	42	2	9	32	6	23	35	4	499

4WD = four-wheel drive.
[a] Cardno Acil have advised that the traffic counts for the Aruligo station are highly suspect and should be disregarded.
Source: ADB. 2006. *Report and Recommendation of the President to the Board of Directors: Proposed Asian Development Fund Grant to the Solomon Islands for the Solomon Islands Road Improvement (Sector) Project.* Manila (Grant 0048).

Table A7.10: West Guadalcanal Traffic Trend
(Post-flood Annual Average Daily Traffic 2009)

Location	Pedestrian	Bike	Motorcycle	Car	4WD	Bus	Truck			Total
							Small	Medium	Large	
Kakabona	760	35	5	600	355	180	148	11	13	2,107
Tamboko	141	6	0	64	77	101	72	0	4	465
Aruligo	272	29	5	64	91	107	86	1	0	655
Visale	590	64	4	37	60	69	91	18	0	933
Selwyn College	397	42	0	5	22	21	28	3	0	518

4WD = four-wheel drive.
Source: ADB. 2006. *Report and Recommendation of the President to the Board of Directors: Proposed Asian Development Fund Grant to the Solomon Islands for the Solomon Islands Road Improvement (Sector) Project.* Manila (Grant 0048).

19. The project preparatory TA report further elaborates the scarcity of traffic data. According to the report, the data for the calculation of benefits were taken from different sources as follows:

(i) Traffic surveys undertaken (Road Improvement Project's Annual Road User Survey, April 2008 and March 2009)
(ii) A social survey undertaken for the project (Cardno Acil, 2009b)
(iii) Previous economic studies in the region (Cardno Acil, 2008a; Cardno Acil, 2008b)

20. However, the report concludes that even from these sources, the statistically valid data available are insufficient for a proper M&E analysis. Subsequently, the assessment that arose from the few assumptions made from the available data were seen to be conservative and are expected to under-estimate the actual benefits of the projects. Hence, it can be expected that forecasts made from such assessments understate actual growth.

FIELD VISITS TO SELECTED PROJECT SITES: SOCIOECONOMIC ASSESSMENT (Fiji, Papua New Guinea, and Solomon Islands)

1. This report evaluates the road and port projects financed by the Asian Development Bank (ADB) during 1995–2010 in Fiji, Solomon Islands, and Papua New Guinea (PNG). The survey covers ongoing and completed projects and focuses on social, economic, and social safeguard performance.

2. The immediate objective of the survey is to assess the social and economic impact of the roads and ports projects on the lives of people, and evaluate the social safeguard performance of the recipient countries.

3. The long-term objective is to derive lessons from the implementation of ADB-assisted road and ports projects so that efficiency and effectiveness of resources can be maximized, negative impacts eliminated or mitigated, and the positive ones redoubled in future ADB operations.

4. The survey covered 25 road sections and three ports—Lae Port Resettlement, and Lautoka and Suva ports. Education and health are the two sectors that were surveyed to assess the short-term impact and long-term effect of road improvements. Several schools were visited in each of the three countries and data was collected on gender-based class roles, effects of gender-balanced education policy, and correlation to road access. Results of the survey show that the ratio of girls to boys is almost 1:1, depicting gender equity in education. However, there is some indication of gender preference for vocational education. While boys show a predilection for auto engineering and agriculture science, girls are more inclined to take up office technology, catering, and tailoring.

5. To assess the impact of roads on health service delivery and access to health facilities by the communities, a number of health centers were surveyed during the course of field visits.

6. Good, sealed roads assist health service delivery in two ways: the service providers are able to reach the communities easily and frequently, and the communities have easy access to health facilities. Health statistics show a high level of coverage, but some remote areas are still not serviced by connecting roads.

7. The positive economic impacts are many and varied, including a major shift in mindset; increase in individual and area-wide agricultural production; improvements in farm income and asset accumulation; economic gain for women as market vendors and roadside sellers; and a boost to existing enterprises and impetus for new ones. This claim is backed by primary data, a small group sample survey, and anecdotal evidence.

8. Roads are a necessary condition for socioeconomic development but are not sufficient by themselves. Other factors that complement the impact and effect of roads include:

(i) Secure land tenure without any interference from the landowners.
(ii) Availability of a credit and banking facility with reasonable collateral security.
(iii) Access to market and up-to-date market information through a reliable communication network.
(iv) Consistent professional advice and assistance from extension officers.
(v) Complementary utilities such as electricity and water supply.
(vi) Enterprise-specific training in management and skill development.

(vii) Risk management—not relying on a single source of income or revenue, being prepared for disease outbreak and fire, regulating cost of inputs, and dealing with price fluctuations.
(viii) Technology innovations—using proper tools, implements, and machinery to improve efficiency and reduce cost of production.
(ix) Last but not the least—hard work, a supporting family, and dust-free roads.

9. As for gender equity, women have benefitted socially and economically, but direct benefits in terms of employment opportunities in road works are minimal.

10. An in-depth case study of community consultation is provided with analysis of the extent to which community issues, concerns, and requests are fulfilled. A major missing link in community consultation is brought to light as follows.

11. According to ADB, community consultation means a process that begins early in the project preparation stage and is carried out on an ongoing basis throughout the project cycle; is gender-inclusive and responsive, and tailored to the needs of disadvantaged and vulnerable groups; and enables the incorporation of all relevant views of affected people and other stakeholders into decision making, such as project design, mitigation measures, the sharing of development benefits and opportunities, and implementation issues.

12. While ADB and other development agencies put a great deal of emphasis on community consultation and participation, the process is not carried forward to its logical conclusion. Much of it remains on paper and in high-sounding words such as community engagement, partnership, and ownership of projects, etc. As a result, one finds that the communities are developing an element of mistrust and lack of interest, especially when issues arising from community consultation are left unanswered and without proper action.

13. An attempt is made to link the various elements of the community consultation process and take them to their logical conclusion. The concept of community consultation and participation gives rise to community expectations. The next step should be to create a list of common community assets from the list of feasible issues, concerns, and requests voiced. This will fulfill community expectations. Social capital is created and social value is added to the project. If this is done, project proponents symbolically hold the community's hand. The next step in the process is community engagement, which now happens naturally and leads to partnership status. Now the community holds the proponents' hands. Partnership gives rise to ownership—we are one and the project is ours. At this point you have created the favorable platform and entry point for all future development projects.

14. At present, the community consultation cycle stops at creating a list of community issues, concerns and requests. There is no management plan nor committed funding.

15. ADB and other financing agencies leave it to the recipient governments who leave it to the exigencies of budget allocation. It is a known fact that the recipient governments in the Pacific are not able to fully meet counterpart funding, resources, and staff commitments. The irony is that a great deal of emphasis is placed on the hardware aspect of a project and environment, but the people who are at the center of development get little attention. At the moment, social impact assessment has gone little beyond the stage of lip service.

16. There should be a separate budget line for the implementation of common community assets and ancillary facilities. And there should be a separate list of feasible issues, concerns,

and requests that the project will fund. The community should be well informed about it. One should move away from the ad hoc process where community members approach project managers for random favors every now and then. This happens quite often in Solomon Islands and is the root cause of many problems between the contractor and the community. A more systematic approach as enunciated above will solve many of the social problems and build trust, partnership, and ownership among people.

17. The intended and unintended resettlement impacts of Lae Port Resettlement Program are dealt with in Chapter 8. The resettlement and relocation of 543 households has been completed with some degree of satisfaction. However, with a view to improving performance in future resettlement programs, a number of issues call for attention—errors of omission and commission; efficiency of resource utilization; process of valuation and compensation; plight of the return of some settlers back to Lae; social and economic conditions of settlers in provinces of their choice; etc.

18. The situation requires an in-depth follow-up study to assess how the displaced households have benefitted from the handsome monetary compensation.

19. The Lautoka Port study provides some interesting perspectives on social and economic gains to individual stakeholders, exporters, and importers, and tax revenue to government coffers.

20. In most cases, stakeholders and respondents seem grateful for the generally positive impacts and benefits of road improvement. However, three instances of adverse impacts were exposed during fieldwork. These are mentioned under government's initiatives on right of way management and road safety. One instance deals with the Nadi Back Road, which has one of the highest densities of serious and fatal accidents so that people of Nadi have christened it "Nadi Death Road". The second deals with some adverse effects on dairy farms in Tailevu District in Fiji. The last instance is mentioned under government's initiatives on ribbon development and road safety. The occurrence of ribbon development is quite prevalent and can be found in all the three countries. In most cases it provides income-earning opportunities to middle- and low-income groups. But there are rare instances when congestion can lead to a number of complications. One such case is White River Bridge crowding and congestion in the vicinity of Honiara.

21. A few instances of environment infringement have been mentioned to show contractor apathy to ameliorative measures, possibility of potential adverse impact if not attended to, and alleged lack of response on the part of the executing agency.

22. Labor welfare and safety compliance issues are dealt with based on actual instances of grievances in Solomon Island and PNG.

23. Land is at the center of most disputes, disturbances, and demands. The issues related to land are covered in some detail with reference to all three countries. Case studies are mentioned to bring out the complexities of land issues. But all is not bad news. Instances of no land disputes have been cited with reasons for it. Compensation is also a contentious issue in the context of land, resources, assets, and resettlement.

24. Land and compensation are a complex and vexing issue at times. There is a feeling among stakeholders that ADB should fund an in-depth study on the subject. To be specific, the subject came up during discussions with Harry Rini, deputy director, Transport Policy and

Planning, Solomon Island; Johnson Pundari, lecturer in economics, University of PNG; and Sakeus Gem and Jack Stanley of the Lae Port Resettlement Project.

25. The last chapter, of equal importance if not more, is about external factors and effectiveness-enabling environments. A number of issues of far-reaching consequences are covered under completion delays and cost overruns; efficiency and effectiveness by road length by contractor; need for forward integration; strengthening of the technical capacity of executing agency; effective presence verses post presence; and status of law and order enforcement.

PHOTOS DURING FIELD VISITS

A. Vanuatu

1. Santo Port Wharf and associated facilities commissioned in 1991 located in Luganville, Espiritu Island, Vanuatu (under Loan 843 and Loan 1080 Santo Port).

Photo A9.1: Port wharf and hardstand area (under ADB Loan 843). (Displayed no evidence of maintenance being done, except a new storage shed was nearing completion in the old wharf area.)

2. Cyclone Emergency Rehabilitation Project Loan 1684 April 1999

Photo A9.2: Reconstruction of eroded embankment adjacent to airport in Vila

Photo A9.3: Rehabilitation works at Prima Bridge over La Colle River

Photo A9.4: Rehabilitation Works at Mele Bridge over Tepwukoa River

Photo A9.5: Rehabilitation Works at Epoc River Crossing

Photo A9.6: Rehabilitation Works at Marona River Crossing

B. Solomon Islands

3. Post-Conflict Emergency Rehabilitation Loans (Loan 1823, Grants 43-44)

Photo A9.7: Unsealed rural road showing maintenance patching (south of Loudulou Bridge)

Photo A9.8: Gabion treatment of creek bank to protect unsealed rural road (Malaita South)

Photo A9.9: Auki water supply reservoir—never commissioned due to low voltage of power supply (under Loan 1823 for the Post-Conflict Emergency Rehabilitation Project)

Photo A9.10: Land dispute stopped completion of the culvert crossing East Guadalcanal (under Loan 1823)

(The Independent Evaluation Department received a government e-mail on 12 September 2011 that the Ministry of Infrastructure and Development committed to sort out the impasse, and the land acquisition is in advanced stage of completion.)

C. Papua New Guinea

Photo A9.11: Hula Road—current condition (under Loan 1153 for the Transport Infrastructure Development Project) Dividing point toward Hula Village

Photo A9.12: Expected project site of the new Lae Port (under Grant 102 for the Lae Port Development Project)

Photo A9.13: Old Lae Port (adjacent to new Lae Port under Grant 102)—wharf area currently in operation under PNG Ports

Photo A9.14: Old Lae Port (adjacent to new Lae Port under Grant 102)—ongoing construction of new extensions to wharf by PNG Ports

Photo A9. 15: Current status of Mt. Hagen Airport—one of 21 airports in the multitranche financing facility (under Loan 2588 for the Civil Aviation Development Investment Program)

D. Fiji

Photo A9.16: A typical gravel road on Vanua Levu near Transinsular Road (under Loan 1164 for the Second Road Upgrading Project)

Photo A9.17: Suva Port—restored King's Wharf (under Loan 1902 for the Fiji Ports Development Project)

E. Cook Islands

Photo A9.18: Cyclone damage not yet cleared away in Atutuki (not under ADB emergency loan). This shows sample of damage.

Photo A9.19: Avatiu yacht marina used for recreational fishing built with emergency funding (under Loan 1588 for the Cyclone Emergency Rehabilitation Project). This was renovated under the loan.