ADB

Validation Report

Reference Number: PVR-386
Project Number: 32124
Loan Numbers: 1709, 2242, and 2243
January 2015

Papua New Guinea: Road Maintenance and Upgrading (Sector) Project

Independent Evaluation Department
Asian Development Bank

ABBREVIATIONS

ADB	–	Asian Development Bank
DOW	–	Department of Works
EIRR	–	economic internal rate of return
HRMG	–	Highlands Region Maintenance Group
km	–	kilometer
PCR	–	project completion report
PNG	–	Papua New Guinea
RRP	–	report and recommendation of the President
VOC	–	vehicle operating cost

NOTE

In this report, "$" refers to US dollars and "K" refers to kina.

Key Words

adb, asian development bank, independent evaluation department, lessons, papua new guinea, performance evaluation, project completion report, road maintenance, road sector, transport

PROJECT BASIC DATA

Project Number:	32124	**PCR Circulation Date:**	Feb 2014	
Loan Numbers:	1709, 2242, 2243	**PCR Validation Date:**	Jan 2015	
Project Name:	**Road Maintenance and Upgrading (Sector) Project**			
Country:	Papua New Guinea		**Approved** ($ million)	**Actual** ($ million)
Sector:	Transport and ICT	**Total Project Costs:** 1709 2242, 2243	 114.70 78.75	 104.80 79.25
ADB Financing: ($ million)	**ADF:** 2243 (18.00)	**Loan:** 1709 2242, 2243	 63.00 68.05	 59.10 51.63
		Borrower: 1709 2242, 2243	 51.70 10.70	 45.60 27.62
	OCR: 1709 (63.00) 2242 (35.00)	**Beneficiaries:**	0.00	0.00
		Others:	0.00	0.00
Cofinancier:		**Total Cofinancing:**	0.00	0.00
Approval Date: 1709 2242, 2243	 16 Nov 1999 29 Jun 2006	**Effectiveness Date:** 1709 2242, 2243	 15 Feb 2000 9 Nov 2006	 15 Feb 2000 9 Nov 2006
Signing Date: 1709 2242, 2243	 17 Nov 1999 13 Sep 2006	**Closing Date:** 1709 2242, 2243	 30 Jun 2006 30 Jun 2010	 10 Nov 2010 7 Feb 2013
Project Officers:	1709	**Location:**	**From:**	**To:**
	S. Jarvenpaa	ADB headquarters	Dec 1999	Nov 2001
	A. Hinduja	ADB headquarters	Dec 2001	May 2002
	S. Jarvenpaa	ADB headquarters	Jun 2002	May 2003
	A. Hinduja	ADB headquarters	Jun 2003	Aug 2003
	M. Minc	ADB headquarters	Sep 2003	Jan 2008
	C. Li	ADB headquarters	Feb 2008	Nov 2008
	A. Lee	PNG Resident Mission	Dec 2008	Dec 2010
	2242, 2243	ADB headquarters		
	C. Li	ADB headquarters	Jun 2006	Sep 2006
	M. Minc	ADB headquarters	Oct 2006	Jan 2008
	C. Li	PNG Resident Mission	Feb 2008	Nov 2008
	A. Lee	PNG Resident Mission	Dec 2008	Jul 2012
	J. Peththawadu	PNG Resident Mission	Jul 2012	Aug 2012
	A. Lee	PNG Resident Mission	Aug 2012	Jan 2013
	G. Ganiga	PNG Resident Mission	Jan 2013	Feb 2013
Validators:	P. Choynowski, Consultant F. D. De Guzman, Senior Evaluation Officer, IED2	**Peer Reviewer:**	T. Yokota, Senior Evaluation Specialist, IED2	
Quality Reviewer:	B. Nguyen, Senior Evaluation Specialist, IED2	**Director:**	B. Finlayson, IED2	

ADB = Asian Development Bank; ADF = Asian Development Fund; ICT = information and communication technology; IED2 = Independent Evaluation Department, Division 2; OCR = ordinary capital resources; PCR = project completion report, PNG = Papua New Guinea.

I. PROJECT DESCRIPTION

A. Rationale

1. According to the report and recommendation of the President (RRP),[1] the Highlands highway of Papua New Guinea (PNG) and its feeder network comprised about 2,000 kilometers (km) of national and provincial roads and constituted the backbone of the Highlands' and the country's economy. However, road conditions in the Highlands were poor. Much of the paved road network was potholed and, in some places, roads reverted to gravel. Almost all unpaved roads had rough riding surfaces, with conditions ranging from rough and stony to impassable.

2. The Highlands region of PNG was the primary production area for minerals, petroleum, and agricultural products, such as coffee, tea, and copra. Road conditions became a significant constraint to coffee and tea production and affected efficient resource extraction. Geological instability caused major flooding and landslides that frequently led to road closures. Agriculture was mainly characterized by subsistence farming and inaccessibility to the Highlands put downward pressure on prices of coffee, tea, and copra. This led to income reductions for farmers, crops not being harvested, and reduction in rural incomes to one-tenth of those in urban areas. Poverty was widespread and health conditions were substandard in the region, particularly for women. Moreover, life expectancy was low, infant mortality high, adult literacy poor, and enrollment in primary and secondary education low.

3. The Medium Term Development Strategy, 1997–2002 of the PNG was the principal policy guideline for the government's economic and social development. It was aimed at creating an environment that enabled the local population to make better use of their land, labor, and natural resources through provision of infrastructure, health and education, and opportunities for income generation. The government's transport objectives in the region were to connect widely scattered population pockets to facilitate the marketing of agricultural produce and the export of crops. The government also aimed to deliver efficiently its public health, education, and agricultural extension services. The Asian Development Bank (ADB) strategy for the road sector in PNG targeted economic growth, social integration, and improvement of standard of living. It supported the government's efforts to restore and maintain the road infrastructure in the Highlands region.

B. Expected Impact

4. The expected impact of the project was improved road infrastructure to enable it to contribute to the economic development of PNG and promote social integration of communities to the mainstream economy. The performance targets were (i) reduction in travel time, (ii) reduction in vehicle operating costs (VOCs), (iii) reliable passenger transport, (iv) reduction in road closures, (v) increase in coffee production, (vi) reduction in freight rates, and (vii) improved road safety.

5. In June 2006, ADB approved a supplementary financial assistance for the project.[2] The expected impact of the project was then modified from improved road

[1] ADB. 1999. *Report and Recommendation of the President to the Board of Directors: Proposed Loan to Papua New Guinea for the Road Maintenance and Upgrading (Sector) Project*. Manila.

[2] ADB. 2006. *Report and Recommendation of the President to the Board of Directors: Proposed Supplementary Loans to Papua New Guinea for the Road Maintenance and Upgrading Project*. Manila.

infrastructure to increased economic activity and social improvement. Performance targets were also modified and included the following: (i) increased trading activity for villagers in the corridors of influence; (ii) increased freight traffic; (iii) increased visits by villagers to health facilities in major town centers in the corridors of influence, particularly by women; (iv) improved income and health indicators; and (v) increased school enrollment.

C. Objectives or Expected Outcome

6. The expected outcome was a 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. Performance targets in road upgrading and rehabilitation included (i) road roughness improvement, (ii) VOC savings, and (iii) travel time savings. Performance targets for road maintenance included (i) upgraded engineering skills, (ii) upgraded project and/or contract management skills, (iii) upgraded planning skills, (iv) upgraded fund and/or financial administration skills, (v) use of timely and preemptive maintenance methodologies, and (vi) an updated road asset and management system and efficient use of this system.

7. The RRP for the supplementary financial assistance also modified the expected outcome to improved rural access to market centers. Performance targets were also modified and became (i) growth in informal transport services, (ii) changes in farm gate prices, (iii) reduction in travel time, and (iv) changes in livelihood patterns.

D. Outputs

8. Project outputs comprised (i) road upgrading, rehabilitation, and resurfacing subprojects in the provinces of Eastern Highlands, Enga, Southern Highlands, Simbu, and Western Highlands; (ii) maintenance works on the national and provincial roads selected according to the road asset and management system; (iii) detailed engineering design and construction supervision; and (iv) strengthening of project implementation and establishment of road maintenance operation. Performance targets were as follows: (i) 220 km of upgraded roads, (ii) 450 km of rehabilitated roads, and (iii) annual routine and periodic road maintenance to preempt road failures. Such maintenance required (i) detailed designs and supervision, (ii) the adoption of the road asset and management system to prioritize the road maintenance works, and (iii) a strengthened and independently functioning Highlands Regional Maintenance Group (HRMG).

9. The RRP for the supplementary financial assistance also modified the expected outputs to become (i) improvement of road conditions for villagers and businessmen to access market opportunities, social services, and imported daily necessities; (ii) establishment of baseline data and a performance monitoring and evaluation system for the project; and (iii) assessment of socioeconomic impacts of the project. As modified, performance targets were (i) reduced length of road roughness from 270 km to 6 m/km by the end of 2009, (ii) reduced VOC starting in 2010, (iii) increased frequency of public transport services, (iv) more readily available imported foodstuffs and household consumables, (v) consultant recruited and fielded from 2007 to 2010, (vi) baseline data for 11 roads, and (vii) socioeconomic impact assessment results.

E. Provision of Inputs

10. The initial total cost of the project was estimated at $114.7 million. Project cost comprised $72 million (63%) in foreign exchange costs and $43 million (37%) in local currency costs. The project was to be financed by an ADB loan of $63.0 million and the government's own funds of $51.7 million.

11. In September 2003, ADB approved an increase in ADB share of financing for civil works from 48% to 70%. The project completion report (PCR)[3] indicated that the government's failure to provide appropriate levels of counterpart funds in the first 5 years of the project had a significant impact on implementation progress. This resulted in slow and untimely counterpart fund releases to the contractors who showed reluctance to work until they received contract payments on a timely basis. This required scaling down the project scope and total project cost from $114.7 million to $90.7 million. Hence, the length of upgraded road had to be reduced from 220 km to 145 km and rehabilitated road from 450 km to 290 km. The RRP for the supplementary financial assistance noted, on hindsight, that the need for ADB financing was lower than expected as few subprojects were approved and few contracts awarded.

12. However, ADB approved a supplementary financial assistance in June 2006, comprising two loans (Loans 2242 and 2243) amounting to an additional $53 million. The main justification was that the proceeds from the original loan (Loan 1709) had been fully committed and financed only a total of 338 km or 50.4% of the roads originally targeted—670 km, comprising 220 km of upgraded road and 450 km of rehabilitated road. The financial shortfall was attributed to a combination of factors, including underestimation of costs at the time of appraisal, delayed project implementation, and lack of competition in the country's construction sector.

13. Likewise, the loan did not have a budget for any physical and price contingencies. Civil works base cost estimates for some road sections were very low. Inflation between 1999 and 2003 was already in double digit. The delay in project implementation meant actual costs were much higher than envisaged at appraisal—for labor by 5–6 times, equipment by 15–30 times, and materials by 1.8–2.9 times. Lack of competition in the PNG construction sector also resulted in high bid prices. The reduced project scope, if not remedied, was expected to compromise the achievement of the project's intended objectives. The additional proposed subprojects to be financed by these supplementary loans were aimed at attaining a total length of 608 km of roads (including 242.41 km for upgrading and 365.51 km for rehabilitation). These supplementary loans were to enable the achievement of 91% of the original project scope.[4] With the supplementary financial assistance, the earlier scaling down of the project scope became unnecessary. Thus, the total project cost was revised to $168.7 million. At completion, the total project cost was $167.6 million, slightly less than the amount estimated.

14. The project was classified Category B under the ADB environmental categorization requirements. The environmental impact assessment for each road was completed. The

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[3] ADB. 2014. *Completion Report: Road Maintenance and Upgrading (Sector) Project in Papua New Guinea*. Manila.

[4] Other justifications were that (i) the proposed supplementary financial assistance was in line with the government's development strategy, which continued to emphasize improving transport infrastructure; (ii) it was consistent with the ADB country strategy for PNG; and (iii) to save substantial project start-up cost, and it was the most efficient and effective way to improve road infrastructure in the Highlands.

project was deemed unlikely to have significant environmental impacts. Each road subproject had an initial environmental evaluation. Environmental management plans were included in the bidding documents and contracts. Also, an environment officer was engaged to ensure monitoring and compliance with all environmental aspects.

15. The PCR indicated that there were no resettlement impacts under the project. Land use rights were obtained in advance of procurement. However, post-agreement compensations issues arose with some projects due to misunderstandings and unjustifiable claims for compensation, which disrupted the implementation of some civil works subprojects. The PCR attributed this to insufficient consultation with affected people and rent-seeking by a few affected parties. However, the PCR did not indicate the amount spent for these land compensations. No indigenous peoples were affected by the project.

16. The project was expected to require 80 person-months in consulting services for the detailed design and 180 person-months for the services of site engineers. Another 375 person-months of consulting services were needed for project implementation support and capacity strengthening of the HRMG. The RRP for the supplementary financial assistance proposed that the consultant already engaged by the project be extended by 1.5 years or for another 132 person-months. However, the PCR did not provide the actual person-months of consulting services that were used under the project.

F. Implementation Arrangements

17. The Department of Works (DOW) was to be the executing agency while the HRMG was to be the project implementation unit, assisted by a team of international and local consultants. The HRMG was to be headed by a field project manager and an office was to be located in each province. The HRMG was to (i) design subprojects and prepare bidding documents; (ii) manage the bidding process; (iii) provide construction supervision and manage contracts; (iv) monitor project progress; (v) prepare withdrawal applications; (vi) maintain project accounts and financial records for auditing; (vii) prepare project progress reports and the project completion report; (viii) monitor environmental and socioeconomic impacts; (ix) implement a cost-effective system for contracting out road maintenance; and (x) provide training in road maintenance, road safety, and prevention of sexually transmitted infections and/or HIV/AIDS.

18. A project steering committee was to be established to ensure close interagency coordination and to monitor project implementation. The project was expected to be implemented over 6 years. In June 2006, when the supplementary financial assistance was approved, it was estimated that implementation would take another 3.5 years and the project would be completed by the end of 2009. Implementation arrangements were established as envisioned at appraisal. However, there was start-up delay in project implementation partly due to the difficulty of establishing the HRMG as a functional implementation unit (para. 36). The project steering committee met only 1–2 times annually and not quarterly as expected. The project was completed in June 2012. Delays and procurement difficulties arose mainly from capacity and oversight deficiencies.

19. Loan and project agreements contained 75 covenants. No covenants were modified or waived during implementation. Four covenants were not complied with, 12 were partly complied with, and the rest or 59 were complied with. The government did not comply with the requirement to provide timely budget allocations for road maintenance of not less than K70 million annually in 1999 prices. The government also did not deposit counterpart funds

at the time of submission of subproject evaluation reports as required. The government did not set up road maintenance trust accounts for each province within 3 months of loan effectiveness. The government felt it was difficult to manage separate road maintenance accounts in each province. With ADB concurrence, the government established one central account with separate provincial ledgers.

20. The supplementary financial assistance contained another 27 covenants—of which 24 were complied with, 2 were partly complied with, and 1 not complied with. The government failed to comply with the covenant to implement and maintain the project performance monitoring and evaluation system. Partial compliances were on maintenance trust accounts for five provinces that were not established, and on the government's inability to provide counterpart funds on a timely basis and lower than budgeted.

II. EVALUATION OF PERFORMANCE AND RATINGS

A. Relevance of Design and Formulation

21. The PCR indicated that the project design at appraisal and completion was *relevant* to government and ADB policies and strategies to develop rural communities and reduce poverty. The Medium Term Development Strategy for 1997–2002 aimed to create an environment that enabled the local population to make better use of their land, labor, and natural resources. Infrastructure and the creation of opportunities for income generation were considered high priorities. Improving transport infrastructure to achieve its overarching development strategy of export-driven economic growth, rural development, and poverty reduction was also a high priority for the government.

22. The PCR also indicated that the project was consistent with the ADB strategy, which aimed to improve access to markets in the Highlands, strengthen asset management and public administration, contribute to poverty reduction through improved access to social services and markets, and support the generation of employment. The project reinforced the role of the private sector and communities by developing an effective road maintenance operation. The project was also consistent with the ADB country strategy for PNG, which identified the transport sector as one of the four priority sectors. This validation concurs that the project was essential to the economic and social development of the Highlands region and was consistent with the government and ADB development priorities.

23. However, the PCR indicated concerns about the project's design and the use of the sector loan approach. The PCR pointed out the lack of subprojects' identification at appraisal and the lack of capacity in the executing agency to undertake technical, economic, financial, and safeguard assessments. In this validation's view, subprojects do not need to be identified at appraisal. However, sufficient executing agency capacity is a requirement in using the sector loan modality.

24. The PCR was also concerned that project design assumed unrealistic timelines for procurement and implementation, given the remoteness, law and order difficulties, and capacity shortfalls of local contracting firms. Likewise, it noted that the design did not take sufficient consideration of the government's ability to provide counterpart funding. The standard to which some roads were to be upgraded or rehabilitated was also questioned. Although subproject selection criteria were not assessed in the PCR, and how these were implemented, it seems that some of the design issues identified by the PCR would have been taken into account if subprojects were selected based on these criteria. Criteria

required (i) the subproject rationale to be sound; (ii) the economic return to be greater than 12%; (iii) land acquisition, and environmental and social issues be resolved; and (iv) counterpart funding be allocated. On the whole, this validation rates the project *relevant*.

B. Effectiveness in Achieving Project Outcome and Outputs

25. The PCR rated the project *less effective* in achieving outcomes. Although the project seemed to have improved rural access to market centers, the PCR could not assess its effectiveness in achieving outcomes because no benefit and monitoring system was established. Also, there was no baseline data and socioeconomic monitoring and evaluation reporting.

26. The PCR indicated that only 60% of the target for upgraded roads and 20% of the target for rehabilitated roads were completed. However, anecdotal evidence suggested that vehicle traffic increased significantly and, as a result, it was likely that VOCs and travel time were reduced. The PCR also noted that the project seemed to have benefited rural farmers and households with improved access, thus, reducing rural poverty. The effectiveness of the road asset management system component was limited because the provision of road data was not completed and data updating did not occur. The training component continued throughout the project, although high staff turnover led to retraining and loss of institutional capacity. On these bases, this validation rates the project *less than effective*.

C. Efficiency of Resource Use in Achieving Outcome and Outputs

27. The PCR rated the project *efficient*. It recalculated the economic internal rate of return (EIRR) at 14.9%, compared to the 18.8% estimate at appraisal. Economic benefits were based on savings in VOCs, savings in maintenance costs, time savings, and benefits from generated traffic. A sensitivity analysis indicated that the base case EIRR would be reduced to 12% if project benefits were reduced by 15%, or if the project costs were increased by 22%,[5] suggesting that the project economic viability was not robust.

28. In this validation’s view, the recalculation of the EIRR had several shortcomings. The year of the analysis should have been in 2014 prices so that costs could have been better compared with benefits. It is also standard practice to use prices of the same year when calculation was made. It was not clear in the PCR, Appendix 11, para. 8 if improvement option was assumed in the EIRR recalculation. This has a bearing on how economic benefits, specifically savings in maintenance costs, are quantified.

29. Also, the EIRR recalculation assumed a standard conversion factor of 95%, implying that border price was the numeraire. However, the PCR stated that the standard conversion factor was used to “revalue goods and services at world prices” and that “these factors have been applied to capital and maintenance costs, as well as to vehicle operating and passenger time costs.” Only nontradables should have been adjusted by the standard conversion factor. In this project, nontradables were labor and passenger time. All other costs should have been treated as tradable and not adjusted by the standard conversion factor.

[5] It was not clear which project costs the PCR referred to. It is presumed that these were maintenance costs since capital costs were actual costs.

30. Economic benefits of generated traffic were based on VOCs and time savings. Since there were no VOCs or time spent in the without-project scenario, the use of these is not appropriate. The economic benefit of generated traffic should have been measured in terms of willingness to pay. The EIRR recalculation assumes that maintenance cost savings will be achieved over the theoretical life of the project of 20 years. However, the PCR indicated that "the most likely cause for reduced benefits relates to the failure to provide regular maintenance" (PCR, para. 35). It also stated that subsequent ADB funding to road projects has increasingly focused on maintenance funding, with limited results. Therefore, the EIRR recalculation should have been more conservative in quantifying maintenance cost savings. This validation is of the view that the PCR recalculation of the EIRR was "not robust" since the economic benefits were likely overestimated, and that economic costs were likely underestimated.

31. The PCR indicated that the road subprojects incurred delays and cost increases. The project incurred initial project delays in contracting and disbursement due to the failure to identify all road subprojects and complete their economic appraisals. The project was planned to be implemented over a 6−year period. The original closing date was extended twice and the loan (Loan 1709) was eventually closed after more than 4 years. The supplementary loans (Loans 2242 and 2243) were to be closed by 30 June 2010 but actually closed 2.5 years later. The PCR also pointed out that the government and the DOW encountered cost escalations in all project components. At appraisal, allocation for civil works was $106.7 million. At project completion, civil works cost reached $139.2 million. Given these circumstances, this validation rates the project *less than efficient*.

D. Preliminary Assessment of Sustainability

32. The PCR rated the upgraded and rehabilitated roads *less likely sustainable*, particularly the rehabilitated gravel roads. It indicated that the availability of government funding for road maintenance will be one of the main factors determining sustainability. The PCR said that other factors affecting sustainability include the (i) ability and capacity of local contractors to undertake maintenance in the remote highland locations, (ii) impact of torrential rains that can last 6–7 months in a mountainous and geologically unstable region (roadside landslips and road subsidence are a recurring problem), and (iii) ability and capacity of the oversight agency to contract and supervise maintenance activities.

33. In this validation's view, funding for road maintenance and the capacity to maintain roads are serious issues. If not properly addressed, these are likely to affect the sustainability of the project. On these bases, this validation rates the project *less than likely sustainable*.

E. Impact

34. The PCR did not rate project impact. It observed that there were positive social and economic benefits and impacts of the road subprojects although no formal assessment was undertaken. It indicated improvements in the rural communities' access to markets and community services. Roadside vendors were also able to improve their incomes while community producers were able to improve their access to market vendors, resulting in reduced rural poverty. However, there were no evidences to support these assertions. This validation rates the project impact *moderate*.

III. OTHER PERFORMANCE ASSESSMENTS

A. Performance of the Borrower and Executing Agency

35. The PCR rated the performance of the borrower and executing agency *partly satisfactory*. It indicated that the government's failure to provide appropriate levels of counterpart funds in the first 5 years of the project significantly affected implementation progress. This resulted in slow and untimely counterpart fund releases to the contractors who were reluctant to continue work until they received timely contract payments. The PCR also indicated that this situation prompted ADB to revise in September 2003 the government cost-sharing ratio under civil works—from 52% to 30%—with no change in the loan amount, and to reduce the project cost from $114.7 million to $90.7 million (para. 11). The project implementation start-up delay was partly attributed to the difficulty in setting up the HRMG as a functional project implementation unit. The PCR noted that the DOW failed to implement the project performance monitoring and evaluation system and did not submit the government's project completion report. This validation holds a similar view with the PCR and rates the performance of the borrower and executing agency *less than satisfactory*.

B. Performance of the Asian Development Bank

36. The PCR rated the performance of ADB *satisfactory*. Performance varied throughout the project implementation period and was assessed over three periods, which coincided with different ADB staff supervising the project. From project start-up to late 2003, the PCR stated that ADB should have spent more effort at ensuring start-up compliance prior to loan approval. Given the DOW capacity at the time, ADB should have been more involved in guiding the DOW in recruiting implementation consultants and in enforcing the mobilization of core consultants. The PCR indicated that ADB could have assisted the DOW and the consultants in preparing technical feasibility studies; in financial, environmental, and social due diligence issues; and in preparing the technical design and bidding documents.

37. The PCR noted that procurement of civil works could have followed a one-stage bidding process with post-qualification, as the construction sector in PNG had limited competition. It also noted that ADB should have encouraged the government to simplify the approval process for awarding contracts. It appeared that there was little oversight or remedial action from ADB senior management to improve the slow disbursement levels. The PCR indicated that although the most significant project delays occurred during this period, ADB initiated limited remedial action. During this time, the project was being managed from ADB headquarters and short review missions were conducted only once a year. ADB performance was rated *unsatisfactory*.

38. The PCR noted that during the second period from 2004 to 2008, the project was still managed from ADB headquarters. However, review missions were longer and increased to 2–3 per year. Review missions involved more extensive subproject site visits. During this period, ADB processed the supplementary financial assistance and supervised the project with more attention to progress against implementation plans. In late 2007, with a change in the headquarter-based ADB staff managing the project, review missions returned to single mission in 2008. The PCR noted that there was less focus on supervision and attention to implementation. With significant improvements in implementation progress and disbursements, ADB performance was rated *satisfactory*.

39. During the third period, loan administration was transferred to the Papua New Guinea Resident Mission in January 2009 until the completion of the project. During this period, review missions increased and ADB held monthly progress meetings with the DOW. Implementation delays were promptly addressed, each review mission set time-bound achievement targets, and regular communications between the DOW, the HRMG, and implementation consultants were maintained. ADB undertook subproject site visits and meetings with the contractors became more frequent. During this period, ADB performance was rated *satisfactory*. On the whole, this validation rates ADB performance *satisfactory*.

IV. OVERALL ASSESSMENT, LESSONS, AND RECOMMENDATIONS

A. Overall Assessment and Ratings

40. The PCR rated the project *partly successful*. This validation also rates the project *less than successful*. It also has the same ratings on relevance, effectiveness, and sustainability. On efficiency, the project incurred implementation delays and cost overruns. A few methodological issues were also identified in the reestimation of the EIRR.

Overall Ratings

Criteria	PCR	IED Review	Reason for Disagreement and/or Comments
Relevance	Relevant	Relevant	
Effectiveness in achieving project outcome and outputs	Less effective	Less than effective	
Efficiency in achieving outcome and outputs	Efficient	Less than efficient	The project experienced implementation delays and cost overruns. Economic benefits were likely overestimated while costs were likely underestimated (paras. 27–31).
Preliminary assessment of sustainability	Less likely sustainable	Less than likely sustainable	
Overall assessment	**Partly successful**	**Less than successful**	
Borrower and executing agency	Partly satisfactory	Less than satisfactory	
Performance of ADB	Satisfactory	Satisfactory	
Impact	Not rated	Moderate	Refer to para. 34.
Quality of PCR		Satisfactory	Refer to para. 45.

ADB = Asian Development Bank, EIRR = economic internal rate of return, IED = Independent Evaluation Department, PCR = project completion report.
Note: From May 2012, IED views the PCR rating terminology of "partly" or "less" as equivalent to "less than" and uses this terminology for its own rating categories to improve clarity.
Source: ADB Independent Evaluation Department.

B. Lessons

41. The PCR identified a few important lessons. One lesson was the need for frequent reviews and close supervision and monitoring of procurement processes. Another lesson pointed out that counterpart funding allocation into project accounts should be made a condition of ADB disbursement. The next lesson cited the need to ensure that subproject

preparation should, at least, reach 90% completion at the time of project preparatory technical assistance and 100% before loan effectiveness. The last suggested a rigorous assessment of the executing agency's capacity to undertake technical, financial, economic, safeguards, and governance evaluation of subprojects, which should be done during project formulation. This validation finds these lessons appropriate and has no additional lesson to offer.

C. Recommendations for Follow-Up

42. The PCR recommended the need for the government to conduct annual sample surveys of all roads to provide project impact data for the road asset management system. It also recommended a regular follow-up of project audit submissions and the government's project completion report. The PCR also noted the need to ensure that a benefit and monitoring evaluation system for future projects of a similar nature be established, including the collection of detailed information on project performance. Covenants should also incorporate a requirement for budgetary allocations for road maintenance covering 5 years after project completion. This validation supports these recommendations and has no other recommendation to offer.

V. OTHER CONSIDERATIONS AND FOLLOW-UP

A. Monitoring and Evaluation Design, Implementation, and Utilization

43. Based on the RRP, a project performance monitoring system was to be established prior to April 2007, comprising a set of indicators for monitoring and evaluating project performance. The performance of each road subproject in relation to the project's goals and purposes will also be monitored. Six person-months of international consulting services were to be provided to establish and monitor indicators and evaluate project performance. The PCR indicated that the covenant for the project performance monitoring system under the original loan for the project was partially complied with. The performance monitoring system and baseline and expected post-completion target values were prepared for most subprojects. However, many of the selected indicators were not appropriate for subproject evaluation.

44. The PCR indicated that the covenant under the supplementary financial assistance was not complied with. The design and monitoring framework was submitted in 2008, but baseline data and ongoing monitoring did not occur. The PCR did not discuss the project performance monitoring system and, therefore, it was not possible to assess its design, implementation, and utilization.

B. Comments on Project Completion Report Quality

45. The PCR was candid and showed a clear understanding of the project implementation conditions. Its main shortcomings were the inadequate shadow pricing of subproject inputs and outputs, and identification of benefits in the EIRR calculation. The assessment of sustainability was also weak and provided few details and discussion of the issues affecting sustainability. The discussion on the relevance of design and formulation was informative and provided some background information on the implementation problems that were encountered later on. However, those who prepared the PCR seemed unfamiliar with the sector loan modality, where subprojects need only to be identified during implementation. An assessment of the subproject selection criteria would also have been useful in the PCR. On the whole, this validation rates the PCR quality *satisfactory*.

C. Data Sources for Validation

46. Data sources included the RRP, PCR, and loan review mission reports.

D. Recommendation for Independent Evaluation Department Follow-Up

47. The PCR suggested that the most appropriate timing of a project performance evaluation report would be 2 years after the loan closure, and that is in 2015. This validation supports this recommendation.