Independent Completion Report: EINRIP PPC

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AID ACTIVITY SUMMARY

Aid Activity Name	EINRIP Implementation, Planning and Support Facility		
AidWorks initiative number	ING406		
Commencement date	15 March 2006	**Completion date**	30 April 2009
Total Australian $	$19,768,818		
Total other $	$0		
Delivery organisation(s)	URS Australia P/L		
Implementing Partner(s)	Directorate General of Highways (DGH)		
Country/Region	Eastern Indonesia		
Primary Sector	Infrastructure		

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EXECUTIVE SUMMARY

This is an independent completion report (ICR) for the Project Preparation Consultant (PPC) contract within the Eastern Indonesia National Roads Improvement Project (EINRIP)—a partnership between the Australian Agency for International Development (AusAID) and the Government of Indonesia (GoI) through the Directorate General of Highways (DGH).

On 26 December 2004, an earthquake with a magnitude of 9.0 on the Richter scale struck an area off the western coast of northern Sumatra, Indonesia, causing a tsunami. Following the tsunami the Australia Indonesia Partnership for Reconstruction and Development (AIPRD) was established by AusAID. This included a $500 million grant program and a $500 million concessional loan program, of which $300 million was to support national road improvements under what became known as the Eastern Indonesia National Road Improvements Project (EINRIP). To support EINRIP a further $28 million, funded from the AIPRD grant program, was allocated for project preparation, design, monitoring and project-related technical assistance; predominantly utilised by a Project Preparation Consultant (PPC) from 15 March 2006 to 30 April 2009. The predominant output of the PPC was the final engineering designs (FED).

This evaluation applied the five Development Assistance Committee (DAC) criteria (relevance, effectiveness, efficiency, impact, sustainability) and AusAID's additional three criteria (gender equality, M&E, analysis & learning). Overall the ICR team assessed the PPC to have performed to the required standard, and recognised many challenges arising from the operating context.

Relevance

The broad relevance of EINRIP in general, and the PPC contract specifically, was self-evident given poor road design and construction practices in the industry, the GoI's constrained financial capacity, and the urgent need to address the national road maintenance backlog. A signature feature of the EINRIP design was the strong emphasis on delivering longer lasting roads than had been common in Indonesia. This was to be achieved by engaging consultants to prepare FED rather than the simplified designs adopted since the 1980s. The commitment of both governments to the Paris Declaration and Accra Agenda for Action was supported by the PPC which used and enhanced national systems and processes. AusAID's interest in influencing road design practice beyond EINRIP emerged over time. However, the PPC was not explicitly tasked with developing capacity or influencing policy and practice. There is a persistent perception that the road maintenance deficit makes 'depth' (pavement quality) at the expense of 'length' (road coverage) an unaffordable and/or politically unacceptable alternative.

Effectiveness

From a broad perspective, the PPC achieved the primary objective of delivering FED for sufficient road linkages to absorb the loan. Further, there is wide agreement that the quality of the PPC's work was good practice. An important challenge facing the PPC was the fact that the EINRIP design (developed by AusAID) did not specify the amount (km) of road to be constructed and only provided broad criteria to guide selection. The initial cost calculations were grossly under-estimated meaning that an original indicative target of 1,500 km of road is likely in reality to be closer to 400 km. This dramatic reduction in output may contribute to a general perception forming within the political economies of Australia and Indonesia that the project has under-performed, despite the fact that the PPC produced an estimated 30% more FEDs than current estimates indicate can be absorbed by the loan. The convoluted process of candidate road selection meant that 6,600 km of road was screened by the PPC with FED ultimately completed for around 500 km. The 'corridor approach' was adopted, but did not focus entirely on key strategic corridors to link ports and major centres with hinterlands with good economic potential. While many of the road segments selected for FED are adjacent links they tend to be short and scattered rather than continuous stretches and thus have limited connectivity benefits. The

quality of work done by the PPC was generally considered to be of a high standard. Comments by stakeholders in this regard were with reference to the quality of survey and design work, and also the quality of key documents/reference manuals that were produced.

Efficiency

The PPC required a twelve week no-cost-extension during which the scope of work was completed. The fact that the extension was not longer is indicative of a dramatic improvement in the workflow to overcome early delays. The PPC was also approved for a AUD6 million contract amendment, largely as a function of the need to recruit, train and resource design professionals rather than outsourcing the FEDs to local industry. Implementation efficiency was arguably impacted by the 'newness' of key elements of the project. Stakeholders generally reported that PPC management was responsive to changing needs despite the large and complex array of challenges. The PPC appears to have successfully managed the challenge of responding to 'dual masters' in AusAID and DGH. PPC design production efficiency improved as project implementation progressed and as the recruited local engineering professionals became familiar with FED requirements, design software and associated processes. Nevertheless persistent lateness eroded the confidence of some DGH stakeholders in PPC performance. A senior DGH representative estimated that only 50% of designs were completed by the due date.

Impact

A narrow application of the concept of impact on the performance of the PPC in this ICR was problematic since the contract was almost entirely output focussed. Adoption of FED raised awareness within GoI of the poor standard of the national road network, and the benefits of high quality design processes, however, there was little evidence that FED would be adopted more widely. In its early conception, EINRIP was not designed to be a capacity building or policy advocacy initiative. It is evident that an expectation emerged within AusAID that the project would foster changes in engineering design practice within DGH. Through implementing FED the PPC introduced some new concepts and suggested modifications to existing DGH specifications. The integration of environmental considerations in the design process was also an important achievement of the project. The PPC facilitated improved documents to guide the PPC process. A largely unanticipated impact was that the PPC grant and loan package enhanced the relationship between Ministry of Finance and AusAID.

Sustainability

Significant emphasis was placed on sustainability when the original EINRIP concept was developed—with sustainability conceived mainly as enduring, high quality road. Several key elements of the PPC's approach were considered likely to enhance the sustainability of EINRIP roads. Many of the major sustainability risks are yet to be addressed. On engineering grounds, there is little doubt that designs produced by the PPC should result in improved road infrastructure as long as construction meets the design specifications. Beyond the construction phase, several important risks to the sustainability of national roads are yet to be addressed by the GoI. AusAID progressively came to see EINRIP as a way to influence the prevailing approach to road design and construction in Indonesia; but the role of the PPC was never to mainstream the FED approach. Adopting the FED approach on a wide scale would be inhibited by the limited number of qualified engineers with knowledge of the technology in Indonesia. Analysis indicated that the cost of FED is substantially higher than simplified design. The greatest constraint to sustainability is likely to be the level of resources needed to construct FED designs.

Gender equality

EINRIP outputs will ultimately contribute towards positive gender equality outcomes in areas around upgraded road links. The PPC Scope of Services did not direct that gender equality be addressed. The absence of a deliberate gender analysis, albeit

likely to have been simple, resulted in a missed opportunity to engage with partners on an issue of prominence within Australian aid/

M&E

A separate M&E contract independent of the PPC was established by AusAID specifically to test the hypothesis that investment in high quality road design is rewarded with better quality pavement and longer lasting roads. The PPC Scope of Services did not require the contractor to implement any formal M&E arrangements. Formal M&E arrangements may have helped to proactively raise issues and to identify the cumulative effect of risks.

Analysis and learning

An important lesson that was adopted as central to the design of EINRIP was the need for strengthened governance. Around 1500 km of road were subject to feasibility studies, only to eliminate over half from the final scope. More focussed screening would have significantly reduced the workload. Further, a strong corridor approach would have significantly reduced time and costs for the FED survey and field data collection and might have improved the quality of the final design.

Recommendations

AusAID should commission a formal review of the supervisory arrangements; especially in relation to the capacity of the FIDIC Engineers.

AusAID should support the RSC's request to provide FIDIC training to improve understanding of the various supervisory roles and responsibilities.

AusAID should proactively explore all available options to fund the surplus road packages designed by the PPC.

AusAID should commission road safety audits on other EINRIP road packages as appropriate, possibly through the Indonesian Infrastructure Initiative (IndII).

DGH should request the PMSC to conduct pre-tender briefings to ensure a comprehensive appreciation for the implications of the FED approach among industry actors.

AusAID should extend the M&E work by two years (i.e. for a minimum of five years in total).

AusAID should oblige the M&E contractor to design and implement a strategy to disseminate and socialise the salient findings of the study.

AusAID should engage a gender specialist with experience in infrastructure development to explore opportunities to address gender equality issues during the remainder of the project.

Beyond the specific gender-related issues, AusAID should engage with a range of sector specialists to ensure that the full range of social and environmental safeguards has been effectively implemented.

CONSOLIDATED LESSONS LEARNED

TABLE OF CONTENTS

LIST OF ACRONYMS

ACAP	Anticorruption Action Plan
ADB	Asian Development Bank
AIDS	Auto Immune Deficiency Syndrome
AIPRD	Australia Indonesia Partnership for Reconstruction & Development
AusAID	Australian Agency for International Development
AWP	Annual Work Plan
DAC	Development Assistance Committee
DGH	Directorate General of National Highways
EINRIP	Eastern Indonesia National Roads Improvement Program
EIRR	Economic Internal Rate of Return
EMU	EINRIP Monitoring Unit
ESS	Environmental and Social Safeguards
FED	Final Engineering Design
GoI	Government of Indonesia
HIV	Human Imuno Virus
ICR	Independent Completion Report
IndII	Indonesian Infrastructure Initiative
M&E	Monitoring and Evaluation
PAS	Procurement Advisory Service
PIP	Project Implementation Plan
PMM	Project Management Manual
PMSC	Project Management Support Consultant
PMU	Project Management Unit
PPC	Project Preparation Consultant
S/LARAP	Simplified Land Acquisition and Resettlement Action Plan
ToR	Terms of Reference
WB	World Bank
WINRIP	Western Indonesia Road Improvement Program

1. INTRODUCTION

1.1 Document Purpose

This is an independent completion report (ICR) for the Project Preparation Consultant (PPC) contract within the Eastern Indonesia National Roads Improvement Project (EINRIP)—a partnership between the Australian Agency for International Development (AusAID) and the Government of Indonesia (GoI) through the Directorate General of Highways (DGH), or *Bina Marga*.

1.2 Activity Background

On 26 December 2004, an earthquake with a magnitude of 9.0 on the Richter scale struck an area off the western coast of northern Sumatra, Indonesia, causing a tsunami that inundated coastal areas in fourteen countries around the Indian Ocean rim. Following the tsunami the Australia Indonesia Partnership for Reconstruction and Development (AIPRD) was established by AusAID as a financing facility to assist the GoI. This included a $500 million grant program and a $500 million concessional loan program, of which $300 million was to support national road improvements under what became known as the Eastern Indonesia National Road Improvements Project (EINRIP).

To support EINRIP a further $28 million, funded from the AIPRD grant program, was allocated for project preparation, design, monitoring and project-related technical assistance. The majority of this grant was expended on a contract with URS Australia Pty Ltd ($19,768,818) as the Project Preparation Consultant (PPC) from 15 March 2006 to 30 April 2009.

This ICR focuses on evaluating the implementation of the PPC within the wider context of EINRIP.

1.3 Design Overview

The overarching objective of EINRIP was: "*To support regional economic and social development in Eastern Indonesia by improving the condition of the national road network*"[1]. EINRIP was the largest single project undertaken by AusAID, and was the first of two major loans ever offered by the agency[2]. Further there was only limited experience within the agency concerning the preparation and management of major infrastructure projects. These factors, combined with the urgent nature of the tsunami response, contributed unique challenges to the design, preparation and implementation of the project.

A range of drivers from within the GoI and AusAID influenced key features of the EINRIP design, which in turn influenced the work of the PPC. These drivers included:

- **Governance**: a desire to minimise the possibility for any form of corruption necessitated elaborate internal controls and processes. This was in part a response to Australian political imperatives for high profile 'tsunami money' to be well managed.
- **Quality**: a commitment to higher standards of road construction than usually found in Indonesia necessitated significant up-front investment in final engineering design (FED). This represented a fundamental change in approach both within DGH and in the industry.
- **Environmental & social safeguards**: a desire to mitigate adverse environmental or social impacts necessitated survey and design processes that met internationally accepted standards.

[1] AIPRD (2005) *Proposed Project Outline*, p 1
[2] EINRIP and the Basic Education Project (BEP) were both offered as concessional loans under the AIPRD) and represented the first ever loan agreements entered into by AusAID.

- **Sustainability**: there was an emergent desire to positively influence DGH project preparation and implementation practices, and hence improve the outcomes of subsequent roads projects.

The PPC was one of the largest consultancy services contracts ever undertaken by AusAID at close to AUD20 million over three years. The scope of services required URS to provide project preparation support for EINRIP to both AusAID and DGH including the following key tasks:

- Leading technical aspects of sub-project identification, feasibility study, and selection.
- Preparing a Project Implementation Plan (PIP) which was used to define the loan agreement
- Preparing an Anti-Corruption Action Plan (ACAP), and Environmental and Social Safeguards (ESS) documents
- Supporting preparation and negotiation of the loan agreement
- Preparing the Project Management Manual (PMM)
- Overseeing the FED of the civil works packages, and preparation of bidding documents

The predominant output of the PPC was the FEDs. It was expected that the PPC would oversee design processes carried out by locally-engaged sub-contractors, however, there were concerns about the availability and capacity of local firms to deliver FEDs within the required timeframe. This necessitated the PPC directly hiring, training, resourcing and managing over 100 engineers/designers.

2. METHODOLOGY

2.1 Evaluation Objectives

The stated objectives of the ICR were to[3]:

- Assess preparation, design and technical assistance activities provided during the implementation of the EINRIP PPC contract
- Review the scope and design of the longer-term monitoring and evaluation (M&E) program
- Undertake a broader analysis of the impact of capacity building approaches adopted under the EINRIP PPC on DGH road betterment practices

These objectives were achieved by seeking the perspectives of relevant stakeholders concerning the program's relevance, effectiveness, efficiency, impact, sustainability, monitoring and evaluation (M&E), gender equality, and analysis and learning. These dimensions of performance were drawn from AusAID's ICR criteria, which are based on the standard Development Assistance Committee (DAC) evaluation criteria.

Although the primary focus of the ICR was on the performance of the PPC contract, AusAID encouraged the ICR team to explore broader issues in relation to the whole preparation phase for EINRIP. This broader focus recognised that the PPC contract was not an end in itself, but rather a means to a greater end. That is, FEDs were not the end, but rather a means to high quality national roads constructed in eastern Indonesia.

2.2 Evaluation Scope and Methods

Scope

Four broad classes of actor were interviewed concerning the performance of the PPC:

[3] See Appendix A for ICR Terms of Reference.

- **AusAID:** infrastructure managers and advisers, activity managers, EINRIP Monitoring Unit (EMU) staff
- **DGH:** Senior DGH representatives, operational DGH representatives, Project Management Unit (PMU) representatives
- **PPC:** Program Director, Technical Director, Team Leader, Technical Reviewers, Operations Manager
- **Relevant third parties:** Asian Development Bank (ADB) and World Bank (WB) representatives, EINRIP implementation contractors

The ICR team interviewed a total of forty-four informants (6 female) in six days. A comprehensive list of interviews is provided in Appendix B.

Methods

In line with the requirement for a rapid evaluation, the ICR team employed qualitative methods; specifically key informant interviews and document reviews. Documents were provided by AusAID and the contractor as requested by the ICR team. Interviews were arranged through AusAID and were conducted at locations convenient for the interviewees. A question guide (Appendix C) assisted open dialogue between interviewees and the ICR team. ICR team members took their own notes and at the conclusion of each day of field work debriefed the salient points, and debated their relative significance to the terms of reference.

Reporting

An Aide Memoire (Appendix D) was prepared on the final day of the mission (8 September, 2009) and was circulated to relevant GoI and AusAID stakeholders at a debriefing conducted at the DGH office in Jakarta. A more detailed Post Mission Brief was submitted to AusAID prior to the ICR team's departure from Jakarta.

This final report has incorporated feedback from all relevant stakeholders collected since the Aide Memoire.

2.3 Evaluation Team

The evaluation team initially comprised four members as outlined in the following table.

Member	Role	Function
Peter Kelly	AusAID Infrastructure Adviser	AusAID policy and strategy perspectives; historical program context; technical insights; report co-author
Charles Melhuish	Independent Infrastructure Expert	Technical insights; broader international perspectives on infrastructure projects; report co-author
Ib. Siti Mardiyah	DGH Chief of Evaluations	DGH perspectives; context and historical insights; relevant GoI policy and strategy
Paul Crawford	M&E Specialist (Team Leader)	Evaluation methodology; review of M&E arrangements; support synthesis of evaluation findings; co-author report; report editing

Unfortunately Ib. Siti Mardiyah was unable to accompany the team due to internal work commitments within DGH. Nevertheless the three remaining ICR team members collectively represented a combined seventy years of international development experience with qualifications in engineering, transport economics and evaluation.

2.4 Limitations Encountered

The ICR team encountered the pervasive evaluation challenges of deciphering complex and ambiguous causal linkages, balancing multiple perspectives and appreciating their own outsider biases and limitations. Nevertheless, beyond these typical challenges the evaluation proceeded to plan with stakeholder feedback indicating that the findings were generally accurate and appropriate. Three minor limitations or challenges may have influenced findings:

- **Scope:** the ICR terms of reference (ToR) was predominantly focussed on the performance of the PPC, and yet the PPC was an integral part of EINRIP. This artificial separation of boundaries at times posed a conceptual challenge for the ICR team, and raised concerns among some stakeholders about the appropriateness of the ToR. Nevertheless, it was widely acknowledged that a strict/narrow focus on the performance of the PPC would have yielded a less useful evaluation, since the PPC was a *means* rather than and *end* in itself. Several of the AusAID/DAC evaluation criteria (e.g. sustainability and gender) would have been meaningless if applied in a discrete fashion to the PPC, rather than recognising the PPC as one element of a larger development initiative.
- **Outsider bias:** the ICR team was assembled to include two independent consultants, an AusAID representative and a DGH representative. The inability of the DGH representative to participate fully as a team member in the mission may have inhibited the team's ability to appreciate nuances in the local context[4].
- **Breadth:** A comprehensive itinerary of interviews was arranged by AusAID. Nevertheless there is always a risk that an important perspective may have been missed. In one instance the ICR team was unable to find the location of an arranged interview[5].

3. FINDINGS

This section reports the ICR team's findings in relation to PPC performance within the wider context of the preparation phase of EINRIP. Evaluation was against the five Development Assistance Committee (DAC) criteria (relevance, effectiveness, efficiency, impact, sustainability) and AusAID's additional three criteria (gender equality, M&E, analysis & learning). Ratings against these criteria using AusAID's six-point ordinal quality scale are provided below, followed by a synthesis of the findings in subsequent sections.

3.1 Evaluation Criteria Ratings

Overall the ICR team assessed the PPC to have performed to the required standard, and recognised many challenges arising from the operating context. There was widespread agreement that the quality of work done by the PPC was of a high standard. As one stakeholder stated, "*the PPC simply did what AusAID asked them to do, and did it well*". Much of the critique reflected in this evaluation arose from the wider 'EINRIP context' within which the PPC was located (as per Section 2.1). The ratings below reflect this wider perspective, as encouraged by AusAID. A discrete/narrow focus on PPC performance would likely have resulted in higher ratings in some areas[6], but would have compromised the utility of the evaluation from the perspective of AusAID's broader learning and continuous improvement agenda.

Evaluation Criteria	Rating (1 – 6)[7]
Relevance	4
Effectiveness	4
Efficiency	4
Impact	4
Sustainability	3
Gender Equality	3
Monitoring & Evaluation	3

[4] This risk was mitigated to the extent possible by: a) the methodology which sought to triangulate stakeholder perspectives; b) a thorough stakeholder debriefing process chaired by the DGH Director for Planning; c) the opportunity for all key stakeholders to review and comment on the draft report.
[5] An interview with the team leader for the Procurement Advisory Service (PAS).
[6] However, a discrete focus on PPC performance using AusAID's evaluation criteria would have been problematic since some criteria (e.g. impact and sustainability) were meaningless when applied in a narrow way to the services of the PPC.
[7] 1=very poor quality; 2=poor quality; 3=less than adequate quality; 4=adequate quality; 5=good quality; 6=very high quality.

Analysis & Learning	4

3.2 Relevance

Relevance is concerned with the alignment of the project objectives with priorities of the GoI and AusAID, and the extent to which these objectives addressed a recognised need. The ICR team assessed the relevance of the PPC contract to be adequate (4/6).

Relative strengths:

☐The PPC services were relevant in the local context given the parameters of timeliness and quality

☐The program demonstrated relevant use of partner government systems

☐Contributed to a recognised need for improved road design quality in Indonesia

☐Aligned with AusAID and DGH strategy and intent in relation to sustainable infrastructure

Relative weaknesses:

☐ Broader issues within the political economy likely to inhibit AusAID's latent ambition to influence policy and practice changes within DGH

The broad relevance of the EINRIP program in general, and the PPC contract specifically, was self-evident given poor road design and construction practices in the industry, the GoI's constrained financial capacity, and the urgent need to address the national road maintenance backlog.

The EINRIP design was formulated rapidly by AusAID in response to large sums of money made available by the Australian Government to assist the GoI after the 2004 tsunami. The project strategy aligned with Australia's commitment to supporting development in lagging regions, such as parts of eastern Indonesia; and with GoI commitment to improving the standard of national roads.

A signature feature of the EINRIP design that was prescribed by AusAID was the strong emphasis on delivering longer lasting roads than had been common in Indonesia. This was to be achieved by engaging consultants to prepare final engineering designs (FED) rather than the simplified designs adopted since the 1980s[8]. There was also to be stronger governance of the implementation and greater supervision of public works. It was expected that this approach would yield sustainability benefits—roads with a high finished quality and longer life.

The emphasis on quality aligned with Australia's policy[9] to support improved planning and management of economic infrastructure throughout the East Asia Pacific Region. The project also aligned with two pillars of the subsequent *Australia-Indonesia Partnership Country Strategy 2008–13* concerned with reducing infrastructure-based constraints to growth, and improving transport safety.

Engaging a PPC to further develop and initiate the EINRIP concept was relevant and pragmatic given:

- AusAID's limited technical resources
- Entrenched local road construction industry practices
- The relatively short loan period

[8] The term 'simplified design' was adopted in the late 1980s to apply to the design methods for asphalt overlays in periodic maintenance projects. This approach was formalised and allowed designs to be prepared cheaply for tender purposes, with the contractor subsequently adding necessary detail in a 'review design' phase.. Simplified design was never formally adopted for road betterment projects, but for practical purposes, this became the modus operandi in the roads industry. The result tended to be poor quality roads, expensively constructed and prone to premature failure within a short timeframe.

[9] This policy is articulated through the 2008 Economic Infrastructure Initiative (EII) and the earlier 2006 Infrastructure for Growth Initiative (IFGI).

- Limitations on the technical capacity of GoI agencies to identify, design and procure the required road betterment works to standards agreed by both governments within the available loan timeframe

Also relevant to contemporary Australian development assistance priorities was the implementation of processes to address HIV and AIDS, and piloting road safety audits on two road packages. Road safety audits support an emerging GoI policy initiative[10].

The commitment of both governments to the Paris Declaration and Accra Agenda for Action was supported by the PPC which used and enhanced national systems and processes. A notable example was the fact that the PPC referred design work to relevant Bina Marga sub-directorates for appraisal and approval. According to the PPC Program Director, because FED was largely a lapsed process within Bina Marga, this referral necessitated extensive consultation and added significantly to design finalisation, but was a valuable way of engaging with DGH. A further example of using GoI systems was the procurement of implementation consultant services (e.g. Procurement Advisory Services, PAS).

The long history of premature failure with Indonesian roads highlights the contextual relevance of the PPC's emphasis on better quality road design. This emphasis was broadly welcomed by local stakeholders including Ir Riel Mantik, Project Manager for Metropolitan Denpasar, who stated "*a new paradigm was required to do the job properly as the old ways did not work*". AusAID's interest in influencing road design practice beyond EINRIP emerged over time. However, the PPC was not explicitly tasked with developing capacity or influencing policy and practice.

Lessons

1. AusAID's emergent interest in influencing policy and practice in relation to road design quality should have been made explicit and appropriately resourced.

The desire for a change in the approach to road betterment was not universal, with several stakeholders expressing concerns about the relative cost implications of FED. Compared with simplified designs, FED demands extensive investment in survey and design processes, estimated at 4% of construction costs[11]. FED also results in higher initial construction costs due to such factors as increased pavement strength. One Bina Marga stakeholder paraphrased his concern on this issue stating "*we have a choice between road depth and length*"[12]. This comment references a perception that the road maintenance deficit makes 'depth' at the expense of 'length' an unaffordable and/or politically unacceptable alternative. This perception persists despite international engineering best practice which argues that an 'upfront' investment in FED is normally recovered when 'whole-of-life' road costs are taken into account. FED should result in increased road durability (life) and consequent lower maintenance costs. EINRIP's ongoing M&E component aims to test this hypothesis by accruing evidence about the whole-of-life cost of FED. It is hoped that such evidence may influence decision makers to allocate increased resources to upfront engineering design (see Appendix E).

The EINRIP emphasis on economic evaluation as the primary criterion for road selection is arguably less relevant in poorer regions of east Indonesia where an existing deficit in public infrastructure severely constrains basic service delivery to the

[10] The ICR team was advised that initiatives to improve road safety will be included in a new Road Law Act to be introduced in 2010.

[11] It is unclear if the PPC considered any alternative scenarios between the full FED approach adopted and the critiqued simplified design. Specifically, there may have been a case for including all of the elements of study that underpin the FED, but designing for slightly less pavement life. For example, instead of a twenty-year design life with a planned wearing course overlay after ten years, a lower design life with periodic improvements at designated intervals may have been more cost effective.

[12] This comment refers to the fact that FED results in deeper strengthened pavements, while simplified design allows cheaper and weaker pavement treatments to cover an extended length of the road network.

poor and their commercial activity. At the time EINRIP was conceived, Australian Government policy directed a strong emphasis on economic return. However, considering criteria such as social equity and pro-poor growth opportunities in infrastructure-deprived areas is likely to be as relevant as pure economic criteria for road selection; i.e. evaluating the broader area development benefits rather than just the narrow road-user cost:benefits[13].

Lesson

2. In addition to EIRR, road investment analysis should emphasise connectivity to maximise the benefit of long distance trips linking ports, markets and centres of trade with production areas and locations with high development potential.

3.3 Effectiveness

Effectiveness is concerned with the extent to which objectives were achieved, and the wider merit of these objectives. The ICR team assessed the effectiveness of the PPC to be adequate (4/6).

Relative strengths:

☐Achieved the primary objective of preparing FEDs for road packages to absorb the value of the loan

☐Work quality widely considered to be of a high standard

Relative weaknesses:

☐Unrealistic early forecasts and key deliverables behind schedule

☐'Corridor approach' became somewhat fragmented by wider political needs

From a broad perspective, the PPC achieved the primary objective of delivering FED for sufficient road linkages to absorb the loan. Further, there is wide agreement that the quality of the PPC's work was good practice.

An important challenge facing the PPC was the fact that the EINRIP design (developed by AusAID) did not specify the amount (km) of road to be constructed[14] and only provided broad criteria to guide selection. This combined with the strong emphasis on quality meant that the PPC was tasked with selecting an unknown number of sub-projects and preparing sufficient designs to absorb the value of the loan—within a context of evolving scope and changing costs. The initial cost calculations were grossly under-estimated meaning that an original indicative target of 1,500 km of road is likely in reality to be closer to 400 km. This dramatic reduction in output may contribute to a general perception forming within the political economies of Australia and Indonesia that the project has under-performed, despite the fact that the PPC produced an estimated 30% more FEDs than current estimates indicate can be absorbed by the loan. The major contributors to the reduced output are itemised in Section 3.4 with reference to efficiency, but it is evident that inaccurate forecasting negatively impacted on project effectiveness. According to AusAID's first Activity Manager: "*the original numbers were, quite simply, wrong.*"

Lesson

[13] Notwithstanding this critique, one EINRIP road did not meet the Government's minimum criteria of 15% economic internal rate of return (EIRR). The EIRRs on the contract packages were generally well above the minimum cut-off rate assessed during the feasibility studies. However one package had an EIRR below the government's minimum rate, and hence represented a notable departure from the main selection criteria (a summary of the cost estimates at feasibility study and contract price is provided in Appendix G). The situation is likely to be compounded given the large increase in costs that has occurred between feasibility study and FED. This will mean that the EIRR on this package will be well below the minimum cut-off criterion.

[14] The Scope of Services provided an indicative value of 1,500 km of road (including bridgeworks) which were to be completed by mid-2009.

3. A rigorous process to establish likely project costs under various scenarios should have been undertaken in the project formulation stage.

In addition to the issue of under-estimation of costs, a further challenge to PPC effectiveness related to the convoluted process of candidate road selection. The ICR team was informed that 6,600 km of road was screened by the PPC[15] with FED ultimately completed for around 500 km. Contributors to this situation included the fact that AusAID and DGH had failed to negotiate an appropriately narrow set of selection criteria, and that as an inherently political process, there was upward pressure on the number of roads to be considered. A case in point is that the GoI added two provinces to the target area later in the project. The large volume of road screening activity also negatively affected implementation efficiency (Section 3.4).

The PPC adopted a range of principles to guide the selection process and enhance effectiveness; most notably the 'corridor approach'. However, the approach did not focus entirely on key strategic corridors to link ports and major centres with hinterlands with good economic potential. While many of the road segments selected for FED are adjacent links they tend to be short and scattered rather than continuous stretches and thus have limited connectivity benefits. Despite the PPC's efforts to focus on the corridor approach, of the twenty-four contracts under EINRIP there are four provinces that have standalone road/bridge contracts and two provinces where there are discrete road sections unrelated to selected corridors. A map of road locations is provided in Appendix F.

Lesson

4. Effort invested in a more precise and narrowly focussed road selection criteria would have streamlined the preparation and design phase and eliminated much of the ambiguity from the scope of work.

The quality of work done by the PPC was generally considered to be of a high standard. Comments by stakeholders in this regard were with reference to the quality of survey and design work, and also the quality of key documents/reference manuals that were produced. Notwithstanding, DGH technical staff raised concerns about emergent issues with the implementation of the first two road packages. These concerns have the potential to erode confidence in the PPC's work, and hence are a matter for ongoing monitoring during the implementation phase. EMU staff advised the ICR team that the concern raised with the Bali package is not a technical issue *per se* and may be a contractor-motivated request for design changes. The issue raised concerning the Sumbawa package is not a flaw in the detailed engineering design so much as an omission[16]. Nevertheless, the emergent concerns of key stakeholders should be respected, and addressed as appropriate, if only because as some level, perception is reality.

3.4 Efficiency

Efficiency is concerned with implementation performance against time and budget parameters. The ICR team assessed the PPC efficiency as adequate (4/6).

Relative strengths:

☐ Strong involvement of partners in the design process (PPC, various DGH sub-directorates and AusAID)

Relative weaknesses:

[15] In addition, a further 2,400 km of roads was assessed by the DGH pavement management system.
[16] The survey process in this instance omitted to note the passage of a major water pipe across the section of road which resulted in supply being cut.

☐Unrealistic length/number of candidate roads screened

☐Under-estimated construction costs at feasibility stage

The PPC required a twelve week no-cost-extension during which the scope of work was completed. The fact that the extension was not longer is indicative of a dramatic improvement in the workflow to overcome early delays. The PPC was also approved for a AUD6 million contract amendment, largely as a function of the need to recruit, train and resource design professionals rather than outsourcing the FEDs to local industry.

Implementation efficiency was arguably impacted by the 'newness' of key elements of the project which required adaptation and change by all partners. From the GoI perspective, the adoption of FED was new since it moved away from the practice of simplified designs which had been used since the 1980s. From AusAID's perspective, the preparation and approval of a major infrastructure loan was new, and so required considerable learning and the development of new processes. From the PPC perspective, the preparation of FEDs (the predominant project output) for an undefined number of road packages to expend the budget, meant that a range of factors affected efficiency.

Key factors largely beyond the control of the PPC that influenced time and cost efficiency included:

- Unrealistic length of candidate roads screened at clients' request
- An unforeseen increase in national road-width regulation[17] necessitating significant duplication of field surveys and land acquisition, and adding to the cost of construction
- Dramatic increase in road construction costs[18]
- Unmet assumptions concerning the availability and capacity of local private sector engineering firms to provide the requisite survey and design expertise
- Underestimated time for building consensus on technical design and process reforms, including the time required for DGH to review and approve designs

Key efficiency factors largely within control of the PPC included:

- High turnover of key staff, initial slowness in developing effective partnerships with DGH counterparts, and consistent delays in the design production schedule
- A potentially inefficient process of visiting each candidate road twice for screening and selection
- Underestimated construction costs[19] arising from a higher standard of design

Stakeholders generally reported that PPC management was responsive to changing needs despite the large and complex array of challenges. For example in 2007, a DGH direction to include two additional provinces in sub-project screening was accommodated. Overall the PPC appears to have successfully managed the challenge of responding to 'dual masters' in AusAID and DGH. However, a perception remains within DGH concerning the PPC's asymmetric accountability to AusAID. A DGH representative reported that "*Having two masters was a difficult situation to manage. From our side we could not force the PPC to deliver. We lacked management control".* This perception—an unfortunate but likely consequence of the PPC's client-provider relationship with AusAID under the grant-funded contract—may have adversely impacted efficiency in the early stages of the project. A DGH

[17] In early 2007, some 12 months after PPC commencement, DGH amended minimum carriageway (road) width of 6m, resulting in a higher level of land acquisition for most packages.
[18] Interviewees cited up to 75% increases in the cost of fuel, cement, steel and other related inputs.
[19] Total sum of contract award cost for packages 1, 2, 3, 4 and 5 is Rp566milyar with same package FS estimate Rp406milyar yielding 40% total cost underestimation on first 5 packages.

stakeholder noted that "*the arrangements certainly created challenges. There were lots of meetings and discussions*".

Stakeholders advised that sound working relationships developed between the PPC and DGH over time as the FED processes normalised. One reported example was when the PPC facilitated an agreement between the engineering and environmental sub-directorates of Bina Marga to advance the start of the Simplified Land Acquisition and Resettlement Action Plans (S/LARAP). The agreed process mitigated the extent of sub-project delay and represents a significant efficiency reform that is likely to be sustained.

PPC design production efficiency improved as project implementation progressed and as the recruited local engineering professionals[20] became familiar with FED requirements, design software and associated processes. Nevertheless persistent lateness eroded the confidence of some DGH stakeholders in PPC performance. A senior DGH representative estimated that only 50% of designs were completed by the due date. This claim was supported by a review of PPC design schedules submitted for November 2007 and 2008 which indicated a slippage of 7 months for AWP1 batch 2 and 4 Months for AWP2. However, while the PPC contract placed responsibility for production of key documents on the contractor, the reality was that each design package required step-by-step appraisal and acceptance by Bina Marga sub-directorates. In this context the observed lateness and apparent inefficiencies cannot be entirely attributed to the PPC[21]; and in fact may stakeholders affirmed the "equanimity" of the PPC throughout the process.

PPC efficiency may have been improved if AusAID had defined firm output timelines in advance of key implementation stages. DGH representatives indicated that this would have assisted with monitoring and managing PPC performance. However, AusAID's Infrastructure Adviser and EMU Manager advised that "*AusAID were reluctant to override technical management of the PPC by DGH or be seen to be actively instructing PPC on day-to-day matters".*

Lessons

5. Further demarcation at the outset of PPC technical oversight responsibility between AusAID and DGH would have facilitated tighter performance monitoring and management.

6. Delivery time estimates should have been conservative given the newness of some elements of the project.

7. Land acquisition and related institutional processes and incentives need to be exhaustively analysed and understood for projects where timeliness is critical but key steps are beyond implementer control.

3.5 Impact

Impact is concerned with significant and lasting changes (both intended and unintended) fostered by the project. The ICR team assessed the impact of the PPC contract to be adequate (4/6).

Relative strengths:

☐Fostered increased awareness of the standard of national roads and the benefits of FED

☐Led the preparation of key technical/reference documents now adopted and maintained by DGH

[20] Staff levels in the PPC Design Office reached around 100 at peak.
[21] One stakeholder asserted that certain individuals within Bina Marga deliberately slowed down the process of legalizing designs because of discontent about the fact that the PPC did not pay stipends for DGH staff inputs beyond their normal work.

Relative weaknesses:

☐ Absence of a capacity building focus eroded the transfer of skills and limited the uptake of FED

A narrow application of the concept of impact on the performance of the PPC in this ICR was problematic since the contract was almost entirely output focussed. That is, the scope of services of the contractor was limited to key deliverables, without any reference to achieving significant and lasting changes, such as strengthened partner capacity or changed policy. Nevertheless, stakeholders recognised the critical role of the PPC in positioning EINRIP more broadly to achieve the desired impact of program.

Notwithstanding the above, there was evidence that the PPC fostered some significant achievements; most notably:

- An increased awareness of the benefits of FED within DGH
- Enhancements to DGH road design specifications
- Integration of environmental considerations within DGH design processes, and the preparation of an Environmental and Social Safeguards Manual
- Preparation of key documents which were subsequently adopted more broadly within DGH and recognised as a significant contribution: Project Management Manual (PMM), Anticorruption Action Plan (ACAP), Environmental and Social Safeguards (ESS), improved bid documents
- Enhanced working relationship between the two governments at both senior and operational levels

The relative merit of these achievements is discussed in turn.

Awareness of FED within DGH

The ICR team noted that adoption of FED had raised awareness within GoI of the poor standard of the national road network, and the benefits of high quality design processes, however, as discussed in Section 3.2 (Relevance), there was little evidence that FED would be adopted more widely. A quote by one DGH stakeholder seems representative: "*The benefits of carrying out detailed designs will have to be assessed"*. FED is not new to DGH, which formerly used it prior to adopting simplified design in the 1980s. The ICR team found that DGH engineering staff were knowledgeable and technically astute, and understood the implications and benefits of FED. However, they were generally of the view that FED, as promoted by the PPC, is unaffordable at the present time given the fiscal and institutional constraints.

Formal capacity building

In its early conception, EINRIP was not designed to be a capacity building or policy advocacy initiative. However, according to the first AusAID Activity Manager, "*although the original focus was not on capacity, capacity issues became apparent in relation to FED".* It is evident that an expectation emerged within AusAID that the project would foster changes in engineering design practice within DGH. However, the PPC contract did not reflect the latent capacity building focus and as a result much of the knowledge and process benefits did not have a substantive impact on DGH staff. Further, the ICR team was unable to identify any clear champion for such a change within DGH. The ongoing M&E work funded under the AusAID grant funds is expected to provide empirical data that may ultimately influence local practice (see Appendix E). But significant lasting changes to policy and practice

Lesson

8. In order to have an impact on capacity and process change, it is important to identify an internal champion for change.

Through implementing FED the PPC introduced some new concepts and suggested modifications to existing DGH specifications. For example, DGH appreciated the opportunity to review its Design Specification Manual and indicated that several of the proposed recommendations will be adopted more broadly.

Another area where the PPC had positive impact was the integration of environmental considerations in the design process. Previously, environmental studies were undertaken in isolation from the engineering designs, and often after the design had been completed. Furthermore, under the simplified design approach environmental aspects were often not relevant since a substantial amount of the engineering design was undertaken after the preparatory studies had been completed. Under the FED approach the environmental safeguards were fully integrated into the final design with sign-off by the Environmental Section within Bina Marga. This ensured that the environmental safeguards were fully incorporated prior to the construction phase.

Improved quality of key documents

The PPC facilitated improved documents to guide the PPC process and the follow-on requirements for the EINRIP loan. These documents included an enhanced PMM, ESS Manual, and ACAP. These documents were produced in English and Bahasa Indonesia which made them useful for GoI staff as well as international contractors.

Improved working relationship between GoI and the Government of Australia

A largely unanticipated impact was that the PPC grant and loan package enhanced the relationship between Ministry of Finance and AusAID at the highest level. Despite some isolated disenchantment within DGH with processes, it appears that the PPC has broadly impacted positively on the working relationships between governments at both senior and operational levels

Lesson	
9.	A formal capacity building component alongside the technical assistance may have helped to mainstream improved processes.

3.6 Sustainability

Sustainability concerns the likelihood that project benefits will endure. The ICR team assessed the sustainability of the PPC's work to be less than adequate (3/6).

Relative strengths:

☐Better quality design is expected to produce longer lasting road

☐ The PPC enhanced local capacity to implement FED through recruiting and training local engineers

☐ The integration of social and environmental considerations within the technical design process is likely to bring sustainability benefits

Relative weaknesses:

☐Unlikely to realise significant changes in design process and quality within DGH in the short or medium term

For the purposes of this ICR, a narrow focus on the sustainability of PPC outputs (predominantly FEDs) was largely considered meaningless. Rather, AusAID's interest was in the apparent *likelihood* that the EINRIP designs prepared by the PPC would contribute to sustainable national roads in eastern Indonesia; and the extent to which the project may have influenced significant and lasting improvements to the quality of road design and construction practice. Critique provided here is provided in relation to these broader perspectives, while recognising that the contractor met the requirements of the scope of services.

Sustainability of EINRIP roads

Significant emphasis was placed on sustainability when the original EINRIP concept was developed—with sustainability conceived mainly as enduring, high quality road. Historically, investments in the national road network had failed to provide the expected benefits, with a high proportion of road infrastructure prematurely deteriorating. One interviewee contended that "*there are several examples where World Bank and ADB funded road projects were known to have deteriorated badly after a relatively short time*". This view was supported by a review of project completion reports and post evaluation reports by the World Bank and ADB which consistently highlighted problems associated with simplified design; specifically that this approach did not take into account key aspects of design that affect the structure of the road pavement, such as drainage requirements and the strength of the pavement layers. To address these weaknesses in design, and to respond to an AusAID imperative that Australian Government funds be used to construct high quality, long lasting roads, the project adopted the FED approach used internationally to design roads. Several interviewees asserted that the PPC application of FED was best practice.

Several key elements of the PPC's approach were considered likely to enhance the sustainability of EINRIP roads, including:

- **Obtaining actual axel load measurements:** the incorporation of actual axle load measurements in pavement design, rather than simply using averages or estimates, was considered an important measure to enhance road sustainability. While this design feature will increase construction costs it should result in more robust roads able to withstand the high truck axle loads commonly experienced in parts of Indonesia.
- **Introducing environmental and social safeguards into the road design process:** as noted in Section 3.5, all designs were signed-off by the head of the Environment and Social Sub-directorate as a part of the approval process. This integration of social and environmental concerns was considered an important measure to improve the environmental and social sustainability of the roads. Of particular note was the requirement for an HIV and AIDS prevention strategy to accompany the road construction phase.
- **Conducting road safety audits:** the implementation of road safety audits on several of the road packages was considered to be an important sustainability measure, since these processes are known to result in safer road infrastructure, which translates into saved lives and improved productivity and social wellbeing. Prior to EINRIP, road safety audit was not used widely by DGH and it is only recently that such techniques are beginning to be used. The ICR team recommends that road safety audits be incorporated into all twenty-four design packages under the EINRIP loan. This activity could be incorporated as a component under the Indonesia Infrastructure Initiative (IndII) grant assistance.

Many of the major sustainability risks are yet to be addressed. On engineering grounds, there is little doubt that designs produced by the PPC should result in improved road infrastructure *as long as construction meets the design specifications*. The ICR team was advised of a range of emerging issues that may erode the efficacy of the FEDs during the construction phase. These issues, which were beyond the scope of this evaluation but warrant further investigation, concern the elaborate supervisory regime comprising several levels of oversight and governance. This regime is reportedly global good practice, nevertheless, the RSC team leader advised the ICR team of several emerging challenges such as: clarity concerning the role of FIDC Engineers within the supervisory hierarchy; the tacit incentives for weakened compliance and corruption; practical issues such as English literacy in the field; and the sheer supervisory workload and distributed geographical focus of the RSC.

Beyond the construction phase several important risks to the sustainability of national roads are yet to be addressed by the GoI:

- The shortfall in road maintenance funding must be addressed if the roads are to be kept in good condition in the post-construction period.
- Overloading in Indonesia is widespread and axle loads excessive. Constructing roads to accommodate overloading requires substantial additional funding and is not considered a viable option. Enforcing road rules and regulations is the least cost option and should be promoted. To date, however, GoI has not demonstrated strong support for such measures.
- The current feasibility study process used by DGH emphasises EIRR at the expense of other important project selection criteria. In particular, little emphasis is given to building connectivity in the network. The current process results in a scattered investment around the network, with poor quality road segments providing limited opportunity for economic growth and social impacts to materialise.
- Sustainability demands safer roads, safer road users and a safer road environment. Studies by ADB and the Global Road Safety Partnership have indicated that Indonesia has a very high accident rate and mitigation measures will require a comprehensive action plan to be adopted by GoI. Despite many suggestions by the donor community and local civil society groups, GoI has yet to make road safety a priority issue.

Lesson

10. Better quality design can only translate into sustainable roads if the underlying problems are also addressed: road maintenance, vehicle overloading, connectivity, road safety.

Sustainability of improved road design practice

As noted earlier in this report, AusAID progressively came to see EINRIP as a way to influence the prevailing approach to road design and construction in Indonesia; but the role of the PPC was never to mainstream the FED approach. Without the requisite support for policy advocacy it is unlikely that FED (a significant departure from the normal DGH approach) will be adopted on a sustainable basis.

Simplified design has been the primary method for designing road betterment in Indonesia for the past two decades. Consequently the skills and capacity in the local consulting industry are oriented to this approach, rather than FED—especially at the scale required by the EINRIP loan. As a result it was decided that the PPC would be responsible for undertaking this activity rather than managing sub-contractors[22]. A large pool of design engineers and technicians was recruited to produce the designs. This was a significant undertaking that was successfully completed by around 100 engineers trained and supported by the PPC. Arguably, there was a capacity development element in this approach[23], given that the engineers benefited from training and support. However, in the absence of ongoing demand for FED within the Indonesian road industry, these skills have reportedly dispersed to other engineering sectors[24]. A consequence of this situation is that adopting the FED approach on a

[22] It was initially envisaged that the PPC would manage the entire design process internally. EMU's concerns about the capacity of the contractor to deliver the quality required led to an exploration of the potential for an outsourced approach. Ultimately the contractor managed the design process internally as originally envisaged.
[23] The PPC contract did not incorporate a formal capacity building component. DGH expressed concern to the ICR team that they were not fully involved with the design process and thus did not benefit from the activity. Furthermore, while they possess improved standard design drawings they do not have access to the software now that the PPC has been dissolved. These impediments reduce the sustainability of the PPC output.
[24] Evidently the PPC advised DGH to recruit some of the trained designers to ensure that FED skills and knowledge of the design software was retained, but according to the former PPC Team Leader this recommendation was not acted on.

wide scale would be inhibited by the limited number of qualified engineers with knowledge of the technology in Indonesia. It may take between five and ten years to build local capacity in the road sector to produce FED as the industry standard.

To support internal discussion in relation to the viability of FED, DGH requested the ICR team to carry out functional cost comparisons between FED and simplified design. Analysis indicated that the cost of FED is substantially higher than simplified design. Under the PPC, FED amounted to approximately $40,000 per km while DGH's simplified design approach costs about $15,000 per km. With a national road network of 34,000 km, more than $1.3 billion would be required to adequately engineer the network using the FED approach. There is no doubt that FED should produce stable and maintainable roads but its widespread introduction would require a large realignment of budget resources to achieve this aim. Given the current budget limits and inadequate human resource capacity the use of FED can only be expected to be adopted on a gradual basis, and probably associated with externally funded projects and programs[25].

Beyond the additional design costs, the greatest constraint to sustainability is likely to be the level of resources needed to construct FED designs. Under PPC the actual construction costs of the tendered packages is approximately $490,000 per km (equivalent to US$390,000). This is significantly higher than the $200,000 construction costs under DGH simplified design designs and US$350,000 for recent tenders under World Bank and ADB contracts. GoI recognises that budget allocations for infrastructure which are currently at 2% of GDP need to be raised substantially to both improve the quality and quantity of national infrastructure to increase and sustain economic growth. A BAPPENAS interviewee indicated that the new development plan is expected to increase allocations to 5% of GDP. If this plan materialises, allocations for road infrastructure will be able to be raised substantially, meaning that a greater proportion of roads could be constructed using FED. At this point in time the mainstreaming of the FED approach remains unlikely.

Lesson

11. The mainstreaming of FED is contingent on having sufficient resources to adopt the required techniques.

Notwithstanding these fundamental issues, there was some evidence that the PPC's work had fostered some significant and lasting changes in internal practice within DGH. Examples include the wider adoption of technical documents prepared by the PPC (e.g. the PMM, ESS Manual, Design Specification and Standard Engineering Drawings); and process improvements to address identified constraints:

- **Processes needed to acquire right-of-way:** the existing procedure required the design to be completed prior to initiating land acquisition processes. Under the PPC it was recommended that such processes could commence once preliminary design was completed thus accelerating the schedule for land acquisition.
- **Integration of environmental safeguards into the final design drawings:** as noted in Section 3.5, all drawings were signed by the head of the Environment and Social Sub-directorate as a part of the design approval process.

3.7 Gender Equality

Gender equality concerns the extent to which the project has fostered greater equality between the genders. The ICR team rated the quality of gender analysis and

[25] This highlights the importance of AusAID advocating with other donors in the sector to adopt the FED approach, and to adequately resource the preparation and design phase.

strategies to improve gender equity employed by the PPC as 'less than adequate' (3/6).

Relative strengths:

☐ Some project initiatives (such as road safety audits) likely to contribute to positive gender equity outcomes

Relative weaknesses:

☐ No explicit gender analysis or strategy undertaken

EINRIP outputs will ultimately contribute towards positive gender equality outcomes in areas around upgraded road links. Examples of PPC outputs that plausibly supported gender equality included:

- Road safety auditing incorporated into road betterment design process (as a pilot)
- Women's participation in land acquisition processes encouraged (but not prescribed)
- Gender-specific focus group discussions included in M&E social surveys
- HIV and AIDS response integrated into construction works contracts

The PPC Scope of Services did not direct that gender equality be addressed, but it was referenced in clause 13 of the Project Specific Contract Conditions. Additionally, the Australia Indonesia Partnership (AIP) Country Strategy 2008–13[26] directed that gender analysis would inform both new and *existing* projects.

This oversight is likely a result of low awareness among project stakeholders of both AusAID's policy commitment to gender equality, and the potential influence certain aspects of road design and construction can have on women's empowerment.

The ICR team recognised that the scope of PPC activities did not offer many practical and meaningful opportunities for gender equality initiatives other than those few undertaken. Nevertheless, the absence of a deliberate gender analysis, albeit likely to have been simple, resulted in a missed opportunity to highlight gender as a prominent feature of Australian aid, develop project partners' appreciation for the issues, and their capacity to undertake the analysis.

Lessons

12. Strategies are needed to proactively foster greater awareness amongst AusAID staff and consultants concerning AusAID's Gender Equality Policy in sectors such as transport where links are not readily apparent.

13. There would have been value in a gender adviser engaging with EINRIP to identify proactive ways to address gender equality.

3.8 Monitoring & Evaluation

Monitoring and evaluation concerns the extent to which adequate arrangements were put in place to ensure accountability, enhance decision-making and promote learning. The ICR team rated the quality of the M&E arrangements for the PPC as 'less than adequate' (3/6).

Relative strengths:

☐ Regular processes of coordination and reporting between stakeholders were established

Relative weaknesses:

☐ No external oversight mechanism

[26] AIP Strategy established in June 2008 included gender equality as a high priority cross-cutting issue.

☐No formal M&E arrangements specifically to guide PPC implementation

A separate M&E contract independent of the PPC was established by AusAID specifically to test the hypothesis that investment in high quality road design is rewarded with better quality pavement and longer lasting roads. A review of this M&E contract is the subject of Appendix E. The extent of the PPC involvement with this M&E work was to provide logistical support for data collection exercises.

The PPC Scope of Services did not require the contractor to implement any formal M&E arrangements. The former AusAID Activity Manager indicated that this was simply an oversight that occurred in the context of the post-tsunami development of the design. Correspondingly, the PPC Program Director stated that "*this was surprising to us at the time. It would have been good to have something defined beyond what we invented ourselves for internal purposes*".

Formal M&E arrangements may have helped to proactively raise issues and to identify the cumulative effect of risks. Such measures may have also helped to empower the PMU within DGH in their oversight of the PPC—something which the ICR team was advised posed a challenge at times. A common feature of M&E arrangements required by AusAID is an element of external oversight. This may have been disregarded given the intensive role of the EMU. However, an external review may have provided opportunity for robust critique of assumptions, and a mechanism to raise key issues with counterparts.

Nevertheless the ICR team was satisfied that, while not formalised in a 'M&E framework' there were sufficient tacit M&E processes in place to provide most stakeholders with reasonable insights into PPC performance. Relevant processes included:

- Regular joint management meetings between DGH (PMU), AusAID and the PPC
- Submission of monthly progress reports by the PPC to EMU
- Daily engagement between EMU staff and PPC management
- Regular engagement between the AusAID Activity Manager and PPC management
- Submission of monthly reports by EMU to AusAID synthesising issues and recommendations

Lesson

14. Formal M&E arrangements should have been established from the outset of the PPC contract.

15. A mechanism of external oversight would have introduced more contestability to EINRIP processes and assumptions.

3.9 Analysis and Learning

Analysis and learning concerns the extent to which relevant analysis of the context was carried out and past lessons learned informed the design. The ICR team rated the project adequate (4/6) in this regard.

Relative strengths:

☐The design process was thoroughly informed by previous donor experience in the sector

Relative weaknesses:

☐ More could have been learned about loan management processes; e.g. advance procurement; preparation lead times etc.

It is a truism that past experience should inform planning. This is especially the case with a substantial investment in the road sector such as EINRIP. One strength of the PPC was that it was guided by the experience of other donors to the sector; particularly the experience of the WB and ADB. Both these institutions had been involved in the sector for considerable time and had built a substantial base of knowledge. AusAID took full advantage of the lessons learned in formulating the design of the PPC and the wider EINRIP. Indeed in developing the initial scope, close discussion and dialogue with the WB was maintained since the latter was preparing the Western Indonesia National Road Improvement Project (WINRIP)—a sister project of EINRIP. The development banks also had considerable experience of working with partner country systems which at the time was a new aspect for AusAID.

Both multilateral donors were advocating the adoption of FED since the simplified design approach was not resulting in sustainable roads and did not provide value-for-money. An emerging objective of the PPC was to demonstrate that better designs can lead to better quality roads, and hence provide better value-for-money. The WB endorsed AusAID's substantial grant funds to support the PPC having found that project preparation tends to become convoluted without sufficient external support. This situation was confirmed to the ICR team in an interview with a WB representative responsible for WINRIP.

A further and important lesson that was adopted was the need for strengthened governance in the road sector. The consequence of this is that the PPC under its project preparation component prepared a comprehensive ACAP to address the complex issues involved, and to guide implementation of the EINRIP project.

Nevertheless, there were aspects of the project that did not build upon or incorporate lessons learned by the multilateral donors:

- Project preparation in Indonesia requires considerable time. The advice on this issues appears not to have been fully accommodated. This is likely due to internal pressures within the Government of Australia to make progress towards the implementation of the loan.
- Most multilateral lending uses advanced procurement action to reduce long delays in project start-up; especially procurement. This could have saved at least nine months in consultant recruitment at the early stage of the project; which would have in turn enabled road construction packages to be tendered earlier, thus accelerating loan disbursement.

As discussed in Section 3.3 (Effectiveness), the PPC adopted a 'corridor approach'. While the ICR team fully appreciated the principles that underpin this approach, it seems not to have produced significantly different results from the random selection of roads within target areas. It would have been prudent to have adopted a coherent, narrow set of selection criteria. This would have resulted in a focus on a few corridors linking ports with the hinterlands. Arguably, the lack of focus contributed to 6,500 km of roads being screened, most of which were not taken further. Similarly 1,500 km of roads were subject to feasibility studies, only to eliminate over half from the final scope. More focussed screening would have significantly reduced the workload. Further, a strong corridor approach would have significantly reduced time and costs for the FED survey and field data collection and might have improved the quality of the final design.

Lessons

16. Tighter terms of reference will reduce the risk that unnecessary work is undertaken during project preparation. It will also reduce pressures placed on executing agencies to add 'important' additional components as 'last minute' additions.

17. Delays in procurement are common during project start-up when country systems are used. Measures to reduce these delays can significantly benefit project implementation timelines.

4. CONCLUSIONS & RECOMMENDATIONS

Overall the ICR team assessed the PPC to have performed to the required standard, and recognised many challenges arising from the operating context. A number of issues were raised during the ICR mission that warrants recommendations for ongoing implementation of EINRIP.

Site supervision issues

Early experience with the implementation of the first road packages has highlighted the critical importance of sound supervisory practices to ensure that the FEDs are borne out in high quality construction. The ICR team was advised by the RSC team leader of many of the complexities encountered with site supervision, ranging from English literacy through to clarity concerning the role of FIDIC engineers within the supervisory hierarchy. It is a pragmatic reality that poor supervision of the construction phase risks squandering the investment in high quality design. There is wide agreement that the FIDIC supervision arrangements are good practice and robust—at least in theory. Nevertheless, given the critical importance of supervision, there is likely to be merit in critical reflection on the details of the supervisory arrangements, and in particular, how the theoretical structure is operationalised in the field context.

Recommendation: AusAID should commission a formal review of the supervisory arrangements; especially in relation to the capacity of the FIDIC Engineers.

This formal review should be conducted by a suitably qualified independent consultant with experience in infrastructure development oversight mechanisms. The ToR for the review should include:

- An assessment of the integrity of the entire governance regime, but with particular emphasis on risks encountered with site supervision
- A review of the mechanisms that govern relationships between FIDIC Engineers and contractors, and the tacit incentives for corruption or weakened compliance regulation
- An assessment of the workload demands on the RSC in relation to multi-site supervision; and the implications on verifying compliance
- A review of the capacity of the local industry to supply the necessary technical and management skills required by the supervisory regime

Recommendation: AusAID should support the RSC's request to provide FIDIC training to improve understanding of the various supervisory roles and responsibilities.

Surplus road packages

As noted in Section 3.3, the PPC prepared approximately 30% more FEDs than current estimates indicate can be absorbed by the loan. This situation represents an unfortunate potential waste of resources.

Recommendation: AusAID should proactively explore all available options to fund the surplus road packages designed by the PPC.

Possibilities for funding the surplus designs include:

- A separate AusAID grant
- Through another AusAID program

- A negotiated partnership in which DGH funds the construction costs from budget and AusAID extends current supervisory arrangements under EINRIP
- Lobbying another donor (e.g. WB or ADB) to implement the completed designs

Road safety audits

As noted in Section 3.6, a novel feature of the PPC's work was the implementation of road safety audits on up to four packages. The recognised social and sustainability benefits, combined with the recent AusAID policy emphasis on disability prevention and support, mean that there is merit in conducting road safety audits on all EINRIP road packages. This should be done through a mechanism that proactively builds DGH capacity and commitment to adopting road safety audits as standard practice.

Recommendation: AusAID should commission road safety audits on other EINRIP road packages as appropriate, possibly through the Indonesian Infrastructure Initiative (IndII).

Pre-tender briefing

The subject of pre-tender briefings was raised by several stakeholders and evidently has become an issue of increasing importance with the tendering of the first road packages. It seems that the original reason for not conducting pre-tender briefings was to reduce the risk of collusion. However, several interviewees reported that the industry actors are already known to each other, and so opting out of pre-tender briefings alone would not mitigate the risks. On the other hand, the newness of the FED approach in the local road construction industry carries the risk that the full technical and cost implications may not be fully appreciated, with the consequent risk that road construction quality may suffer. This situation appears to give weight to the argument for pre-tender briefings.

Recommendation: DGH should request the PMSC to conduct pre-tender briefings to ensure a comprehensive appreciation for the implications of the FED approach among industry actors.

M&E arrangements

As discussed in Appendix E, ongoing M&E work has been independently contracted by AusAID to test the hypothesis that FED translates into higher quality and more enduring roads with a competitive whole-of-life cost. However, these M&E arrangements are currently planned over a three-year period, despite the fact that road quality is unlikely to deteriorate much in this period. A more comprehensive analysis of the issues requires a longer period for study.

Recommendation: AusAID should extend the M&E work by two years (i.e. for a minimum of five years in total).

The value of studying the benefit of FED on road quality risks being squandered if there is no explicit plan to disseminate and socialise the findings among key GoI and donor stakeholders.

Recommendation: AusAID should oblige the M&E contractor to design and implement a strategy to disseminate and socialise the salient findings of the study.

(N.B. See other recommendations in relation to the M&E arrangements in Appendix E).

Gender equality

As noted in Section 3.7, analysis of gender equity issues was an oversight during the design phase and the PPC contract. An opportunity is now present for AusAID to engage a gender specialist to identify and promote opportunities to address gender equality over the remainder of project.

Recommendation: AusAID should engage a gender specialist with experience in infrastructure development to explore opportunities to address gender equality issues during the remainder of the project.

Recommendation: Beyond the specific gender-related issues, AusAID should engage with a range of sector specialists to ensure that the full range of social and environmental safeguards has been effectively implemented.

Conclusion

The development and implementation of EINRIP involved a genuine partnership between the two governments with work being carried out through partner systems. The PPC facilitated the evolution of strong working relationships with DGH. These relationships will facilitate more effective assistance in the future. The overall achievement of the PPC in getting concepts agreed, package designs completed and then signed off by a number of sub-directorates within DGH against a constrained timeframe has been significant. The fact that EINRIP is underway with a high standard of designs while other roads projects (WINRIP, SRIP and various ADB projects) are at various stages of preparation is perhaps indicative of the overall success of the EINRIP preparation phase in general, and the role of the PPC in particular.

APPENDIX A: TERMS OF REFERENCE

Terms of Reference
Independent Completion Report
Eastern Indonesia National Road Improvement Project (EINRIP)
Project Preparation Consultant (PPC) Phase

1. Introduction

The Independent Completion Report will assess the performance and achievements of the Eastern Indonesia National Roads Improvement Project (EINRIP) – Project Preparation Consultant (PPC) phase. The PPC phase is the main component of the EINRIP Preparation Activity under Initiative ING406: EINRIP Implementation, Planning and Support Facility.

2. Background

The Australian Agency for International Development (AusAID) in partnership with the Government of Indonesia (GOI) administers the Australia Indonesia Partnership (AIP). The AIP's goal is to support Indonesia to achieve sustainable poverty alleviation by delivering the development outcomes outlined in Indonesia's Medium Term Development Plan. The Governments of Australia and Indonesia have committed AIP loan funds to the Eastern Indonesia National Road Improvement Project (EINRIP).

Following the 2004 tsunami the AIP (previously AIPRD) provided a major financing facility to the Government of Indonesia for reconstruction and development. This includes a $500 million grant assistance program and a $500 million highly concessional loan program. $300 million of the loan funds have been made available for national road improvement through EINRIP. A further $28 million, funded from the AIPRD grant program, was allocated for project preparation, design, monitoring and project-related technical assistance.

EINRIP provides support to 24 national road and bridge improvement works in 9 provinces of Eastern Indonesia. The major focus of EINRIP is upgrading roads which have been reclassified as National Roads from Provincial or non-status roads, of which there are some 4,300 km in Eastern Indonesia. The main objective of the program is to improve these links to an acceptable standard of service and accessibility, and provide the infrastructure essential to support local and regional economic development.

EINRIP emphasises the need for improved quality, sustainability and governance in road design and construction through a number of special features:

- Improved project planning including Final Engineering Designs (FED) approved for all projects
- Improved procurement processes and management arrangements
- Strengthened construction supervision and quality control processes
- Independent technical and financial audits
- A long-term program of monitoring and evaluation based on periodic surveys extending 3 years beyond the end of construction to assess the effectiveness of these improvements by assessing road durability.

3. Indonesia Program Context

The project preparation and design phase was contracted to URS Australia P/L working in close partnership with the Directorate General of Highways (DGH or Bina Marga). As the Project Preparation Consultant (PPC) they were tasked to identify the content of EINRIP and prepare the civil works program to the standards required for Project Appraisal and Peer Review by AusAID, and as the basis for the subsequent Loan negotiation and Agreement with GoI.

Implementation of the $28 million grant component of EINRIP is managed under AidWorks Initiative ING406: EINRIP Preparation, Design and Technical Assistance. This initiative consists of 3 activities: EINRIP Preparation, EINRIP Technical Assistance and EINRIP Monitoring and Evaluation. The main activity of EINRIP Preparation is the PPC with a contract value of $19,768,818 implemented by URS from 15 March 2006 to 30 April 2009. This ICR will focus on evaluating the PPC implementation.

The other activities will continue to support the EINRIP Loan Program over the duration of the loan period, currently expiring 1 June 2011.

4. Objectives

The objective of the ICR mission is to assess the implementation of EINRIP Preparation, Design and Technical Assistance activities to date, principally but not exclusively under the PPC contract. The findings of the ICR are intended to serve both evaluative and program development purposes, to inform decision making processes and provide guidance for further programming in the road infrastructure sector.

The outcomes of the PPC design activities - in terms of their potential contribution to improve the finished quality of road construction - will not become apparent for several years after completion of the works. Therefore some aspects of PPC work may only be fully evaluated over the longer term, drawing on the data from the separate Monitoring and Evaluation (M&E) component surveys. The ICR will review the scope and design of the longer-term M&E program and make recommendations for the next phase of funding.

The ICR is also expected to undertake a broader analysis of the impact upon DGH of the capacity building aspects of EINRIP, and comment on some broader program planning and management questions set out in Section 5 below.

5. Scope of ICR Mission

The ICR will assess and rate the PPC's performance against the evaluation criterion of relevance, efficiency, effectiveness, impact (or potential impact), sustainability, monitoring and evaluation, gender equality and analysis and learning. The ratings will be based on the standard AusAID six-point scale, as outlined in the ICR template (see **Attachment A**). Standard evaluation questions to guide the evaluation team in forming these ratings are at **Attachment B**.

Although the evaluation team must be able to provide an assessment and rating of the evaluation criterion above, the team should give particular priority to examining the following areas:

1. Assess whether the activity has achieved the objectives established for the use of Project Preparation Consultants via the detailed preparation of the EINRIP program; has PPC contributed to the higher level and strategy objectives of the Indonesia aid program?
2. Assess whether the activity appropriately addresses sustainability so that the benefits of the activity will continue after funding has ceased, with due account of partner government systems, resources, stakeholder ownership and the phase-out strategy. This will include review of the Cost Effectiveness of the activity with reference to the cost of Final Engineering Design as a percentage of total EINRIP project costs.
3. Assess the likely short and longer-term impacts of the capacity building aspects built into the design of EINRIP. These features include:
   - The adoption of the FED approach for all projects and the use of the harmonised FIDIC construction contract. Whether these are likely to lead to improved bidding documents and specifications and strengthened construction supervision procedures to improve the quality of finished construction works?
   - Procurement Advisory Services (PAS) advice to DGH and to Procurement Committees on compliance with PMM requirements and GOI regulations.
   - Strengthened Governance, through the preparation and adoption of a detailed Anti Corruption Action Plan (ACAP) for EINRIP.
4. Review the Monitoring and Evaluation framework and implementation plan including:
   - Review the adopted M&E model and comment on its appropriateness to achieve EINRIP evaluation objectives
   - Review and comment on the reported and assembled baseline data together with data collection activities to date
   - Make recommendations for any improvement, as appropriate
   - Make recommendations on future funding of the M&E program and likely resources required to fund it through to completion in 2015, if considered appropriate.

The ICR is expected to comment on these matters and the likely value and sustainability of the PPC initiative in the context of the overall EINRIP loan program.

It is also intended that the evaluation will critically review and provide insights into some important broader **infrastructure program management questions** such as:

- How best to consolidate improvements in road design quality, contracting and construction processes during the loan implementation phase and beyond?

- What are the major policy issues and constraints to improving road transport infrastructure that have been identified during the course of EINRIP project preparation (including the issue of GOI funding and budget management for land acquisition)?

- How can AusAID address some of these issues to promote the existing and constructive policy dialogue with Ministry of Public Works, possibly via Indonesia Infrastructure Initiative (IndII) grant assistance?

- Is the grant funded Monitoring and Evaluation Component of EINRIP, undertaken on the basis of an extended "interrupted time series" survey methodology, going to meet AusAID evaluation information needs and provide a useful model for other longer term infrastructure activities?

- What are the implications of an intensive planning and design phase for "scaling up" of future road sector projects and the timelines for implementation?

6. Evaluation Process

The evaluation will take around 2 weeks and is provisionally planned for August/September 2009. The exact date and timeline of the ICR is to be confirmed based on consultation with GOI counterpart agencies and the evaluation plan (including methodology) that will be developed by the team leader.
In undertaking the ICR, the evaluation team will:
a. Conduct a desk study to assess relevant program documentation provided by AusAID and advise AusAID of any additional documents or information required prior to the in-country visit (3 days).
b. Develop an evaluation plan (including the methodology), and instruments and identification of key respondents and further documentation required. The plan will indicate the roles and responsibilities of each team member for data collection, analysis and reporting (2 days)
c. Participate in an AusAID briefing session in Jakarta at the start of the in-country field visit (half day)
d. Conduct meetings in Jakarta (5 days)
e. Prepare an Aide Memoire for submission on the final day of the field review which outlines the major findings and preliminary recommendations of the ICR and participate in an AusAID debriefing session in Jakarta at the completion of the field visit and present initial findings of the ICR to AusAID Jakarta and counterparts (1 day)
f. Submit a draft ICR (3 days of writing for the team leader) consider if other team members are required to contribute and how much time they need
h. Submit the final ICR (2 days of writing for the team leader).

7. Evaluation Team

The ICR Team will comprise an independent Team Leader with particular expertise in M&E methodology, an independent infrastructure expert with experience in roads

planning and design and an AusAID Infrastructure Adviser. DGH will nominate the Chief of Evaluations Section, Ms Ir. Siti Mardiyah as their team member. The team leader will be required to make contact with Ibu Siti during the planning phase of the study to ensure adequate communication and coordination within the team in preparation for the field mission.
The team leader will be responsible for writing up the ICR. The review will address specific questions around the technical aspects of the PPC process and assess what lessons and recommendations can be drawn that would have broader relevance to AusAID as a whole. The Team will be supported by staff from AusAID Canberra and Jakarta, as required.

8. Reporting requirements

The ICR Team shall provide AusAID with the following reports:

a. **Evaluation plan (including methodology)** – to be submitted at least one week prior to the in-country visit for stakeholder consideration;

b. **Presentation of an Aide Memoire and discussion -** on the initial findings of the ICR to be presented to AusAID and to key GOI stakeholders at the completion of the in-country mission;

c. **Draft ICR** – to be submitted to AusAID within two (2) weeks of completing field visit. AusAID may share the report with and seek feedback from partner government (DGH, MOF, BAPPENAS) and other key stakeholders, as appropriate;

d. **Final ICR** – to be submitted within two weeks of receipt of AusAID's comments on the draft ICR. The ICR Team shall determine whether any amendment to the draft is warranted. The report should be a brief and clear summary of the ICR outcomes and focus on a balanced analysis of issues faced by the activity.

Both the draft and final reports should be no more than 20 pages of text plus appendices. The Executive Summary should be no more than 2-3 pages.

9. Review requirements

The draft report will be subject to technical quality review, and review by peers. Revisions to the report may be required following these reviews, and will be negotiated as appropriate.

10. Time Table

The ICR desk study and mission will take approximately 2 weeks and it is to be completed by end of October 2009 at the latest.

11. List of Key Partner Agencies

Directorate-General of Highways, Ministry of Public Works
Ministry of Finance (Directorate of External funds)
BAPPENAS (Dir of Utilisation ofDevelopment Funding)
World Bank, Jakarta Office

ADB, Jakarta Office

12. List of Key Documents

a. PPC Activity Completion Report
b. PPC Final Technical Report
c. PPC Monthly Reports
d. PPC Design Specification Review
e. PPC Inception Report
f. EINRIP Loan Agreement
g. EINRIP Project Implementation Plan
h. EINRIP Project Management Manual
i. EINRIP Quality at Implementation Reports

APPENDIX B: LIST OF PERSONS MET

List of Persons Met

AusAID

Mr. Patrick Dennis, EINRIP Manager
Pak Sigit Pratignyo, Infrastructure Program Manager
Mr. Ben Power , Counsellor
Ibu Widya Narsi , EINRIP Program Manager
Mr. Andrew Dolimore, INDII Manager
Mr. Tim Vistarin, Former EINRIP Manager
Mr. Robin Taylor, Former Jakarta Post Counsellor

URS Sustainable Development Project Preparation Consultants (PPC)

Mr Peter Shea, URS Vice President & EINRIP Project Director
Pak Haryanto Citro Pranowo (Former Assistant EINRIP Team Leader)
Ms. June Mendoza, Team Leader Procurement Advisory Services (PAS)
Mr. David Foster, Former EINRIP TL
Mr. Phillip Jordan, INDII and EINRIP Road Safety Consultant

EINRIP Monitoring Unit (EMU)

Dr. Hugh Brown – Infrastructure Adviser
Mr Leslie Roberston – Engineering Adviser
Pak Fahmi Cahyono – Project Engineer
Pak. Teguh Wiyono – Environmental & Social Manager
Pak Zacky Wasaraka- Procurement Specailist
Ibu Arlini Dewi – Admin Assistant
Ibu Ida Dewatanti- Finance Manager
Mr. Peter Ruthen, former Environmental Specialist EINRIP
Mr. Graham Gleave M&E Conultant (by phone)

Directorate General of Highways

Pak. Taufik Widjoyono, Director of Planning
Pak. Danis H Sumadilaga, Director of Technical Affair
Ibu Rien Marlia, Head of EINRIP PMU
Ibu Nurmala Simanjuntak, Head of WRS Subdirectorate TA
Pak. Riel J Mantik, Project Manager Metroploitan Denpasar
Pak.Thomas Setiabudi Aden, Chief of Sub Directorate Eastern Region II
Pak Herman Darmansjah, MT (Director of Technical Development)
Pak Chairul Taher, Director of Road & Bridge of Eastern Indonesia

Ministry of Finance

Pak Maurin Sitorus, Director, Directorate Loans and Grants
Pak Chandra Emirullah, Deputy Director Directorate Loans and Grants

Ministry of National Development Planning (BAPPENAS)

Pak Bambang Prihartono, Director, Directorate of Transporattion

SMEC International

Mr. Tony McNamara Team Leader PMSC EINRIP
Mr. Abid Kazmi, Quality Assurance Specailist, PMSC

BCEOM

Mr. Tony Obdam , TL-Regional Supervision Consultant (by phone)

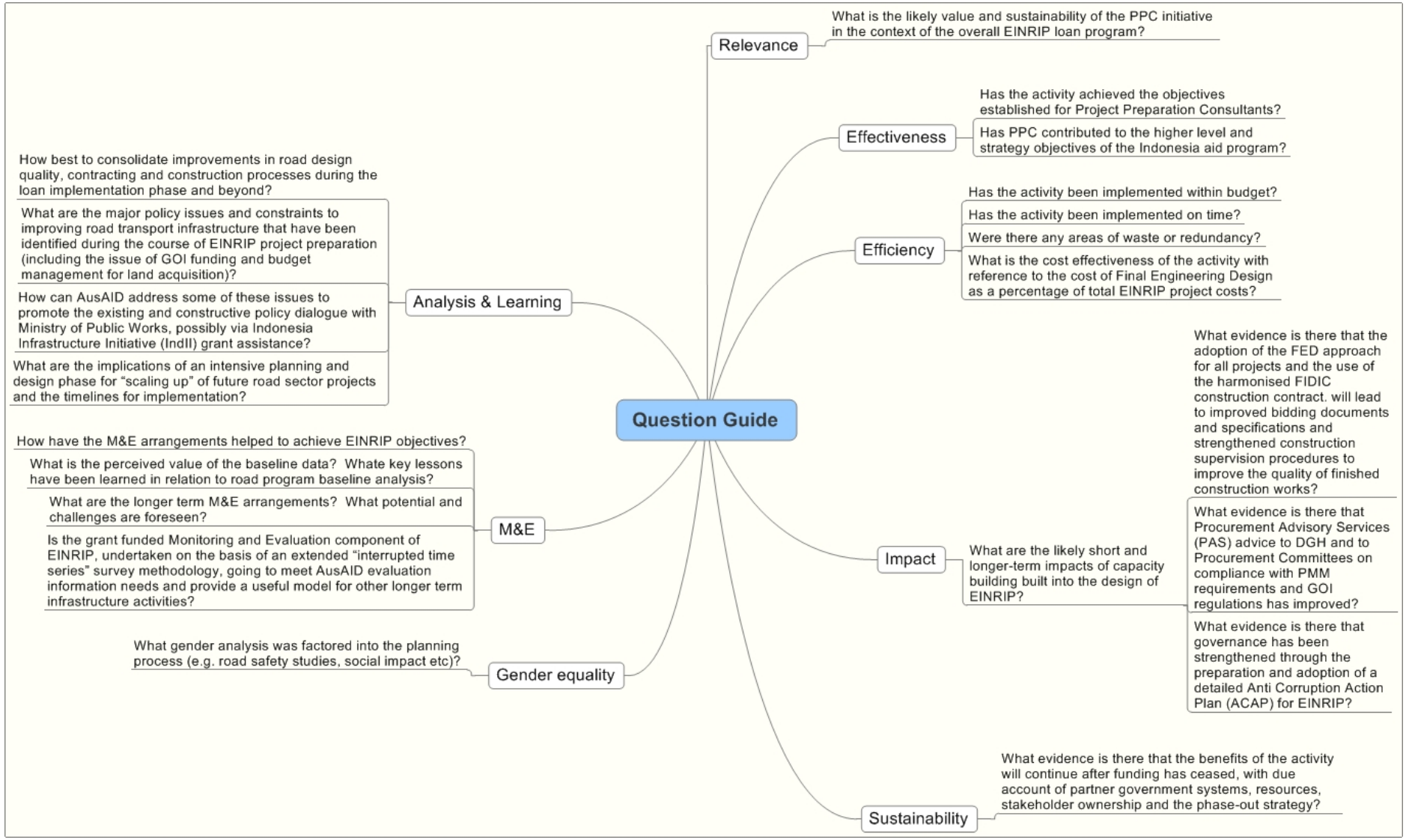
World Bank

Mr. Mustapha Benmaamar, Transport Sector Coordinator

Asian Development Bank

Mr. Rehan Kausar ,Infrastructure Specialist

APPENDIX C: QUESTION GUIDE


Question Guide
Relevance
What is the likely value and sustainability of the PPC initiative in the context of the overall EINRIP loan program?
Effectiveness
Has the activity achieved the objectives established for Project Preparation Consultants?
Has PPC contributed to the higher level and strategy objectives of the Indonesia aid program?
Efficiency
Has the activity been implemented within budget?
Has the activity been implemented on time?
Were there any areas of waste or redundancy?
What is the cost effectiveness of the activity with reference to the cost of Final Engineering Design as a percentage of total EINRIP project costs?
Impact
What are the likely short and longer-term impacts of capacity building built into the design of EINRIP?
What evidence is there that the adoption of the FED approach for all projects and the use of the harmonised FIDIC construction contract. will lead to improved bidding documents and specifications and strengthened construction supervision procedures to improve the quality of finished construction works?
What evidence is there that Procurement Advisory Services (PAS) advice to DGH and to Procurement Committees on compliance with PMM requirements and GOI regulations has improved?
What evidence is there that governance has been strengthened through the preparation and adoption of a detailed Anti Corruption Action Plan (ACAP) for EINRIP?
Sustainability
What evidence is there that the benefits of the activity will continue after funding has ceased, with due account of partner government systems, resources, stakeholder ownership and the phase-out strategy?
Gender equality
What gender analysis was factored into the planning process (e.g. road safety studies, social impact etc)?
M&E
How have the M&E arrangements helped to achieve EINRIP objectives?
What is the perceived value of the baseline data? Whate key lessons have been learned in relation to road program baseline analysis?
What are the longer term M&E arrangements? What potential and challenges are foreseen?
Is the grant funded Monitoring and Evaluation component of EINRIP, undertaken on the basis of an extended "interrupted time series" survey methodology, going to meet AusAID evaluation information needs and provide a useful model for other longer term infrastructure activities?
Analysis & Learning
How best to consolidate improvements in road design quality, contracting and construction processes during the loan implementation phase and beyond?
What are the major policy issues and constraints to improving road transport infrastructure that have been identified during the course of EINRIP project preparation (including the issue of GOI funding and budget management for land acquisition)?
How can AusAID address some of these issues to promote the existing and constructive policy dialogue with Ministry of Public Works, possibly via Indonesia Infrastructure Initiative (IndII) grant assistance?
What are the implications of an intensive planning and design phase for "scaling up" of future road sector projects and the timelines for implementation?

APPENDIX D: AIDE MEMOIRE

Aide Memoire: ICR for EINRIP PPC

An independent completion review (ICR) team interviewed 44 key informants (6 female) in relation to the performance of the Project Preparation Consultant (PPC) project which was established to assist the initiation of the Eastern Indonesia Road Improvement Project (EINRIP). The PPC was evaluated (September 1 – 7, 2009) against standard criteria outlined below.

Findings

- **Relevance:** the emphasis on designing and building quality roads was found to be consistent with the strategy of both the Australian Agency for International Development (AusAID) and the Directorate General of Highways (DGH). Of concern to some stakeholders was the cost and time implications of the extensive and detailed surveys and final engineering design (FED). A moderated form of FED that appreciates issues of affordability and political economy may be more relevant in the future
- **Effectiveness:** the PPC achieved the primary objective of preparing FEDs for the length of road required to absorb the loan. Early forecasts of the length of road to be improved were unrealistic and key deliverables were late. Minor design issues identified at site for the first two road packages under implementation have potential to erode confidence in the quality of design preparation. The adopted 'corridor approach' did not result in a strong corridor focus resulting in a scattered program of road improvement that is less likely to address connectivity issues. There was no explicit or formal capacity building of DGH staff.
- **Efficiency:** implementation ran behind schedule for much of the project, but there was a dramatic increase in productivity towards the end of the contract. Pressures on efficiency included the large quantity of candidate roads screened, a change in carriage-way width regulation, and unmet expectations about local private sector engineering design capacity.
- **Impact:** DGH stakeholders appreciated PPC support with the enhancement of key documents such as the Project Management Manual (PMM) and Design Specification. It is too early to assess the impact of the adopted FED approach at this time. This is the subject of detailed monitoring work in coming years. A particular constraint facing DGH is the limited local government budget for land acquisitions which are necessary to accommodate wider road reserves and more extensive drainage works required by FED .
- **Sustainability:** the sustainability of improved road design will be a matter for study beyond the life of the Project. However, more sustainable roads are an expected outcome of designing for longer pavement life, improving road drainage and using measured vehicle axle loadings in designs. Investment in building the technical capacity of local private sector staff which should provide some continuing benefit. The PPC facilitated integration of DGH processes for environmental and social planning within the technical design process. This reform is likely to contribute to more sustainable outcomes. The adopted FED approach is unlikely to have contributed to any sustainable change in practice within DGH at this time owing to the pragmatic reality of budget limitations.
- **Gender:** explicit gender analysis and gender equality strategy preparation was not carried out in accord with policy guidance. It is noted that the ongoing M&E work explicitly seeks male and female perspectives in relation to socioeconomic aspects of road improvements. The absence of a deliberate gender analysis resulted in a missed opportunity to develop project partners' capacity to understand and promote gender equality.
- **M&E:** The PPC was not required to establish any formal M&E arrangements to assess progress, quality or the achievement of defined outcomes. AusAID did not install any independent oversight mechanisms (e.g. a mid-term review) beyond the function of the EMU. A discrete M&E contract has been established to assess the *ex poste* impact of the FED compared with control roads. This will yield valuable information about the design life and merit of greater front-end

investment in road design. Notwithstanding the absence of any formal M&E arrangements, all parties report a range of tacit M&E processes, including monthly meetings, reports and informal communication.

- **Analysis & learning:** The broad approach adopted drew heavily on lessons learned by the World Bank and Asian Development Bank. The emphasis on adopting FED was in direct response to the observed rapid deterioration of roads funded by other donors that had used typical Simplified Engineering Designs. Areas where lessons appear not to have been applied relate to a failure to adopt advanced procurement action for implementation consultants, and advice by the World Bank in relation to the time taken for project preparation with loans of this kind. The fragmentation of the 'corridor approach' may also be indicative of an absence of any system to capture trends and lessons, e.g. an activity level M&E plan.

Lessons

- **Management arrangements:** parallel lines of accountability to AusAID and DGH complicated matters for the PPC and reduced the perception of control by DGH. The absence of formally agreed and time-bound outputs made tighter monitoring and management of PPC performance difficult. External review mechanisms, e.g. a mid term review, may have enabled issues to be identified earlier.
- **Project scope:** broad selection criteria and a large length of roads screened contributed to delays, added cost and reduced PPC efficiency, and did not contribute to a strong 'corridor approach'.
- **Capacity building:** the shortfall in formal or structured capacity building of the private sector and DGH staff is likely to inhibit the uptake of FED and, critically, the viability of supervisory arrangements (FIDIC) for implementation.
- **Standards:** the adoption of FED beyond EINRIP will be inhibited by budget limitations for land acquisition and detailed surveys. The local private sector will require time to respond to new demands for FED technical capacity. A change in the political economy is necessary for priorities to shift from length of road laid to longer design life (depth).
- **Design sustainability:** the extent to which high quality design is translated into sustainable road will be critically influenced by the quality of EINRIP's contract supervision arrangements.

Recommendations

- Emergent site design and supervision issues with the first two contracts demands a formal review of the supervisory arrangements; especially in relation to capacity of the SSE (FIDIC Engineers Representative).
- The external road quality M&E arrangements should be extended over a 5 – 10 year period to ensure that the proposition that investment in front-end design leads to enduring road quality can be fully tested. Terms of reference should be adjusted to explicitly require documentation and socialisation processes to support this agenda.
- Funds should be proactively sought for implementing the surplus road packages (i.e. completed designs that will not be implemented within the loan) to ensure value is obtained from the investment in designs.
- Road safety audits should be implemented for all road packages.
- FIDIC training should be provided for local engineers, contractors and local officials.
- Pre-tender briefing including site inspection should be held to enable site and design issues to be identified and resolved as far as possible prior to tender.

APPENDIX E: REVIEW OF M&E CONTRACT

Background

AusAID was conscious that the high-profile nature of the Eastern Indonesia National Road Improvement Project (EINRIP) demanded a comprehensive and rigorous approach to verifying performance. Consequently, AusAID commitment to funding detailed M&E work for three years beyond the completion of works.

AusAID engaged the services of an independent monitoring and evaluation (M&E) specialist, Graham Gleave, to:

- Identify a set of key performance indicators (KPIs)
- Prepare a detailed evaluation methodology
- Identify an appropriate survey strategy to collect the identified data
- Recruit and manage data collection and evaluation sub-contractors

The purpose of the M&E contract was broadly to test the hypothesis that investment in final engineering design (FED) pays dividends in terms of sustainability and whole-of-life cost. It was noted that this information was needed for internal accountability purposes within AusAID; but more importantly to influence design practices in Indonesia and inform future road infrastructure programming. It was also intended that the research would benefit other donor programs[27].

The approach invested in the comprehensive measurement of a narrow set of indicators that could be captured regularly (annually) and were expected to be sensitive to changes fostered by the project.

Primary data included:

- Traffic volume
- Road condition
- Traffic speed
- Social impact

Secondary data included:

- Road maintenance
- Accidents/road safety

The approach prescribed quasi-experimental methods to ascertain the counterfactual, using both *with/without* and *before/after* measures (i.e. a 'double difference' approach). The plan is to study all project roads (i.e. a census) against selected control roads.

Data collection was carried out by sub-contracted agents, and was initially managed by the PPC, and more recently the PMSC[28].

Industry-established methods were used for data collection (roughness, traffic counters, speed etc.).

The current contract is due to expire in 2010, with provision for extension or re-tendering. Data collection processes have been designed to continue at least until 2015. There is no expectation of meaningful data before 2012 or 2013.

Review

This review of the M&E arrangements for EINRIP considers:

- M&E design and methodology
- Meaningfulness
- Cross-cutting issues
- Partner systems and capacity building

[27] Initially it was believe that the World Bank's sister project (Western Indonesia National Road Improvement Project, WINRIP). Delays and little harmonised management of the two projects have eroded this potential.
[28] HK Logistics is also subcontracted to manage the contracting and payroll for the survey teams.

- Cost effectiveness

M&E design and methodology

The scope of the M&E arrangements was intentionally narrow with a focus on the long term impact of AusAID's investment in high quality road design. There was a particular emphasis on impact in relation to economic development. There was no intention for the M&E arrangements to extend to monitoring implementation performance, quality, risks or capacity development outcomes. In this regard, the focus on a narrow set of measures that could be regularly (annually) tracked with reasonable reliability is appropriate. The broader issues listed above would normally be the domain of regular project M&E arrangements[29].

Arguably the least reliable measures will be those derived from secondary data: road maintenance records and accident/safety records. The social surveys are, by their nature, exposed to reliability issues, but this has been managed to date by retaining the same data collection teams to ensure consistency of approach and interpretation—something which may become increasingly problematic in the future.

In general, the M&E methods and design are consistent with international good practice in the industry.

Meaningfulness

Meaningfulness concerns the value or merit of the information and knowledge that the M&E processes will accrue. From a technical standpoint, the M&E plan should deliver meaningful data in relation to trends in road condition, road usage and various social and economic changes. The 'double difference' design should yield accurate data to reveal any difference between EINRIP roads and other comparable Indonesian roads. This will provide a valuable basis for debate and policy advocacy in relation to design and construction methods employed in the Indonesian road industry *vis-a-vis* EINRIP.

One concern from a technical perspective is whether sufficient time has been allocated to the work for meaningful changes to be detected. Some interviewees were of the view that a high quality road of the kind designed by the EINRIP PPC was unlikely to reflect any meaningful changes in road condition in the three years provided for *ex-poste* study. Consensus was that at least five years, and preferably ten years would yield more valuable findings.

Concerns about meaningfulness derive less from technical or methodological issues than from the wider socio-political issues. Put simply, the capture and reporting of accurate and reliable data alone is unlikely to have significant influence without an effective 'socialisation strategy'. If, as stated, there is an intention to use the findings of the M&E work for policy advocacy purposes within GoI and among other relevant donor partners, then an explicit strategy should be put in place to ensure value-for-money from what is otherwise an expensive M&E exercise. Without a deliberate strategy it is difficult to believe that findings will have any influence, especially when the conclusions will be drawn long after the completion of EINRIP.

AusAID's commitment to an *ex-poste* evaluation is laudable and a rare occurrence in international development. But for this commitment to endure and for valuable results to be accrued and utilised, it is important that support within the agency be sustained until the end of the study. Premature termination of the study will squander the investment made to date. This issue is a potential risk since the study will extend long beyond the life of the EINRIP project, and may exceed the 'institutional memory' within AusAID.

Cross-cutting issues

[29] Formal M&E arrangements addressing the wider performance issues during the PPC contract were conspicuously absent. There was no overall M&E Framework, no updating of the Risk Management matrix, no external oversight of the EMU or project in general.

Gender equality is an important development principle promoted by AusAID. The social surveys carried out by the contractor seek some gender-disaggregated perspectives in relation to changes in circumstances broadly related to EINRIP. This work represents the only substantive gender analysis across the whole project. Hence, there would be merit in AusAID engaging a gender specialist to review the social survey and associated processes to ascertain if more could be done to derive meaningful information about gender equality issues.

There are no measures in place for assessing the long-term impact of the various environmental and social safeguards implemented by the project (e.g. HIV and AIDS prevention strategies). The designs prepared by the PPC prescribed a range of environmental and social safeguards. It would be appropriate to evaluate the efficacy of these safeguards through time.

Partner systems & capacity building

An important development principle promoted by AusAID is the use of partner systems and the building of in-country capacity. The M&E arrangements can be criticised from this perspective since they have been entirely commissioned by AusAID and implemented by an international contractor. There was no attempt to formally engage DGH evaluation systems. However, it is important to assert the original requirement for independent/objective study of the impact of the EINRIP approach. In a sense, the requirements were more in line with independent research than with regular performance M&E.

Notwithstanding, there is evidence that the contractor routinely made contact with key individuals within DGH and sought their engagement[30]. He stated: "*Bina Marga were quite interested in the initial planning and design of the M&E arrangements; but staff turnover has meant less engagement through time. But generally speaking there is still good cooperation".* The ongoing stakeholder engagement should be formally encouraged as part of the wider socialisation process, and with a view to using the study findings for policy advocacy purposes.

Cost-effectiveness

The methods used are more intensive and more expensive than typical project M&E arrangements; if only because they extend beyond the life of the project. In this sense the work is more closely aligned with research than conventional project M&E.

The recommendation that the study be extended for between 5 – 10 years is likely to have additional cost implications. However, there may be a range of modifications[31] that AusAID could consider to reduce the cost without compromising data integrity. There may also be opportunities for cost-sharing with other interested donors:

- **Frequency:** under the current plan annual studies will be carried out. This may be more frequent than necessary, especially in the early years when road quality is high. Consider reducing the frequency of data collection processes; for example biennially.
- **Intensity:** the current plan is to study all 24 road packages constructed under EINRIP. It may be possible to only study a representative sample without compromising data integrity.
- **Cost-sharing:** explore the interest of the WB or other donors in gathering empirical evidence about the cost:benefit of investing in high-quality design.

Recommendations

Consider extending the life of the study for at least 5 years (preferably up to 10 years) to enable a thorough investigation of the long-term outcomes of high quality road design and associated maintenance and usage factors. This may involve simply extending the current contract arrangements (perhaps with independent

[30] The consultant providing briefings for DGH staff during each M&E mission.
[31] The modifications proposed here should be discussed with the M&E consultant originally responsible for the research design to identify if there are any grounded reasons why the suggestions are likely to be problematic.

oversight/peer review), or if performance is deemed unsatisfactory or consultant availability is problematic, the contract could be retendered at a nominated point.

Develop and resource a clear 'socialisation strategy' and oblige the M&E contractor to implement this strategy as part of the ToR to ensure value-for-money from the investment in the long-term study. This would involve a clear articulation of the 'audience' for the findings and an explicit strategy to communicate with each class of audience.

Canberra-based advisors should explicitly identify other road projects funded by AusAID where design quality is a point of contention and proactively engage the interest of their respective stakeholders in the findings of the EINRIP study.

Formally engage WB representatives in the EINRIP study with particular reference to WINRIP. Seek co-funding from the WB to extend the study for the recommended 5 – 10 years.

Proactively communicate the rationale for the long-term study within AusAID to ensure that commitment to the development of longterm knowledge is preserved in the face of staff turnover and changing priorities. This communication/continuity function is likely to be best performed by Canberra-based Advisors.

Engage a gender specialist to review the social survey and associated processes to ascertain if more could be done to derive meaningful information about gender equality issues.

Investigate measures to test the efficacy of the social and environmental safeguards that were used as part of the designs.

Consider reducing the frequency and intensity of data collection processes as a cost-saving measure.

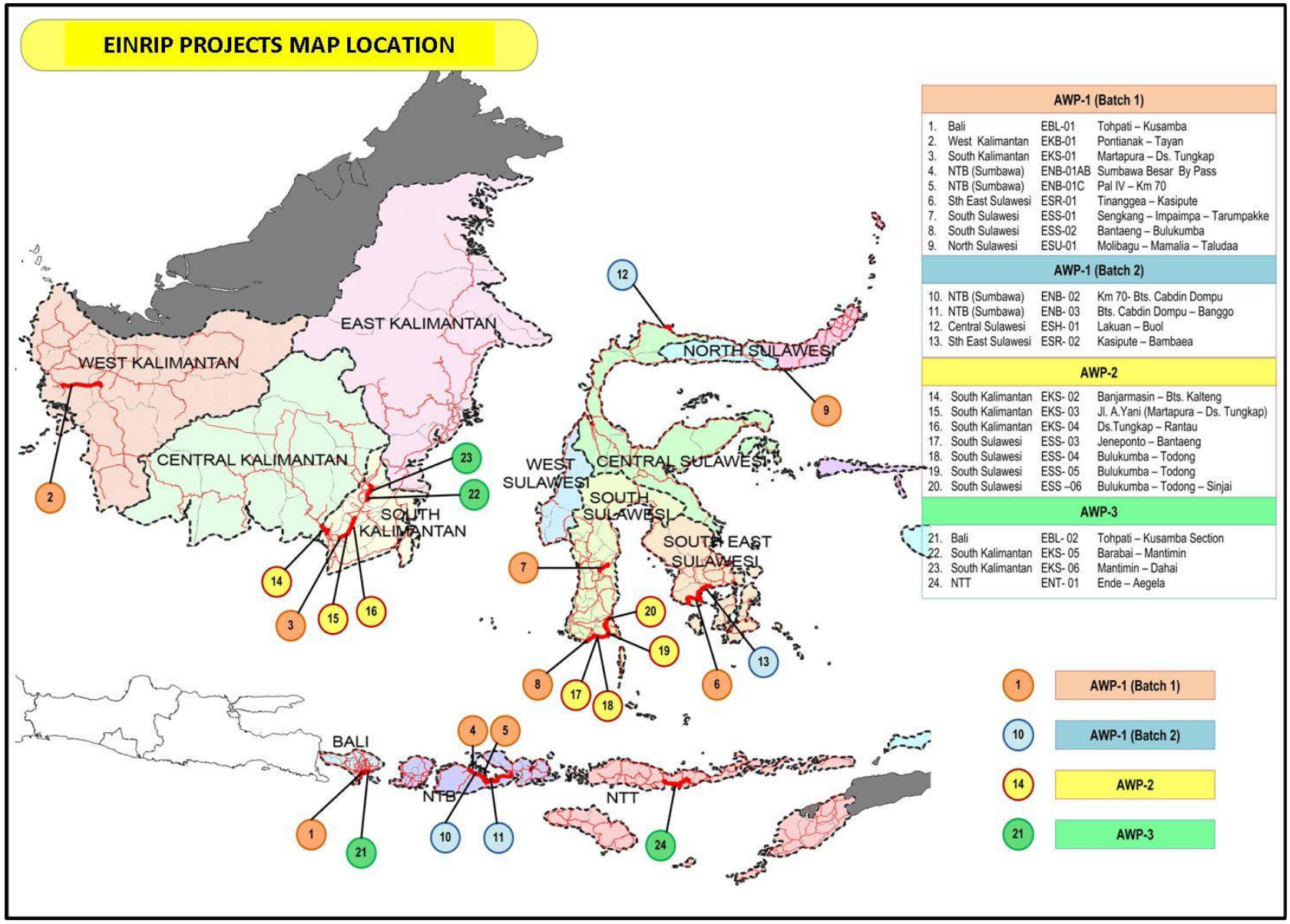
Consider exploring cost-sharing arrangements with other donors interested in studying the benefits of high quality road design.

Conclusion

The design of the M&E arrangements demonstrates good practice and should yield valid and reliable data to the extent that this is possible. The arrangements are expensive relative to typical project M&E. This expensive is defensible from AusAID's perspective if:

- There is a genuine need/demand within the agency for empirical evidence of the effect of FED on road sustainability
- There is a global absence of comparable studies that could yield this data from secondary sources (i.e. this is original work)
- There is a commitment to socialising the findings of the study to ensure they are used within AusAID, GoI and among other donors
- The commitment to funding the study through to a natural end can be sustained

APPENDIX F: MAP


EINRIP PROJECTS MAP LOCATION
EAST KALIMANTAN
WEST KALIMANTAN
CENTRAL KALIMANTAN
SOUTH KALIMANTAN
NORTH SULAWESI
WEST SULAWESI
CENTRAL SULAWESI
SOUTH SULAWESI
SOUTH EAST SULAWESI
BALI
NTB
NTT
AWP-1 (Batch 1)
1. Bali EBL-01 Tohpati – Kusamba
2. West Kalimantan EKB-01 Pontianak – Tayan
3. South Kalimantan EKS-01 Martapura – Ds. Tungkap
4. NTB (Sumbawa) ENB-01AB Sumbawa Besar By Pass
5. NTB (Sumbawa) ENB-01C Pal IV – Km 70
6. Sth East Sulawesi ESR-01 Tinanggea – Kasipute
7. South Sulawesi ESS-01 Sengkang – Impaimpa – Tarumpakke
8. South Sulawesi ESS-02 Bantaeng – Bulukumba
9. North Sulawesi ESU-01 Molibagu – Mamalia – Taludaa
AWP-1 (Batch 2)
10. NTB (Sumbawa) ENB- 02 Km 70- Bts. Cabdin Dompu
11. NTB (Sumbawa) ENB- 03 Bts. Cabdin Dompu – Banggo
12. Central Sulawesi ESH- 01 Lakuan – Buol
13. Sth East Sulawesi ESR- 02 Kasipute – Bambaea
AWP-2
14. South Kalimantan EKS- 02 Banjarmasin – Bts. Kalteng
15. South Kalimantan EKS- 03 Jl. A.Yani (Martapura – Ds. Tungkap)
16. South Kalimantan EKS- 04 Ds.Tungkap – Rantau
17. South Sulawesi ESS- 03 Jeneponto – Bantaeng
18. South Sulawesi ESS- 04 Bulukumba – Todong
19. South Sulawesi ESS- 05 Bulukumba – Todong
20. South Sulawesi ESS –06 Bulukumba – Todong – Sinjai
AWP-3
21. Bali EBL- 02 Tohpati – Kusamba Section
22. South Kalimantan EKS- 05 Barabai – Mantimin
23. South Kalimantan EKS- 06 Mantimin – Dahai
24. NTT ENT- 01 Ende – Aegela
1 AWP-1 (Batch 1)
10 AWP-1 (Batch 2)
14 AWP-2
21 AWP-3

APPENDIX G: COST ESTIMATES AT FEASIBILITY STUDY

EINRIP PROJECT COST ESTIMATES

No.	Package	Duration (month)	Length (km)	EIRR (%)	Feasibility Study Estimate (excl. VAT) A$ million	Feasibility Study Estimate (excl. VAT) Rp (milyar)	Engineer's Estimate Rp (milyar)	Owner's Estimate (Rp (milyar)	Contract Price (Rp (milyar)
1	EBL-01,Tophati-Kusamba (Prov. Bali)	24	10.80	44.50	15.26	114.45	191.87	191.95	164.38
2	ENB-01AB, Sumbawa Besar By Pass. (Prov. NTB)	18	11.50	31.80	12.30	92.25	71.95	81.72	60.89
3	ESR-01. Tinangea-Kasipute (Prov. Sulawesi Tenggara)	24	33.80	44.40	8.58	64.33	123.34	138.84	105.21
4	EKB-01, Pontianak-Tayan (Prov. Kalimantan Barat)	24	31.50	13.20	7.50	56.25	164.67	164.67	124.85
5	ESS-02, Bantaeng-Bulukumba (Prov. Sulawesi Selatan)	24	26.90	33.30	10.77	80.78	146.51	146.47	113.27
6	EKS-01. Martapura-Ds. Tungkap (Prov. Kalimantan Selatan)	24	18.90	100.70	7.36	55.20	116.12	104.04	
7	ESU-01. Molibagu-Taludaa (Prov. Sulawesi Utara) - Bridges	18	0.48	Bridges	4.43	33.22	43.82	46.39	
8	ESS-01, Sengkang-Impa Impa (Prov. Sulawesi Selatan)	24	24.20	85.60	8.11	60.83	107.83	114.36	
9	EBL-02, Tohpati-Kusamba (Prov. Bali)	24	8.20	24.40	13.59	101.93	175.59	178.38	
10	ENB-01C, Pal IV-KM 70 (Prov. NTB)	24	31.80	31.80	8.40	63.00	138.24	141.12	

11	ENB-02, KM 70 - Bts. Cabdin Dompu (Prov. NTB)	18	14.20	24.40	10.95	82.14	71.77	73.44	
12	ENB-03, Cabdin Dompu-Banggo (Prov. NTB)	18	23.70	23.10	7.61	57.10	101.63	101.88	
13	ESR-02, Bambea-Sp. Kasipute (Prov. Sulawesi Tenggara)	18	23.90	32.10	5.63	42.23	100.93	118.31	
14	ESH-01/01b, Lakuan=Buol (Prov. Sulawesi Tengah)	18	16.20	19.50	10.66	79.95	116.77	123.07	
15	EKS-02, Banjarmasin-Bts.Kalteng (Prov.Kalimantan Selatan)	24	12.80	99.60	4.93	36.98	99.05	104.61	
16	ESS-03, Jeneponto-Bantaeng (Prov. Sulawesi Selatan)	24	25.80	43.20	9.64	72.27	128.61	119.34	
17	ESS-04, Bulukumba-Tondong (Prov. Sulawesi Selatan)	24	20.70	37.30	7.74	58.08	113.29		
18	ESS-05, Bulukumba-Tondong (Prov. Sulawesi Selatan)	18	20.00	44.20	7.36	55.23	110.51		
19	ESS-06, Bulukumba-Tondong-Sinjai (Prov. Sulawesi Selatan)	24	24.50	42.20	9.86	73.93	138.73		
20	ENT-01, Ende-Aegela (Prov. NTT)	18	15.60	28.10	13.97	104.78	154.36		
21	EKS-03, Martapura-Ds. Tungkap (Prov. Kalimantan Selatan)	24	23.10	96.00	9.17	68.78	143.71		
22	EKS-04, Ds. Tungkap-Rantau (Prov. Kalimantan Selatan)	24	27.00	84.40	11.46	85.95	139.08		
23	EKS-05, Barabai-Mantimin (Prov. Kalimantan Selatan)	18	24.10	86.60	10.07	75.53	116.56		
24	EKS-06, Mantimin-Dahai (Prov. Kalimantan Selatan)	24	23.70	37.60	7.72	57.90	135.08		
	Grand Total AWP		**493.38**		**223.07**	**1,673.09**	**2,950.02**		