



Technical Assistance Consultant's Report

Project Number: 51115-001
February 2021

Democratic Republic of Timor-Leste: Baucau to Viqueque Highway Project

Operational Plan for National Industry

Prepared by
SMEC International Pty Ltd
Sydney, Australia

For Ministry of Planning and Finance, Development Partnership Management Unit; and
Directorate of Roads, Bridges and Flood Control

This consultant's report does not necessarily reflect the views of ADB or the Government concerned, and ADB and the Government cannot be held liable for its contents. (For project preparatory technical assistance: All the views expressed herein may not be incorporated into the proposed project's design.)

Asian Development Bank



MINISTRY OF PUBLIC WORKS



TA-9502 TIM: BAUCAU TO VIQUEQUE HIGHWAY PROJECT

10 OPERATIONAL PLAN FOR NATIONAL INDUSTRY

Reference No. TIM 51115 - 001
Prepared for Asian Development Bank

Important Notice

This report is provided pursuant to a Consultancy Agreement between SMEC Australia Pty Limited (“SMEC”) and Asian Development Bank, under which SMEC undertook to perform a specific and limited task for Asian Development Bank. This report is strictly limited to the matters stated in it and subject to the various assumptions, qualifications and limitations in it and does not apply by implication to other matters. SMEC makes no representation that the scope, assumptions, qualifications and exclusions set out in this report will be suitable or sufficient for other purposes nor that the content of the report covers all matters which you may regard as material for your purposes.

This report must be read as a whole. Any subsequent report must be read in conjunction with this report. The report supersedes all previous draft or interim reports, whether written or presented orally, before the date of this report. This report has not and will not be updated for events or transactions occurring after the date of the report or any other matters which might have a material effect on its contents or which come to light after the date of the report. SMEC is not obliged to inform you of any such event, transaction or matter nor to update the report for anything that occurs, or of which SMEC becomes aware, after the date of this report.

Unless expressly agreed otherwise in writing, SMEC does not accept a duty of care or any other legal responsibility whatsoever in relation to this report, or any related enquiries, advice or other work, nor does SMEC make any representation in connection with this report, to any person other than Asian Development Bank. Any other person who receives a draft or a copy of this report (or any part of it) or discusses it (or any part of it) or any related matter with SMEC, does so on the basis that he or she acknowledges and accepts that he or she may not rely on this report nor on any related information or advice given by SMEC for any purpose whatsoever.

Preface

This document is prepared to guide the development of the road network in Timor Leste and achieve the key road sector objectives included in the Strategic Development Plan 2011-2030. It is the outcome of a technical assistance (TA) funded by the ADB to support the Government of Timor Leste in this effort. The TA was designed to develop the following:

- Output 1a: Integrated national road network strategy and plan.** Support will be provided to DRBFC to draft a comprehensive national road network strategy and plan that will encapsulate the following: (i) 20-year capital investments and operation and maintenance (O&M) strategy, (ii) organizational reform plan to implement the strategy; (iii) defined levels of service (LOS) expected from the national road network that will include communication mechanism to the public for feedback and performance measurement; (iv) asset management plan linked to an appropriate asset management system to support network prioritization and intervention thresholds; (v) an operational manual and training for planning, budgeting, procurement, supervision, and monitoring and evaluation, and (vi) operational plan targeting development of national road contracting and consulting industry, human resources and capacity development, and financing instruments to support private sector participation. Suitable policy instruments would be considered to integrate the draft strategy and plan in the wider context of Transport Sector Master Plan currently under review and endorsement by the Government.
- Output 1b: Concept design for a sustainable road maintenance program.** This output will build on road maintenance initiatives by donors including ADB, JICA, European Union and the Roads for Development program financed by the Government of Australia to deliver (i) a draft policy paper to introduce Road Maintenance Fund; and (ii) a design for donor-supported 10-year road maintenance and operation program. An initial concept proposal for the program has been shared with the government and development partners, and broad support has been received (see attachment 1). An extensive stakeholders' consultations and high-level policy dialogue will need to take place to draft the policy paper and the program suitable for donors' technical and financial support.

This document provides an executive summary of the output of this work. It presents the key recommendations for the sustainable development and maintenance of the road network and it will hopefully serve as a reference and guideline in formulating the Government of Timor Leste's future road sector strategies and plans. The list of reports summarized here in order are:

OUTPUT	DELIVERABLE
1	Road Subsector Assessment
2	Road Investment and Maintenance Strategy
3	Maintenance Program 2020-2030
4	Road Maintenance Fund Policy Paper
5	Organizational Reform Plan
6	DRBFC Training Program
7	DRBFC Manuals for Operations
8	Road Asset Management Plan
9	Levels of Service
10	Operational Plan for National Industry

The TA's conclusions and recommendations are based on the professional judgement and views of the TA consultants derived through a series of seminars, workshops, and consultations with various government agencies and offices, under the overall guidance received from the Ministry of Public Works, the Ministry of Finance and the Asian Development Bank.

The team is grateful for the support and information provided to it by the various units within the DRBFC and other government ministries.

Contents

1	INTRODUCTION	1
1.1	Council of Administration for the Infrastructure Fund (CAFI)	2
1.2	Major Projects Secretariat (MPS).....	2
1.3	National Development Agency (ADN).....	2
1.4	National Procurement Commission (NPC).....	2
1.5	Objectives of this review.....	2
2	PRIVATE SECTOR STATUS	4
2.1	Current procurement process.....	4
2.2	Design of projects	5
2.3	Upgrading and rehabilitation contracts.....	5
2.4	Maintenance contracts	7
2.5	Supervision of construction	8
2.6	Summary	9
3	PRIVATE SECTOR PROFILE	10
3.1	Consultants	10
3.2	Contractors	11
4	PRIVATE SECTOR STRENGTHENING.....	15
4.1	Company licensing, registration and classification	15
4.2	DRBFC managed project design and competitive bidding is needed	15
4.3	Standardized bidding documents	16
4.4	Advertising and local content regulations	17
4.5	Size of Contracts.....	17
4.6	Credit Guarantee.....	18
4.7	Standardize equipment supply costs	19
4.8	Training for contractors	20
4.9	Language of bidding documents.....	20
4.10	Contracting modalities.....	21
4.11	Supervision and payments.....	22
	APPENDIX A CONSULTANT SURVEY RESPONSE	24
	APPENDIX B CONTRACTOR CLASSIFICATION SECTORS	25
	APPENDIX C CONTRACTOR SURVEY RESPONSES.....	26

Tables

Table 1	Contract details for national and municipal road upgrading.....	6
Table 2	Contract details for rural road rehabilitation	7
Table 3	Contract details for rural road rehabilitation	8
Table 4	Consultant classification categories.....	10
Table 5	Classification of registered civil engineering companies – 2014	10
Table 6	Contractor classification categories.....	11
Table 7	Contractor equipment requirements by class	12
Table 8	Number of Contractors by municipality and classification	12
Table 9	Classification of the responding contractors	13
Table 10	Contractor access to equipment.....	13
Table 11	Contractor compliance with financial requirements and qualifications	13
Table 12	Options for facilitating access for domestic contractors	14

1 Introduction

1. This paper looks at how road works in Timor Leste are being designed, specified, contracted, implemented and monitored. It distinguishes between road upgrading and rehabilitation on the one hand, and road maintenance on the other. A distinction is also made between the national and municipal road networks that are largely managed directly by DRBFC together with a number of donor projects, and the rural road network that receives strong support from the R4D programme.

2. The international donors entered Timor Leste in 2000 under the United Nations Administration, and the first ADB project was designed to begin the process of restoring Timor Leste after the damage of the war¹. One of the early steps was to create the basis for a contracting capacity in Timor Leste by involving domestic contractors as joint venture partners and subcontractors. The ADB design documents for the Emergency Works grant notes the following:

“Civil works will be awarded on the basis of international shopping and international competitive bidding in accordance with the ADB’s Guidelines on Procurement. International contractors are encouraged to include joint-venture arrangements with local contractors and will utilize labor intensive methodologies.”

“Five short-term contracts for road repair will be tendered to engage local people in road works on an urgent basis. Concurrently, five longer-term international contractors will be selected, one to be based in each regional center: Baucau, Dili, Maliana, Oecusse and Same. Each contractor will ... (vi) develop local road repair capacity by mentoring the selected local subcontractors; and (vii) involve communities in the unskilled road repair activities.”²

3. We are now 20 years on from that beginning in 2000. Local contractors are still having trouble entering international contractor teams. No local preference is allowed for Timor Leste because, with the Petroleum Fund income, per capita GDP is above the local preference cut off point of \$1,000 per capita. We have now obtained a long history of local contractor involvement in road rehabilitation but traditional limitations such as collateral and bond guarantees remain a problem. DRBFC is keen to assist and allow local contractors to obtain a share of the international contracting. The ADB is of the same mind as are the staff of the National Procurement Commission (NPC). But everyone seems bound by the rules of the game that are fixed in place.

4. As we will explain below, an issue for the emergency works was the difficulty and time required to prepare proper design and bidding documents both for rehabilitation and for maintenance works. This led to the preference for directed contracts that were quick and easy to contract and allowed the contractor wide leeway for self-design of the project and only required subsequent ex-post signoff by the government of the works undertaken. The justification for those contracts were very loose and were normally based on a verbal agreement by a ‘big’ man.

5. In early 2011, the Government established the Infrastructure Fund (IF)³. It functions as a financial instrument for the Government to target investment in major public projects essential to boost development and create a well-functioning economy following the outline provisions of the Strategic Development Plan (SDP). The IF provides funds for projects greater than \$1 million. The fund budget is multi-year and helps to overcome the limits on contracting imposed by the normal annual budgets.

6. In 2011, the government also created four important contract management organizations: i) the Council of Administration for the Infrastructure Fund (CAFI); ii) the Major Projects Secretariat (MPS); ii) the National Development agency (ADN); and iii) the National Procurement Commission (NPC). Those organizations were established to bring more structure and accountability to the public works process that used funding from the Infrastructure Fund (IF), and to reduce the political influence on the awarding of public works contracts.

¹ Emergency Infrastructure Rehabilitation Project, Report on a project grant from the Trust Fund for East Timor to the United Nations Transitional Administration for East Timor, April 2000. Asian Development Bank.

² Ibid, page 14

³ The Infrastructure Fund was established by law in 2011 by Decree Law No. 8/2011 which is a subsidiary to Law No.1/2011.

Those organizations have significantly changed the contracting and project delivery process for the better – particularly for IF and international donor funded projects as outlined below.

1.1 Council of Administration for the Infrastructure Fund (CAFI)

7. Recognizing the risks involved in the implementation of major projects from technical, fiscal and procurement points of view, the Government decided to establish the Council of Administration for the Infrastructure Fund (CAFI) as the executive body with authority over the decision-making process for all matters related to IF projects and to provide policy guidance to the executing agencies or line ministries. The CAFI is headed by the Minister of Planning and Strategic Investments⁴, with the Minister of Public Works, the Minister of Finance and the Minister of Transport and Communications forming the remaining members. The composition of the membership and chairperson of CAFI tend to change as the new government structures are formed.

8. The IF is providing support to a total of 22 programs. With regards to the road sector, of particular importance are the programs related to roads, bridges, and maintenance & rehabilitation, as well as the Tasi Mane program that is building (road) infrastructure along the south coast. Simultaneously with the formation of CAFI, the Government established three entities to help manage the implementation of the programs under the Infrastructure Fund, namely the National Development Agency (ADN), the Major Projects Secretariat (MPS) and the National Procurement Commission (NPC).

1.2 Major Projects Secretariat (MPS)

9. The Major Project Secretariat (MPS) was created by Decree Law 8/2011 and provides technical and administrative support to CAFI. The MPS is responsible for assessing the projects proposed for financing under the Infrastructure Fund from a financial and technical perspective and for determining the expected returns of proposed projects. All infrastructure projects greater than \$1 million are required to pass through the MPS for review and approval. The MPS also provides secretary duties in CAFI meetings and reports to the Council of Ministers on a monthly basis.

1.3 National Development Agency (ADN)

10. The National Development Agency (ADN), was established by Decree Law 11/2011 with responsibility under the Prime Minister but supervised by the Minister for Planning and Strategic Investment (MPSI). Under the changes of the current government, while the structure remains, no minister has yet been appointed to MPSI and it is unclear to whom the ADN now reports. ADN is responsible for the detailed review of capital development projects, based on the analysis of their respective cost and social benefits to determine if they are in the public interest. ADN is also responsible for monitoring project implementation and verifying certification of quality for project acceptance, both at national and local level. This includes the checking that signoff has been obtained for completed work volumes and work quality as part of the approval process for the payment of invoices.

1.4 National Procurement Commission (NPC)

11. The National Procurement Commission (NPC) was established under Decree Law 14/2011 to handle all public procurement above a value of \$1 million. NPC's mandate is to provide procurement services to the line ministries and other public entities in major infrastructure projects and provide transparency under the State procurement process for the bidders and the public. After review and approval to proceed, any capital procurement is meant to be handled by the NPC which is also under the Ministry of Planning and Strategic Investment.

1.5 Objectives of this review

12. Once a project is deemed suitable for the IF, the MPW submits the project to the Council for Administration of the Infrastructure Fund (CAFI) for final approval. However there still remain windows of opportunity in the system that can be used by the private sector to gain advantage and limit risks. One of

⁴ As of 2019 a Minister has not yet been appointed to the Ministry of Planning and Strategic Investment.

the most important windows is to use the strong political membership of CAFI to sway approvals to selected and prior approved contractors. Part of this paper is to examine how that system works and indicate how it can be improved to benefit all public works implementation in Timor Leste.

13. The objective of this paper is therefore to see:

- (a) what capacity exists in the consulting industry of Timor Leste to prepare designs, carry out supervision of construction and to monitor and assess the performance of contractors;
- (b) what capacity exists in Timor Leste for the contracting community in Timor Leste to take on larger contracts;
- (c) what impediments are still in place that limit that capability;
- (d) what options exist to overcome those limitations;
- (e) what practical steps donors/government can take to support the further development of the local private sector to participate in the delivery of public works contracts.

2 Private Sector Status

14. This chapter looks at the current capacity of the private sector in Timor Leste to provide consulting and contracting services for the road sector. It looks at the specific areas of road and bridge design, road and bridge rehabilitation and upgrading works, road maintenance works and supervision of road works.

2.1 Current procurement process

15. The Projects Department of DRBFC prepares the project documents, including design review and bills of quantities. The designs are generally done by international design engineers in cases of donor funded projects and by the sponsoring contractor for domestic funded projects. The DRBFC Five-Year Plan (FYP) for 2019-2023 includes planned budgets for contracting out design works but to date that has not happened. DRBFC plans to initiate contracted design starting in 2020. Procurement of government-funded contracts is initiated by the Analysis and Evaluation Department of DRBFC. This department reviews the project documents (designs and bills of quantities) approved by the Projects Department and ensures that all documents are in order and that cost estimates are in line with unit rates.

16. In the case of contracts funded by the Infrastructure Fund (most road upgrading and rehabilitation contracts), the project documents are then sent to the Ministry of Public Works (MPW) and forwarded to the National Development Agency (ADN) that carries out a detailed technical and financial review. If ADN identifies any issues, these have to be corrected by DRBFC and resubmitted. Once approved, ADN sends the project documents back to MPW, which subsequently should send them on to the National Procurement Commission (NPC). NPC prepares the bidding and contract documents, and carries out the tendering and the bid evaluation. The bid evaluation focuses on qualification with requirements regarding financial capacity and previous experience, with the contract awarded to the qualified bidder with the lowest bid price (bid prices are compared for all qualified bidders). Once the bid evaluation is completed, NPC informs MPW of the results. As a result of this approach, it is NPC that sets the qualification and other bidding requirements. This is generally done following standard procedure, without taking into account the specific characteristics of the road construction industry in Timor Leste. This approach unfortunately is not always being followed with many contracts in the past initiated by and subsequently directly awarded to contractors.

17. Where contracts are funded from the General State Budget (OGE) and are smaller than \$1 million, the Analysis and Evaluation Department of DRBFC sends the project documents directly to the Corporate Services of the Ministry of Public Works, which prepares the bidding documents and carries out the tendering. This generally involves only the maintenance contracts, but may also include rural road rehabilitation contracts. The bid evaluation is then carried out by MPW.

18. The bidding and contract documents for government-funded projects are generally based on ADB standard bidding documents for small works. The contract is signed by the Minister of Public Works and identifies the Director of DRBFC as the Project Manager. Due to the difficulties for contractors to obtain securities, advance payments are often excluded from the contract (it makes little sense to provide cash deposits to a bank to obtain an advance payment of an equivalent amount). To facilitate the participation of domestic contractors, performance securities are also often omitted from the contract, and replaced by an increase in the percentage of retention payments from the normal 5% to 12%. Although this provides a solution to the difficulty for contractors to obtain performance securities, it reduces the cash flow for the contractor, potentially jeopardizing implementation. It also reduces the amount of the performance guarantee during the initial stages of the project, when payment amounts and related retentions are still small.

19. R4D apply different contracting modalities according to the size of the contract and the availability of local contractors. Larger contracts are tendered publicly, while for smaller contracts a request for proposals is applied. In exceptional cases where there are no other bidders or there is an urgent need to issue a contract, single source contracting may be applied. R4D use their own standard bidding documents, which are largely based on the ADB standard bidding documents, but with many specific clauses. Bidders are furthermore required to participate in the pre-bid meeting and subsequent site visit and pre-bid training.

20. The bidding is single-stage, two envelope whereby the technical bids are first evaluated, and the financial bids are opened only for the bidders with the top two ranking technical bids. This means that the focus is very much on the technical capacity of the bidder rather than on the financial bid price. The technical evaluation looks at previous contracts, financial resources, staff experience, proposed work programme, and access to materials and equipment (for haulage, compaction, excavation and cement mixing).

21. Bid securities are not required and instead a bid securing declaration signed by the bidder is considered sufficient. However, the R4D contracts do include an advance payment of 20% against provision of an advance payment security issued by a bank. A performance security is also required equal to 5% of the contract price. In addition, 10% of each payment is retained. These requirements increase the costs for the contractors, which will be reflected in the bid prices.

2.2 Design of projects

22. The road development budget includes funding for design, supervision and monitoring. However, at this time, there is no design being carried out by DRBFC. Road design is done by the contractors who either prepare the designs in-house or use consultants to prepare the designs. At this time, the capacity within the DRBFC is focused on design review. When the contractors – using a design/build approach – present a road design, the DRBFC design team carry out a cursory review of the design and if there is nothing that is clearly in violation of the design standards or geometric design manual, then the design is approved and passed by the DRBFC. Those designs then become the basis for costing and ultimately, contracting. In future, as the process becomes more regular, those designs will need to be done by consultants working directly for the DRBFC. DRBFC will be directly involved during the design period to meet with the design team on a regular basis to verify that all the issues that the DRBFC wants included in the design are included. The resulting designs will then be the basis for contracting.

23. Prior to 2014 the DRBFC did not have any capacity to carry out even a cursory design review. That capacity has developed in the DRBFC Projects Department only during the last four years. But it is still inadequate, and it will need significant upgrading and significant increase in capacity to become a functioning design unit.

24. The design unit will also need to become more experienced in developing the design requirements. This will mean preparing the design brief for the design consultants and then monitoring the process of design. That design brief will also need to specify the list of surveys and data that will be needed for the design as well as the format for that data to allow the data collected to be used in the design review on the equipment available in the DRBFC design office.

25. Further, an up to date comprehensive road design manual for use by consultants does not currently exist. The manuals included in the current design briefs are the Road Geometric Design Standards (2010 – unofficial) and the Bridge Design Standards & Manual (2010 – unofficial). Other circulars have been prepared by donors – mainly JICA – but they remain preliminary and unofficial. A pavement design manual was prepared under JICA funding in 2008 but it is not being used and is not accepted as the official pavement design manual. Testing and surveys also need to be specified. Overall a consolidated road design manual with sample drawings and look up tables is needed.

2.3 Upgrading and rehabilitation contracts

2.3.1 National and municipal roads

26. The review of 49 national and municipal road upgrading contracts (17 in donor-funded projects and 32 in government-funded projects) showed an average cost of \$826,000/km. There is not so much difference in the average costs per kilometre between donor-funded and government-funded contracts. A larger difference exists in the size of the contracts. Donor-funded contracts average 29 km in length with an average contract amount of \$24 million. There are a couple of smaller donor-funded contracts involving municipal roads where costs per kilometre are lower (\$400,000/km) and the contract size is limited by the road length.

27. Most government-funded contracts, on the other hand, average only 5 km in length with an average contract amount of less than \$4 million. All government funded contracts fall below the \$5 million threshold above which they have to be approved by the Court of Audit. The government-funded upgrading contract

for Aituto-Same road is the only exception, with a road length of 24 km and a contract amount of \$26 million, making it comparable to the donor-funded contracts. A summary of comparison of donor and domestic contracts is provided in Table 1.

28. All donor-funded contracts are awarded to international contractors, while all government-funded contracts are awarded to domestic contractors. This is considered a significant point that raises the question why domestic contractors are unable to compete for the donor-funded contracts. Even for the smaller donor-funded municipal road contracts of \$4-5 million that are of a similar size and nature as the government-funded contracts, the contracts have been awarded to international contractors. It appears that this is strongly linked to the requirements regarding previous construction experience of a similar nature, where the limited experience and small contract sizes of domestic contractors mean that they are not considered qualified under existing bidding requirements (see survey results below).

29. In the government-funded contracts, the question may be raised why the contracts are not larger in size and are divided into smaller sections of 4-6 km with contract amounts of \$3-5 million. Although some larger sections are reportedly awarded to a consortium of domestic contractors, the actual contracts are signed with individual contractors for the same short sections and small contract amounts. The reason for this appears to be the fact that all contracts exceeding \$5 million have to pass through the Court of Audit where the procurement and contract awards process is reviewed. The 24 km and \$26 million Aituto-Same contract did pass through the Court of Audit and has proven that a larger contract can be carried out by domestic contractors (in this case a joint venture of two domestic contractors).

Table 1 Contract details for national and municipal road upgrading

Contracts		Cost (\$/km)			Length (km)			Contract amount		
Funding	#	Average	Max	Min	Average	Max	Min	Average	Max	Min
Government	32	\$831,147	\$1,666,667	\$323,983	5.8	24.0	2.1	\$4,602,040	\$25,953,679	\$2,011,783
Donors	17	\$815,123	\$1,168,481	\$363,920	25.7	58.9	4.4	\$24,237,019	\$59,287,454	\$4,294,258
Total	49	\$825,588	\$1,666,667	\$323,983	13.5	58.9	2.1	\$11,414,176	\$59,287,454	\$2,011,783

Source: DRBFC contract data

2.3.2 Rural roads

30. A review of 72 rural road rehabilitation contracts (under R4D) between 2013 and 2016 showed an average cost of \$145,000/km, increasing from \$120,000/km in 2013 to \$180,000/km in 2016 (there were no rehabilitation contracts in either 2017 or 2018 due to a lack of budget). The contracts tend to be small in size, averaging 2.6 km and varying between 1.0 and 10.0 km. Total contract amounts average \$320,000, but have increased over time from \$250,000 in 2013 to approximately \$440,000 in 2016 in line with the average costs per kilometre. The contract amounts are strongly determined by the lengths of the roads to be rehabilitated. In 2016, the rehabilitation contracts also included routine maintenance of recently completed roads, leading to longer road lengths per contract and reduced costs per kilometre (Table 2 below only indicates the rehabilitation component of these contracts).

31. The rural road rehabilitation contracts are awarded to local labour-based contractors, many of which have been trained under the R4D and ERA projects. With the experience gained in previous years, these contractors have been awarded increasingly larger contracts, involving more complex works. This change is especially visible in the minimum contract amounts, that have increased from \$25,000 in 2013 to over \$200,000 in later years. Maximum contract amounts have similarly increased from under \$400,000 in 2013 to nearly \$1,000,000 in 2016. With the increasing contract amounts, competition from domestic equipment-based contractors is expected. However, the bidding of these contracts is restricted to contractors that have been trained under the R4D and ERA pre-bidding training programmes, and which are based in the municipality in which the road is located. This excludes the equipment-based contractors.

Table 2 Contract details for rural road rehabilitation

Contracts		Cost (\$/km)			Length (km)			Contract amount		
Year	#	Average	Max	Min	Average	Max	Min	Average	Max	Min
2016	18	\$180,923	\$351,213	\$108,502	2.6	7.0	1.0	\$438,202	\$947,600	\$203,592
2015	10	\$181,560	\$292,076	\$21,762	2.8	9.5	0.9	\$332,680	\$718,618	\$106,634
2014	2	\$127,312	\$186,916	\$67,709	4.9	7.5	2.4	\$474,651	\$510,049	\$439,253
2013	42	\$120,904	\$214,746	\$24,928	2.4	4.9	1.0	\$254,831	\$376,562	\$24,928
Total	72	\$144,511	\$351,213	\$21,762	2.6	9.5	0.9	\$317,593	\$947,600	\$24,928

Source: R4D contract data

2.4 Maintenance contracts

2.4.1 National and municipal roads

32. For national and municipal road maintenance, contracts tend to be \$200,000-\$300,000 in size and are limited to basic routine maintenance. Only for road maintenance in Dili are larger contracts sometimes signed for up to \$1 million, including both routine and periodic maintenance. Despite these contracts being of a similar size as the rural road rehabilitation contracts, and many of these contracts involving similar works (vegetation control and gravel repairs to poor roads), the contracts tend to be awarded to equipment-based contractors with no involvement of labour-based contractors from the rural road sector. The contracts are volume-based, with the required volumes of maintenance determined during an initial survey of the road and entered into a Bill of Quantities. The contracts run for a number of months until the works have been completed.

2.4.2 Rural roads

33. For the rural roads, the maintenance contracts follow a different approach. For the first year, maintenance is included in the rehabilitation contracts, with approximately 6 months of rehabilitation works followed by 6 months of maintenance (covering the 6-month defects liability period). After that initial year, annual maintenance contracts are tendered and signed with labour-based contractors. These maintenance contracts generally include different roads within the same area, resulting in larger contracts that are more interesting to contractors.

34. A total of 115 maintenance contracts carried out under R4D from 2013-2017 were reviewed. In 2014 and 2015 the maintenance only included routine maintenance due to the fact that roads were recently completed and because of limited funding (\$1.1 million maintenance funding in 2014 and \$1.8 million in 2015). In 2016 the rural road maintenance budget was increased to \$5.6 million and maintenance contracts included both routine and some periodic maintenance, often combined into a single contract (involving different roads). In 2017 the total budget reverted to only \$1 million, allowing only for routine maintenance. Maintenance funding for rural roads under the R4D program has varied widely and one of the complaints expressed by R4D staff is the uncertainty of annual funding. Longer term planning is difficult if the funding available changes dramatically.

35. The average maintenance cost per kilometre varies strongly depending on whether periodic maintenance is included or not. The average cost for periodic maintenance is \$30,000/km, ranging from \$4,000/km to \$145,000/km (these extremes are both from 2013 and are understood to include larger spot rehabilitation rather than full length periodic maintenance). Routine maintenance contracts average \$5,700/km/year, ranging from \$2,400/km/year to \$18,500/km/year. The high rates include spot repairs in addition to general routine maintenance. The size of the contracts has increased over the years as more roads were brought to maintainable condition. Especially the maximum length has increased as more maintainable rural roads became available in an area and could be combined in one contract. In 2016, when the total rural road maintenance budget reached \$5.6 million and was therefore less of a limiting factor, maintenance contracts could amount to \$700,000. As such the size of the maintenance contracts is very similar to that of the rural road rehabilitation contracts. A summary of the rural road contracts is provided in Table 3.

Table 3 Contract details for rural road rehabilitation

Contracts		Cost (\$/km)			Length (km)			Contract amount		
Year	#	Average	Max	Min	Average	Max	Min	Average	Max	Min
2017 (R)	20	\$2,391	\$3,598	\$2,025	19.5	35.4	6.0	\$45,818	\$78,755	\$15,999
2016 (R+P)	32	\$18,966	\$65,872	\$5,096	10.6	24.5	3.0	\$171,971	\$700,656	\$41,288
2015 (R)	25	\$6,164	\$33,526	\$2,739	15.0	27.7	5.2	\$73,249	\$174,334	\$24,549
2014 (R)	12	\$5,040	\$8,419	\$2,366	19.2	29.7	6.0	\$93,934	\$181,554	\$36,056
2013 (P)	26	\$27,295	\$144,933	\$3,676	5.6	14.6	1.0	\$105,484	\$231,893	\$26,269
Total	115	\$13,730	\$144,933	\$2,025	12.9	35.4	1.0	\$105,395	\$700,656	\$15,999

Source: R4D contract data, (R) routine; (P) periodic

36. The focus of the maintenance contracts is always on routine maintenance, ensuring that all maintainable roads receive routine maintenance throughout the year. When funding is limited, the contracts are limited to routine maintenance only (as in 2014 and 2017), while in years with more budget the contracts are extended to also include periodic maintenance and rehabilitation. Contractors are also required to hire most of their unskilled labour from the suco in which the road is located, and to ensure at least 30% participation of women.

37. The contractors are furthermore required to set-up and subcontract so-called community maintenance groups (CMG). The CMGs are generally formed within suco boundaries by local people from along the roads to be maintained, who are organized and trained by the contractors to carry out general routine maintenance. This is mainly aimed at off-carriageway preventative maintenance (cutting vegetation, cleaning drains and culverts, removing small landslides, etc.), but may also include basic surface and shoulder repairs (e.g. filling potholes in gravel roads). The contractor is responsible for managing the CMGs and for carrying out complementary activities and more complicated surface repairs.

38. The maintenance group approach is common in other countries as well. This is an inexpensive approach to routine maintenance that ensures a full-time presence to maintain the road and prevent further deterioration, while also creating employment for local people. This approach can also apply to the municipal and national road networks to support a more full-time maintenance presence to ensure a more timely and preventative response to maintenance needs.

2.5 Supervision of construction

39. The development budget for donor funded projects always includes provision for supervision of the works. Donor projects follow the FIDIC contract format which allocates a very specific role to the supervision engineer. However, it should be noted that the laws of Timor Leste in some cases invalidate the provision of some FIDIC contract provisions and where there is a variance between the local law and the FIDIC clauses in the contract, the local laws take precedence.

40. Under the current DRBFC budget, each project is also allocated a supervision budget (this has been introduced recently). Currently, that supervision responsibility rests with the Construction Department of DRBFC but due to lack of budget for fuel and per diem, no supervision is carried out by the DRBFC staff. As a result, the planning and monitoring agency ADN also carries out project supervision. In both cases, for DRBFC and ADN, direct project supervision is not their job. For DRBFC the job is to contract with the supervision engineer and to monitor the work of that engineer. Equally, the ADN is responsible for ensuring that the works have been done and that the supervision engineer has certified the works completion correctly. That is an audit role and only requires very limited field review. At this time, ADN has taken a strong role to carry out what in most cases would be a supervision engineer's job, inspecting the works for each invoice received from the contractor. In the new proposed organization structure developed by DRBFC, the Construction Department will be transformed into an Inspection Department which will have the responsibility for both managing the supervision function and for inspecting to ensure quality control.

41. In future, all projects over a certain minimum size should also have an independent supervision engineer. The FIDIC conditions are quite clear. The engineer sits on the third point of a triangle that has as its other points the owner (DRBFC) and the contractor. For disputes or clarifications needed in the terms of

the contract or variations to the contract, the engineer's decision is normally accepted. If the disagreement is strong and one or the other side will not accept the engineer's recommendation, it can be taken to arbitration but in most cases the arbitration result follows the engineer's recommendation.

42. Further, the supervision engineer authorizes payment of the interim invoices. Once approved, normally the invoice should be paid. Subsequent review over the following payment milestone period may find discrepancies in some part of the claim such as an incorrect estimate of the percent of the project that is complete. That amendment is then just carried forward to the following billing period and the payment is amended accordingly.

43. Currently this process is not being followed in Timor Leste, even for donor funded projects. ADN has taken the role of supervision engineer for domestic funded national and municipal road projects and it reserves the right to carry out detailed site review on all projects before payment is authorized. This unreasonably delays the payment process to the detriment of the contractors and the project. When the delay in payment becomes excessive the contractors stop work. This is not good for the contractor, the client or the country.

44. For donor projects that are contracted under FIDIC conditions, this added layer of supervision is not needed since qualified supervision engineers are contracted for all donor projects. For those projects, normally spot checking/audit is carried out by the owner or owner's representative and that would be a normal role for ADN to play.

45. Domestic engineering capacity is still weak. The local consulting community has only operated as part of international joint ventures in a limited way. It is not clear whether the current engineering companies have the capacity to operate independently as a full supervision team with testing, verification and quality assurance techniques. The requirement for all significant locally funded projects to hire independent supervision engineers may stimulate the local engineering firms to strengthen capacity and add staff. Supervision is a multi-faceted activity that requires expertise in a number of fields. As the amount and scope of supervision work expands over the coming 5 years, consolidation and expansion of the engineering companies operating in Timor Leste can be expected.

46. For supervision the DRBFC has issued a "White Book" which lists the specifications against which the contracts are prepared. It is comprehensive and covers many of the items falling under the supervision requirements. However, topics such as materials standards, pavement design standards, slope stability or drainage and contract management are incomplete or unofficial and new manuals and updated specifications will be needed for those areas.

47. Further, supervision also requires considerable testing of materials used for construction from samples taken from the work face. This includes gravel and aggregate, concrete, reinforcing steel, bearings for bridges etc. Currently all testing is done through the central testing laboratory operated by the Ministry of Public Works. As the workload for supervision expands, other laboratories may open in Timor Leste. This can be a welcome development particularly if the testing facilities are closer to the contract location.

2.6 Summary

48. The above picture is similar to what would be found in other countries. The opportunities for private sector contribution to the road development in Timor Leste cover the full range of activities from project design, supervision, construction and monitoring. The capacity to carry out those functions is outlined below.

3 Private Sector Profile

49. The Decree Law 27/2010 lays out the requirements for registration of engineering consultants and contractors working in Timor Leste on contracts up to \$7,500,000. Procurement is carried out according to the procurement law 10/2005 and its amendments⁵. According to the decree law, all contractors are required to register and certify their status through the Ministry of Public Works. This appears to apply to any contractor bidding for international or domestic financed work up to \$7,500,000 in value. Above that value the decree law says that this decree does not apply.

50. However, while the decree law is in place and lays out specific requirements as summarized below, it is not applied and there is no evidence of the registration information being used for qualification of bidders or pre-qualification to develop a shortlist of bidders. This is an obligation of the Ministry of Public Works and in the absence of any direction to apply the regulation to potential bidders through the National Procurement Commission (NPC), qualification of bidders is not used. This may be a result of the allocation of contracts to “veterans” who are often just a post box and as soon as the contract is issued, the contract is subcontracted to a more qualified company. While this practice is excused on the basis of “national reconciliation” following the war, it is now 20 years since the war finished and it is time to terminate this practice and apply the laws as they were intended and as outlined below.

3.1 Consultants

51. Consulting companies working for the Ministry of Public Works need to be registered and classified according to the following requirements as defined in the *Support Guide for Companies in the Construction Sector* issued by MPW in 2013 under Ministerial Decree 13/2013 linked to the Decree Law 27/2010 regarding the *Certification and Registration of Civil Works and Technical Consulting Companies*.

Table 4 Consultant classification categories

CLASS	SOCIAL CAPITAL	ENGINEERS (EXPERIENCE)	TECHNICIANS (EXPERIENCE)	COMPANY EXPERIENCE	WORKS VALUE
A	≥\$150,000	3 (≥5 years)	3 (≥7 years)	≥5 years	≤\$7,500,000
B1	≥\$100,000	2 (≥5 years)	2 (≥5 years)	≥3 years	≤\$1,500,000
B2	≥\$50,000	1 (≥5 years)	2 (≥3 years)		≤\$250,000

Source: *Guia de Apoio para as Empresas do Sector da Construção, MPW 2013*

52. The consulting industry only started to form officially in 2005. At this time there are 13 civil engineering consultants registered with the Ministry of Public Works working from Dili on contract related activity. The list of registered consultants by classification is shown in Table 5 below.

Table 5 Classification of registered civil engineering companies – 2014

NO.	COMPANY NAME	CLASS	ADDRESS	RESPONSIBLE CONTACT
1	Dalan Engenharia Consultant	A	Plaza Level 2 Unit 215 Comoro	Paulo A. F. D. De Aquiar
2	Enarco Consultant Unip.Lda	A	Luis Dos reis Dili	Thomas Eugenio Correia
3	Maidalo I Consultan	A	Surik Mas Dili	Dra Yustina Nago
4	Salu Corporation Unip. Lda	A	Becora Becusse Kraik, Dili	Edward Eliem Salu
5	Metan-Mutin Unip. Lda	B1	Lahane Oriental, Dili	Gil Alfonso Magno Dili
6	Railor Consultan Unip Lda	B1	Vera Cruz Dili	Casmiro Pinto
7	Alfa Sun Consultan	B2	Culu-Hun, Cristo Rei Dili	Jeky Edison
8	Cremona Lda	B2	Delta Comoro, Dili	Samuel Moniz Da Cruz
9	Geo Art Unip. Lda	B2	Aimutin Comoro Dili	Domingos Do Santos
10	Gio Consultant Eng. Unip. Lda	B2	Bispo de Madeira Audian	Felisbela M. R. M Soares
11	JKC Consultant Eng.Unip.Lda	B2	Dit Bairro Baya Comoro	Antonio Ximenes
12	Lemorai La Foti	B2	Nain Feto Dame Perunas	Arlindo Sarmento
13	Naijuma Unip. Lda	B2	Vila Verdi, Dili	Cipriano J. G. Da Costa

⁵ Decree_Law_10_2005_EN, Decree_Law_01_2010_EN, Decree_Law_02_2010_EN, Decree_Law_03_2010_EN, Decree_Law_11_2005_EN, Decree_Law_12_2005_EN, Decree_Law_14_2006_EN, Decree_Law_14_2010_EN, Decree_Law_24_2008_EN, DL 2010-27 Legal Regime Governing the Certification and REGISTRATION.pdf

53. As part of this technical assistance, a survey was carried out with consulting companies through the Association of Consulting Engineers and the MPW registration. The response was provided by the consultants on a voluntary basis, with a total of 6 consulting companies submitting their filled in questionnaire. The summary of the survey responses is included in Appendix A. This shows the degree to which consulting companies have participated in design and supervision. In some cases, the consultants also provided a marketing brief that highlighted their experience. The key takeaways from the above information are as follows:

- (a) Generally, the consultant companies are small to medium in size. The largest has 20 staff and the smallest is a two-person proprietorship. The size of the companies is a comment on the size of the market. The largest, established 20 years ago in 1999, has reached a size of 20 staff. A comparable company starting in the same period in India during the massive expansion of the national road system in India has reached up to 2,000 staff; they are all generally in infrastructure, roads and bridges but also buildings.
- (b) The consultant companies all generally work in infrastructure (roads and bridges but also buildings). All claim experience in supervising construction projects which cover, buildings, roads and bridges and river protection works;
- (c) Some consultant companies claim design experience and from discussions with contractors, they typically use local design consultants to design the road works that are proposed to the DRBFC;
- (d) The consultant companies have a range of staff available and all companies claim to have worked on donor contracts;
- (e) There is a tendency for the consultant companies to stay with the same clients. Once a base of trust has been created the companies tend to go back to the same clients. This is also a comment on the lack of competitive bidding for the work undertaken.

54. In summary, the selection of design and supervision consultants is small, with only 4 consultant companies classified as class A or B2 and allowed to undertake contracts of more than \$250,000. Projects executed by the consulting companies tend to be either for contractors (where the registration and classification is not an issue) or as sub-consultants to other international firms. A base of talent exists but it is thin and because of a lack of steady work, the design capacity has not expanded significantly. However, consulting is a very demand-driven activity and if the demand expands through DRBFC's need for improved road designs, other international firms from Indonesia or other countries will be interested and will be available to help develop and expand the local capacity.

3.2 Contractors

55. The Ministry of Public Works classifies contractors according to a set of minimum requirements defined in the *Support Guide for Companies in the Construction Sector* issued by MPW in 2013 under Ministerial Decree 13/2013 linked to the Decree Law 27/2010 regarding the *Certification and Registration of Civil Works and Technical Consulting Companies*. Depending on their classification, the contractors are allowed to carry out works of different values. The classification categories are indicated in Table 6.

Table 6 Contractor classification categories

CLASS	SOCIAL CAPITAL	ENGINEERS (EXPERIENCE)	TECHNICIANS (EXPERIENCE)	COMPANY EXPERIENCE	WORKS VALUE
A	≥\$150,000	3 (≥5 years)	3 (≥10 years)	≥5 years	≤\$7,500,000
B1	≥\$100,000	2 (≥5 years)	2 (≥7 years)	≥3 years	≤\$1,500,000
B2	≥\$50,000	1 (≥5 years)	2 (≥5 years)		≤\$750,000
C	≥\$10,000	1 (≥3 years)	1 (≥5 years)		≤\$250,000

Source: *Guia de Apoio para as Empresas do Sector da Construção, MPW 2013*

56. Apart from the requirements regarding social capital and staff/company experience, there are also requirements regarding the minimum numbers and types of equipment the contractors should have access to. These numbers and types of equipment depend on the type of works, which are categorized into 7 sectors (including 2. Roads) and 20 subsectors (including 2.1 Roads, 2.2 Bridges and 2.3 Flood Control Works). The complete list of sectors and subsectors can be found in Appendix B. For the road sector, the equipment requirements for the different contractor classes are listed below.

Table 7 Contractor equipment requirements by class

EQUIPMENT	CLASS A	CLASS B1	CLASS B2	CLASS C
Trucks	4	3	2	1
Concrete mixer ≥ 150 litres	4	3	2	1
Concrete vibrator	4	3	2	1
Stamper	2	2	1	1
Welder	1	1	-	-
Water pump > 3 inches	1	1	-	-
Water tanker	2	1	-	-
Roller	2	1	1	1
Loader	2	1	1	1
Excavator	2	1	1	1
Grader	1	1	-	-

Source: Guia de Apoio para as Empresas do Sector da Construção, MPW 2013

57. Based on the above classification the numbers of registered and classified contractors by municipality are indicated in Table 8. There are 705 registered contractors, of which only 154 are classified as class A and B1 contractors that may carry out works exceeding \$750,000. A third of all contractors are based in Dili. In the case of the larger contractors, 84% of the class A contractors and 61% of the class B1 contractors are based in Dili. These are the contractors capable of carrying out rehabilitation and upgrading works in national and municipal roads. Some smaller routine maintenance contracts may be carried out by class B2 contractors.

Table 8 Number of Contractors by municipality and classification

MUNICIPALITY	A	B1	B2	C	TOTAL
Aileu	-	-	5	15	20
Ainaro	-	1	18	22	41
Baucau	2	5	17	29	53
Bobonaro	-	5	20	36	61
Covalima	1	5	9	8	23
Dili	52	56	50	74	232
Ermera	-	2	13	15	30
Lautem	-	4	13	15	32
Liquiça	1	3	12	20	36
Manatuto	-	3	11	29	43
Manufahi	2	2	9	32	45
Oecusse	1	2	15	18	35
Viqueque	3	4	15	31	53
Total	62	92	207	344	705

Source: MPW contractor registration

3.2.1 Contractor Survey

58. As part of the review of contracting companies, a survey was prepared and distributed to the contacting industry as part of this technical assistance. Two channels were used. One was via the Chamber of Commerce and Industry of Timor Leste (CCITL). The CCITL was established by the Government and the private sector in 2010 as a Non-Governmental Organization (NGO) based in Dili. It currently has a national president and four vice presidents and 13 municipal presidents. Contractors comprise a large portion of the membership of the CCI. The second channel was through the Ministry of Public Works (MPW) contractor registration system as noted above. A total of 15 completed questionnaires were submitted and tabulated. The full summary of the information obtained from the respondents is provided in Appendix C. The synopsis of the responses received is provided in the tables below.

3.2.2 Contractor Survey Response

59. The respondents include mainly class A and class B contractors, while also including a significant portion of unregistered contractors.

Table 9 Classification of the responding contractors

CONTRACTOR CLASS	A	B	C	NOT REGISTERED
Percentage of respondents	33%	27%	7%	33%

Source: Contractor questionnaire

60. While the registration system was established in 2011, there has been no case since, where it seems to have been used. Normally the classification of contractors is used to determine which contractor has the capacity to take on specific contracts. However, over the past seven years, the only government-funded road rehabilitation or upgrading contract using competitive procurement was for the expressway construction from Suai to Zumalai. All other contracts have been through direct appointment. The R4D road contracts are competitive but are limited as noted above to the labour-based contractors who have been trained by the R4D program.

Table 10 Contractor access to equipment

QUESTION	YES	NO	N/A
Do you rent equipment?	53%	47%	-
Is equipment available in Timor Leste	40%	60%	-
Is lack of equipment a disadvantage	40%	60%	-

Source: Contractor questionnaire

61. Concern has been expressed, anecdotally, that foreign contractors can overwhelm the local contractors by arriving with a full complement of equipment. Often this equipment has been used previously on projects in the country of origin of the contractor and due to the relatively small size of Timor Leste, the local contractors have a problem competing for projects because of the lack of easy access to equipment in Timor Leste. The above survey indicated that approximately half the local contractors need to rent equipment and about 60% report that it is difficult to obtain that equipment in Timor Leste. As a result, they need to rent from Indonesia or import equipment. Nevertheless, 60% of respondents claim that the limited availability of equipment is not a disadvantage.

Table 11 Contractor compliance with financial requirements and qualifications

CAN YOU PROVIDE THE FOLLOWING?	YES	NO	N/A
Problems bidding on donor projects	64%	36%	-
Bid Security	93%	7%	-
Performance Security	87%	13%	-
Audited statements for past 3 years	80%	20%	-
Positive net worth last year*	33%	13%	53%
Minimum average turnover past 3 years of \$5 million	40%	60%	-
2 similar projects in past 5 years of more than \$4 million**	40%	47%	13%

Source: Contractor questionnaire

62. The response to the above questions is very instructive. Two-thirds of the firms found problems bidding on donor projects but contrary to conventional wisdom, those problems appeared not to be strongly related to finance. Bid securities and performance securities seemed to be easily provided as did audited statements. This may in part be due to the fact that in many government funded projects such securities are not required and instead the retention percentage to payments is increased. Contractors seem to accept that compromise. However, showing a positive net worth, achieving minimum levels of turnover and having experience in 2 similar projects was considered to be more difficult to achieve. This supports the point made in looking at the contracts as noted above, that most contractors have only done one contract of up to \$5 million with works spread over a few years. Not many contractors have a strong portfolio of work that can then be claimed to support future work.

Table 12 Options for facilitating access for domestic contractors

OPTIONS FOR HELPING YOUR FIRM	YES	NO	N/A
Credit guarantee insurance	40%	13%	47%
Smaller contract Size \$4-6 million	7%	67%	20%
Smaller contract Size \$6-10 million	20%	53%	27%
Information in Tetun	87%	13%	
Bid training support	87%	13%	

Source: Contractor questionnaire

63. The options for contractor support were also somewhat of a surprise. While only half responded, of the respondents who replied to the question, a strong majority voted for a guarantee insurance program. The non-respondents perhaps did not fully understand how a credit guarantee insurance program could work and could be of help to their business.

64. That lack of understanding also seems to be the case with potential contract size. Again, the lack of response indicates a confusion over the meaning and that the options vary according to whether the contract uses local funding or uses donor funding. For donor funded contracts, reducing the contract size should allow local firms a better chance to meet the contract size limits, but it seems that contractors interpreted it to mean that all contracts should be smaller – including the domestic contracts.

65. What was very strongly supported was providing advertisements, bidding documents and contract documents in both English and in Tetun or Portuguese. Clearly the language barrier is an impediment. The contractors also strongly supported improved bid preparation training as is done for the R4D contracts. This could be done through a formalized training course open to any contractor or through a mentoring or on-call consultant support.

4 Private Sector Strengthening

66. This chapter describes the main issues that are currently facing the domestic private sector construction industry (contractors and consultants) and includes recommendations on the steps to be undertaken in support of the private sector in Timor Leste.

4.1 Company licensing, registration and classification

4.1.1 Issue

67. The law specifies that consultants and contractors should be classified according to their size and experience and resources and that the contracts undertaken should be linked to that classification system. As noted above, such a system exists in Timor Leste, but it is not used. On the contrary, many contracts are given directly to companies with no registration and no apparent capacity.

4.1.2 Comments

68. The registration and classification of contracting and consulting companies can help ensure that contracts are awarded to companies that are capable of carrying out the work in a proper manner. Such a system has been developed in Timor Leste, but it is not being applied. Contractor registration and classification requirements are not included in bidding documents, despite this being required by existing legislation. The survey of contractors shows that a third is not registered at all, despite participating in government-funded works contracts. Anecdotal evidence suggests that many contracts have been awarded to contractors that do not have the required classification or qualifications to carry out the work, with implementation often subcontracted to other contractors⁶.

69. Typically to be allowed to carry out contracting business in a country, contractors are required to be licensed and to abide by certain qualification standards. These may vary depending on whether the contractor is a solely owned foreign enterprise or if it is a joint venture with a local company. In each case qualification standards apply. China for instance requires all contractors to be locally registered and to abide by the Chinese regulations regarding classification and accompanying targets for working capital and local staffing. Further, foreign contractors cannot bid for locally financed work unless the work is technically beyond the capacity of the local contractors. The application of such standards ensures that the foreign-owned contractors do not enjoy any special advantage over local contractors.

70. In Timor Leste the requirements for registration and certification of capacity exists for all companies bidding on contracts up to \$7.5 million. For contracts above that size, the regulations state that domestic firms are not capable of bidding on those contracts and as a result they must be procured through international firms or joint ventures with international firms in the lead.

Recommendation: All contractors who bid on construction projects in Timor Leste should be required to register their companies under local law which includes provisions for tax payments, and the Decree Law No. 27/2010 should be extended to cover companies carrying out contracts above \$7,500,000 as is done in other international jurisdictions.

4.2 DRBFC managed project design and competitive bidding is needed

4.2.1 Issue

71. Direct appointment for works undertaken by DRBFC has become the default method for selection and contracting. In addition, the direct appointment is made based on the selection of road, design and costing developed by the contractor. This process violates the mandated requirements for network planning, project development, project execution and project monitoring and is inherently susceptible to corrupt behaviour.

⁶ These contracts are often given to “veterans” who may be only one-person companies if incorporated at all. The contracts are then executed by other larger companies. This process, while aiming to maintain stability in the community, is now, 20 years after the end of the war, outdated. Rather than using a blunt tool like a construction contract to recognize contributions from individuals or families, it is better to incorporate those benefits in a pension or local community development system as in other countries.

4.2.2 Comments

72. In the review of project delivery process, feedback from larger contractors highlights the preferred approach. The contractors select a road from the five-year plan (hopefully) and prepare a design. The design is then submitted to the DRBFC for review. Once it is considered acceptable, the DRBFC puts a government cover sheet in the design which is then returned to the contractor. The contractor then proposes a contract price that is sent to the Analysis and Evaluation Department of DRBFC to verify the rates used. Once that approval has been provided the project contract is sent to ADN and MPS for review and approval and then presented to the Council of Ministers by CAFI. All contracts over \$1 million need Council of Ministers approval. In cases where that proposed contract is larger than \$5 million, CAFI is required to submit it to the Court of Audit under the Ministry of Finance. That process may take time and it will likely also require the procurement to be done using competitive bidding. This removes the large contractor advantage of receiving a sole-source contract. **As a result, contractors self-regulate to stay below the threshold level of \$5 million to avert that requirement.**

73. In the rural road sector, the labour-based contractors currently carry out all rehabilitation and maintenance contracts. **All contracts are competitively bid.** With the sizes of these contracts gradually increasing, it is expected that equipment-based contractors may start to become more interested. For the moment their participation is limited by the bidding requirements restricting participation to contractors who have had training offered by the ERA and R4D pre-bid programmes and based in the municipality concerned. Although this has definite benefits in terms of ensuring that the labour-based contractors trained under these programmes can gain experience and gradually grow, it does limit the options open to the equipment-based contractors.

Recommendation: Following the law, all road contracts should be competitively bid. Where contractors submit design/build options outside of a formal request for design/build submission, DRBFC should carry out the normal design review and then forward the documents to the procurement office of MPW for those under \$1 million and to NPC for those above \$1 million. Payment for the designs based on standard design unit rates may be made to the proposing contractor. Under normal circumstances, all design documents should be prepared for the design unit of DRBFC and be under the authority of that unit. Those designs would then form the basis of bidding documents to be bid through the MPW or NPC process.

4.3 Standardized bidding documents

4.3.1 Issue

74. The current bidding documents, qualification requirements, evaluation procedures and contract clauses used for national/municipal road contracts and for rural road contracts are very different. There are also differences depending on whether the funding comes from the Infrastructure Fund or from the allocation from the General State Budget. This is likely to cause confusion, both with contractors and with the entities involved in procurement and contract management.

4.3.2 Comments

75. Standard contract document formats are based on those used for domestic and international contracts and vary, depending on the source of funding and the type of contract intended. The style of the contracts is often different, but many elements are common. Differences may still exist in the Bid Data Sheet and the Particular Conditions of Contract, but the Instructions to Bidders, the Evaluation and Qualification Criteria, the Bidding Forms, the General Conditions of Contract and the Contract Forms should be largely the same. These should as much as possible also be in line with the documents used by international financing institutions and bilateral donors. As new modalities are considered, such as performance-based contracts, a more common structure would make bidding more understandable and easier for the companies to comply with. This would also allow these documents to be translated to Tetun following the procurement law to facilitate improved understanding by domestic contractors.

Recommendation: A single type of standard bidding document should be used for all contracts.

4.4 Advertising and local content regulations

4.4.1 Issue

76. The local industry does not seem to maximise its capacity by forming joint ventures and using the ability to subcontract to foreign firms to improve local content.

4.4.2 Comments

77. One way of strengthening the local engineering community is to encourage joint ventures with international companies of a similar type. DRBFC cannot be seen to be preferring one company over another but it is normal in the initial advertisement for submitting expressions of interest or project bids, to provide a list of local engineering company contacts so that potential foreign bidders can then follow up with those contacts. This can also be done through a link to a webpage covering contractor registration by category.

78. Further, some countries specify a minimum local content for construction projects. In some countries the percentage of local content is set at 30% but the mechanism whereby that target is achieved is left to the bidder. Since the international donors normally apply their own standards for procurement, any variation from those standards would need to be carefully considered. Recently, provision for local standards have become more relaxed so long as the procurement risk assessment for a country ranks the country as compliant in terms of openness, transparency and bidding impartially. For instance, the Australian funded R4D program design requires a minimum of female input and a minimum of labour input for its projects. For joint finance or local finance, provisions for local content are normally accepted. In future such a local content provision may be very helpful in developing local capacity.

Recommendation: Include in all public calls for international contracts, a list of all local contractors and consultants registered with the MPW by class of registration with contacts and addresses for each. Unless specifically banned by agreement with donors, define minimum local content standards for bidding of up to 30% of the contract value that over time support positive development of the local contracting industry.

4.5 Size of Contracts

4.5.1 Issue

79. The issues related to contract size vary depending on whether they are donor funded or domestic funded. For **donor funded contracts** the contract amounts tend to be higher at around \$25 million, although there are also some smaller contracts in municipal roads of \$4-\$5 million. However, even for these smaller contracts the qualification requirements regarding annual turnover and previous experience were set at such a level that they were out of reach of domestic contractors.

80. For **domestic funding**, contract splitting is not permitted. This requirement is not being followed. The current trend to limit contracts to less than \$5 million to keep contract approval away from review by the Court of Audit, is a blatant violation of the contract splitting restrictions in the procurement law and that process should stop.

4.5.2 Comments

81. Under **donor funding**, the contracts are arranged in packages that allow for balanced funding from the Government of Timor Leste and the donor. Contract packages can be sized and allocated according to need. For example, large equipment supply may be procured from a foreign supplier as a separate package paid either from government funds or from donor funds. A bridge may be funded separately from the roads if it is to be a different contractor. The development of the contract packages is normally decided during the loan discussion and is designed to fit the source of the funding and the purpose of the contract to be funded.

82. The packaging of the contracts is largely a question of choice (as long as this does not affect the procurement modality). There is a tendency for IFIs to prefer a limited number of large contracts, reducing the number of contracts to be procured, supervised and managed. However, this is just administrative convenience. The benefit achieved of developing the local construction contracting capacity is surely worth a marginal increase in administrative burden.

83. In order to ensure greater participation of domestic contractors, the contract sizes and especially the related qualification requirements need to be adjusted to be within reach of these contractors. This is especially the case for the smaller road works where domestic contractors have a proven ability to be able to carry out similar works and where such packaging follows normal procurement practice.

84. For **domestic funded contracts**, there are problems. The 32 government-funded national and municipal road upgrading contracts that were reviewed, were each awarded to different equipment-based contractors (with the exception of one contractor that had two contracts). This may reflect a lack of capacity of the contractors to carry out more than one contract at the same time. Anecdotal evidence also suggests that companies may operate under different names to facilitate access to contracts, and that contracts are awarded to shell companies that subcontract actual implementation to other companies. It may therefore be the case that the actual number of implementing contractors is smaller, with different contracts implemented under different names.

85. The majority of contracts were awarded to individual contractors, most of which are set up as single-owner limited liability companies (*Sociedade por Quotas Unipessoal*). Only 5 of the reviewed contracts were awarded to joint ventures or consortia of different contractors. With the exception of the \$26 million Aituto-Same road upgrading contract, the contracts with joint ventures and consortia were of a similar size as the contracts with individual contractors. The result is that most contractors can only show experience in one contract, generally not exceeding \$5 million. This complicates their ability to qualify for donor-funded projects that generally exceed \$5 million and where experience in more than one project of a similar value is required.

86. Domestic funded contract sizes should ideally increase gradually with the benefit of providing contractors with experience on larger contracts which in turn allows them to bid on larger contracts now being carried out by international competitors. This also ensures that the contracts are vetted by the Court of Audit before contract approval which will in turn ensure that they are not allocated to contractors directly but rather follow the standard project delivery process with competitive bidding.

Recommendation: Where possible and appropriate to the conditions, IFI projects should include smaller packages of approximately \$5 million to be increased gradually in size as contractor experience with larger contracts improves. Related bidding qualification criteria should be kept as flexible as the IFI procurement process will allow, taking into account the financial capacity and experience of the domestic construction industry. In the case of government-funded projects, the size of projects should be gradually increased to between \$6 and \$10 million to allow for local contractors to gain experience at that contract size. These contracts should all be competitively tendered.

4.6 Credit Guarantee

4.6.1 Issue

87. Domestic contractors in Timor Leste face high charges for loans and have difficulty obtaining securities from banks due to the requirements for providing fixed assets or cash deposits as collateral. This is increasing their costs and reducing their competitiveness. This affects loans for performance security and for working capital. Working capital availability is one of the issues raised by the contractors in the contractor survey.

4.6.2 Comments

88. Donor funded credit guarantee loans are an effective means of overcoming this problem that many small and medium size enterprises (SMEs) face in securing bank finance. The ADB is actively involved with establishment of SME loan financing instruments including programs in Mongolia, Sri Lanka, Pakistan and Kazakhstan.

89. The process works approximately as follows. The ADB provides a loan of say \$50 million through the Ministry of Finance to a reputable bank in the target country that will act as the credit guarantee bank – often a state-owned bank. In turn the credit guarantee bank establishes a credit guarantee fund which can be used by normal commercial banks to guarantee their loans to the target companies. The borrowing company goes to the commercial bank for a loan as it would normally do. However, where the commercial bank would

normally have fixed requirements for collateral or for other encumbered assets that are difficult for the company to meet, the credit guarantee bank can have relaxed criteria depending on the pool of clients and the nature of the business carried out. The commercial bank can then apply for the credit guarantee against the value of the loan to the company. That application is reviewed by the credit guarantee bank and if acceptable, the guarantee is issued with a fee charged to the company to cover the cost of the guarantee. In the event of a default on the loan, the commercial bank can call on the credit guarantee bank to pay for the outstanding loan amount essentially leaving the commercial bank with zero risk. The criteria defined for the borrower are as follows⁷:

“Each qualified SME loan will: (i) be used by a qualified SME borrower for a qualified subproject; (ii) be denominated in ___; (iii) have a market-based interest rate; (iv) be at least partially guaranteed by a new guarantee product ...; and (v) have at least 5-year maturity, which is consistent with lending for capital investments. Up to 15% of the gross amount provided to the CGFM under the subsidiary loan agreement may be used at any given time for SME loans that have a repayment period or tenor of less than 5 years.”

90. If relaxed conditions for borrowing are not part of the guarantee, then the cost of using the guarantee facility becomes an added cost burden for the company. The “insurance” interest added by the guarantee bank to the loan makes the loan more expensive than a simple direct loan from the commercial bank, so the company may resist paying the added cost.

91. Second, the commercial bank may not like the credit guarantee mechanism. The guarantee bank may be very strict in administering the guarantee process. Normally that means that the commercial bank must exercise all available means to get the funds repaid. This means significant paper burden for the commercial bank to prove all means have been exhausted with consequent resulting delay in obtaining the guarantee funds. For this reason, many commercial banks resist using the guarantee mechanism.

Recommendation: The Government of Timor Leste should request the ADB to look carefully at the options for establishing a credit guarantee mechanism for the SME community in Timor Leste including contractors.

4.7 Standardize equipment supply costs

4.7.1 Issue

92. In the contractor survey the list of equipment normally owned by the company was modest. Over half the companies that responded to the survey noted that they regularly rent equipment from local rental companies to carry out projects. From visual survey of ongoing works, it is clear that the equipment used by foreign contractors is often very new and of a brand manufactured in the country of the contractor. The concern is that domestic contractors are at a cost disadvantage for equipment cost under the existing bid evaluation process.

4.7.2 Comments

93. Domestic contractors may have a disadvantage securing equipment under the same terms as international bidders. Under the customs law:

“Goods for temporary admission, like large machinery to complete a project are exempt from duty. The importer will be required to provide a financial guarantee to be returned on removal”⁸.

94. This means that foreign contractors can use equipment that has been paid for under previous offshore contracts and directly import that equipment into Timor Leste. Alternatively, they can purchase new equipment offshore and import that equipment duty free into Timor Leste. For local companies, equipment is normally either purchased or rented. In both cases import duty will have been paid on the equipment. This provision can provide a small but important difference in the costing of construction.

⁷ Proposed Loan and Technical Assistance Grant: Mongolia: Supporting the Credit Guarantee System for Economic Diversification and Employment Project, Asian Development Bank, RRP, 2015, para 15.

⁸ See <<https://www.mof.gov.tl/customs/exemptions/goods-exempt-from-import-duty/>>

Recommendation: Consideration needs to be included in the project cost evaluation to ensure that for the purposes of comparison between local and international contractors, the same basis is used for equipment costing – that is, an imputed cost for duty and tax will need to be applied to all equipment used, irrespective of the source.

4.8 Training for contractors

4.8.1 Issue

95. Limited training facilities are available commercially in Timor Leste for contractors to the oil and gas industry but largely the local road and bridge contracting community is not well served with local training. An exception is for rural road works. In the rural road sector, labour-based contractors have been developed under the R4D and ERA projects. This has been done with the involvement of local training institutes. This includes the Institute for Support to Business Development (IADE - *Instituto de Apoio ao Desenvolvimento Empresarial*) for business and contract management, and the Don Bosco Training Centre in Comoro for technical training in labour-based road works. However, added training facilities are needed for the overall contracting industry.

4.8.2 Comments

96. There are a number of instances where contractors in Timor Leste have created “Joint Ventures” to carry out larger projects. An example is the case noted above, where two local contractors in a joint venture carried out the rehabilitation of the Aituto to Same road for approximately \$26 million. A second case from 2013 related to rehabilitation of approximately 10 kms of the Natabora to Manatuto Road by a consortium of five local firms operating under a common business umbrella to rehabilitate the subject road. The urban roads in Dili were also carried out by a consortium of local companies involving a contract for \$29 million. However, even in cases of joint ventures, contracts are often separated to the individual companies. Training is needed to make contractors aware of joint ventures and other organizational structures and to support bid preparation, similar to the training provided to rural road contractors.

97. As part of the ongoing technical assistance from the ADB, training may be provided to local contractors. This provides an opportunity to stress the organizational structure options available to local contractors to allow them to present a stronger profile to the evaluation teams for larger road construction contracts. It also provides an opportunity to explain in detail the different aspects of the bidding documents commonly used in Timor Leste, highlighting the issues to be taken into account in order to ensure that bidders comply with the qualification requirements and that bids are considered responsive.

98. Some of these topics are covered in the bidders meeting held by the National Procurement Commission but a more in-depth training would help improve the contractor’s capability.

Recommendation: Training workshops and template agreements should be prepared to assist the local contracting industry to form joint ventures to bid on larger contracts for both donor funded and IF funded projects. The training program should also strengthen the ability of local contractors to provide responsive bids following the guidance of the R4D bid training experience.

4.9 Language of bidding documents

4.9.1 Issue

99. The procurement law⁹ in Article 39 states that “for international public tender the English language shall be used without prejudicing the translations prepared in Portuguese or Tetun”. In Article 61 it further states that “the announcement for an international public tender shall be published in two international distribution newspapers of recognized prestige, in English and other foreign language used in international business as well as in one nation-wide distribution newspaper, in Portuguese or Tetum”.

⁹ “Decree Law 10/2005 – Procurement Legal Regime” Articles 39 and 61.

4.9.2 Comments

100. The new version of the ADB open competitive bidding (OCB) guidelines has removed the separation between international competitive bidding and national competitive bidding. This means that all bidding can be done through open competitive channels, whereby a selection is made for nationally advertised OCB or internationally advertised OCB. This allows local standard bidding documents to be used (in as far as these are consistent with ADB's 2017 procurement regulations). It also allows local language (Tetun) bidding documents to be used and bids to be submitted in the local language so long as the official language of the contracts remains in English and advertisements are carried on the ADB website in English.

101. In the survey of contractors, availability of bidding documents (Portuguese or Tetun) and copies of contracts in local language (Portuguese) was strongly supported. This recognizes the difficulty of providing a literal contract copy in Tetun which is not designed as a declarative style language.

Recommendation: For domestic contracts the procurement Law specifies that all bidding documents need to be prepared and advertised in English and another international language as well as in Tetun or Portuguese. Standard bidding documents and specifications acceptable to international financing institutions should be prepared in both English and in Portuguese as the local language of Timor Leste and advertising should be carried out using the local media in Timor Leste as specified in the procurement law. Where possible, a copy of contracts should also be prepared in Portuguese but with the provision that the English version is always the official version for international contracts.

4.10 Contracting modalities

4.10.1 Issue

102. As contracts move from capital improvement to the road network to an approach to providing sustainable roads over the longer term of 3 to 5 years or longer, new contracting modalities will be needed. These new modalities are outlined in the 10-year Maintenance Programme 2020-2030 and will draw on the recent experience of performance-based contracts pioneered by the donor community for recently completed capital works contracts.

4.10.2 Comments

103. The contracts normally used in the road sector in Timor Leste are volume-based, with the volume of works measured before the start of works as the basis for bidding, and the volume of completed works measured at the end of works as the basis for payments. This modality works very well for upgrading and rehabilitation contracts, and even for periodic maintenance contracts. However, it is not very suitable for routine and emergency maintenance contracts. For these maintenance types a rapid response is required to address any defects, and in the case of routine maintenance, many of the activities are preventative in nature. Waiting until the damage has occurred and then measuring the volume of work to be carried out and starting the procurement process will result in significant delays.

104. For these maintenance types, alternative contracting modalities can be used. Common contracting modalities are performance-based and term-based contracts, sometimes combined with traditional volume-based contracts. Performance-based contracts have been used in Timor Leste in donor-funded projects that included two years of performance-based routine maintenance immediately after completion of the works. Under such performance-based contracts the contractor is required to comply with specific performance standards that describe the allowable defects to the different road elements (e.g. maximum size and number of potholes). Contractors are responsible for estimating the volume of work required and for submitting bid prices for that volume of work. Payments are made against compliance with the performance standards, with payment deductions applied in case the defects exceed the performance thresholds. This provides an incentive to contractors to address defects when they are small, as this reduces their costs and increases their profit (as opposed to volume-based contracts where profits are maximized by increasing the volume of work). Performance-based contracts are often signed for a number of years (5 or more), allowing contractors to invest in equipment and materials, thus reducing their costs.

105. In the case of term-based contracts, a contract is signed for a specific period of time (term) with a provisional sum that is based on a tentative bill of quantities. The tentative bill of quantities is used only for bidding purposes, allowing the lowest bid price to be selected and unit rates to be defined for various activities. Actual work under the contract is initiated by a work order signed by the Employer, indicating the location, type and volume of work to be carried out. Payment is against the completed volume of work according to the agreed unit rates. The innovative part of the term-based contract is that the procurement is brought forward, allowing works to be initiated relatively quickly through a work order. Term-based contracts are often used for emergency maintenance but can also be used for routine maintenance.

106. Term-based contracts can also be combined with performance-based contracts, with routine maintenance paid on a performance basis and complementary emergency maintenance paid through a provisional sum. This is also often combined with volume-based contracts for initial upgrading or repair works, resulting in so-called output- and performance-based road contracts (OPRC). These include initial upgrading, rehabilitation or periodic maintenance works paid on a volume basis, followed by 5 or more years of routine maintenance. The contracts also include a provisional sum to cover any emergency maintenance required during the contract period (smaller emergency maintenance is included under the performance-based payments, but larger damages are paid separately). This results in a comprehensive contract that covers all requirements during the contract period.

Recommendation: Innovative contracting modalities should be introduced for routine and emergency maintenance that are better suited to these maintenance needs.

4.11 Supervision and payments

4.11.1 Issue

107. Recently discrepancy has occurred between the provisions of Timor Leste law and the provisions of the international agreements signed by the Timor Leste Government and the FIDIC contract provisions that are imbedded in those agreements. Some of the provisions for management and payment of contractor invoices in the FIDIC structure are not being followed by the Government of Timor Leste. This is causing some serious delays in the payment of invoices and as a result, in some cases, is causing contractors to stop work for lack of money.

4.11.2 Comments

108. Supervision of government-funded national and municipal upgrading works during implementation is the responsibility of DRBFC. However, since all DRBFC staff are located in Dili and funding for fuel and per diems is often lacking, the number of supervision visits tends to be very limited. The staff from the municipal Road Departments are often requested to visit the road works, but they too face similar limitations. The DRBFC Five-Year Plan (FYP) for 2019-2023 includes planned budgets for contracting out supervision works, averaging \$5 million per year. Outsourced supervision has been applied in the past for the expressway. Although this will provide a solution to the issue of supervision, DRBFC staff will still need to visit the works on a regular basis to verify performance and progress.

109. Whenever a payment invoice is submitted by a contractor, the supervision engineer is normally responsible for assessing the percentage complete, and the value of the invoice against that percentage as specified in the contract. Under FIDIC conditions, once that certification by the supervising engineer is provided, then the invoice can be paid.

110. In Timor Leste this process is now complicated by the need to forward the invoice to ADN who then generally carries out a detailed inspection of the works. Even small issues that are identified need to be resolved before the payment can be processed, rather than leaving them to be corrected before the next payment. The FIDIC conditions note that a withholding from the invoice can be made to offset any works under review but payment is still made on an interim basis with adjustments carried out at the next payment.

111. Although the current ADN review approach is very thorough, it causes unnecessary delays in payments with the entire payment process having to start from the beginning once the corrections have been made. The delay in processing of payments is a major problem being faced by all contractors, both in government

funded and donor funded projects. Apart from the cumbersome approval procedures, lack of funding due to limited or unapproved budgets can further delay payments up to a year or more. This is mentioned by contractors as the main problem they face in their operations, with many contractors having to demobilize due to payments being delayed over an extended period of time.

Recommendation: Development partners should work with the Government of Timor Leste to clarify the responsibilities of the MPW, the Supervising Engineer under the contract and the ADN for normal verification and authorization of payment withdrawals following the provisions of the contract and the ADN law. The current system is not working, and it needs to be reviewed.

Appendix A Consultant Survey Response

COMPANY	1	2	3	4	5	6
Year of establishment	2005	1999	2017	2001	2013	2010
Registration class			B		B	
Own equipment	Yes	Yes	Yes	Yes	Yes	Yes
Main field of work	Roads, bridges	Infrastructure		Roads, bridges, water, buildings, topography & mapping, traffic & social survey	Roads	Public building and urban planning; Roads, bridges and flood control; Transportation & traffic engineering; Airports, ports, and harbour; Irrigation & water resource development; Environmental engineering
Permanent staff	15	20	2	12	9	7
Engineers	8	4	1	5	9	2
Technician	2	6	1	4	3	1
Surveyors	2	2	1	2	2	1
Draftsmen	2	4	1	1	2	1
Others	1	4	1	25	1	2
Donor project experience	Yes	Yes	Yes	Yes	Yes	Yes
Previous experience	<p>Survey, detailed engineering design and construction supervision services for road, bridge and flood control</p> <p>Detailed engineering design and construction supervision services for building construction</p> <p>Survey, detailed engineering design and construction supervision services for jetty and storage facilities</p>	<p>Site investigation, construction design, mobilization and installation of port infrastructure</p> <p>Study and detailed engineering design of new office building</p> <p>New construction of Embassy office and residence</p> <p>Management of donor funded infrastructure project</p> <p>New construction of office building</p>	<p>Design for construction of army office and dormitory</p> <p>Construction supervision of public building</p> <p>Design and construction supervision of residential buildings, conference hall, gymnasium, and landscape works</p> <p>Design and construction supervision of land and property fence, landscaping, road access and drainage</p> <p>Development of Rural Roads Master Plan and Investment Strategy</p>	<p>Construction supervision for road upgrading and maintenance in donor-funded project including post-upgrading economic evaluation</p> <p>Construction supervision of irrigation scheme</p> <p>Feasibility study and detailed engineering design of municipal road in donor-funded project</p> <p>Construction supervision services for expressway</p>	<p>Construction supervision of bridges with retaining walls</p> <p>Emergency works for gabion box protection with backfill</p>	<p>Design and supervision of church and auditorium construction</p> <p>Construction supervision services for public building rehabilitation project</p> <p>Construction supervision services for school building</p> <p>Design and supervision for orphanage building</p>

Appendix B Contractor Classification Sectors

SECTORS AND SUBSECTORS	
1. Building and Housing	<ul style="list-style-type: none"> 1.01 Public and Industrial Buildings 1.02 Office Buildings 1.03 Housing 1.04 Landscape Arrangements 1.05 Heritage Restoration
2. Roads	<ul style="list-style-type: none"> 2.01 Roads 2.02 Bridges 2.03 Flood Control Works
3. Ports and Airports	<ul style="list-style-type: none"> 3.01 Runways 3.02 Piers, Retaining Walls and Breakwaters 3.03 Excavations and Landfills
4. Waters	<ul style="list-style-type: none"> 4.01 Sanitation Networks and Treatment Facilities 4.02 Water Distribution Networks 4.03 Drilling of Water Extraction Wells
5. Irrigation	<ul style="list-style-type: none"> 5.01 Dam / Dyke 5.02 Networks or Irrigation Systems
6. Space (Only for Civil Engineering Consulting Companies)	<ul style="list-style-type: none"> 6.01 Urban Planning Studies
7. Electricity and Special Installations	<ul style="list-style-type: none"> 7.01 Low Voltage Electrical Networks and Transformation Stations 7.02 Air conditioning and telecommunications infrastructures 7.03 Fire extinguishing, safety and detection system

Appendix C Contractor Survey Responses

COMPANY	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	
Year of establishment	2017	1991	2011	2010	2014	2016	2008	2007	2001	2005	2013	2007	2012	2007	2017	
Registration class	A	A	A	A	C		B	A	B	B		B2				
Own equipment	Yes	Yes	Yes	Yes	No	Yes	Yes	Yes	Yes	Yes	Yes	No	Yes	Yes	No	
Do you rent equipment?	No	Yes	Yes	No	Yes	Yes	Yes	No	No	Yes	No	Yes	No	No	Yes	
Can you find equipment in TL	No	Yes	No	No	Yes	Yes	No	No	No	No	Yes	No	Yes	Yes	No	
Are you disadvantaged because international firms have more access to equipment?	No	No	No	No	No	No	Yes	No	No	Yes	Yes	No	Yes	Yes	Yes	
Previous bids for donor project	No	Yes		Yes	No	Yes	No	Yes	No	Yes	Yes	Yes	Yes	Yes	No	
Interest in donor project	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	
Contract Size Experience		\$2.5 m				\$2.0 m	\$0.7 m									
Languages	EN,TT,PT	PT	TT,BH	EN,TT		TT	PT	EN,PT								
Obtain bid security	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	No	Yes	Yes	Yes	
Obtain performance security	Yes	Yes	No	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	No	Yes	Yes	Yes	
Audited statements past 3 years	Yes	Yes	No	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	No	Yes	Yes	No	
Positive net worth last year	Yes	Yes	No	Yes				No		Yes	Yes					
Average turnover >\$5m last 3 years	No	No	No	Yes	No	No	No	Yes	No	Yes	Yes	No	Yes	Yes	No	
2 contracts >\$4m last 5 years	No			Yes	No	No	No	Yes	No	Yes	Yes	No	Yes	Yes	No	
Annual earthworks (m3/year)	1,500	4,000		2,500	500			2,000								
Annual asphalt works (m2/year)		3,200			2,480											
Preference for documents in Tetun	Yes	Yes	Yes	No	No	Yes	No	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	
Bid training support	Yes	Yes	Yes	No	Yes	Yes	No	Yes	Yes	Yes	Yes	Yes	Yes	Yes	No	
Past experience	Road rehab Road maintenance	Building construction Construction of River protection wall Road rehab Road maintenance Urban road rehab Construction of Training Center	Emergency road work Road rehabilitation Emergency road work	Building rehabilitation Road construction	Municipal road rehab Guardrail installation Rural road rehabilitation	Church construction Residence construction Gazebo construction Construction of Music School	Church construction Agriculture project Church construction State Secretary of Gender project Construction of gabions	Ministry of Agriculture project Road maintenance Road rehabilitation Rehabilitation of Stadium Emergency works, drainage, and slope protection	Road maintenance Road rehabilitation Rehabilitation of gabions, slope protection and drainage Emergency construction of gabions Construction of PNTL office building	Rural road construction Construction of gabions, slope protection and drainage Emergency construction of gabions Construction of Clean Water System. Installation of electrical connections	Road construction Rehabilitation of gravity water system Emergency construction of gabions Construction of Clean Water System. Installation of electrical connections	Construction of health centre Construction of fish hatchery centre Routine maintenance of Luca-Dilor road, Viqueque. Construction of primary school building Demolishing of damaged houses	Road construction & rehab Transformer installation Routine maintenance of Luca-Dilor road, Viqueque. Construction of primary school building Demolishing of damaged houses	Construction of temporary school building Water system construction Supply of IT equipment		

**local people
global experience**

SMEC is recognised for providing technical excellence and consultancy expertise in urban, infrastructure and management advisory. From concept to completion, our core service offering covers the life-cycle of a project and maximises value to our clients and communities. We align global expertise with local knowledge and state-of-the-art processes and systems to deliver innovative solutions to a range of industry sectors.

