



Technical Assistance Consultant's Report

Project Number: 51115-001
February 2021

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

Organizational Reform Plan

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

5 ORGANIZATIONAL REFORM PLAN

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
2	CURRENT ORGANIZATION.....	4
2.1	Directorate for Roads, Bridges and Flood Control (DRBFC).....	4
2.2	Other entities.....	6
3	INTERNATIONAL COMPARISONS	8
3.1	South Africa National Road Agency Limited (SANRAL).....	8
3.2	Fiji Roads Authority (FRA).....	9
3.3	Directorate for Roads, Bridges and Flood Control (DRBFC).....	10
4	SUSTAINABLE ROAD MANAGEMENT	12
4.1	Administration	12
4.2	Finance & Contract Management.....	13
4.3	Planning & Programming.....	13
4.4	Implementation	14
4.5	Maintenance	15
4.6	SWOT analysis.....	16
5	RESTRUCTURING DRBFC.....	18
5.1	Proposed organizational reform.....	18
5.2	Project cycle.....	20
5.3	Capacity Building.....	21
5.4	Decentralization.....	21
5.5	Regional Offices	21
5.6	Supervision and Inspection.....	22

Tables

Table 1	Comparison of Timor Leste with South Africa and Fiji.....	11
Table 2	Comparison of DRBFC with SANRAL and FRA	11

Figures

Figure 1	Organization structure for the Ministry of Public Works.....	4
Figure 2	Organization structure for DRBFC.....	4
Figure 3	SANRAL organization structure.....	8
Figure 4	FRA Organization Structure	10
Figure 5	DRBFC proposed organization for General Directorate.....	10
Figure 6	Proposed organization for DRBFC.....	18
Figure 7	Project cycle for construction and maintenance works	20
Figure 8	Institutional reform and capacity building process	23

1 Introduction

1. This is the third report in the 2019 road sector assessment series of reports. This builds upon the findings from the first report in the series, the **Road Subsector Assessment**, which provides a summary of the current legal and institutional structure of the road sector.

2. A reform plan needs to follow a series of logical steps. The first of those is to define the function of the Directorate for Roads, Bridges and Flood Control (DRBFC), its mandate and responsibilities. The organization needs to evolve as the functions of DRBFC change. The historical function of DRBFC is first indicated in the Law on the Road Transport System of 2003 under which the responsibility of the roads department is to provide:

DRBFC responsibilities (Decree Law 02/2003)

- 11.1 It is incumbent upon the central administration to construct, maintain and operate the national road network.
- 11.2 The construction, maintenance and operation of district and local road networks are incumbent upon the local authorities of the area where they are situated.
- 11.3 The construction and operation of roads and major artworks, namely bridges and tunnels, as part of the national road network may be the subject of a concession granted to an enterprise specifically constituted to that purpose.
- 11.4 For the purpose of subsection 11.3, the Government shall define the road stretches or the major artworks to be included in a concession, as well as their respective construction programmes.

3. This law clearly defines DRBFC's responsibility for all national roads, while at the same time making the municipalities responsible for the future management of municipal roads and local roads (understood to include rural and urban roads). In addition to the above requirements of the Road Transport System law, the Strategic Development Plan (SDP) of 2011 includes the following vision for the road sector in Timor Leste.

Our vision for road infrastructure in Timor-Leste is to:

- Deliver a comprehensive roads maintenance program
- Rehabilitate all existing roads
- Construct new bridges to provide all-weather access on major routes within five years and the remainder of national and district roads by 2030
- Build the road infrastructure required to support the development of the south coast
- Establish national ring road standards and establish a ring road to these standards by 2030.

4. Based on the SDP, DRBFC is required to provide an extensive network of quality and well-maintained roads which is essential to connect communities, promote rural development, industry and tourism, and provide access to markets. This implies that the roads provided by the DRBFC must be both physical connections between and among communities but also to support a series of development objectives.

5. The MPWTC Strategic Results and Transformation Plan¹ notes that the national infrastructure outcomes include the following:

National Impact	That a modern and productive economy is built, creating jobs for the citizens of Timor Leste
National Sector Outcomes	<p>That the country is provided with the infrastructure required to facilitate and underpin economic and social development</p> <ul style="list-style-type: none"> • Outcome 1: That an integrated framework for connectivity exists and is functioning, providing increased mobility for goods and people and improved balance in territorial development. • Outcome 2: That there is improved protection of road and bridge infrastructure from flooding. • Outcome 3: That the health and wellbeing of the citizens improves.

6. The role of DRBFC for the past 10 years has focused heavily on new construction works with little attention given to maintenance. That focus was sensible because: i) unimproved roads that were to be improved were essentially left in poor condition until the rehabilitation works could begin; and ii) while the roads were under construction, no maintenance was possible.

7. That role is now changing. As the network becomes updated, maintenance of the completed roads will increasingly be essential. Maintenance needs to begin on the first day after the new road opens. The photo on the cover of this report is an indication of the damage that can occur on a recently completed road during the first rainstorm or small earth tremor. As the road network moves from rehabilitation and reconstruction to network sustainability through effective maintenance, the structure of DRBFC will begin to focus more on the management of the existing road network and less on the need to plan, contract and supervise construction.

8. A second important aspect is the ongoing decentralization. As the decentralization process to the municipalities continues, the management of lower level roads is likely to be transferred to those municipalities. The decentralization process has also resulted in DRBFC's regional offices being transformed into municipal offices and subsequently transferred to the municipalities, leaving DRBFC without any local presence. The reintroduction of municipal offices is required to improve DRBFCs capacity to monitor the road network under its responsibility and to the supervision of ongoing construction and maintenance works. This will require a rebalancing of management activities between the staff in the head office of DRBFC in Dili, the municipal offices under DRBFC, and the decentralized municipal road departments.

9. These two important shifts in the way DRBFC works will have a significant impact on the organization structure of DRBFC. At this point the discussion needs to focus on the allocation of responsibilities and the implementation of the key functions to the departments, units and offices that will be responsible for them. It also needs to focus on the kind of management processes, staffing requirements and skill sets needed to ensure that the complete road network is sustainable and that the delivery of road network services is responsive to local considerations.

10. Chapter 2 describes the current structure and responsibilities of DRBFC and how those roles will be redefined as the DRBFC evolves from a capital works focus to a sustainable road network focus

11. Chapter 3 presents international comparisons which focus on the structure of the South Africa National Road Agency Limited (SANRAL) and the Fiji Road Authority (FRA) as working examples that can be used as models for the restructured DRBFC

¹ Strategic Results and Transformation Plan, Ministry of Public Works, Transport and Communications, Timor Leste, 2015-2017.

12. Chapter 4 describes the functions that need to be carried out by a road management entity in order to ensure sustainable road management of the road network including an analysis of the strengths, weaknesses, opportunities and threats (SWOT analysis) of DRBFC
13. Chapter 5 discusses the proposed restructuring of DRBFC and how the proposed units will play a role in the different steps of the project cycles for construction and maintenance

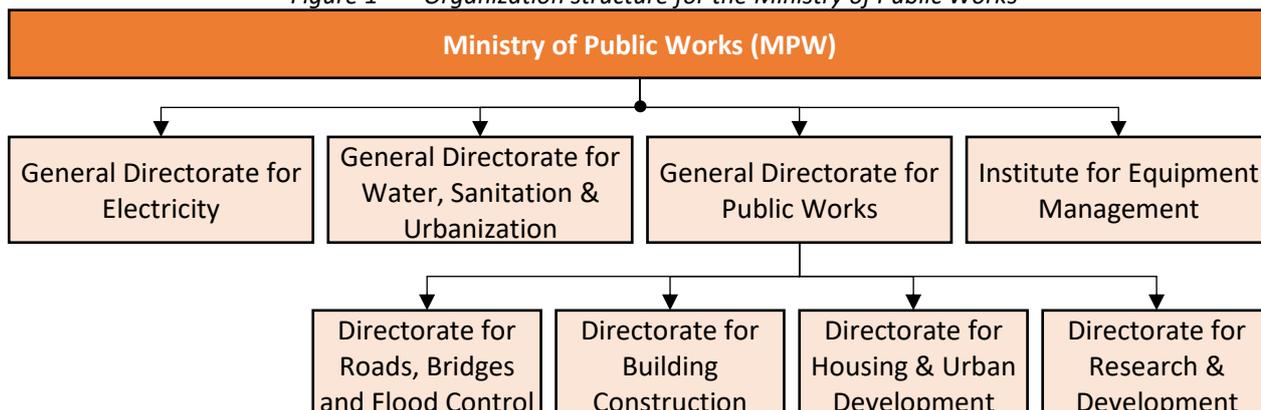
2 Current Organization

14. This chapter looks at the current organization of the road sector in Timor Leste and is largely based on the findings from the Road Subsector Assessment. It focuses on the Directorate for Roads, Bridges and Flood Control (DRBFC) that is formally responsible for the management of the road network and related infrastructure. It also briefly looks at the other entities active in the road sector.

2.1 Directorate for Roads, Bridges and Flood Control (DRBFC)

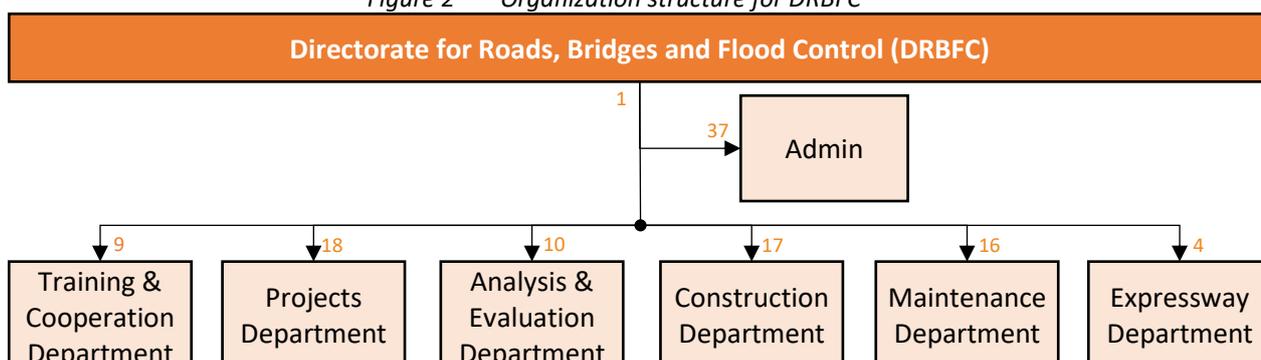
15. DRBFC is the prime unit within the Ministry of Public Works for planning, designing, contracting and implementing works related to national, municipal, rural and urban roads, bridges and river protection works. The organization structure of DRBFC within the Ministry of Public Works is illustrated in Figure 1.

Figure 1 Organization structure for the Ministry of Public Works



16. DRBFC currently reports to the Director General through the acting Director. Under the Director are six departments and a total of 112 staff, including 15 technicians (diploma-3) and 41 graduates (39 *licenciaturas* and 4 *maestrias*). The department has plans to expand to 261 staff by 2023, quadrupling the number of technicians and doubling the number of university graduates. All DRBFC staff are currently based in Dili. The organization structure of the DRBFC is illustrated in Figure 2. A brief outline of each current department is provided below.

Figure 2 Organization structure for DRBFC



2.1.1 Administration Unit

17. The Administration Unit includes human resources, administration, finance and logistics and has a total of 37 staff members. This is the only unit planned to reduce in size, with a target of 24 staff by 2023.

2.1.2 Training and Cooperation Department (*Departamento de Formação e Cooperação*)

18. The Training and Cooperation Department is responsible for coordination, execution, implementation of donor financed projects and monitoring social and environmental impacts of those projects. In practice it does not carry out these functions as they are carried out by the project management unit (PMU) for ADB, WB and JICA projects and by R4D for rural roads projects. However, the MPW has increasingly noted that the responsibilities for the above functions rest with the DRBFC and the PMUs are now being more closely

integrated into the DRBFC structure. The department is also responsible for ongoing training of the staff. The department currently has 9 staff members and is planned to expand to 16 staff members by 2023.

2.1.3 Projects Department (*Departamento de Projetos*)

19. The Projects Department is responsible for surveys, plans, design review, works volumes and costs and social and environmental assessments of road works. However, in reality it does not carry out any of the above since for international funded projects, those tasks are carried out by consultants and for locally funded work, contractors normally take control of all those areas. It currently has 18 staff members and is planned to expand to 25 staff members by 2023.

2.1.4 Analysis & Evaluation Department (*Departamento de Análise e Avaliação*)

20. The Analysis & Evaluation Department is responsible for assessing the project proposals and checking cost estimations and for processing and approving payments to contractors. After project reviews and payments approval it then forwards the documents to the National Development Agency (ADN) for their review and assessment and subsequently to the National Procurement Commission (NPC) for procurement (smaller projects under \$1m are procured directly by the Ministry of Public Works) and for payments to MPS (for Infrastructure Fund financed projects) or to the MPW for state budget financed projects. The department currently has 10 staff members and is planned to expand to 27 staff members by 2023.

2.1.5 Construction Department (*Departamento de Construção*)

21. The Construction Department is responsible for supervising the implementation of construction, upgrading and rehabilitation works. The staff are distributed over the three subsectors covered by DRBFC (roads, bridges and flood control) with most staff under the bridge section. All staff are based in Dili, and because the department generally lacks funds for covering operational expenses related to supervision (fuel, per diems, etc.), field supervision is almost never done. They are often assisted by the staff of the Roads Departments under the different municipalities, especially in the case of urban and rural roads. The department currently has 16 staff members and is planned to expand to 31 staff members by 2023.

2.1.6 Maintenance Department (*Departamento de Manutenção*)

22. The Maintenance Department is responsible for assessing maintenance needs in the different roads, for preparing the maintenance plan and for supervising maintenance implementation. The staff are distributed over four regional sections, each covering a number of municipalities. Maintenance projects as compared to construction and upgrading prepare maintenance documents within the maintenance department. The department therefore also has a database that they use for maintenance planning and the identification of maintenance needs. All staff are based in Dili, and because the department generally lacks funds for covering operational expenses related to supervision (fuel, per diems, etc.) field supervision is almost never done. They may be assisted in supervision by the Road Departments under the different municipalities but with transfer of staff from the DRBFC to the Ministry of State Administration (MSA) responsibilities and resource usage are confused and this approach is not tenable over the longer term. The department currently has 16 staff members and is planned to expand to 39 staff members by 2023.

2.1.7 Expressway Department (*Departamento de Vias Rápidas*)

23. The Expressway Department is responsible for the supervision of the construction of the expressway between Suai and Beaçó, and for the maintenance after completion of construction. It currently only has only 4 staff members, with most staff members covering different positions in the department (e.g. the department chief is also responsible for bridges and inspections). The number of staff is planned to expand to 27 by 2023.

2.1.8 Regional Offices

24. DRBFC used to have five deconcentrated regional offices with about four staff. As part of the decentralization process these offices were first converted into municipal offices under DRBFC, and subsequently the offices and staff were transferred to the municipalities as municipal road departments. As a result of these changes, in 2019, 54 new technical staff were added and allocated to the DRBFC municipal

offices to provide support to the DRBFC head office in Dili. Those staff are now being trained to support the local objectives of the DRBFC.

2.2 Other entities

Apart from DRBFC, there are several other entities active in the road sector in Timor Leste. These are briefly described here.

2.2.1 Municipal Road Departments

25. The Road Departments in each of the municipalities report to the municipal government. Although the decentralization process is ongoing and the Road Transport System Law states that municipal and local² roads will be the responsibility of local authorities, all roads currently continue to fall under the responsibility of DRBFC. The de facto management of the rural roads is carried out by the municipal road departments, however, and the R4D rural road programme works directly with staff from these road departments (there are no staff in DRBFC responsible for rural roads). In the case of urban and municipal roads the municipal roads departments are also involved as they are based in the municipal centres where the those roads are located, facilitating supervision and monitoring but with management from DRBFC. The municipal road departments sometimes also support DRBFC in regarding the national and municipal road networks (reporting damages, surveying, supervision, etc.), but this is limited. As decentralization progresses, it is to be expected that the management of both rural and urban roads will be handed over to the municipal road departments. For municipal roads it is not yet clear what will happen, as some of these roads cross municipal boundaries, complicating management at municipal level.

2.2.2 Council of Administration for the Infrastructure Fund (CAFI)

26. In early 2011, the Government established the Infrastructure Fund (IF) by Decree Law No. 8/2011 which is a subsidiary to Law No.1/2011. Decree Law No.8/2011 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.

27. 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 Investments, 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.

28. 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).

2.2.3 Major Projects Secretariat (MPS) - Secretariado dos Grandes Projetos (SGP)

29. The Major Project Secretariat (MPS) was created by Decree-Law no. 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.

² Understood to include urban and rural roads.

2.2.4 National Development Agency (ADN) - *Agência de Desenvolvimento Nacional*

30. The National Development Agency (ADN), was established by Decree Law in 2011 with responsibility under the Prime Minister but supervised by the Minister for Planning and Strategic Investment (MPSI). 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. ADN is also primarily responsible for monitoring project implementation and certification of quality for project acceptance, both at national and local level. This includes the checking of completed work volumes and work quality as part of the approval process for the payment of invoices in cooperation with the line ministries and according to the contract documents.

2.2.5 National Procurement Commission (NPC) – *Comissão Nacional de Aproveitamento (CNA)*

31. 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.

2.2.6 Ministry of Transport and Communications (MTC)

32. The Ministry of Transport and Communications (MTC) is the central Government body responsible for the design, implementation, coordination and evaluation of the policy, defined and approved by the Council of Ministers, in the sectors of transport and communications. With regard to the road sector, it is responsible for formulating, developing and ensuring the implementation and enforcement of the legal and regulatory framework for road transport (including vehicles, road furniture and signage) and for promoting coordination within the transport sector to encourage complementarity between its various modes. While vehicle overloading is a major concern for road damage and maintenance, the road transport law does not address this issue and MTC does not control vehicle loading.

33. Through the **National Directorate of Land Transport (DNLT)**, MTC is also responsible for licensing of drivers and vehicles, for controlling the condition of those vehicles and for providing through DRBFC, the line markings and signage needed to navigate the national road system safely. DNLT also bears the responsibility for locating and developing intercity bus stops and protection, and for specifying where bus laybys are to be located for implementation by DRBFC.

34. Coordination between DNLT and DRBFC is regularly required regarding the implementation of safety and traffic control measures, especially in the case of ongoing works and damage. DNLT is responsible for defining the road safety and traffic control measures to be undertaken, before DRBFC can implement these. The fact that DNLT and DRBFC are under two different ministries and are located at opposite sides of the city, severely affects the coordination between these two directorates. However, when both were under the same ministry under the previous government, coordination was not improved.

2.2.7 Ministry of Interior (MOI)

35. The Ministry of the Interior is the central Government body responsible for the design, execution, coordination and evaluation of policy, defined and adopted by the Council of Ministers, for the areas of internal security, migration and border control, civil protection and police cooperation. Under the operation of the national police, ensuring the safe operation of road vehicles is also within the mandate of the MOI. This has recently been clarified in the 2015 organic law.

36. One of the functions of MOI, under Decree-Law no. 35/2015 Article 11 of the Organic Law, was the establishment of the Directorate of Road Safety integrated into the General Directorate of Operational Services. The role of the **National Directorate of Road Safety (DNRS)** is to plan, coordinate and implement the National Accident Prevention and Road Safety Policy. The primary function of MOI is enforcing the traffic rules and regulations. The National Directorate of Road Transport (DNLT) of MTC and the DNRS are both equally responsible for ensuring safe operation of the road network and vehicles on that network.

3 International Comparisons

37. There are many organization models around the world for setting up a roads department or roads authority. As DRBFC moves forward three principles are important.

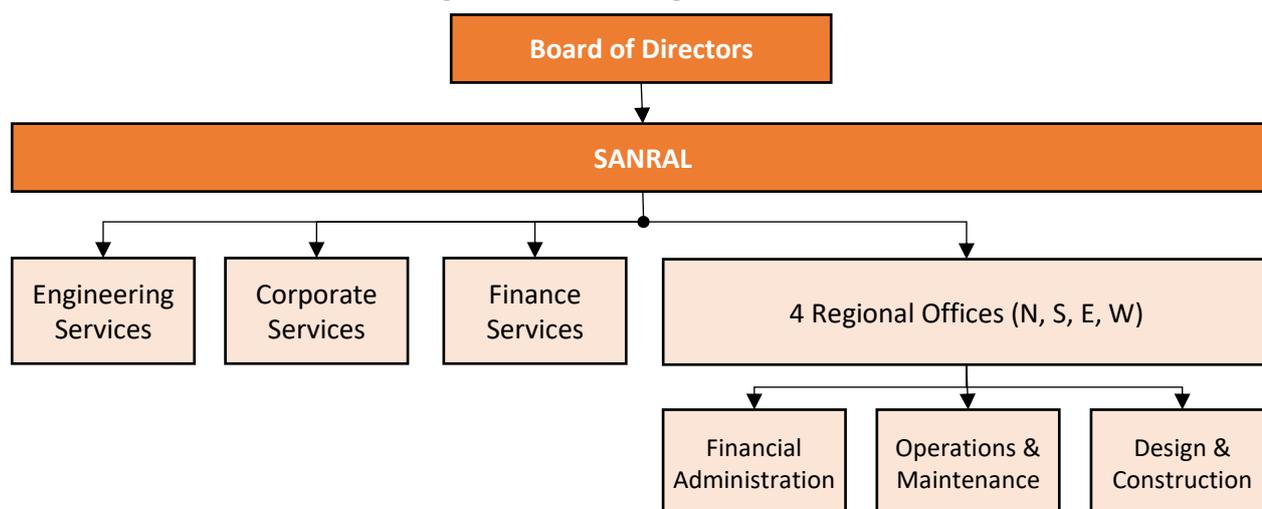
- The DRBFC needs to ensure that the road network serves the needs of the people of Timor Leste;
- The DRBFC organization needs to be efficient in carrying out its work;
- The DRBFC needs to be accountable for the work it does and to provide a high degree of transparency.

38. Two international examples are presented here that may be used by the DRBFC to help define its structure over the coming few years. The two examples are South Africa National Road Agency Limited (SANRAL) and the Fiji Road Authority (FRA).

3.1 South Africa National Road Agency Limited (SANRAL)

39. SANRAL was created by Parliament through the South African National Roads Agency Limited and National Roads Act in 1998. It is the successor to the South African Roads Board that formed part of the Department of Transport. It was originally set up based on an earlier model developed in Australia for the Country Roads Department of Victoria in the early 1990s when it converted to a corporate model called VicRoads. SANRAL is a government-owned public company that is headed by a Chief Executive Officer and overseen by an eight-member Board of Directors appointed by the Minister of Transport. It has 162 staff members who are responsible for the management of 21,490 km of national and provincial roads³. The schematic for the SANRAL organization is shown below.

Figure 3 SANRAL organization structure



Source: www.sanral.co.za

40. As with DRBFC's previous regional structure, SANRAL has several regional offices covering different parts of the country. These essentially act as independent decision-making entities in carrying out the planning and implementation of construction and maintenance works. The central core offers corporate, financial and engineering services in support of the regional offices. The organization is essentially a matrix arrangement with localized decision making. Over the years, SANRAL has shown itself to be one of the most successful roads managers in the world. A study by the World Bank⁴ noted:

³ It is expected that the coverage will increase by a further 13,510 km over time.

⁴ See World Bank publication, "Making It Happen", which analyses selected case studies of institutional reforms in South Africa since 1994.

SANRAL is acclaimed as “a world-class road agency” that dramatically improved the management of the country’s national road network ... Its asset management approach has transformed the management of the national road network and led to a gradual transformation of the road construction and maintenance industry. It highlights the fact that 95% of the roads managed by SANRAL are in “good to very good condition” and that 100% of the network is under routine maintenance contracts. The World Bank highlights four critical factors that contributed to SANRAL’s success:

- The political commitment to reform is strong with the recognition by Government that transport is an important pillar to grow the South African economy, expand trade and investment and achieve social cohesion.
- There is a strong leadership and continuity provided by the team under the Chief Executive Officer, who has been at the helm of SANRAL since its inception. Its human resource policies “foster morale within the agency and promote staff retention.”
- SANRAL adopted a more business-like approach to manage roads and introduced a pavement asset management framework and a staffing structure that responded to the requirements.
- SANRAL succeeded in attracting private sector participation in its expanding toll road operations.

41. To emphasize, the key contributors to the success of SANRAL are:

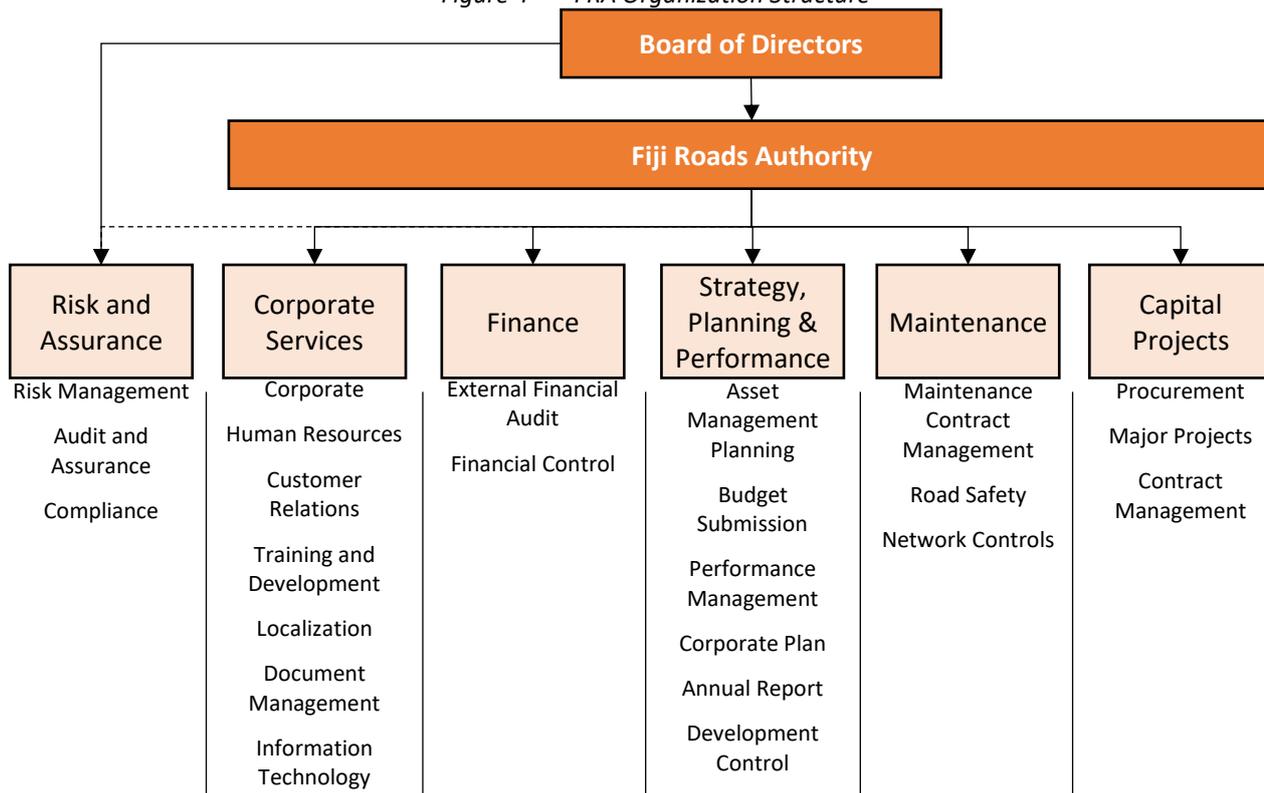
- the political commitment to reform
- the strong leadership of the organization and a commitment to foster strong morale and retain staff
- the ability to manage roads like a business and match the works to the needs
- the attraction of private sector partners as needed

3.2 Fiji Roads Authority (FRA)

42. The Fiji Roads Authority was established by Decree Law in 2012, again following largely the corporate model which provides for a high degree of accountability. The Fiji model is also a single shareholder public corporation managed by a Chief Executive Officer and with an advisory board selected from senior government staff and private sector representatives. Since the FRA was only established in 2012, it has only now completed its transition from a roads department to a corporatized authority. FRA has about 100 staff members and is responsible for 7,525 km of national and rural roads. The organizational structure of the FRA is as shown below.

43. FRA operates as a body corporate governed under the leadership of a board. FRA manages the road assets primarily through out-sourced contracts with the private sector. The exception to this is certain maintenance work carried out by Municipal Councils and the management of roads on the Outer Islands which are administered by the Ministry of Rural and Maritime Development under a MoU with FRA.

Figure 4 FRA Organization Structure

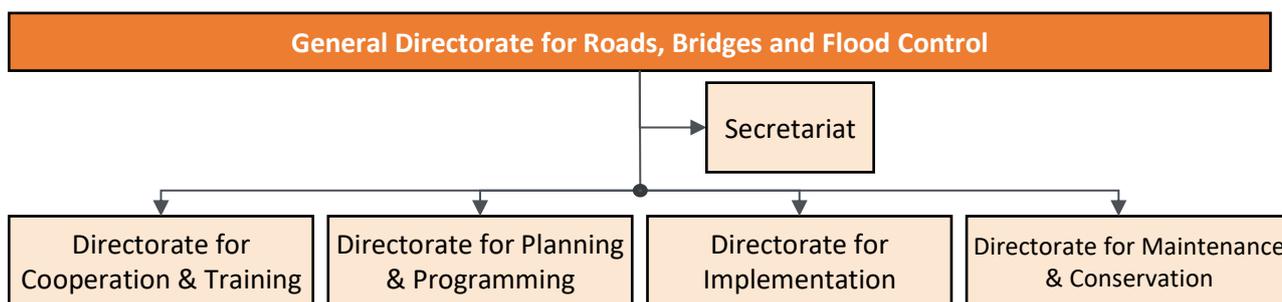


Source: www.fjiroads.org

3.3 Directorate for Roads, Bridges and Flood Control (DRBFC)

44. The management of DRBFC has recently proposed an organizational restructuring. This involves a reduction of the number of departments from six to four, merging the Expressway Department and the Analysis & Evaluation Department with the other departments. At the same time, DRBFC proposes to transform the current national directorate headed by a director, to a general directorate headed by a director general. The departments and their chiefs would then be transformed into national directorates headed by directors. Additional departments would then be created under these national directorates. The proposed organization chart for the new general directorate is shown in Figure 5.

Figure 5 DRBFC proposed organization for General Directorate



45. This proposed organization structure is very similar to that of SANRAL and FRA, with separate units for planning, construction and maintenance. The proposed Directorate for Cooperation & Training is understood to incorporate different aspects of general administration and finance (administration, finance, human resources, procurement) in as far as these activities are carried out by DRBFC.

46. A comparison of the key characteristics of the road sector in the three countries is illustrated below. Fiji has a similar country size, road network size, although its economy is considerably larger (especially in terms of non-oil GDP). The amount of annual maintenance funding in Fiji (\$55 million) is also similar to the foreseen long-term maintenance needs for Timor Leste (\$65 million).

Table 1 Comparison of Timor Leste with South Africa and Fiji

ASPECT	SOUTH AFRICA	FIJI	TIMOR LESTE
Population	57,980,000 (2019)	905,502 (2017)	1,296,000 (2017)
Land Area	1,219,090 km ²	18,275 km ²	14,870 km ²
GDP (nominal)	US\$349.433 billion (2018)	US\$ 5.061 billion (2017)	US\$ 2.955 billion (2017)
Non-Oil GDP			US\$ 1,843 (2017)
GDP (per capita)	US\$ 6,182 (2018)	US\$ 5,589.39 (2017)	US\$ 2,279.25 (2017)
Road network	747,000 km	7,525 km	6,623 km
National Roads	16,200 km (2018)	1,707 km	1,401 km
Municipal (urban) Roads	251,000 km		1,367 km
Rural Roads	480,000 km	5,818 km	3,855 km

Table 2 Comparison of DRBFC with SANRAL and FRA

ASPECT	SANRAL	FRA	DRBFC
Road length managed	21,490 km	7,525 km	6,623 km
Roads capital budget	US\$ 526 million (2015)	US\$ 186 million (2016)	US\$ 424 million (2019)
Capital budget per km	US\$24,500/km	US\$24,500/km	US\$64,000/km
Road maintenance budget	US\$ 432 million (2015)	US\$ 55 million (2015)	US\$ 12 million (2019)
Maintenance budget per km	US\$ 20,000/km	US\$ 7,300/km	US\$ 1,800/km
Staffing of roads entity	162	100	112
Road length per staff member	100	75	42

47. The lessons to be learned from SANRAL and FRA that are relevant for Timor Leste are:

- The size of DRBFC at the moment is adequate for a transition phase while the DRBFC moves toward a long-term sustainable asset management style of organization;
- A tight and focused management structure is able to address issues quickly and with minimum confusion;
- Accountability is important, both within the government system as well as to the community served. Communication is essential to ensure that the accountability is achieved;
- All non-management activities can be contracted out so DRBFC becomes a road management organization with all data collection, design, implementation, supervision and monitoring activities carried out under contract;
- Capital budgets for SANRAL and FRA are much lower compared to the network they are responsible for than for DRBFC, while maintenance budgets are much higher which is indicative of the state of the networks managed;
- Budget accountability with private sector style reporting and management of assets provides important feedback to the Ministry of Finance and allows for informed budget making in subsequent years;
- Corporate spirit is important. Steps to achieve improved common viewpoints around objectives and approach foster improved performance. Everyone needs to know what their job is.

48. The length of road managed per employee shows that even at the current level, DRBFC is much lower than SANRAL and about 60% of the level achieved in FRA. While DRBFC has been planning a large increase in staff, on the examples shown, the current level, if used intelligently, may be sufficient going forward. At the very least, improving the capacity of the current staff levels needs to be carefully considered by DRBFC as a viable strategy before new staff are added. This suggests that the retraining of staff is one of the most important approaches to addressing future needs.

49. It is also useful to consider the road maintenance budget of FRA in comparison to DRBFC. While this year the expectation is to have around \$12 million available for road maintenance in Timor Leste, the estimates for the road maintenance budget for a mature road network run to around \$65 million. The current allocation of \$55 million by Fiji for their similar but more mature road network provides further support for the Timor Leste estimates.

4 Sustainable Road Management

50. This chapter looks at the specific functions related to road management that need to be carried out by DRBFC, how these relate to the current organizational structure and the one under discussion, and what changes are required to ensure all functions and underlying activities can be carried out. The chapter is organized by the five main areas that are reflected in the organizational structures of DRBFC, SANRAL and FRA:

- Administration
- Finance and contract management
- Planning & Programming
- Construction management
- Maintenance management

51. The required functions for each of these five areas for a modern roads organization are listed and compared to the existing activities of DRBFC. The changes needed to move from the current status to a modern style of road management are subsequently highlighted, identifying the new functions and activities where added skills and a redefinition of approaches will be needed.

4.1 Administration

Main Functions

- Administration of the roads entity
- Organization review, human resource development, and training of staff
- Preparation of the annual report and forward multiannual business plan
- Community linkage and public relations

52. The Administration Department is often not accorded the same respect as the other line departments. This is reflected in the current organizational structure of DRBFC where the Administration Department is indicated as a support structure for the director rather than a full-fledged department with a department chief. In the organizational structure proposed by DRBFC, the Administration Department has been presented as a Secretariat, further reducing its status.

53. **Human resource management** including training will become a very important area for DRBFC as it moves from a capital works implementation entity to one that is increasingly responsible for maintenance and management of the road network. Staff will need to be trained on how to manage a network including contracting and supervising consulting services related to design and supervision, the use of the planned IRMIS system, the introduction of alternative contracting modalities for the implementation of construction and maintenance works (e.g. longer-term performance maintenance contracts), and many other areas.

54. DRBFC will also need to improve its **public relations**, increasing transparency by providing information to the public through reports and websites, and collecting feedback from road users through surveys and comments pages. This will be linked to the preparation of **annual reports**, both for higher levels of government, but also for the wider public. Multiannual **business plans** will also need to be prepared, identifying where DRBFC will be in the future.

55. It may be clear from the above that Administration is an area that is currently not strongly developed in DRBFC, and where significant attention will need to be given to creating a suitable structure with clearly defined units responsible for specific functions, and developing the required capacities to carry out those functions.

4.2 Finance & Contract Management

Main Functions

- Financial management for the unit
- Contract preparation
- Contract management
- Coordination with international partner organizations

56. These functions are currently carried out in part by the Analysis & Evaluation Department and by the Coordination & Training Department. Several of the functions under this area are also not being carried out by DRBFC, or only to a limited extent. **Financial management** is very poorly represented in DRBFC, as all payments are processed through ADN, MPS and MPW. Even if this remains the case, there is an argument to be made for strengthening this area in DRBFC, so that they are fully aware of the available budgets, the status of payments, foreseen expenditure, etc.

57. DRBFC is not involved in the procurement process, which is carried out by either NPC or by MPW. However, it needs to become more involved in this process, with the aim of taking over more functions in the future. For the time being, DRBFC should become responsible for the preparation of the bidding documents, making use of standard bidding documents in as far as these exist. This responsibility for **contract preparation** will ensure that DRBFC is fully aware of the contract details during the project preparation stage, before it becomes responsible for the management of the projects. The actual approval of the bidding documents and the procurement of the contracts will continue to be carried out by NPC and MPW for the time being.

58. **Contract management** is similarly managed only to a limited degree and will also need to be strengthened. For the development partner funded projects the contract management is more developed, with a strong role played by the Project Management Unit (PMU), but also by the Coordination & Training Department of DRBFC. With ongoing talks of integrating PMU functions more into the DRBFC structure, this will become an important area for DRBFC. This contract management capacity will also need to be expanded to the other government funded projects. As part of the IRMIS that is being developed, a contract management system will also be prepared which can support strengthening DRBFC's role in contract management.

4.3 Planning & Programming

Main functions

- Development and operation of a mapping system and road database of road inventory and condition
- Regular collection and entry of current road condition and amended inventory data
- Preparation of a long-term development strategy, five-year investment prioritization plans and annual investment plans
- Assessment of overall social and economic viability of investments for prioritization and programming
- Development of multiannual forward rolling budgets and annual works budgets
- Monitoring and evaluation of overall performance against targets and budget

59. Planning and budgeting for road rehabilitation and upgrading is currently carried out by the DRBFC Projects Department. They prepare a Five-Year Plan (FYP) identifying the roads and road lengths to be upgraded or rehabilitated. This is a very general plan based on rounded lengths to be upgraded or rehabilitated each year, using unit rates to convert these to estimated budget requirements. In the case of rural roads, technical support is provided by the R4D programme based on the Rural Road Master Plan (RRMP). Actual planning only takes place once the (proposed) budget is known, at which time the actual road sections to receive funding are identified and a more detailed cost estimate is prepared.

60. Maintenance planning is carried out by the DRBFC Maintenance Department. The FYP for maintenance and the annual maintenance plan are prepared based on the roads selected to receive maintenance and on unit costs per kilometre. Once the budget allocation has been approved, which may not match the requested funding, the annual maintenance plan is adjusted to fit the available budget, selecting priority roads and

priority sections within those roads. Survey videos are used to identify maintenance needs in the different roads and indicate these in GIS maps.

61. At the moment, the data used to create the road upgrading and rehabilitation plan and the road maintenance plan are very limited. **Data collection** is limited to “once off” studies carried out by international and local consulting firms. The planning department will need to start collecting data on the road inventory, road condition, traffic, vehicle loading, etc. to form the basis for prioritization and planning of both construction and maintenance works.

62. This will require a **database and mapping system** to store the data as well as analytical modules that can help interpret the data and convert it into plans and programmes. The R4D programme is currently supporting the development of the Integrated Road Management Information System (IRMIS) that will include these functions, as well as complementary functions such as a contract management system. However, the IRMIS system will need to be incorporated into the DRBFC structure, with the development of clear procedures for data collection, data entry and data analysis. This will also require a dedicated unit to be formed that will be responsible for coordinating and to a certain extent carrying out these functions. This road asset management unit may build on the existing GIS unit under the Projects Department, but it will require additional staff and equipment.

63. The preparation of **multiannual prioritization plans and annual investment plans** will need to be based on data analysis, especially in the case of maintenance where maintenance costs can be significantly reduced and road conditions improved through a proper analysis of road conditions and other factors. Procedures and criteria for this analysis will need to be prepared, linking them to the requirement to prepare multiannual and annual plans.

64. Assessment of the **economic and social viability** is not carried out currently. This is a new area that will need to be developed, allowing identified road projects to be assessed in terms of their costs and benefits for the country.

65. **Monitoring of performance** against targets and budget is currently limited in DRBFC and will need to be introduced, allowing DRBFC to track and review its performance and that of the road network. This will require the introduction of key performance indicators that reflect the levels of service being provided by DRBFC, both in terms of road network performance, but also in terms of the performance of DRBFC and the wider government.

4.4 Implementation

Main functions

- Review and approval of detailed feasibility study of roads for investment as needed
- Review and approval of road/bridges/flood control designs
- Land acquisition and legal review and resettlement
- Supervise road works and ensure compliance with contracts
- Inspect performance of contactors and sign off on withdrawal applications under the contracts
- Provide quality assurance and approve hand over of completed contracts after the defect liability period
- Guide and support regional offices to monitor and supervise road construction works

66. At the moment there does not appear to be any **feasibility study reports** (FSR) prepared other than for donor funded projects. This means that the DRBFC does not have any experience with planning, contracting or reviewing FSRs, which are a key component in all large-scale investment projects. That capacity needs to be strengthened.

67. The preparation of government-funded rehabilitation and upgrading projects are the responsibility of the DRBFC Projects Department, which is meant to carry out the necessary surveys and testing, prepare the **design**, the Bill of Quantities and the cost estimates for each project. At the moment those responsibilities are rarely undertaken by the projects department but are done by contractors who select a road, prepare an outline design, and submit the design with the support of a senior government official, with the projects department doing a review against standards and then signing off on the design. For maintenance contracts,

the surveys, designs, BOQs and cost estimates are prepared by the Maintenance Department. In the case of development partner funded projects, designs and project documents are generally prepared by consultants contracted under the project. The five-year plan includes a budget for design for all proposed projects, allowing consultants (or contractors) to be hired to prepare the designs. DRBFC's capacity to review the proposed designs and work together with the consultants in finalizing the designs will need to be strengthened.

68. For the development partner funded projects and the government-funded works for the expressway, **supervision** is carried out by a supervision consultant. In the case of rural roads, supervision is carried out by R4D consultants together with staff from the municipal road departments. For the other government-funded projects, supervision is carried out by ADN but generally as a verification of work against invoices. Whenever a payment is due and an invoice has been submitted by the contractor, ADN carries out a thorough inspection of the works and identifies any defects that need to be corrected before payment is made. However, this is only done at specific moments during construction, and the day-to-day supervision when works are ongoing is very limited and needs to be increased. DRBFC is responsible for the supervision, but the location of all staff in Dili and the limited budgets for fuel and per diems means that site visits are not frequent. Normally supervision of construction is carried out by specialized supervision engineers. In the future, that should also be the norm for DRBFC. The new five-year plan includes budgets for supervision, allowing consultants to be hired to carry out this activity. However, DRBFC as the client has ultimate responsibility for the works and a supervision monitoring capacity needs to be maintained within DRBFC. DRBFC will need to verify the work of the supervision engineer and review the reports and tests carried out. The DRBFC also needs the capacity to review and test the work undertaken by the contractor and agree to accept the handover of the finished facility at the end of the construction and defects liability period.

69. The transfer of the DRBFC **regional offices** to the municipalities has reduced the capacity of DRBFC to manage their activities. The recent hiring of 54 new staff and allocation of those staff to the DRBFC municipal offices will help to re-establish that local capacity by bringing DRBFC closer to the works sites, facilitate site visits by DRBFC staff from these offices and complement the work of the supervision consultants. The staff of the regional offices will need to be supported and provided with the equipment required for them to carry out their tasks. That implies (travel) budgets, vehicles, testing equipment and communications systems.

4.5 Maintenance

Main functions

- Definition of maintenance standards for intervention, time required and costing of intervention;
- Analysis of road deterioration, required maintenance activities and costing of annual maintenance works
- Presentation of the annual maintenance plan to the Ministry of Finance or the Road Fund for maintenance funding
- Programming of maintenance projects according to the maintenance plan
- Specification and design of maintenance works to be undertaken and the scope of work for maintenance contracting
- Identification of emergency works and development of bill of quantities for works to be undertaken
- Monitoring of the maintenance carried out and sign off on the quality of works
- Guide and support regional offices to monitor and supervise road maintenance works

70. Where roads have been selected for inclusion in the annual maintenance plan, the Maintenance Department carries out field surveys to measure the actual volumes of maintenance required. The data is subsequently entered into Excel files to prepare the cost estimates, based on which the project documents are prepared. Most maintenance contracts are small in size and do not need to be approved by ADN, and the project documents can be sent directly to NPC or MPW for procurement. Currently DRBFC has very little involvement in the procurement process for road maintenance other than providing the general project documents.

71. Both for investment works and maintenance, the decision on the five-year and annual **maintenance plans** should be evidence based. As the IRMIS database becomes more complete and modern tools for

maintenance assessment and programming become available to the DRBFC, this type of optimized maintenance planning is both possible and needed. This allows for an evidence-based plan to be prepared, together with funding options for presentation to senior management of the MPW as well as to the Ministry of Finance. This evidence-based approach is normally essential if the sustained maintenance funds needed by the department are to be secured.

72. The preparation of the maintenance volumes may continue to make use of video data collected for the different road sections and included in the IRMIS database, building on the planning procedures developed with support from JICA. Using the video footage, locations and volumes of maintenance may be identified in the roads approved for maintenance, which may form the basis for the preparation of the BOQ, complemented by field surveys where necessary.

73. With the reintroduction of **DRBFC municipal offices**, one of the main beneficiaries will likely be the maintenance department. These field-based staff are essential to monitor ongoing contracts and to support the field surveys to identify require maintenance volumes.

4.6 SWOT analysis

74. This section provides an analysis of the strengths, weaknesses, opportunities and threats (SWOT analysis) of DRBFC in its development from its current status to a more efficient and effective road management entity.

4.6.1 Strengths

75. The following are the strengths that DRBFC can use to build a restructured organization.

- A rapidly improving network of roads that will be largely upgraded for national and municipal roads within 5 years and for rural roads, upgraded within 10-15 years
- Improved technical capability among its staff and a staff complement that is approximately the correct size for sustainable road management
- Commitment from the development partners to continue to support the current DRBFC as it moves toward a longer-term modern road management organization

4.6.2 Weaknesses

76. The following are some of the weaknesses that need to be addressed as DRBFC moves forward.

- Budgets are directed at capital works but planning, development, execution and monitoring of those works are largely out of DRBFC's hands and they have little direct responsibility due to high level influence in the project delivery process
- Operating and maintenance budgets have been inadequate for many years and staff have become resigned to filling a role with no resources to use to carry out their responsibilities
- The DRBFC operations are carried out in inadequate third level facilities, using outdated systems and equipment and with no operational funds to improve those conditions
- Following from the above, staff are not motivated and they do not have a clear idea of their organizational responsibility
- Staff training is piecemeal and no coherent staff training and development plan is in place to prepare the staff for being part of a modern sustainable road management organization

4.6.3 Opportunities

77. The following are opportunities that are available for DRBFC as it develops over the coming decade.

- Recognition of the importance of DRBFC and follow up commitment by the Government of Timor Leste for a strong and effective national road network
- Gradual increases in national funding available for road maintenance supplemented by sources of user fees allocated to the road sector
- Continued support from the donor partners to provide for institutional and management systems development

- Potential strengthening of the human resource capacity of DRBFC to better match the department responsibilities and operational needs
- Gradual development of contractor capacity through direct contractor training and also learning by doing to allow for more independence and higher quality in road maintenance works

4.6.4 Threats

78. The following areas remain as possible threats to timely development of the DRBFC as a road management entity.

- Lack of commitment by the Government of Timor Leste to provide sustainable funding for the road sector over the coming years
- Poor initiative and commitment by the staff of the DRBFC to improve their knowledge and procedures to support development of a modern road management capacity
- Continued reliance of the political class on personal reward from contractors and other road sector companies for kickbacks and bribes
- Lack of improved capacity in the DRBFC to undertake the work needed to keep the roads in good condition because of lack of commitment to rule-based operations by the government officers involved
- Diminished commitment from the donor community to support ongoing road sector rationalization because of perceptions of persistent corruption in the government officials responsible for the road sector

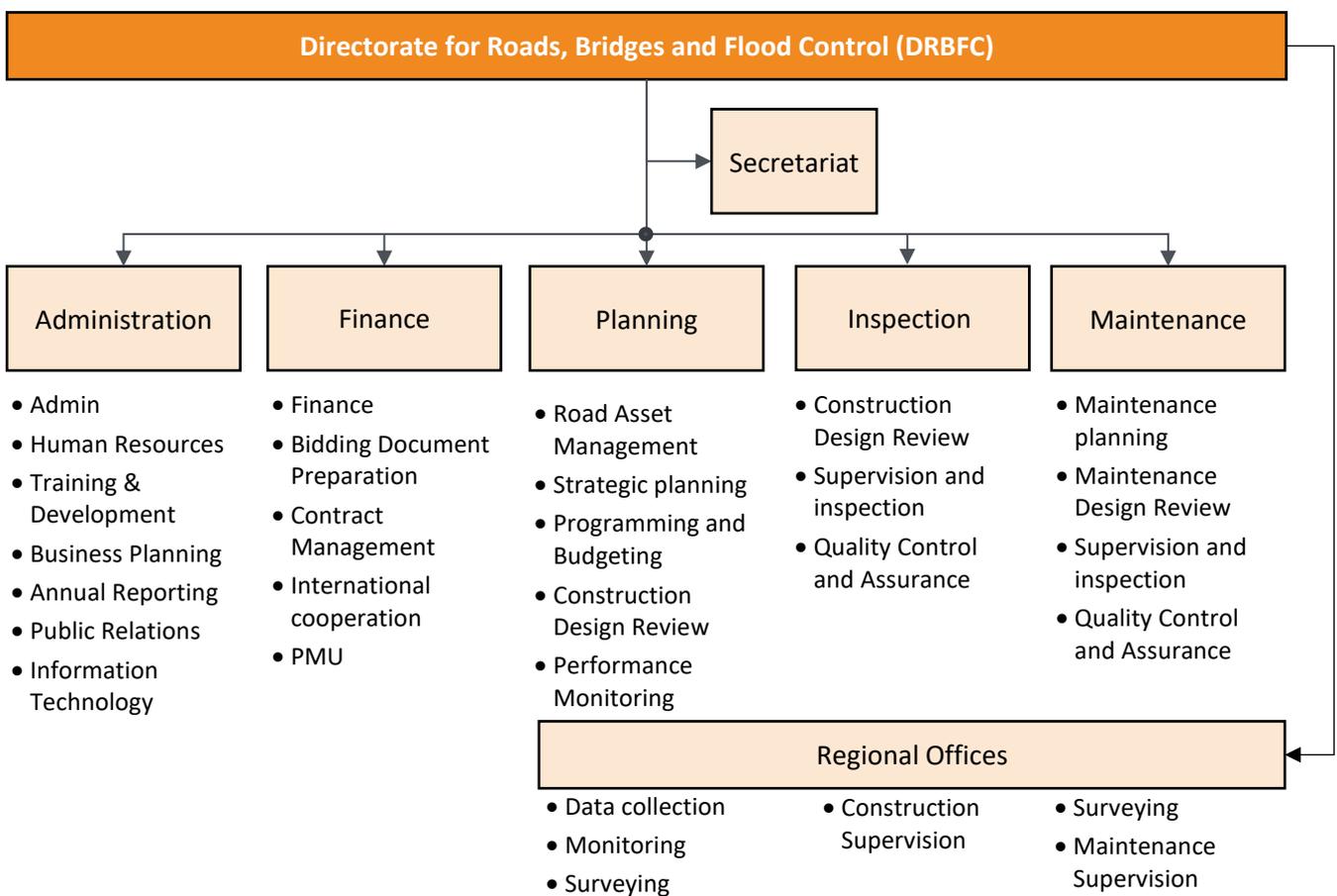
5 Restructuring DRBFC

79. The first chapters of this report outline what the Government of Timor Leste has asked the Ministry of Public Works through DRBFC to do, what the current structure is of DRBFC, what best practice approaches exist in other countries, and what functions need to be carried out by a modern road management entity. This chapter looks at how this information may be brought together to identify a suitable organizational structure for DRBFC in the future, and the additional support required to ensure that structure can function properly.

5.1 Proposed organizational reform

80. Many organizational models can be found around the world for road management organizations. In the end, the choice is driven by the functions that need to be carried out by the road organization and the resources that are available. Figure 6 below shows a possible organizational structure for DRBFC in the future, based on the principal areas of responsibility and the main functions to be carried out.

Figure 6 Proposed organization for DRBFC



81. For smaller countries like Timor Leste with limited human resources, it is important to keep the organization structure simple and focused. The proposed structure above includes the three main departments of planning, inspection and maintenance that are reflected in the existing DRBFC structure as well as the new structure proposed by DRBFC management, and which are also represented in the structures of SANRAL and FRA. These are the core activities of DRBFC and of any road management entity.

82. The **Department of Planning** would be responsible for the road asset management system being currently introduced, through a specific road asset management unit with dedicated staff. Using the IRMIS, it would be responsible for strategic planning and for the preparation of multiannual and annual investment plans. It would also use the IRMIS data to carry out performance monitoring for the road network and for the road sector. The Department of Planning & Programming would also be responsible for the review and

approval of designs and cost estimates prepared through local consultants⁵. It should be noted that design review is carried out throughout the design process and the capability of the design review team for roads, bridges and flood control need to be comparable to the capability found in the consultant design team. Many design review meetings are normally needed through the complete design period. The Department would also work with the regional offices regarding data collection, surveying and monitoring of the road network, although a large part of this work would be outsourced to the private sector.

83. The **Department of Inspection** would be responsible for construction implementation, supervising and inspecting the work carried out by contractors. It would also be responsible for coordinating the quality control and assurance of ongoing works, either working with the government laboratory or through private sector labs. It would work closely with the regional offices that would be responsible for the regular supervision of the ongoing contracts and for coordinating with the supervision engineers. As it develops, it will also need to coordinate its activity with ADN. As the capacity of DRBFC to carry out supervision improved, the need for detailed project supervision by ADN diminishes.

84. The **Department of Maintenance** would be responsible for maintenance planning, working closely with the Department of Planning & Programming and their RAMS unit. It would also be responsible for preparing the preparation of designs and cost estimations, working through consultants where necessary. For this purpose, it would work closely with the regional offices for the surveying of the roads and maintenance needs. Given that alternative contracting modalities are often applied for road maintenance, the Maintenance Department would also need to be involved in the preparation of the bidding documents, ensuring that these are in line with needs. For this purpose, it would work closely with the Department of Finance & Contract Management. The supervision of maintenance contracts would also be the responsibility of this department, for which it would work closely with the regional offices. For maintenance contracts involving more complex works, supervision consultants will be hired.

85. The **Department of Finance** builds upon the current structure of DRBFC's analysis & evaluation department and the coordination & training department, and responds to the functions that DRBFC will need to carry out in future. Many of these functions are currently to a large extent carried out outside of DRBFC by ADN, NPC and MPW. However, in the future it is likely that DRBFC will become more responsible for these activities as it moves towards becoming a road management entity, possibly evolving to a general directorate and over time even to a roads authority. It is therefore important to develop the necessary capacities and systems that will allow DRBFC to take over the preparation of bidding documents which may include draft contracts (procurement would continue to be handled by NPC and MPW). This department would also become responsible for contract management, covering both government- and donor-funded projects. As such, it would also form the main contact point with the PMU. Increasingly, this department would also handle the financial administration for DRBFC and for the different contracts, ensuring that DRBFC is aware of the payment status of all contracts and of expenditure progress and predictions.

86. The **Department of Administration** also builds on the current structure, but elevates the current administration unit to a department with its own chief. The functions are expanded to also include the training of staff since this is considered a key element of the planned evolution of DRBFC. This will be an important area for DRBFC to focus on in the next 5-10 years as several new functions are introduced and DRBFC evolves into a road management entity overseeing activities carried out by the private sector and shifting its focus from construction to maintenance.

87. The resulting structure is similar to that of the Fiji Roads Authority, which is a similar size organization responsible for a similar size network in a similar size country. At this point, a decision needs to be agreed by the Ministry of Public Works and the Ministry of State Administration on the future structure of DRBFC. The "Fiji Model" is considered to be a good model to emulate based on the local conditions in Timor Leste, growing towards this model over time. Initially this may involve only the restructuring of DRBFC and its departments to reflect the principal areas of responsibility and the key functions it has to carry out. In the

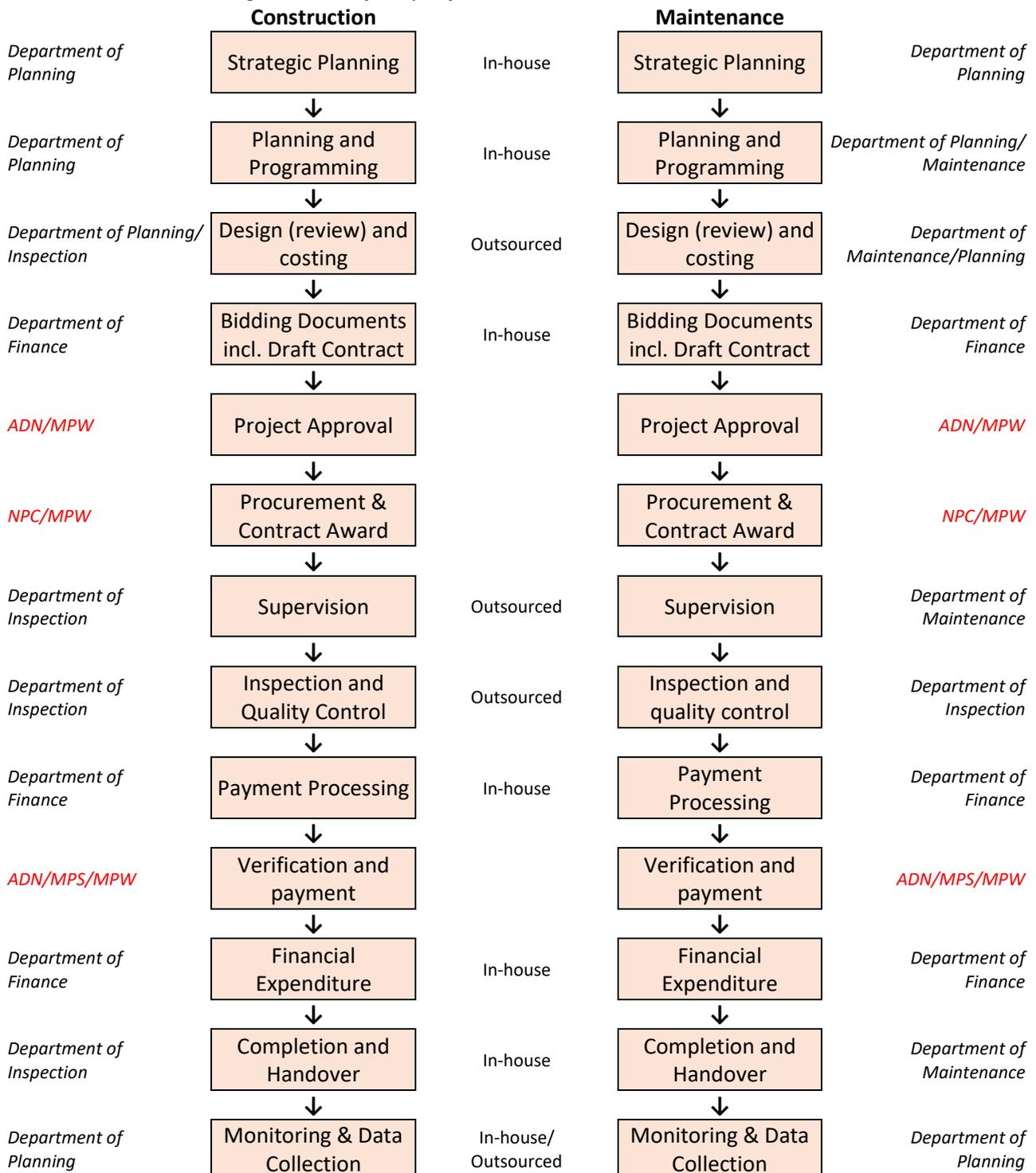
⁵ Although this function may also be allocated to the Department of Implementation, DRBFC has expressed its preference to leave it with the Department of Planning & Programming as is currently the case.

short-term this may also include the elevation of DRBFC to become a General Directorate headed by a Director General. In the medium- or longer-term this may be followed by a transition of DRBFC into a road authority.

5.2 Project cycle

88. The involvement of the different departments in the project cycle for construction and maintenance is indicated in Figure 7 below. This indicates the main department involved, as well as any external entities that play a role.

Figure 7 Project cycle for construction and maintenance works



89. In the functions of planning and design, the Planning Department will need to work closely together with the Inspection Department and the Maintenance Department. In the case of maintenance, the Maintenance Department will play an important role in preparing the five-year and annual plans, working closely with the RAMS unit under the Planning Department. Simple maintenance designs would also be prepared by the Maintenance Department, while more complicated designs would be prepared together with the Planning Department. The Planning Department would also be responsible for network performance monitoring and the regular updating of network inventory, condition and traffic data.

90. The Finance Department would be involved in preparing the bidding documents, but these would still need to be approved by ADN (technical) and NPC (procurement). The Finance Department would also play a bigger role in tracking expenditure under the contracts and predicting budget expenditure gaps and surpluses.

91. The regional offices would be involved in several of the activities indicated above, but would also provide their inputs under the coordination of the central departments. Several activities may be outsourced to the private sector, but this will still need inputs from DRBFC to overview the contracts and control the quality of the provided services.

5.3 Capacity Building

92. Improved human capacity is the most critical DRBFC need at the moment. The staff do not have the required capacity and skills to manage the road network effectively. While it has improved markedly over the past five years, major shortcomings in technical and managerial knowledge and skills remain. As new functions are introduced in DRBFC, significant training of staff will be required. This training is not a one-off event, and will need to be continued over the next 5-10 years as DRBFC evolves. This is reflected in Figure 8. As functions change, as new challenges develop, capacity needs to grow to match. The HRD function is very weak in DRBFC and this is one area where significant improvement is needed.

5.4 Decentralization

93. The decentralization process is ongoing in Timor Leste. Responsibility for the road sector has not yet been decentralized and remains with DRBFC. However, rural roads are de facto being managed by the municipal roads departments, which are the direct counterparts for the R4D rural road programme. There are no staff in DRBFC dedicated to rural roads. It is expected that this process will proceed with the formal decentralization of rural roads to the municipalities at some stage, and for this reason the management of rural roads has not been reflected in the organizational structure. Similarly, it is expected that the management of urban roads will be decentralized to the municipalities in the future, given that these urban roads are located in the municipal centres and the municipal road departments are already involved in their management. The decentralization of the municipal roads as proposed in the Road Transport System law, is less straightforward since several of these roads cross municipal boundaries. It is therefore expected that these roads will remain the responsibility of DRBFC.

94. The municipal road departments are quite new, and they will need considerable strengthening in order for them to successfully carry out the management of the rural roads and in future the management of the urban roads. For the rural roads capacity building and strengthening is already being provided by the R4D programme. This will need to be continued in the future, and it will need to be expanded to the urban road network that has very different characteristics and technologies. There will be an important role to be played by DRBFC in this process, in supporting the municipal road departments in their management of the rural and urban road networks, and in training their staff regarding planning, design, contract management, and supervision.

5.5 Regional Offices

95. DRBFC previously had five regional offices located in Dili, Baucau, Same, Maliana, and Oecussi, each covering a few municipalities. The regional offices were headed by an engineer who was assisted by one supervisor per municipality and a number of assistant supervisors. The regional offices were responsible for procurement up to a certain amount and had equipment that was used for in-house executed emergency

works and maintenance. These regional offices were transformed into municipal offices and subsequently transferred to the municipalities, leaving DRBFC without any local presence.

96. The reintroduction of these de-concentrated offices will be an important part of the new restructured organization. More authority can also be allocated to the de-concentrated units as experience and capacity grow. As a result of the recent hiring in 2019, four staff are now located in each municipality, which seems an adequate capacity.

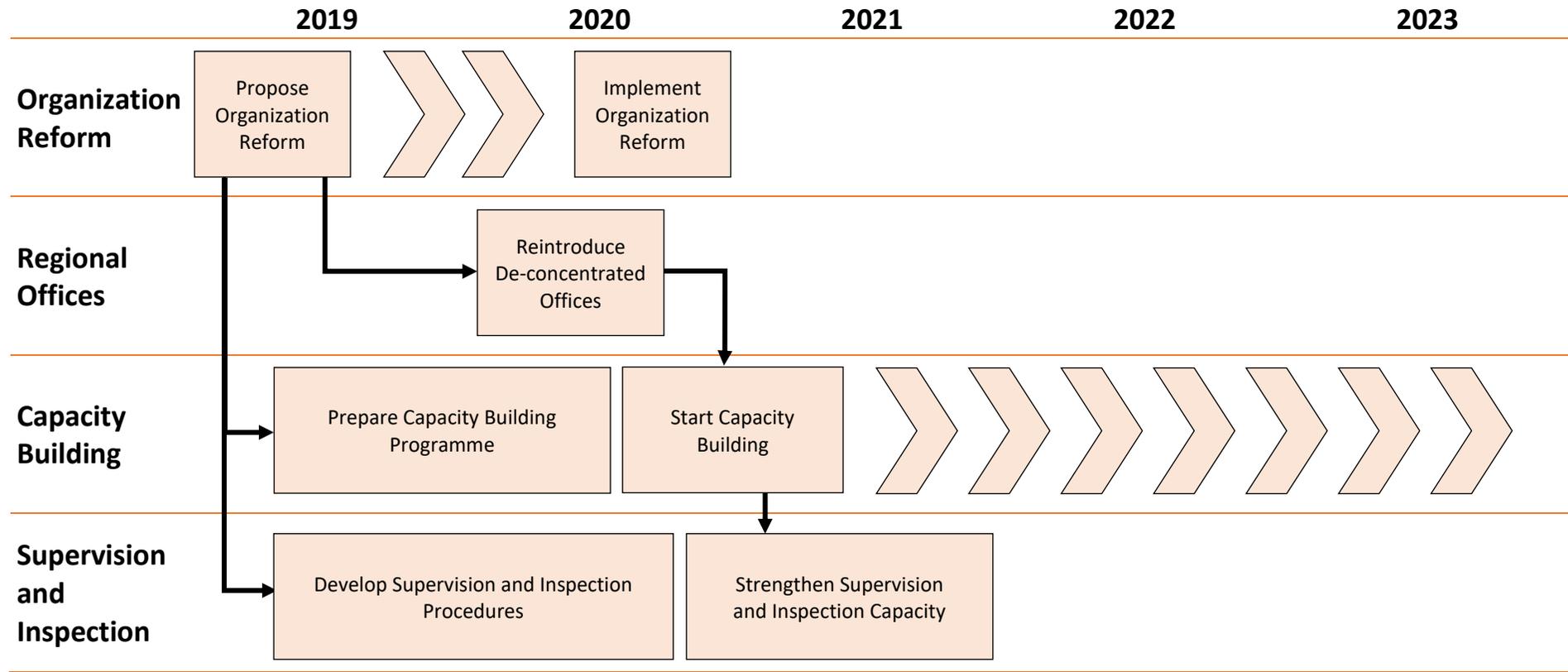
97. The main role for the de-concentrated municipal offices will be to survey and monitor the roads and to supervise any ongoing works. The offices may also be involved in the coordination with municipal roads departments regarding the linkage of rural roads with the national and municipal road networks. The de-concentrated offices may also be involved in supporting the municipal road departments in their management of the rural and urban road networks, providing on-the-job training and general support.

98. Training of all staff based in the DRBFC municipal offices will certainly be needed, and this will form part of the above capacity development plan. As indicated in Figure 8, the reintroduction of the de-concentrated offices will commence in 2019. This will require significant training to be carried out in 2020 as offices are set up.

5.6 Supervision and Inspection

99. Supervision and inspection of ongoing construction and maintenance contracts are important functions of any road management entity, whether these are carried out in-house or through consultants. The supervision function is currently only carried out to a very limited extent by DRBFC. At the same time, inspections are carried out by ADN for all payment invoices, where an auditing role involving a sample of invoices would be deemed more appropriate. As a result, DRBFC does not consider its role in inspections to be very relevant. For the evolution of DRBFC into a more modern road management entity, it is important that the supervision and inspection capacities are developed through the inspections department. Under the current five-year plan, funds for supervision have been budgeted as part of the support to contracts. It is understood that this funding will be used to involve supervision consultants. As such, capacity building of DRBFC staff should focus on their role as reviewer of the supervision reports, complemented by site visits to confirm supervision results. DRBFC will also need to coordinate the quality control and assurance activities, carrying these out themselves or through private sector. The proposed regional offices will play an important role in this process and will need to be included in the capacity building.

Figure 8 Institutional reform and capacity building process



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.