

## SECTOR ASSESSMENT (SUMMARY): ROAD TRANSPORT

### Sector Road Map

#### 1. Sector Performance, Problems, and Opportunities

1. Timor-Leste comprises the eastern half of the island of Timor, the nearby islands of Atauro and Jaco, and Oecussi, an exclave on the northwestern side of the island, within Indonesian West Timor. The island of Timor is part of the Malay Archipelago and is the largest and easternmost of the Lesser Sunda Islands. The terrain is dominated by Mount Ramelau, which bisects the island from east to west. The coastal zones in many parts of the country are narrow and mostly on steep hillsides.

2. Road is the primary mode of transport, carrying 70% of freight and 90% of passengers. Land transport services in Timor-Leste are provided competitively by the private sector, with the government limited to licensing and basic vehicle and road safety requirements. Passengers are ferried by minibuses and taxis in the urban areas, and by minibuses and light to medium trucks licensed to carry both passengers and freight in the rural areas, particularly where roads are poor. A small number of heavy trucks transport containers and large equipment, but the narrow roads and difficult terrain severely limit their coverage.

3. Timor-Leste has an extensive road network of about 6,000 kilometers (km), half of which are undeveloped rural tracks. The core network comprises 1,400 km of national roads connecting the capital, Dili, and 13 districts, and 900 km of district roads linking major population centers to the national roads. About 80% (1,800 km) of core roads are (or used to be) paved. A road survey conducted in 2008 found that only 8% of core roads were in fair condition, with the remaining in poor (22%) or very poor condition (70%).<sup>1</sup> Almost the entire core road network now needs to be rehabilitated to a maintainable standard, as many roads have prematurely deteriorated. Rural roads are also generally in poor condition. Frequent landslides and road closures caused by intense rainfall and geotechnical instability in mountainous areas compound the poor condition of the roads.

4. The deterioration in the road network means that journeys take longer, vehicles cost more to operate, and rural communities are more isolated. Significant income from agriculture and other products is lost and social conditions are worsening. The poor transport links are exaggerating the constraints to economic growth arising from Timor-Leste's small and isolated markets.

5. Road infrastructure must be preserved through routine and periodic maintenance. The maintenance works should be programmed systematically to allocate limited resources more efficiently and effectively over the entire road network. The required annual maintenance expenditure for the core road network (about 1,600 km) in its condition as of 2009 was estimated at \$20 million–\$30 million (in 2009 prices).<sup>2</sup> It was also estimated that improving the roads to a maintainable condition could halve the required funding level. The funding need is substantially above recent allocations for road maintenance; the 2011 budget provided

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<sup>1</sup> ADB. 2008. *Technical Assistance to the Democratic Republic of Timor-Leste for Preparing the Road Network Development Project*. Manila (TA 7100-TIM).

<sup>2</sup> ADB. 2009. *Report and Recommendation of the President to the Board of Directors: Proposed Asian Development Fund Grant to the Democratic Republic of Timor-Leste for the Road Network Development Sector Project*. Manila (Grant 0180-TIM).

\$5.3 million for road maintenance, while annual expenditure averaged less than \$2 million from 2004 to 2010.<sup>3</sup>

6. The benefit of upgrading road infrastructure will be maximized when affordable, accessible and safe transport services are provided. The private sector provides transport services for passengers and goods. Passenger and freight transport between population centers use minibuses and light trucks because of the narrow width of the roads and the difficult terrain.

7. Road safety is another emerging issue of land transport in Timor-Leste. The Timor-Leste National Police reported 1,656 cases of road accidents in 2008; of these, 50 resulted in fatalities, 215 in serious injuries, and 1,020 in other injuries. Many less serious, unreported cases were not included, and the actual number of injuries and fatalities is believed to be higher. Human error accounted for 60% of all reported accidents, 25% were attributable to road conditions, 10% to the weather, and 5% to mechanical failure. The potential for even higher accident rates is great considering the rising number of vehicles associated with rapid economic growth—many of them unprotected motorcycles carrying up to four people—and the increased vehicle speeds that will become possible by road improvements.

8. Gaps in capacity of government agencies responsible for the road network also constrain road development. Notably, the Directorate of Roads, Bridges, and Flood Control of the Ministry of Infrastructure (MOI)—the line agency responsible for planning, developing, and maintaining road infrastructure—has less than 20 engineers, only five of which are in regional offices. Each regional engineer is assisted by a supervisor and three assistant supervisors. The Directorate of Roads, Bridges, and Flood Control's main weakness is a shortage of capable staff in the districts to plan, administer, and supervise roadwork. The central agencies with responsibilities for infrastructure including road projects—the National Development Authority, the Major Projects Secretariat of the MOI, and the Procurement Commission—are all recently established and are still putting in place the business processes and staff needed to undertake their responsibilities.

9. National contractors are awarded projects of up to \$1.5 million by the government, but in some cases they lack the technical and financial capacity to implement the projects properly. A lack of project management expertise and skills generally excludes national contractors from taking the main responsibility for large projects. In 2010, the government initiated a contractor registration system as a means for raising quality standards. Under the system, contractors will be classified according to financial, technical, and management capacity, with the classification linked to the size and type of contracts for which a contractor is eligible to bid.

10. Indonesia is the largest source of Timor-Leste's imports and its third largest export market.<sup>4</sup> National roads in the border region are main corridors to Indonesia, giving Timor-Leste access to cross-border activities. To facilitate cross-border commercial or social activities, Timor-Leste must improve its cross-border facilities and national roads in the border regions. Improved connectivity in the border areas will create economic benefits, reduce poverty, and promote the country's engagement in international cooperation and integration.

<sup>3</sup> ADB. 2010. *Performance Evaluation Report: Emergency Infrastructure Rehabilitation Project (Phases 1 and 2) in Timor-Leste*. Manila. p. 23.

<sup>4</sup> National Directorate of Statistics. Various Years. *Trade Statistics*. Dili.

11. Several lessons can be drawn from past and ongoing road projects in Timor-Leste: (i) difficult terrain, geology, and weather conditions require more intensive routine and preventive maintenance of the road network; (ii) the period of road construction is essentially reduced by 4–6 months of rainy season every year; (iii) regular coordination is needed to synchronize support and avoid duplication of investment because of the larger than normal number of development partners; (iv) the capacity of national contractors must be developed through actual works of appropriate size and well-targeted training; (v) the MOI still needs support in implementing large projects, as do the new central agencies; and (vi) more effective skills transfer from project consultants to government staff is needed.

12. The quality and sustainability of road infrastructure requires more attention. Past road projects were aimed at restoring accessibility and centered on repairing only the damaged sections of the road network. While Dili's connection with most other areas of the country improved, overall road conditions continued to worsen because the government could not meet the maintenance needs. The road sector improvement project, recently completed with Asian Development Bank (ADB) support, is the first attempt to move from emergency work to comprehensive rehabilitation of the core road network. Higher quality road maintenance and rehabilitation projects and periodic review of road sector plans are needed to ensure the road network is effective. The improvement of the core road network, adequate road maintenance, and community participation, including women, in rural road development must be integrated and progressively expanded in the course of road sector development. To make road sector investments sustainable, stand-alone maintenance contracts should be avoided. A functioning road maintenance program, including institutional setup, policy framework, programming and implementation capacity, and sufficient budget support, is essential.

## **2. Government's Sector Strategy**

13. The Strategic Development Plan (SDP), 2011–2030 was released in July 2011.<sup>5</sup> Implementation commenced with the 2011 budget. Road infrastructure development is prominent in the plan. It commits to undertaking substantial and long-term investment in roads to maintain the current road network, including a major program of road rehabilitation, repair, and improvement. New roads are only to be built if they serve important economic or social objectives. The SDP establishes the following targets: (i) rehabilitating or fully upgrading and widening to international standard key national and district roads by 2015; (ii) rehabilitating all local roads by 2015 using locally based contractors; and (iii) conducting an annual condition monitoring survey on all improved roads to determine maintenance needs.

14. Infrastructure (electricity, roads and bridges, water and sanitation) has been identified as the top development priority for 2011, as it was in 2010. Substantial funds have been set aside in the 2011 budget for infrastructure (via establishment of the Infrastructure Fund), and the government has committed to maintain funding for infrastructure at a high level to 2015.

## **3. ADB Sector Experience and Assistance Program**

15. The 2005 Road Sector Improvement Project had initiated the transition of ADB support for road transport beyond emergency work.<sup>6</sup> The project rehabilitated longer stretches of road

<sup>5</sup> Government of Timor-Leste. 2011. *Timor-Leste Strategic Development Plan, 2011–2030*. Dili.

<sup>6</sup> ADB. 2005. *Report and Recommendation of the President to the Board of Directors: Proposed Asian Development Fund Grant to the Democratic Republic of Timor-Leste for the Road Sector Improvement Project*. Manila (Grant 0017-TIM).

than previous projects and initiated labor-intensive maintenance and a larger role for local communities. There was a greater focus on sector planning, with roadwork selected from high-priority roads identified in a 5-year road strategy and program developed with ADB technical assistance support in 2005 and adopted by the government in 2006.<sup>7</sup> A sector approach allowed the government to expand its lead role and provided flexibility in the use of ADB resources.

16. The 2009 Road Network Development Sector Project continued the transition (footnote 2). It was designed to initiate implementation of a 10-year plan for the core road network developed with the support of ADB technical assistance (footnote 1). The project is addressing a lack of sustainability in maintenance by facilitating a move from stand-alone maintenance contracts. A road maintenance program will be established through the development of the policy framework, and programming and implementation capacity. Funds are allocated for the initial maintenance program. The project is also designed to address weaknesses in the capacity of local contractors. It provides contract packages appropriate for small national contractors and will train small contractors in road maintenance technology, bidding, contracting, and project management. The project is complemented by the Our Roads Our Future Project.<sup>8</sup> This will establish a model for community participation in the rehabilitation and maintenance of rural feeder roads and small-scale community infrastructure in areas supported by the Road Network Development Sector Project.

17. Other major donors in the road transport sector include Japan and the European Union. Since 2000, the Government of Japan has provided more than \$35 million in grants for transport, around half for road improvements and for project studies and training in the road sector. The Japan International Cooperation Agency has funded technical assistance for capacity building in road maintenance and for the preparation of guidelines and manuals for roads. The European Union has provided more than \$50 million through three rural development programs, each one with a rural road rehabilitation component. The latest component, valued at approximately \$20 million, will improve the conditions in about 200 km of rural roads (mainly in the western part of the country, including Oecussi), and it will also assist in continuing to build small-scale local road construction capacity. The International Labor Organization and the governments of Australia, Ireland, and Norway are also active in the rehabilitation and maintenance of rural roads. In May 2011, the World Bank approved a \$20 million grant to commence rehabilitation of national roads in the central region of Timor-Leste.

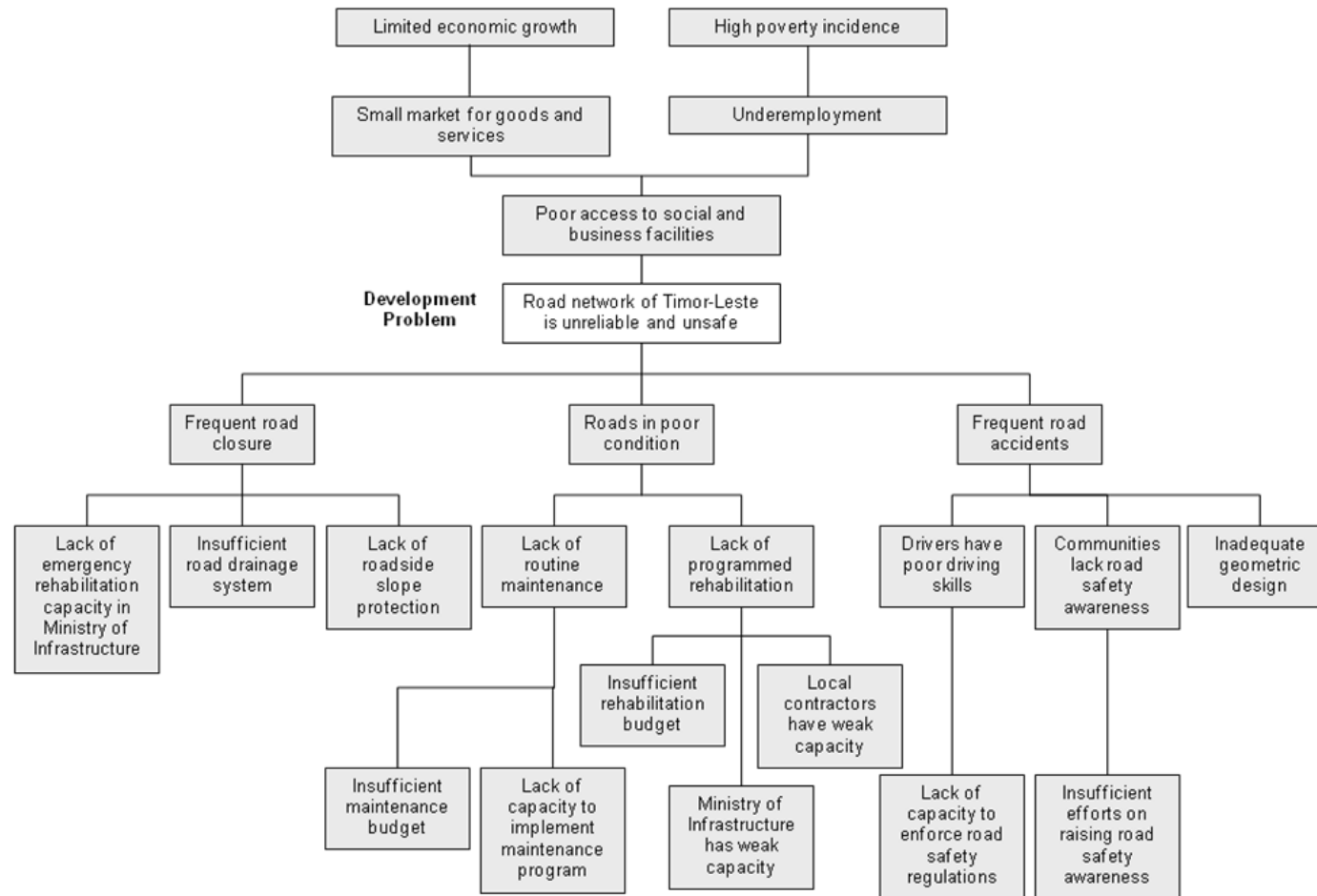
18. ADB support will continue implementation of the core road network. The ADB program will progress from support of the rehabilitation of roads to the upgrade of key roads. The program will emphasize investment projects of national significance that are instrumental to efforts to fast-track development and provide an inclusive pattern of economic growth. Supporting the road maintenance program and building the capacity of government agencies and staff, and local and community-based contractors will remain a high priority. Investment projects that demonstrate government leadership through cost sharing will be favored. A strong emphasis will be placed on projects cofinanced by development partners.

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<sup>7</sup> ADB. 2001. *Technical Assistance to East Timor for Transport Sector Improvement*. Manila (TA 3731-TIM).

<sup>8</sup> ADB. 2009. *Proposed Grant Assistance to Timor-Leste: Our Roads Our Future—Supporting Local Governance and Community-Based Infrastructure Works*. Manila (Financed by the Japan Fund for Poverty Reduction, Grant 9142-TIM).

## Problem Tree for Road Transport



Note: The problem tree is adapted from that prepared at the management for development results workshop, 19–20 July 2010, Dili. Participants included representatives of government agencies, civil society, development partners, and the private sector. The workshop was funded by ADB. 2007. *Technical Assistance for Results-Based Project Management for Pacific Developing Member Countries*. Manila (TA 6436-REG, financed by the Japan Special Fund).

Source: Asian Development Bank.

### Sector Results Framework (Road Transport, 2011–2015)

Country Sector Outcome		Country Sector Outputs		ADB Sector Operations	
Sector Outcomes with ADB Contributions	Indicators with Targets and Baselines	Sector Outputs with ADB Contribution	Indicators with Incremental Targets	Planned and Ongoing ADB Interventions	Main Outputs Expected from ADB Interventions
Increased and more efficient movement of people and goods	<p>At least 25% of total population benefits from rehabilitated or upgraded roads by 2015<sup>a</sup></p> <p>A minimum of 800 rural poor and vulnerable people (at least 30% of them women) receive training on and participate in community-based road rehabilitation and maintenance by 2015</p>	<p>Highway system established and maintained</p> <p>Paved, all-weather roads linking all of the 13 districts of Timor-Leste into a coherent road network</p> <p>All-weather roads that reach local communities</p>	<p>The government will rehabilitate or upgrade at least 500 km of highway and district roads by 2015, based on strong domestic participation</p> <p>The national road system on track for completion by 2020</p>	<p><b>Planned key activity areas</b></p> <p>National and district roads (90% of funds)</p> <p>Rural roads (5% of funds)</p> <p>Sector policy and capacity development (5% of funds)</p> <p><b>Pipeline projects with estimated amounts</b></p> <p>Road Network Upgrading Sector Project (\$8 million)</p> <p>Road Network Upgrading Sector Project (Additional Financing, \$8 million)</p> <p>Infrastructure Asset Management Cluster TA (\$1 million)</p> <p><b>Ongoing projects with approved amounts</b></p> <p>Road Network Development Sector Project (\$46 million)</p> <p>Our Roads Our Future—Supporting Local Governance and Community-Based Infrastructure Works (\$3 million)</p> <p>Infrastructure Project Management TA (\$15 million)</p>	<p><b>Planned key activity areas</b></p> <p>180 km of national and district roads upgraded or rehabilitated</p> <p>Road maintenance program operational</p> <p><b>Pipeline projects</b></p> <p>50 km of national and district roads upgraded or rehabilitated</p> <p><b>Ongoing projects</b></p> <p>About 130 km of national and district roads improved to maintainable condition</p> <p>Annual maintenance implemented on about 130 km of national roads</p> <p>About 80 national contractors trained in contract administration and labor-based road maintenance</p> <p>At least 90 km of rural feeder roads rehabilitated and maintained by community workers</p>

ADB = Asian Development Bank, km = kilometer, TA = technical assistance.

<sup>a</sup> Population in subdistricts with rehabilitated or upgraded roads.

Source: Office of the Prime Minister. 2010. *From Conflict to Prosperity: Timor-Leste's Strategic Development Plan, 2011–2030*. Dili.