

## SECTOR ASSESSMENT (SUMMARY): TRANSPORT<sup>1</sup>

### Sector Road Map

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

1. **Myanmar's economic transition.** Myanmar's economy, which has a history of low growth, is entering what could be a quick catch-up period. It is estimated that Myanmar's gross domestic product per capita stagnated from 1900 to 1990, and then grew at 2.7% annually from 1990 to 2010, against an Asian average of 4.2%. In 2012, Myanmar initiated its transformation towards a democratic and market-based economy. The government floated the kyat in April 2012, implemented tax and licensing reforms benefiting private businesses, and started removing restrictions to foreign investments and imports. There are now prospects for Myanmar's gross domestic product to grow at 7% annually in the medium term and potentially up to 8% until 2030.<sup>2</sup>

2. **Transport sector background.** Myanmar's transport sector can help Myanmar realize its economic potential, but it may impede this potential if long-standing constraints are not tackled. The development of Myanmar's transport services was long hampered by economic distortions: (i) lack of access to foreign exchange; (ii) high license costs for vehicle imports; (iii) coexistence of a subsidized fuel market (for public operators) with a black market (for private ones); (iv) a system of centralized allocation of government freight to transporters; and (v) the presence of loss-making, low-productivity public transport operators. Until early 2010, transport was cheap but slow and unreliable for shippers who could use public road, rail, or river transport operators; it was expensive for those who needed to use the much smaller-scale private operators. As a result, Myanmar's economy has grown without relying on transport. From 1990 to 2011, the number of heavy trucks in Myanmar grew at 2.5% annually, well below the pace of growth of the economy. In 2010, there were only 4.5 cars per 1,000 people in Myanmar.

3. **Transport sector reforms.** The government has already removed important constraints to sector growth. In 2011, it abolished the fuel subsidization system. From 2012 to 2013, it gradually facilitated the import of foreign vehicles, reduced their import costs, and mostly freed the market for freight and intercity public transport. It also raised tariffs for public transport operators, bringing them closer to actual costs, and initiated their privatization. As a result, private sector transport services and personal transport means have boomed: during 2012–2013, the number of registered cars increased by 53%, and motorcycles by 75%. In 2013, the number of trucks grew by 55%. After this initial catch-up phase is over, the demand for transport is expected to grow about 30% faster than the economy. The average rates of growth of trips and freight movement could reach 9%–10%, and the car fleet could grow at 15% or more each year. However, the government's removal of restraints to sector growth also reduced the competitiveness of public transport operators. From 2010 to 2013, rail freight and passenger traffic dropped by 40%, while the public river transport operator lost 60% of its users.

4. **Remaining bottlenecks.** The rapid increase of transport demand is bound to intensify pressure on transport infrastructure and the decline of public transport operators if the efficiency of the transport system is not improved. Most of the transport infrastructure needs to be rehabilitated and modernized to meet the changing needs of an economy in transition. This task

---

<sup>1</sup> This summary is based on: Asian Development Bank (ADB). 2012. *Myanmar: Transport Sector Initial Assessment*. Manila (<http://www.adb.org/documents/myanmar-transport-sector-initial-assessment>).

<sup>2</sup> ADB. 2012. *Myanmar in Transition: Opportunities and Challenges*. Manila.

will take time, because of the large investment requirements and the need to build new sector foundations. The government needs to create the institutional capacity (i) to plan, manage, and regulate in a market economy; (ii) to design new financing channels to raise needed resources; and (iii) to improve skills of the people working in the sector.

5. **Road infrastructure.** Road is the dominant transport mode, used for 76% of passenger and 81% of freight trips.<sup>3</sup> The country has a road network of over 148,700 kilometers (km). Its average road density of 0.21 km per square km compares with that of Thailand (0.22), Cambodia (0.21), Indonesia (0.18), and the Lao People's Democratic Republic (0.17). Its length per population compares with that of Viet Nam or the Philippines, both of which are more populated. However, the majority (80%) of Myanmar's road network is unpaved, which does not compare well with its neighbors.

6. Myanmar has a paved road network of 31,000 km, but its quality is generally poorer with regard to pavement roughness and width than in neighboring countries. While aggregated data is not available, about half of the roads surveyed or visited by Asian Development Bank (ADB) staff have been in fair condition (roughness index from 4 to 8), and another half in poor to very poor condition by international standards (roughness index above 8). The poor condition of the network is due in part to the initial construction and subsequent maintenance works, which rely mostly on labor-intensive techniques (e.g., hand-laid macadam), with inadequate quality testing and a dearth of modern equipment. In many areas, maintenance has been too sparse to preserve pavements. Despite the low traffic volumes, large sections of the network show signs of underlying failure requiring full reconstruction.

7. The network has been generally underutilized, with traffic on most national highways in the range of 100 to 500 vehicles per day (not including motorcycles). Only a few corridors carry more than 1,000 vehicles per day: the two north–south corridors of Yangon to Mandalay, and Yangon to Magway; the Greater Mekong Subregion (GMS) East–West Economic Corridor connecting with Thailand; and the GMS Northern Corridor connecting with Yunnan, in the People's Republic of China. While the network is not congested, travel speeds are generally low, in the range of 25 km per hour to 45 km per hour (except on the Yangon to Mandalay expressway). This is because a large share of the vehicle fleet is more than 40 years old, pavement condition is poor, and modern vehicles share narrow road lanes with nonmotorized ones (e.g., ox carts). As the vehicle fleet modernizes and the number of heavy vehicles grows, the deficiencies of the road network will become more apparent.

8. **Road network management.** The trunk road network is managed by Public Works, a department of under the Ministry of Construction. Public Works is mainly tasked with planning, constructing, and maintaining a national and provincial road and bridge network of about 38,000 km, of which 18,000 km are paved. It also carries out airfield and government building construction works. Unlike similar organizations in other countries, Public Works carries out all road works with its own equipment and 25,000 staff. Public Works' maintenance division staff of 10,200 people is organized under 17 regional or state offices, 400 township or subdistrict units, and village maintenance groups. A separate works division (8,000 staff) carries out road and bridge designs and works through its 16 special road construction units and 16 special bridge construction units. The planning division (5,300 staff) manages and allocates equipment to each unit in function of their annual work plan. The road research laboratory and soil research laboratory have responsibility for the material tests and borehole investigations.

---

<sup>3</sup> Japan International Cooperation Agency. 2014. *The Survey Program for the National Transport Development Plan in the Republic of the Union of Myanmar*. Draft Final Report.

9. **Road sector funding.** Over the past decade, Public Works has consistently increased the size of the paved road network by 500 km each year. From 2006 to 2012, Public Works increased its construction works budget sixfold. In FY2012, Public Works' budget was \$600 million, representing about 1% of Myanmar's gross domestic product. It was divided into \$300 million for road construction and upgrade, \$200 million for bridge construction, \$80 million for periodic maintenance, \$5 million for routine maintenance, \$2 million for equipment purchases, and \$13 million for staff costs. Spending has been concentrated on new construction, often in remote areas where demand is low, and on repair works, which have failed to remedy the roads' deficiencies. Using maintenance cost figures common in developing countries, Public Works appears to underspend by about \$30 million on routine maintenance, by about \$10 million on periodic maintenance, and by \$200 million on road rehabilitation.<sup>4</sup> Public Works' high share of spending for road and bridge construction supports its objective to connect the country together, but does not optimize the economic impacts of its limited budget.

10. Public Works has also gradually delegated the maintenance of a large share of the trunk road network to the private sector. As of November 2013, Public Works had 5,665 km of roads managed by 29 private contractors under 61 build–operate–transfer contracts. The schemes are essentially brownfield road concessions, where a private company takes over an existing road after some limited rehabilitation or improvement works and maintains it for a contractual term of 40 years, extendable to 55 years. To recoup its costs, it raises tolls on long-distance traffic at levels fixed by the government. The model may need to evolve as traffic picks up. By international comparisons, the contracts appear too simple and too long to properly allocate risks, while the toll levels seem too low to fund anything besides basic maintenance on most roads.

11. **Road safety.** Road safety is a serious issue in Myanmar, despite the low vehicle numbers. About 3,300 people died from road crashes in 2013. This puts Myanmar's annual fatality rate at 5.5 per 100,000 people, a level already comparable with developed countries. However, because road use is far lower, the risk of being killed in a road accident when using the road is 10 to 30 times higher.<sup>5</sup> The economic cost of reported road accidents is estimated to be \$550 million.<sup>6</sup> As traffic volumes increase, the situation will likely worsen and the costs will increase. While the government has the outlines of a road safety program, including a high-level committee that brings together all of the relevant agencies (i.e., transport, health, police, etc.), there is little evidence of improvement at the road network level.

12. **Strategic options for network modernization.** The challenges for the government include (i) where to start, (ii) how to raise and allocate needed resources, (iii) how to create the needed road sector construction and maintenance industry, and (iv) how to develop the institutions needed to plan and manage road modernization investments and to maintain the existing assets. In the short run, a program of asphaltic overlays and preventive maintenance would extend the life of the pavements that are still maintainable, generating high benefits for a low cost. Further, to meet modern standards, a large share of the network will need to be rehabilitated and improved, and in the case of bridges, rebuilt to higher standards. Careful planning is needed to allocate resources where they are the most cost-efficient, e.g., on high-

<sup>4</sup> ADB staff estimates. Necessary spending on road rehabilitation may be up to \$400 million annually to reduce the backlog of roads in poor condition within 10 years.

<sup>5</sup> ADB staff estimates. The estimated fatality rate per billion vehicle-km was 100 in 2013, against a range of 3–10 in the Organization for Economic Cooperation and Development countries.

<sup>6</sup> ADB staff estimates, based on the unit cost per accident recommended in: International Road Assessment Program. 2008. *The True Cost of Road Crashes*. Basingstoke, United Kingdom.

volume roads and international corridors. Based on international experience, Public Works' transformation may entail gradually outsourcing works, probably starting with construction and periodic maintenance works, as needs will quickly outpace the organization's capacity to scale up its own resources.

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

13. The government has plans for the transport sector at the subsector level. However, these plans are essentially lists of construction and maintenance projects that are not guided by an overarching transport policy or strategy. The plans lack any analysis of why one project should be preferred over another. The government realizes that this fragmented approach to sector planning and management is a constraint, and that a more coherent approach and a new planning and policy framework for the sector is needed. With support from the Japan International Cooperation Agency, the Ministry of Transport has been preparing a comprehensive transport master plan. The draft plan integrates the investment plans of the different transport subsectors under coherent corridor-based development approaches. The plan modernizes transport sector policies by affirming, among others, the needs to (i) better plan and coordinate, (ii) develop transport infrastructure in an economically efficient manner, (iii) strengthen national and international connectivity, (iv) develop multimodal transport systems, (v) improve safety and reduce environmental impacts, (vi) improve the institutional and regulatory system in a way that enlarges the role of the private sector in provision of services and infrastructure, and (vii) implement a market-oriented approach based on the user-pays principle.

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

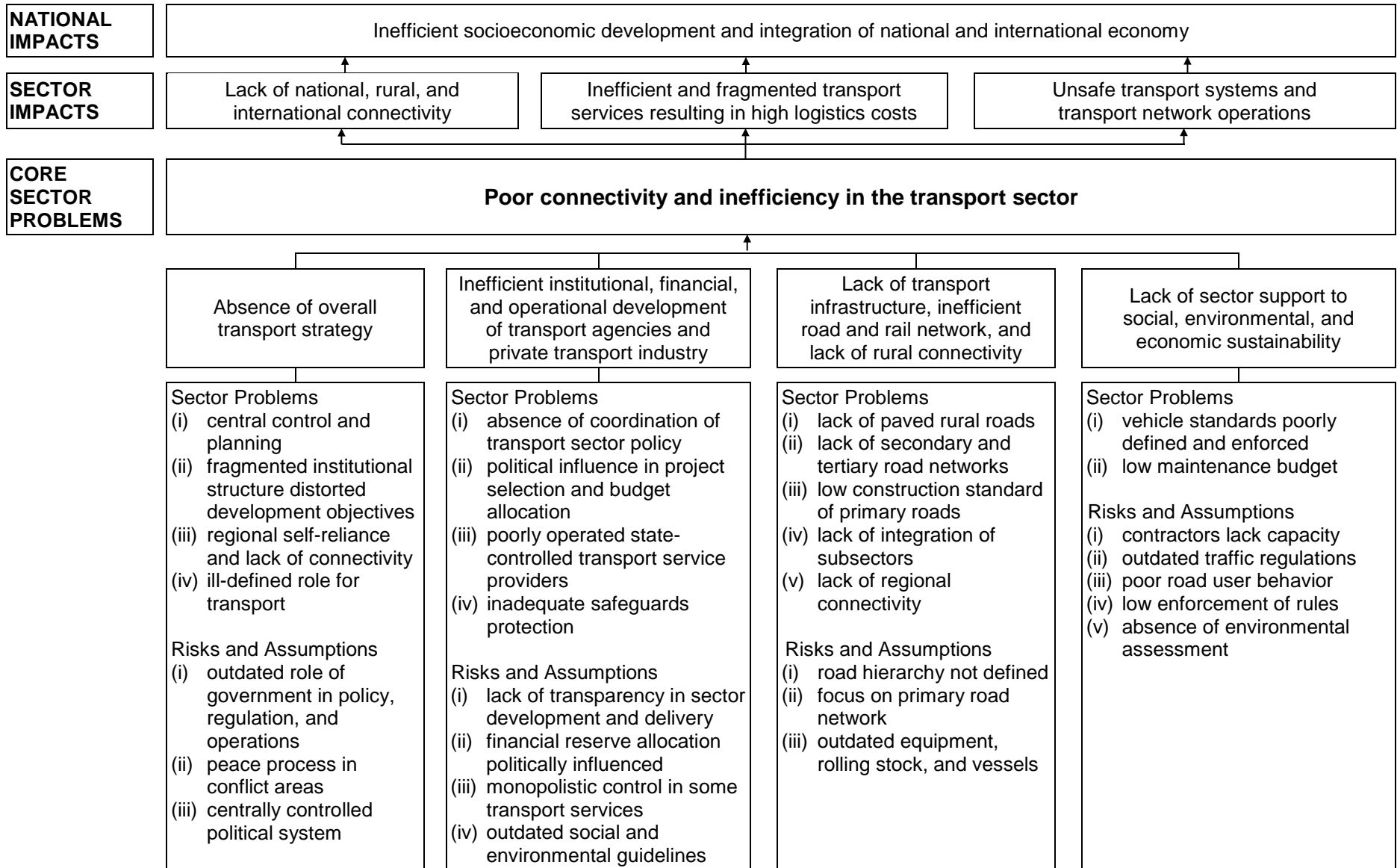
14. Despite Myanmar's sustained engagement with ADB through the GMS program, ADB has not directly supported the country's transport sector since the late 1980s. The last major ADB transport project in Myanmar was the Rangoon–Prome Road Improvement Project.<sup>7</sup> More recently, the GMS relationship has been very effective in maintaining relationships, and will continue to be so. Given the long absence of ADB operations in Myanmar, there are few operational lessons to draw upon. Based on ADB's experience with reengagement in other countries, ADB's initial operations should remain simple: ADB should provide support through well-qualified consultants, adequate staffing, and other resources to support a fairly long transition process.

15. The first set of ADB investment projects in the transport sector was selected based on its ability to: (i) deliver priority development outputs quickly and visibly; (ii) incorporate simple project designs and straightforward implementation procedures; (iii) avoid major negative impacts on the safeguard areas of resettlement, environment, and ethnic minorities; (iv) be scalable and replicable; and (v) provide hands-on training and relevant experience to staff in the implementing agencies. In parallel, ADB's initial program of engagement consists of technical assistance in the areas of institutional capacity building and policy advice. Besides this project, ADB's activities include the preparation for the upgrading of a section of the East–West Economic Corridor, and a capacity development technical assistance project to create an asset management program for Public Works. As local institutions' capacity increases, it is expected that ADB's operations can grow in scale and complexity.

---

<sup>7</sup> ADB. 1983. *Report and Recommendation of the President to the Board of Directors: Proposed Loan to Burma for the Rangoon–Prome Road Improvement Project*. Manila (Loan 644-BUR approved on 26 September for \$27,000,000).

## PROBLEM TREE FOR THE TRANSPORT SECTOR



## SECTOR RESULTS FRAMEWORK (TRANSPORT SECTOR, 2012–2014)

Country Sector Outcomes		Country Sector Outputs		ADB Sector Operations	
Outcomes with ADB Contribution	Indicators with Targets and Baselines	Outputs with ADB Contribution	Indicators with Incremental Targets	Planned and Ongoing ADB Interventions	Main Outputs Expected from ADB Interventions
More efficient and safe transport of people and goods	<p>50% of the trunk road network is in good condition and meets minimal Myanmar standards by 2030 (2010 baseline: less than 20%)</p> <p>100% of revenues of Myanmar Railways cover operating costs by 2020 (2010 baseline: less than 50%)</p>	<p>Institutional structure realignment and transport sector policies improved</p> <p>National road network expanded, improved, and managed well</p> <p>Regional connectivity improved</p>	<p>Single transport agency with responsibility for the sector by 2016</p> <p>Paved road length increased by 5% per annum</p> <p>2–3 GMS corridors connected into Myanmar by 2020</p>	<p><b>Planned target subsectors</b> International and national roads (99% of funds)</p> <p>Transport sector reform and policies (1% of funds)</p> <p><b>Pipeline projects with estimated amounts</b> Maubin–Phyapon Road Rehabilitation Project (\$80 million)</p> <p>GMS East–West Economic Corridor Eindu to Kawkareik Road Improvement (\$130 million)</p> <p>Transport Sector Reform and Modernization (\$1 million)<sup>8</sup></p> <p><b>Ongoing projects with approved amounts</b> Preparing the GMS East–West Economic Corridor Eindu to Kawkareik Road Improvement (\$1.5 million)</p> <p>Developing the Road Asset Management Program for Myanmar Roads (\$1.365 million)</p>	<p><b>Pipeline projects</b></p> <p>(i) 55 km road rehabilitated in Ayeyarwaddy region by 2017</p> <p>(ii) 70 km segment of the GMS East–West Regional Corridor upgraded by 2017</p> <p><b>Ongoing projects</b></p> <p>(i) A program for road asset management prepared by 2015</p> <p>(ii) A coherent and effective set of transport institutional structures and policies recommended by 2014</p>

ADB = Asian Development Bank; GMS = Greater Mekong Subregion, km = kilometer.  
Source: Asian Development Bank.

<sup>8</sup> Formerly titled *Modernizing Myanmar Railways through Institutional Capacity Building and Rehabilitation*.