

A decorative background consisting of a grid of squares in various shades of brown and red, with some squares missing or faded, creating a mosaic effect.

Myanmar

Transport Sector Initial Assessment



Myanmar

Transport Sector Initial Assessment

October 2012

Asian Development Bank

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Currency Equivalents

(as of 1 October 2012)

Currency unit = kyat (MK)

MK1.00 = \$0.0011

\$1.00 = MK861.33

Abbreviations

ADB – Asian Development Bank

ASEAN – Association of Southeast Asian Nations

BIMSTEC – Bay of Bengal Initiative for Multi-Sectoral Technical and Economic Cooperation

GMS – Greater Mekong Subregion

IWT – Inland Water Transport

km – kilometer

Lao PDR – Lao People's Democratic Republic

m – meter

MOC – Ministry of Construction

MORT – Ministry of Rail Transportation

MOT – Ministry of Transport

PRC – People's Republic of China

Sector Assessment: Context and Strategic Issues

A. Introduction

1. This initial assessment of Myanmar's transport sector provides an overview of the key challenges and opportunities facing the sector, highlights the Government of Myanmar's plans for addressing priority transport needs, and describes the Asian Development Bank's (ADB) initial steps for reengaging in the sector. The assessment was prepared to provide background information for ADB's interim country partnership strategy for Myanmar, and identifies possible technical assistance and investment initiatives for the transport sector. The assessment will be revised periodically based on new information to reflect the evolving development partnership between Myanmar and ADB.

B. Overall Transport Sector Context

2. Myanmar is a large country, with a land area of 676,577 square kilometers (km²). Its geographic location, when combined with strategic investments in transport infrastructure, provides Myanmar with the potential to become a land bridge between South and Southeast Asia, and linking the People's Republic of China (PRC) to these markets. Myanmar shares borders with Bangladesh, the PRC, India, the Lao People's Democratic Republic (Lao PDR), and Thailand. The country has a 2,800-kilometer (km) coastline along the eastern side of the Bay of Bengal.

3. Myanmar's population is approximately 60 million, with more than 70% living in rural areas. Gross domestic product per capita was estimated to be \$380 in 2009 and Myanmar is ranked among the poorest (161 out of 180 countries) by the International Monetary Fund. The economy is predominantly based on agriculture, with rice being the main crop and staple food. The country has abundant natural resources; development of Myanmar's oil and gas reserves since the early 1990s has resulted in rapidly increasing petroleum exports, reducing agriculture's share of total exports.

4. Myanmar's long period of isolation, since the 1980s, and the intense economic sanctions that accompanied it, seriously hampered the country's development. The sanctions are only now being eased. During nearly 3 decades, Myanmar lost most access to international investment and assistance, including from ADB and the World Bank. Consequently, Myanmar's transport sector has suffered from a lack of international expertise, experience, and investment; and a loss of capacity in the agencies that are tasked with managing and operating the sector. This applies broadly to all of the transport subsectors: roads, railways, ports, inland waterways, and civil aviation.

5. Compared with other member countries of the Association of Southeast Asian Nations (ASEAN), Myanmar's transport sector is considerably underdeveloped. For example, road density for

ASEAN overall is about 11 km per 1,000 people, while Myanmar's is about 2 km. Indonesia has about 250 vehicles per 1,000 people and Thailand has about 370; the equivalent figure for Myanmar is just 18.¹

6. There has been some public investment in the transport sector over the past 20 years, with limited assistance from the PRC and India (particularly in the road subsector). However, an overall transport sector strategy has been lacking. Investment has focused on major highways and new railways, with little funding for the operation and maintenance of the existing networks, particularly for the lower-level road networks. The higher-level roads are underutilized while access to regional towns and communities is very poor. Transport costs are high and access to economic and social opportunities for much of the population is severely limited.

7. In light of the recent reforms by the government and following the national by-elections on 1 April 2012, there is a growing consensus, both nationally and internationally, that Myanmar is poised for fundamental political, economic, and social change. The transport sector will play a critical role in facilitating economic and social development in the country. An important priority is improved domestic connectivity through more efficient transport linkages between rural areas, markets, and urban centers.

8. Improved connectivity with neighboring countries is also important. Although Myanmar shares borders with five countries and is in effect a bridge between South Asia and Southeast Asia, transport links with its neighbors are very limited and substandard. To achieve the potential of its strategic location, Myanmar needs to develop or improve more border crossings. Further, it needs to adopt the software provisions included in the Greater Mekong Subregion (GMS) Trade and Transit Agreement, to facilitate the cross-border movement of people and goods.

C. Core Sector Issues

1. Background

9. The principal core sector issues are (i) the fragmented and overlapping institutional structures for managing the sector; (ii) the lack of an overall transport sector strategy; (iii) the related lack of rigorous cost-benefit economic analysis in the decision-making process for prioritizing infrastructure investments; (iv) the need for capacity building using as a base the reasonably robust and committed institutions and officials at the subsector level; (v) the limited role of the private sector; and (vi) the poor state and very low coverage of the lower level road network, resulting in local communities having inadequate access to the core road network and basic services.

10. From the time of independence in 1948 through the early 1960s, Myanmar (formerly Burma) had reasonably sound transport infrastructure and a competent and well-structured civil service to manage it. In 1962, however, the government adopted the "Burmese Road to Socialism." Most productive assets were nationalized and the transport network became a means of distributing food and other commodities around the country. Budgetary constraints were severe and investment in the transport network fell sharply. Revenues from the commercial subsectors, notably the rail and inland water transport networks, were delinked from the costs of providing services.

11. In the late 1980s, a beginning was made to return the country to a more market-based system. Before this could take hold, however, political events resulted in the international community imposing wide-ranging economic sanctions on the country. Among other consequences of these sanctions,

¹ United Nations Development Programme (UNDP). January 2011. *Transport Sector Development Issues and Strategies*. Yangon, Myanmar.

international development agencies, including ADB and the World Bank, suspended their assistance. This severely impacted infrastructure investment, the focus for both agencies in Myanmar during the 1980s. ADB had financed reconstruction of the core Rangoon–Prome (now Yangon–Pyay) highway; the World Bank, among other operations, financed projects for port rehabilitation and development of the domestic contracting industry.

12. The PRC, India, and Japan continued to support investment in the transport sector, notably physical works in the road and rail subsectors. However, there was little investment or reform in the agencies that managed the transport subsectors and operated the state-owned service providers. To the extent there was change, it was to centralize control. The revenue-generating agencies—the railway, inland water transport, the road department’s bus and truck fleets, and, more recently, the national airline—lost most of the autonomy they once had; they became little more than departments within their parent ministries. Their revenues went to the central treasury and their financing was allocated through the budget in the same manner as a government department. This is the prevailing situation, and the cumulative result is a seriously inadequate and inefficient transport system.

13. The government’s national integration policy of extending the road and rail networks to remote areas of the country has deepened the transport challenges. Since these areas are typically mountainous and sparsely populated, with little economic base, the cost of providing transport infrastructure to them is high, and the economic returns and revenue potential are low. The railway provides an example. Since the late 1980s, the rail network has almost doubled from 1,976 km to 3,516 km; the number of bridges has doubled (to more than 11,000) and the number of tunnels has increased from zero to 12, indicating that the new railways have been constructed in difficult terrain and at a commensurately high cost. Despite this significant expansion of the network, overall rail freight has increased by just 50%, from about 2 million tons to 3 million tons. Much of this increase could be accounted for by normal growth on the original network. It is likely that these remote areas could have been integrated with the rest of the country at much lower cost by roads of appropriate standard. Frequently road construction paralleled rail construction, resulting in excess transport capacity in the corridor served by both.

14. In short, the more productive and economically important parts of the road and railway networks have been seriously underfunded, while expensive and underutilized extensions of the networks have proceeded apace. As part of an overall transport planning process, all major infrastructure investments, whether for new or upgraded facilities, should be subjected to rigorous comparative cost–benefit analysis, preferably based on the net benefit to the country as a whole.

15. Exacerbating, or perhaps the cause of, the lack of an overall approach to transport planning is the complex and fragmented institutional structure. Myanmar’s transport sector is managed by six ministries and several city development committees. These are the (i) Ministry of Transport (MOT); (ii) Ministry of Rail Transportation (MORT); (iii) Ministry of Construction (MOC); (iv) Ministry for Progress of Border Areas and National Races and Development Affairs; (v) Ministry of Defense (MOD); (vi) Ministry of Home Affairs; and (vii) the Yangon, Mandalay, and Nay Pyi Taw city development committees. Of these, the MOC, the MORT, and the MOT are the most important for the greater part of the country’s core transport networks. The structures of these three ministries are outlined in the Appendix in simplified form. The most essential points to note from this outline are:

- (i) there is no agency with overall responsibility for the transport sector;
- (ii) there are no clear lines of responsibility; for example, road-related activities fall under the MOC, the MORT, and the MOT;
- (iii) the MORT and the MOT consist of a mix of departments and state transport enterprises, with the MOT being almost completely vertically integrated;

- (iv) critical road-related activities, such as regulation, driver and vehicle licensing, and safety, are the responsibility of the MORT; and
- (v) the MOC, the agency responsible for constructing and maintaining roads, has no formal involvement with regulating the vehicles that use the roads, or with road safety.

16. Notwithstanding this complex institutional structure, the subsector agencies—for roads, railways, and inland waterways, for example—have remained reasonably robust and well organized. Despite limited financial resources and access to the latest management and technical processes, they have managed to keep the networks working and relatively well maintained. To illustrate, the core network of the road subsector is in reasonable condition. Funding permitting, periodic and routine maintenance appears to be done regularly, typically through labor-intensive methods but adequately considering the low traffic volumes. This situation will change as the economy grows and traffic volumes and loads increase. Nonetheless, there is a basic institutional framework for managing the subsectors and assistance for capacity building should utilize it. There is, however, a pressing need to restructure overall management of the sector. For example, responsibility for the road subsector should be under one ministry or agency, not three as is the case currently.

17. Also, the private sector should have a much larger role as contractors for government-financed construction and maintenance works. There should also be much greater private sector involvement in areas that are the preserve of state enterprises, notably road transport, the railway, inland waterway transport, and civil aviation.

18. The tertiary local sectors of the road network have received much less attention. Myanmar's extremely low coverage of lower-level roads—as apparent from map reviews and field inspections—is a major problem for a country where more than 70% of the population lives in rural areas. There appears to be no adequately resourced government agency to develop and maintain this network. Unless there is a concerted effort to link local communities with the core road system, it will be difficult to improve the well-being of the rural population—including through improved access to and delivery of education, health, and agricultural extension services. This observation applies in particular to conflict-affected areas of the country, where there has been very little development for many decades.

19. In summary, the principal sector issues are the fragmented and overlapping institutional management structure, the lack of an overall transport strategy and system for prioritizing infrastructure investment, the need for capacity building, and the serious inadequacy of the lower level road network. The problem tree for the transport sector in Myanmar is on p. 5.

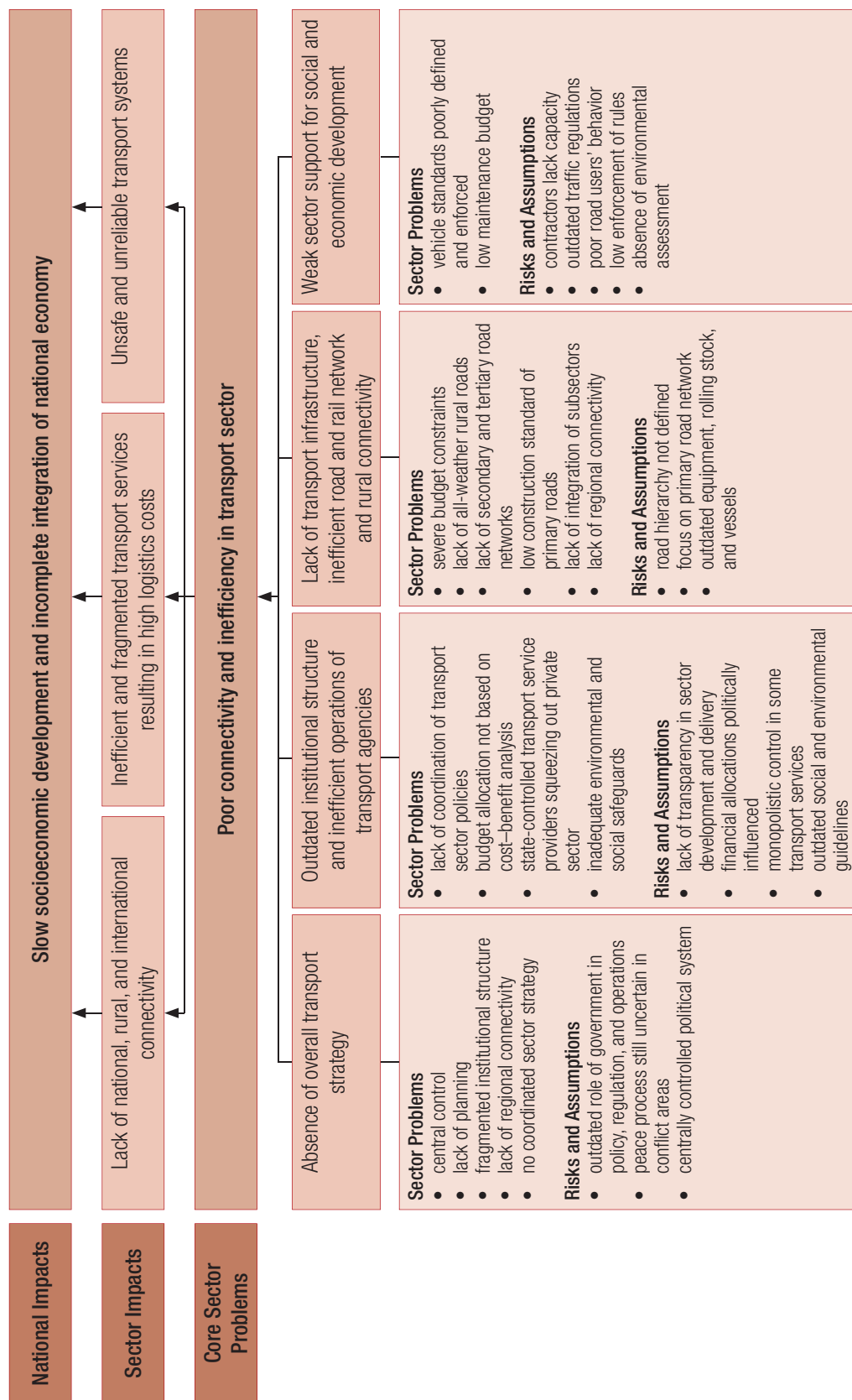
2. Subsectors

20. Myanmar's transport sector consists of six subsectors: roads, railways, inland waterways, ports, civil aviation, and urban transport. Each subsector is reviewed below, concentrating on the first three as these are likely to be the focus of ADB's assistance in the short to medium term.

21. Based on the 1993 *Myanmar Comprehensive Transport Study*,² about 50% of passenger travel was undertaken by road and 44% by rail. For freight, about 20% was carried by road, 30% by rail, and 40% by inland water transport. It is likely that these modal shares have changed somewhat since the study was completed and that the road sector is now more dominant. Further assessment of current modal shares is required.

² UNDP. 1993. *Myanmar Comprehensive Transport Study*. Yangon, Myanmar.

Figure 1 Problem Tree—Transport Sector in Myanmar



Source: Asian Development Bank.

a. Roads

22. **Road infrastructure.** Road transport is the dominant transport mode in Myanmar. However, for a country covering an area of 676,577 km², with a population of about 60 million, the country has a relatively low road density, both in terms of total road length and the extent of higher-standard roads. Myanmar has about 130,000 km of roads of all types, equivalent to about 2 km of road per 1,000 people. As noted earlier, road density for ASEAN as a whole is more than five times higher. The comparison is even less favorable in terms of total road length paved to all-weather standards, which is only 20% in Myanmar's case.



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Table 1 Road Network

Year	Ministry of Construction			Total Road Network		
	Total Road Length (km)	Paved Road (km)	% Paved	Total Road Length (km)	Paved Road (km)	% Paved
2004	29,497	14,126	47.9	90,713	22,153	24.4
2005	29,825	14,356	48.1	92,859	22,830	24.6
2006	30,433	14,956	49.1	104,058	22,880	22.0
2007	30,711	15,213	49.5	111,737	24,374	21.8
2008	30,902	15,387	49.8	125,355	24,684	19.7
2009	32,070	15,583	48.6	127,942	24,975	19.5
2010	34,178	16,550	48.4	130,050	25,942	20.0
2011	37,784	17,260	45.6	142,395	30,879	21.7

km = kilometer.

Source: Myanmar Ministry of Construction, Public Works Department, 2011.

23. Myanmar's policy for transport, to the extent there is a policy, is as an element of the national policy for integration of all regions of the country, and promotion of economic activities, particularly trade and tourism with neighboring countries. Road transport, as the dominant mode, has a significant role to play in achieving these policy objectives. At the local level, road transport is essential for supporting agriculture and tourism and for providing rural communities access to markets and essential services.

24. Improving access to conflict-affected areas through constructing and rehabilitating road links will be crucial in the context of recent and ongoing negotiations to resolve ethnic tensions in much of Myanmar's eastern region bordering the PRC, the Lao PDR, and Thailand. Better road links will facilitate the process of social and economic development that has been absent in these areas for almost five decades.

25. The extent and shape of Myanmar's primary road network has been dictated by topography. The country is long and relatively narrow, and divided by north-south mountain ranges and large rivers.

As a consequence, most of the road network runs north–south, as do the railway and inland waterway networks. However, this is changing, as outlined in the country’s National Road Network Plan. Since the late 1980s, several primary roads and bridges have been constructed to provide east–west linkages. The result is a core network that provides access to most regions of the country.

26. The lower-level networks, at state or division and local levels, appear to be much less extensive, or almost nonexistent in some areas. What exists is in poor condition.



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27. About 48% of the core network of about 34,000 km is paved with an all-weather surface. In contrast, only 8% of the noncore secondary and local road network, such as it is, has some form of all-weather surfacing; much of this is in very poor condition. The implications of this low level of access for economic and social activity are grim. Many studies have shown that poverty reduction is more likely to be effective when communities have ready access—throughout the year and in all weather—to essential services and to markets. A recent study in Bangladesh confirms the strong link between access and poverty reduction.³

28. **Road transport.** In 2010, Myanmar’s number of vehicles per 1,000 people, inclusive of motorcycles, was about 38; Thailand’s ratio was 10 times this. Viet Nam and even the Lao PDR also had much higher ratios. While Myanmar’s number of vehicles has been growing rapidly, increasing from around 175,000 in 1990 to 2,300,000 in 2010, almost all of the increase is attributable to motorcycles; they now account for 82% of the total number of vehicles. Vehicles with four or more wheels have increased much more slowly, by about 5% per annum to some 400,000.

Table 2 Vehicle Registration

Year	Total Registration	Motorcycle Registration	% Motorcycles
1990	174,970	41,912	23.9
1995	291,006	82,528	28.4
2000	438,834	174,553	39.8
2004	960,341	638,386	66.5
2008	1,994,358	1,608,772	80.7
2010	2,291,675	1,877,596	81.9

Source: Myanmar Ministry of Rail Transportation, Road Transport Administration Department.

29. Since vehicle density is so low, Myanmar does not experience significant congestion problems, even on the busiest sections of the core network. However, as the country’s economy expands, spurred by political and economic liberalization, this will change. In developing countries, traffic usually increases much more rapidly than road capacity. Rapidly increasing traffic will have a negative impact on the already inadequate road infrastructure, undermining the capacity of the network.

³ World Bank. 2006. *The Poverty Impact of Rural Roads: Evidence from Bangladesh*. Washington, DC.

30. A program of road capacity preservation and enhancement is urgently required, commencing with activities focusing on preserving the most essential parts of the road network followed by activities to expand the network. Much more needs to be done to ensure that road capacity and service quality are aligned with the likely rapid increase in transport demand.

31. **Road safety.** Road safety statistics for Myanmar indicate that, despite the low vehicle numbers and limited road network, fatality rates are higher than for neighboring countries and much higher than for developed countries. While the reliability of information for Myanmar is uncertain, World Health Organization data for 2007 indicate that Myanmar suffered 15.7 fatalities per 10,000 vehicles, a standard measure.⁴ Comparable values were 1.1 for Australia, 4.9 for Thailand, and 5.6 for Viet Nam. As traffic volumes increase, this situation will likely worsen. The 2011 study by the United Nations Development Programme (footnote 1) estimated that road accidents in 2003 cost the equivalent of about 3% of gross domestic product. While the government has the outlines of a road safety program, including a high-level committee that brings together all of the relevant agencies (transport, health, police, etc.), there is little evidence of improvement at the network level. Future support for the country's road sector will need to include assistance for developing and sustaining a comprehensive approach to road safety.

32. **Road subsector constraints.** The principal constraints concerning the road subsector include (i) the lack of an overall strategy for the transport sector, (ii) a fragmented institutional management structure for the road subsector, (iii) inadequate budgetary resources, (iv) excessive state control of all aspects of the subsector's operations, and (v) insufficient quality control resulting in infrastructure investments failing well before the end of their expected service lives. The lack of an overall strategy for the transport sector has been discussed earlier. The fragmented institutional structure and limited budgetary resources are considered currently to be the most critical and are discussed below.

33. The institutional structure for the road subsector is particularly complex, as outlined in the Appendix, and is a principal constraint to effective development and management of the subsector. Several ministries and agencies are responsible for the design, construction and maintenance of road infrastructure: the MOC; the MORT; the Ministry for Progress of Border Areas and National Races and Development Affairs; the MOD; the Ministry of Home Affairs; and the Yangon, Mandalay, and Nay Pyi Taw city development committees. The Public Works Department of the MOC is responsible for the design, construction, and maintenance of the main and secondary roads, which constitute about 38,000 km of the country's overall 147,000 km road network; the remaining 109,000 km are the responsibility of the other agencies.

34. The MORT has overall responsibility concerning users of road infrastructure; the MOT has peripheral involvement through its Department of Transport. Within the MORT, the Road Transport Administration Department and the Transport Planning Department are the core service agencies. In addition, the ministry owns the Road Transport Agency, a state economic enterprise. It also administers the Central Institute of Transport and Communications.

35. The Road Transport Administration Department is responsible for driver licensing, vehicle registration, aspects of road safety, and other related regulatory activities. The Transport Planning Department is responsible for scrutinizing and coordinating plans, budget, and financial matters prepared by the ministry and its agencies; issuing licenses to commercial vehicle operators for carrying passengers and freight; managing passenger and freight logistics to ensure sufficient supply to meet demand; and functioning as the focal point for international relations related to land transport. The Road Transport

⁴ World Health Organization. 2009. *Global Status Report on Road Safety*. Data used in the report is available at http://www.who.int/violence_injury_prevention/road_safety_status/country_profiles. It is likely that this overstates the situation for Myanmar, since the large numbers of motorcycles in the country have only recently been included in the vehicle statistics. However, an alternative measure, fatalities per 100,000 population (2.4 in 2000 and 3.2 in 2009, a 33% increase in 10 years) confirms that the problem is serious, and deteriorating.

Table 3 Road Network Responsibilities

Ministry/Committee	Road Length (km)	% of total
Public Works Department, Ministry of Construction	37,784	25.6
National highway	18,740	
Main roads	19,044	
Ministry for Progress of Border Areas and National Races and Development Affairs	94,286	64.0
Urban roads	11,272	
Rural roads and border area roads	83,014	
Army Corp of Engineers, Ministry of Defense	8,049	5.5
City Development Committees	7,226	4.9
Nay Pyi Taw City	2,284	
Yangon City	3,928	
Mandalay City	1,014	
Total	147,345	100.0

km = kilometer.

Source: Ministry of Construction, Public Works Department.

Agency provides freight and transport services, including buses in Yangon and trucks operating in competition with private transport companies. The Central Institute of Transport and Communications manages the human resource requirements for the overall transport sector.

36. Despite this multiplicity of agencies, the unclear and illogical division of responsibilities among them, and the budgetary constraints described below, the road subsector operates reasonably well. Discussions and field visits during the preparation of this initial assessment indicated reasonably sound maintenance practices, using labor-intensive methods. Once the institutional arrangements and responsibilities for the transport sector are restructured in a more coherent manner, the subsector agencies, which are already reasonably effective, should be able to operate more efficiently.

37. Budget limitations are severe. In 2011, the budgetary allocation for the primary and secondary road network, for which the MOC is responsible, was about \$300 million, or about \$8,500 per km. Since the bulk of this was for new road construction to interconnect the country, little remained for maintenance. Nonetheless, maintenance is generally adequate on the core network given the present low levels of traffic. This situation will change rapidly as traffic volumes and heavy loads increase. Budget requirements need to be based on analysis of construction and maintenance costs, and cost-benefit analysis of priority road infrastructure investments.

38. A further constraint to the development of the road subsector is lack of familiarity with the required procedures of development agencies, notably those of ADB and the World Bank. This is not surprising because the last ADB-financed project in the road subsector was approved in 1983 and was implemented through a force-account approach using state agencies.⁵ During preparation of this initial assessment, government agencies appeared to anticipate that ADB support would be similar in nature, including the implementation arrangements. This will not be the case.

b. Railways

39. The railway subsector is operated by the MORT state enterprise, Myanmar Railways. During the past 20 years, the rail network has been expanded considerably—to about 3,500 km. Much of this

⁵ ADB. 1983. *Report and Recommendation of the President to the Board of Directors: Proposed Loan to the Union of Myanmar for the Rangoon–Prome Road Improvement Project*. Manila.

Table 4 Rail Network Development

Description	Existing in 1988	Additions from 1988–2010	Present Total
Route miles (km)	1,976	1,540	3,516
Track miles (km)	2,794	1,838	4,632
Railway stations (number)	487	402	889
Rail bridges (number)	5,650	5,553	11,203
Tunnels (number)	0	12	12
Passenger trains (number)	243	207	450
Cargo trains (number)	18	3	21
Locomotives (number)	293	98	391

km = kilometer.

Source: Myanmar Ministry of Rail Transportation, Myanma Railways.

expansion has been undertaken to provide transport services in remote areas of the country, reflecting the government's policy of national integration.

40. Most of the new lines, several of which parallel new roads, are in mountainous terrain and have been very expensive to construct.⁶ Remaining funds for maintaining and improving the existing core network have been extremely limited. As a result, the rail network is in poor condition. Further, the operating assets, including locomotives, passenger and freight cars, and signaling and communications systems, require substantial investment. Despite the extensive investment in new rail lines, the subsector's relative importance is slipping. To illustrate, the subsector handled some 3 million tons of freight in 1993, about 30% of total freight transport; in 2011, freight tonnage remained the same, but was a much smaller share of the significantly increased freight transport demand.

41. Railway financial statements indicate that revenues of the subsector are only about half the level of expenses. However, despite its limited financial resources, Myanma Railways is a relatively robust state enterprise, with staff resources and operating procedures that have been sufficient to keep the railway operating with reasonable levels of service under very difficult circumstances. Through its in-house technical resources, Myanma Railways has been able to keep a large, disparate, and old locomotive fleet

Table 5 Railway Financial Statement, 2006–2009 (Kyat billion)

Classification	2006	2007	2008	2009	2010	2011
Revenue	25.17	27.26	28.11	30.10	33.16	51.00
Passenger	18.51	20.43	20.54	20.20	20.64	29.46
Goods	4.87	4.63	5.47	7.69	8.29	16.74
Others	1.79	2.20	2.10	2.21	4.23	4.80
Expenses	37.70	43.66	52.62	58.89	66.38	71.55
Operating expense	37.68	43.63	53.59	58.86	66.32	71.54
Interest	0.02	0.03	0.03	0.03	0.06	0.01
Operating Ratio (%)	149.8	160.2	187.2	195.6	200.2	140.3

Note: Numbers may not sum precisely because of rounding.

Source: Ministry of Rail Transportation, Myanma Railways.

⁶ To illustrate in simple terms the impact of this, prior to 1988, the essentially original colonial-period rail network included about 5,600 bridges and no tunnels. The new lines, about 70% of the original network, have added a further approximately 5,600 bridges and 12 tunnels, which are a very high cost part of a railway link.

operating using basic but effective approaches such as replacing engines and traction systems.

42. **Railway subsector constraints.** The principal constraints affecting the subsector include (i) the focus on constructing new lines that have low economic value and revenue prospects, (ii) insufficient investment in the core network, and (iii) the lack of a modern commercially oriented financial management system.

43. These constraints are interlinked. The resources committed to expensive but low-return new lines are constraining essential investment in the core network, from which future revenue growth will be generated. The absence of a commercially focused financial management system makes it difficult to align expenditures on the network with revenues from the various lines.



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44. Investment in basic infrastructure, such as track renewal, replacement of sleepers, reballasting, and upgrading of signaling and communications systems, is seriously inadequate. As a result, operating speeds are low, riding quality is poor, and the competitiveness of passenger and freight services will decline as the competing road network is improved. To illustrate the challenges facing the railway subsector, more than 25% of its 400 locomotives are over 40 years old. They are difficult and expensive to operate and maintain, especially as they originate from multiple manufacturers—a consequence of multiple donor support.

45. Travel between Yangon and the capital Nay Pyi Taw is about 5 hours by road and almost 9 hours by rail. Since government agencies account for a large share of rail freight, the railway system is protected to some extent from the disparity in travel times. In the future, however, the disparity will become serious, as the government becomes less dominant as an originator of freight shipments and as more consumer-related high-value low-volume freight begins to dominate transport demand.

c. Inland Waterways

46. Myanmar has some 5,000 km of navigable waterways, of which about 2,400 km make up the primary inland waterway network. This network includes the Ayeyarwaddy and Chidwin rivers and the extensive channel system in the Ayeyarwaddy Delta. The dominant provider of both passenger and freight services on the network is Myanmar Inland Water Transport (IWT), a state enterprise of the MOT.

47. IWT has approximately 240 powered vessels, many of which are old, with a total capacity of about 70,000 tons. In 2011, IWT handled 28 million passengers and 5 million tons of freight (comparative 2000 figures are 23 million passengers and 4 million tons of freight). IWT currently handles some 50% more freight than Myanmar Railways. Equivalent figures for passenger and freight movements are not available.



J. Cooney

Table 6 Inland Water Transport

Description	Present total
Service Route (kilometers)	3,516
Vessels (number)	429
Powered	236
Dumb barges	154
Station pontoons	39
Services, 2011	
Passengers (million)	27.57
Goods (million tons)	4.79
Dockyards (number)	6

Source: Myanmar Ministry of Transport, Myanmar Inland Water Transport.

48. Freight transported by water includes teak logs, rice, cement, fertilizer, building materials, and petroleum products. As with the rail subsector, much of this freight is among state enterprises, and hence captive.

49. For most locations where IWT provides services, the river ports are little more than landing beaches. Vessels are loaded and unloaded from the beach by means of a simple gangplank. At some locations, specialized cargo-handling facilities are available for bulk commodities, such as petroleum, cement, and fertilizer.

50. Transport tariffs are low and well below cost for both passenger and freight services, and are fixed by the government. This applies even for commercial commodities such as building materials, for which market-based tariffs could be charged. Low tariffs may also apply to the increasing tourist-related water transport tours, provided by a small IWT fleet of passenger vessels. These serve the international tourist market, indicating that commercial tariffs should be applied to this segment of IWT's market.

51. IWT is vertically integrated, internalizing all aspects of its services, including vessel maintenance. It has six shipyards throughout the country, some more than 100 years old and none equipped with modern facilities. As with the other transport subsectors, however, IWT has the management and technical capacity to maintain a reasonable level of service, despite its aging fleet and facilities and very limited financial resources.

52. While IWT is able to make use of an essentially free "roadway" to provide its services, there is a considerable cost and effort required to ensure that this roadway remains navigable. Extensive and repeated dredging is required, as well as effective navigation and communications facilities. This is the responsibility of the MOT's Directorate of Water Resources and Improvement of River Systems. The directorate operates through several agencies, including the Waterways Conservation Department, which is responsible, among other activities, for navigation facilities and dredging. Since 2000, the directorate's total expenditure for the two main rivers, the Ayeyarwaddy and the Chidwin, was about \$5 million, a completely inadequate sum given the size and importance of the inland water transport network. During the low water season, from November to May, many of the inland water transport routes have insufficient draft for vessels to operate safely, if at all. Improved river channels and navigation aids would benefit all providers of inland water transport services—public and private.

53. **Inland waterway subsector constraints.** The principal constraint for the subsector is being required, as in the case of IWT, to provide services at government-fixed tariffs that are below cost. If tariffs were set to reflect costs, and the subsector operated commercially, IWT would be able to modernize

and expand its operations. There would also be considerable scope for IWT to transfer portions of its operations, including operating and maintaining vessels, to the private sector.

54. The lack of budgetary resources for dredging activities and navigation facilities is also a major constraint, for both public and private sector providers. The main reason for inadequate dredging appears to be the lack of finances for spare parts and fuel, rather than a lack of dredging equipment. Again, a greater role for the private sector, drawing on more realistic transport tariffs, merits further study.

d. Ports

55. Myanmar's principal port city is Yangon, which handled 12 million tons of import and export freight in 2011. The main port, located on the Yangon River 30 km inland from the sea and adjacent to Yangon City, is administered by the Myanmar Port Authority. Because of the shallow draft leading to the port, access is limited to vessels of around 10,000–12,000 deadweight tons. The general cargo berths are located along Strand Road, in the heart of the city, which contributes to the city's developing traffic congestion. Additional government-owned terminals for petroleum products and other commodities are in the same port area.

56. Yangon port now includes the new port area at Thilawa, about 20 km downstream of Yangon. This is a private sector investment developed and operated by Hutchison Port Holdings of Hong Kong, China. The new port has rail access, provides some 1,000 meters (m) of wharf, and handles container and general cargo. It offers a deeper draft than Yangon, 10 m compared with Yangon's 7 m; as a consequence, it can handle larger vessels, including cruise ships.

57. Deep water ports are also to be developed with Thai investment at Dawei in the southeast of the country and with PRC government investment at Kyaukphyu in Rakhine State. These will primarily serve the Thai and PRC markets, together with some development of the local area and economy.

58. The Myanmar Port Authority is also responsible for eight coastal ports, four on the western coast and delta and four on the southeastern coast. These are reportedly simple facilities, typically pontoon based, without mechanized handling facilities. Most coastal traffic is between the coastal ports and Yangon. Another MOT state enterprise, the Myanmar Five Star Line, operates a small number of vessels on coastal and international routes. However, the bulk of coastal shipping is provided by private operators, mostly using relatively small timber-hulled vessels.

59. **Port subsector constraints.** Given the relatively low volume of imports and exports and available port capacity in Yangon and Thilawa, the subsector is relatively accommodative. New port developments such as Dawei will add to overall capacity, enabling growth in imports and exports as the economy becomes more market-based. There may also be benefits to be gained from improving the coastal ports to allow more effective use of coastal shipping as part of the country's overall transport system.

e. Civil Aviation

60. Myanmar's civil aviation subsector includes three airports capable of handling 747 class aircraft: (i) the international airport in Yangon; (ii) the international airport in Mandalay, (iii) the new international airport in Nay Pyi Taw; and 30 other local airports with adequate air traffic control facilities and air navigational aids. Domestic air services are provided by Myanma Airways, a state enterprise of the MOT. Its fleet consists of new ATR⁷ series of turboprop aircraft. Other airlines providing domestic services include Air Mandalay (a joint venture of Myanma Airways, and Singaporean and Malaysian interests); Air Bagan; Yangon Airways; Air KBZ; and Asian Wings; all privately owned. Myanmar Airways

⁷ ATR is an aircraft manufacturer of regional turboprop airplanes under a consortium of Alenia and EADS.

International, a joint venture between Myanma Airways and a local investor, provides international services to some regional destinations.

61. **Civil aviation subsector constraints.** The principal constraint to the subsector is its airport infrastructure and increasing demands for air travel. Safe and efficient operations are largely dependent on the subsector's infrastructure development. One of the key policies is to improve the safety and efficiency of air transport in Myanmar by raising standards and modernizing its infrastructure. The state is planning to expand its existing airports and to construct a new international airport under a public-private partnership arrangement. As the economy expands, incomes rise, and international tourism increases, Myanmar is planning to invest in its airports and will seek private participation for finance and operations. A strong civil aviation subsector is needed to facilitate economic activity and tourism throughout the country.

f. Urban Transport

62. Myanmar is one of the least-urbanized countries in the region, with less than 30% of the population living in urban designations. Ten-year projections do not indicate much change in the urban-rural ratio, but rural to urban migration could accelerate as has been the case in other developing countries.

63. Bus services are present in urban areas throughout the country. About 80% of Yangon's public transport is provided by buses of some form; a further 6% is provided by the city's limited urban rail service. The bus fleet is operated by a mix of public and private sector operators, with vehicles ranging from conventional buses to converted trucks and pickups. Typically, these vehicles are old and unsafe. The urban circular rail line in Yangon has potential for development as a core element of the city's transport network, particularly if it is integrated with feeder bus services. Motorcycles are banned in Yangon City; elsewhere in the country they are the main form of transport.

64. **Urban transport subsector constraints.** Urban transport planning is urgently needed, particularly for Yangon. Transport demand over the medium to long term must be planned for, detailing how this demand can most effectively be met. Plans should be made in advance of the expected rapid growth of the economy, and before private motor vehicle ownership increases and congestion becomes severe. Yangon's street network is grid oriented and its major thoroughfares are wide, both of which are features conducive to a properly managed and regulated public transport system.

3. Links to Other Sectors and Thematic and Regional Issues

65. As summarized below, the development of Myanmar's transport sector will have important implications for regional cooperation and integration, safeguards and gender issues, and private sector participation. Ensuring that these implications are properly addressed and integrated with development of Myanmar's transport sector will require coordination with other development partners active in the sector.

a. Regional Cooperation and Integration

66. Improved cross-border transport connectivity is a core objective of regional cooperation and integration initiatives. ADB has a long history of engagement with Myanmar through the Greater Mekong Subregion (GMS) Program, which includes three major road corridors involving Myanmar: the North-South Economic Corridor; the East-West Economic Corridor; and the Southern Economic Corridor. The GMS Transport Sector Strategy⁸ emphasizes Myanmar's central position in linking Southeast and

⁸ ADB. 2007. *GMS Transport Sector Strategy 2006–2015, Coast to Coast and Mountain to Sea: Toward Integrated Mekong Transport Systems*. Manila.

East Asia with South Asia. ADB's reengagement with Myanmar offers the potential to complete these corridors through its inclusion in the forward investment framework of the GMS Program. Railway lines from the PRC and Thailand could also be extended into Myanmar.

67. In addition to participation in the GMS Program, Myanmar is a member of the Bay of Bengal Initiative for Multi-Sectoral Technical and Economic Cooperation (BIMSTEC).⁹ BIMSTEC was established in 1997 to strengthen linkages between South and Southeast Asia through regional cooperation initiatives in 14 priority sectors. With respect to transport, the focus has been maritime cooperation to facilitate the movement of goods among the major international seaports of the member countries. BIMSTEC will likely retain this emphasis, but it also provides a platform for Myanmar to engage in dialogue with Bangladesh and India concerning land transport.

68. Reflecting Myanmar's strategic geographic location, it is included in Economic and Social Commission for Asia and the Pacific's (ESCAP) Asian Highway Network and Trans-Asian Railway Network. It is also included in ASEAN's Highway and Railway Networks. In addition to identifying principal transport routes that connect the member countries, the ESCAP and ASEAN networks propose design standards and specifications for transport infrastructure to promote uniformity and safety. Myanmar has actively participated in these programs and is a signatory to a number of agreements and memorandums of understanding. Reflecting this commitment, the government intends to widen national roads included in the ASEAN and roads included in the Asian highway networks by 2015, subject to available financing.

b. Safeguards and Gender

69. Myanmar's capacity to address safeguards and gender issues associated with transport sector projects is very limited. Myanmar has no working knowledge of ADB's *Safeguard Policy Statement* (2009), and considerable training will be needed to build the requisite institutional capacity to comply with ADB's environmental, social, and ethnic minority policy requirements. Since these requirements apply across all sectors, training must be coordinated within ADB and with other development partners. Failure to address these requirements in a timely, comprehensive, and coordinated manner could seriously hamper the formulation and implementation of investment projects generally.

c. Private Sector Participation

70. Transport construction and maintenance in Myanmar are undertaken primarily by government agencies, but some private companies are also active in the sector. Most directly financed transport works are undertaken by government agencies, with little involvement by private contractors. Capacity building is needed to strengthen the effectiveness of private contractors, especially with regard to the road subsector. A program of this nature was undertaken in Sri Lanka with ADB support, in a similar state-dominated environment, with considerable success.

71. While private sector participation in directly contracted works has been limited, it has been significantly involved in road construction and maintenance through concession arrangements. Since the late 1990s, approximately 8,000 km of roads have been constructed and/or maintained under local forms of build–operate–transfer and maintain–operate–transfer modalities. Tolls are set by the government and are minimal, typically \$0.01–\$0.02 per km. The concession agreements—many of which are not viable—appear to reflect a relationship between the government and a selected concessionaire.

72. There is scope for much greater private sector involvement in the inland water, rail, and civil aviation subsectors. All are state-dominated and, over the years, have changed from some measure of management and financial autonomy to being essentially government departments. Service delivery, asset

⁹ BIMSTEC members are Bangladesh, Bhutan, India, Myanmar, Nepal, Sri Lanka, and Thailand.

and financial management, and planning have deteriorated. Recognizing these issues and constraints, the government is interested in increased private sector participation in the transport sector.

4. Strengths, Weaknesses, Opportunities, and Threats Analysis

73. Based on information gathered in preparing this assessment, an analysis of the strengths, weaknesses, opportunities, and threats regarding Myanmar's transport sector can be summarized as shown in Table 7.

Table 7 Strengths, Weaknesses, Opportunities, and Threats Analysis of Myanmar Transport Sector

Strengths	Weaknesses
<p>Sweeping political reforms are leading to resumption of multilateral and bilateral development assistance for Myanmar's transport sector.</p> <p>Transport sector is expected to be a priority area of assistance for development partners.</p> <p>Staff in the transport sector are committed and competent, and operate relatively effectively under difficult circumstances.</p> <p>Transport system is in a poor state, providing a relatively "clean slate" for formulating a sustainable transport strategy and policies to meet future transport demand.</p> <p>National integration policy has resulted in primary road network extending to most areas of the country.</p> <p>There is little encroachment on highway rights-of-way.</p> <p>Existing rail network connects most regions of the country.</p> <p>There is an extensive navigable river network with inland water transport services.</p>	<p>The institutional structure is fragmented and there is a lack of clarity in defining roles and responsibilities.</p> <p>A comprehensive and integrated transport development strategy is lacking.</p> <p>State enterprises operating on a noncommercial basis dominate the transport sector.</p> <p>State transport enterprises in civil aviation, ports, railways, and bus services are operating inefficiently.</p> <p>Many transport prices are centrally set and controlled.</p> <p>Budgetary subsidies compensate for low transport fares, distorting financial management.</p> <p>There is a lack of familiarity with international best practices for procurement, financial management, and environmental and social safeguards.</p>
Opportunities	Threats
<p>Political and economic environment is improving rapidly.</p> <p>Basic subsector structures are functional.</p> <p>Staff resources of the responsible transport ministries and agencies are committed and work effectively.</p> <p>Extensive assistance is required in all areas of the transport sector.</p> <p>Considerable scope exists for public-private partnership initiatives.</p>	<p>Political reform fails to be sustained or occurs more slowly than envisaged.</p> <p>Political reform occurs too quickly, creating a vacuum in policy and regulatory control.</p> <p>Economic growth fails to materialize as quickly as expected.</p> <p>Subsector agencies are unable or unwilling to transition from subsector operators to subsector regulators and managers.</p> <p>Externally supported transport investments are uncoordinated.</p> <p>Institutional restructuring and capacity building is not addressed.</p>

Source: Asian Development Bank.

II

Sector Strategy: Steps for Reengaging in the Sector

A. Government Sector Strategy, Policy, and Plans

74. Government plans for the transport sector are essentially lists of subsector construction and maintenance projects. They are not guided by an overarching transport policy or strategy. As a consequence, subsector projects are not coordinated. Further, they are not integrated with the country's overall development plan, beyond the broadly expressed intention of extending transport services to all parts of the country. There is no comparative cost-benefit analysis for determining which projects should be given priority. Interministerial or interagency coordination is lacking. For example, the MOC, which is responsible for the country's primary and secondary road network, operates under a Thirty-Year Plan, which commenced in 2000 and is being implemented in 5-year increments. This also appears to be the procedure for the other transport ministries or agencies, leading to a fragmented approach to sector planning and management. A more coherent approach is essential. There is broad agreement among transport authorities on the need for a new planning and policy framework.

75. The MOT has indicated its intention to prepare a transport master plan. The plan would include the following objectives: (i) harmonize future plans with the new State Constitution; (ii) integrate the plans of the different transport subsectors; (iii) pursue new opportunities to connect with neighboring countries; (iv) promote domestic connectivity and multimodal transport networks; (v) promote greater private sector participation; and (vi) identify technical, financial, and human resource requirements for implementation of the plan.

76. This outline accords with the recommendations of the 1993 Comprehensive Transport Study (footnote 2), most of which remain relevant since so little has changed since completion of the study. The MOT is requesting expertise and advisory support for this important undertaking. It is anticipated that Japan may support preparation of such a transport master plan.

B. ADB's Sector Support Program and Experience

1. ADB Program to Date

77. Despite Myanmar's continued 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 (footnote 5). The civil works under that project were implemented by the MOC on a direct force-account basis. The road, which is the major transport corridor between Yangon and Pyay, is in relatively good condition. Given the long lapse in ADB's involvement in Myanmar's transport sector, the experience and lessons learned from this project are probably of little relevance to any future ADB assistance.

2. ADB's Experience and Self-Evaluation

78. ADB's last project operation in Myanmar in the 1980s was successfully completed and performed satisfactorily. The project is well-recalled by the government's transport agencies and should contribute to developing the relationships necessary for any future ADB operations in the sector. In this regard, Myanmar's long-standing involvement in the GMS Program provides a strong basis for working with ADB.

3. Political Economy Influence on Progress

79. At this early stage of Myanmar's reengagement with the international community, political economy factors will likely determine the timing of ADB's progression from sector assessments to capacity building to lending operations. Myanmar's arrears with ADB must also be cleared before lending operations can resume. Furthermore, the international community will likely press for substantial progress concerning the political situation, the peace process, and other issues.

80. Preparatory to reengagement, the legacy of 5 decades of highly centralized and state-dominated economic activity must be better understood. Initial ADB operations will need to be designed around this situation, rather than advocating radical institutional and other reforms at the outset. A step-by-step approach is more likely to be the most practical and successful way forward. As noted earlier, Myanmar's transport agencies are reasonably effective and should adapt appropriately given adequate time and support. Complex operations, involving large-scale procurement, extensive use of international contractors, and difficult environmental safeguards, etc., could fail, and impact negatively on the institutional reform process.

81. Governance and corruption issues will also require close attention. Transparency and accountability are weak, which could seriously impede financing operations by multilateral and bilateral development agencies and partnerships with the private sector.

4. Lessons Learned

82. Given ADB's absence of operations in Myanmar for many years, there are few operational lessons available to be learned. UNDP's experience should be drawn upon, as well as ADB's experience in other countries that have passed through similar transitions (e.g., Cambodia, Sri Lanka, and Viet Nam). Key lessons include: (i) keep initial operations simple; (ii) provide adequate support through well-qualified consultants, while ensuring that the government agencies remain responsible and in control; and (iii) ensure that ADB provides the staff and other resources necessary to support the transition process.

83. Specifically, ADB-supported operations, working in concert with other development partners where necessary, will need to include in their designs comprehensive support to help government agencies adapt to a program focus that places greater emphasis on country ownership and capacity development than was the case in the 1980s. This support must also begin the process of involving communities in development programs that affect them. This will be a particular challenge, given the very centralized, top-down, and hardware-focused approach to development, particularly in the infrastructure sectors, that has prevailed from the colonial period to the present.

C. Other Development Partner Support

84. For more than 20 years there has been little development partner support for infrastructure investments in Myanmar, with the exception of some support by the PRC, India, and Japan for some

road projects. In light of recent political reforms, the donor community has shown strong interest in reengaging with Myanmar, and the transport sector is viewed as a priority for development assistance. Poverty reduction will depend upon spurring economic growth, for which a greatly improved transport system integrating the country nationally, regionally, and internationally will be vital.

D. ADB's Initial Support in the Sector

85. Based on this review and assessment of Myanmar's transport sector, it is proposed that ADB's initial support for the sector should include three interrelated phases. The initial phase would involve preparation of an in-depth sector assessment, strategy, and road map to further strengthen ADB's understanding of the transport needs, challenges, and constraints, and to identify—in partnership with the government—priority areas for support. This phase is well advanced and discussions are under way to define a medium-term strategy and road map for the transport sector.

86. The second phase is also ongoing and involves provision of technical assistance in the form of policy advisory services, planning, institutional capacity building and training, and project pre-feasibility studies. Technical assistance in these areas will be first step toward restructuring and strengthening the sector, and recasting responsibilities among the six ministries currently in charge of the subsectors. This assistance would draw on the analytical work and recommendations presented in the 1993 Comprehensive Transport Study (footnote 2), to the extent they remain relevant. This phase will also include training on the procedural requirements for preparing investment projects, particularly in the areas of safeguards and procurement.

87. The third phase, building upon the first two phases, would involve the preparation, financing, and implementation of infrastructure investment projects. Indeed, the second and third phases would adopt parallel approaches to ensure that institutional capacities are aligned with the requirements to prepare and implement development projects efficiently and effectively. To achieve this alignment, the first set of transport investment projects will be selected on the basis of their ability to (i) deliver priority development outputs quickly and visibly; (ii) incorporate simple project designs and straightforward implementation procedures; (iii) have no major negative impacts on resettlement, environment, and/or ethnic minorities; (iv) be scalable and replicable; and (v) provide hands-on training and relevant experience to staff in implementing agencies. Based on this approach, the scope, scale, and complexity of investment operations can increase, commensurate with the growth in institutional capacities to design, implement, and manage investment projects.

88. The challenges and opportunities facing Myanmar's transport sector are immense. By preparing this initial assessment, ADB has taken the first step to deepen its own knowledge of the sector in order to formulate a strategic approach for future development assistance. ADB also hopes that this initial assessment informs and inspires other development partners to coordinate and collaborate in strengthening the role and capacity of Myanmar's transport sector in contributing to sustainable economic and social development.

Appendix

Overview of Transport Sector Organizations

1. Myanmar's transport sector is managed by six ministries and several city development committees. These are (i) the Ministry of Transport (MOT); (ii) the Ministry of Rail Transportation (MORT); (iii) the Ministry of Construction (MOC); (iv) the Ministry for Progress of Border Areas and National Races and Development Affairs; (v) the Ministry of Defense; (vi) the Ministry of Home Affairs; and (vii) the Yangon, Mandalay, and Nay Pyi Taw City Development Committees. Of these, the MOC, the MORT, and the MOT are the most important. The structure of these three ministries is summarized below, with functions identified where relevant. State-owned transport enterprises are also shown, such as Myanma Airways.

2. The essential points to note are the following:

- (i) There is no agency with overall responsibility for the transport sector.
- (ii) There are no clear lines of responsibility; for example, road-related activities fall under three ministries (the MOC, the MORT, and the MOT).
- (iii) The MORT and the MOT include many departments and state transport enterprises, each vertically integrated with the ministry.
- (iv) Critical road-related activities, such as regulation, driver and vehicle licensing, and safety, are the responsibility of the MORT.
- (v) The agency responsible for constructing and maintaining roads has no formal involvement with regulating vehicles that use the roads, or with road safety.

A. Ministry of Transport

3. The MOT includes 12 departments, agencies, and institutes: (i) Department of Transport, (ii) Department of Civil Aviation, (iii) Department of Marine Administration, (iv) Department of Meteorology and Hydrology, (v) Directorate of Water Resources and Improvement of River Systems, (vi) Myanma Airways, (vii) Myanma Five Star Line (the national shipping line), (viii) Myanma Port Authority, (ix) Inland Water Transport, (x) Myanma Shipyards, (xi) Myanmar Maritime University, and (xii) Institute of Marine Technology.

B. Ministry of Rail Transportation

4. The MORT includes five departments, agencies, and institutes:

- (i) Myanma Railways;
- (ii) Road Transport Administration Department—responsible for
 - (a) motor vehicle inspection and registration;

- (b) drivers' license testing and issue;
- (c) traffic regulations, road signs, traffic accident statistics; and
- (d) vehicle-related taxes;
- (iii) Transport Planning Department—responsible for
 - (a) scrutinizing and coordinating plans, budget, and financial matters for the ministry and its agencies;
 - (b) issuing licenses to operators who use the road vehicles commercially for carrying passengers and freight;
 - (c) managing to transport the necessary amount of goods and passengers to the necessary place within the necessary time in collaboration with the internal transportation force in transporting state-owned goods and local and international passengers;
 - (d) coordinating international and regional relations related to land transport;
- (iv) Road Transport, a state-owned provider of road transport services for passengers and freight; and
- (v) Central Institute of Transport and Communications.

C. Ministry of Construction for Transport-Related Activities

4. The MOC's principal responsibilities related to the primary and secondary road networks include:

- (i) preparing policies for development of roads;
- (ii) preparing plans for construction of roads;
- (iii) repair and maintenance of roads;
- (iv) arranging and overseeing joint ventures with other agencies for construction and maintenance of roads;
- (v) undertaking land acquisition and clearance for construction of roads;
- (vi) importing equipment for constructing and maintaining roads;
- (vii) undertaking research related to construction and maintenance of roads; and
- (viii) overseeing the Public Works Department, which provides the resources to undertake these tasks and has separate divisions responsible for roads, bridges, public buildings, and airfields.

5. There is no specific agency tasked with road safety. In 1998, the government established the Traffic Rules Enforcement Supervisory Committee, which has two subcommittees—for education and legislation and for enforcement. Committee members include the Public Works Department, the Health Department, Myanma Insurance, the traffic police, and city development committee representatives. It is not clear at what level this committee operates, or whether it meets regularly.

Myanmar: Transport Sector Initial Assessment

The Asian Development Bank (ADB) is preparing sector assessments to help align future ADB support with the needs and strategies of developing member countries and other development partners. The assessment is a working document that helps inform the development of country partnership strategies. This transport sector assessment highlights development issues, needs, and strategic assistance priorities of the Government of the Republic of the Union of Myanmar and ADB, with a focus on rail, roads, urban transport, water transport, port, and civil aviation. It highlights sector performance; priority development constraints; the government's strategy and plans; other development partner support; lessons learned from past ADB support; and possible future ADB assistance, including knowledge support and investments. The product serves as a basis for further dialogue on how ADB and the government can work together to tackle the challenges of managing transport sector development in Myanmar in the coming years.

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ADB's vision is an Asia and Pacific region free of poverty. Its mission is to help its developing member countries reduce poverty and improve the quality of life of their people. Despite the region's many successes, it remains home to two-thirds of the world's poor: 1.8 billion people who live on less than \$2 a day, with 903 million struggling on less than \$1.25 a day. ADB is committed to reducing poverty through inclusive economic growth, environmentally sustainable growth, and regional integration.

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