

SECTOR ASSESSMENT (SUMMARY): TRANSPORT

A. Sector Performance, Problems, and Opportunities

1. Armenia's transport sector plays an important role in the national economy, which is constrained by geography and international politics.¹ The country's transport infrastructure, however, is not adequate, as evidenced by Armenia's positions in various international rankings.² Improving the country's deficient transport network is therefore critical for lowering the transportation and trade costs, and thus for increasing income-earning opportunities and for realizing the full benefits of Armenia's otherwise liberal trade regime.³ Excluding pipelines, rail and road carried most of the freight in 2013, as measured in ton-kilometers (ton-km). Yerevan, the capital city, accounted for about two-thirds of the domestic freight by roads. Roads account for most of passenger traffic, while air transport accounts for less than 1 % (in passenger-km).⁴

2. **Road transport.** Armenia's road network is 7,792 km long and comprises 1,735 km of interstate roads, 4,040 km of republican roads, and 2,017 km of local roads.⁵ Although there is ambiguity as to the road conditions due to the inadequate road asset management system, about three-quarters of the interstate roads are estimated to be in good to fair condition,⁶ and about 60% of local roads need rehabilitation. The overall capacity of the network is considered adequate to accommodate the estimated traffic volumes up to 2020. The reasons why many segments of the road network are in poor condition include insufficient financing for maintenance; outdated road design, maintenance standards, and technical specifications; and lack of qualified workers, contractors, and consulting companies with the necessary knowledge and skills.

3. Despite the deficiencies of the road network, road traffic increased considerably during the past several years not only in absolute terms, but also relative to total traffic. Cross-border cargo traffic expanded particularly fast. One explanation is that the private sector provides most road transport services (including international and urban transport services), and competition in the market for these services is fairly robust. Therefore, road transport offers a better combination of flexibility, affordability, and quality than rail and air transport. The major challenges are to maintain (i) the capacity and efficiency of the international road corridors, which serve the heaviest traffic volumes and are of greatest economic importance, and (ii) good to fair service levels of the republican and local roads. In this context, road design and maintenance standards as well as technical specifications need to be modernized, collection of road and traffic data should be improved, and cost-effective technical solutions need to be developed for low-volume roads.

4. In part because of the rapid growth of road traffic, road safety deteriorated markedly. The number of recorded traffic accidents rose from 1,021 in 2001 to 2,824 in 2013, and the number of people killed or injured in traffic accidents increased from 1,495 to 3,994 over the same period. The traffic accident fatality rate (per 10,000 vehicles) is much higher in Armenia than in European countries. To augment road safety, improvements are needed in institutional

¹ This summary is based on studies undertaken by Asian Development Bank (ADB) staff and consultants, including Armenia's Transport Sector Assessment, Strategy and Roadmap (Draft, 2014) and ADB. 2011. *Armenia's Transport Outlook*. Manila.

² In the Global Competitiveness Report, Armenia scores fairly low on the quality of road (80th out of 144 countries), railroad (68th), port (134nd), and air transport (72nd) infrastructure. World Economic Forum. 2014. *The Global Competitiveness Report 2014–2015*.

³ Geopolitical constraints, along with the underdeveloped transport infrastructure, are also among the reasons for unbalanced development of various regions of the country. Also see Economic and Poverty Analyses (Summaries) and Note on Inclusive Growth (accessible from the list of linked documents in Appendix 2).

⁴ NSS. 2014. *Statistical Yearbook of Armenia 2014*. Yerevan.

⁵ NSS. 2014. *Statistical Yearbook of Armenia 2014*. Yerevan.

⁶ PADECO. 2010 Armenia: *Preparing the North–South Road Corridor Development Project*. Consultant's Report (TA 7208). Manila.

coordination, traffic safety audits, road designs including signs and markings, speed limit enforcement, and other measures. The government has adopted a strategy to improve road safety (para. 12).

5. **Railway transport.** The total operational length of Armenia's railway network is about 703 km (footnote 5). As is the case with the road network, many parts of the railway network, including some bridges, are in poor condition. The only railway link to sea ports that Armenia has at present is through Georgia. In 2008, the government signed a concession agreement allowing Armenian Railways to be run by a subsidiary of Russian Railways, and to operate as the South Caucasus Railway. Although cargo and passenger turnover increased somewhat in absolute terms in recent years, their shares in the total transport volumes declined, mainly due to strong competition from the trucking industry. Key challenges and opportunities for the South Caucasus Railway include network development for faster transit across Armenia and to Georgia, establishment of intermodal terminals, and development of container transport.

6. **Air transport.** In 2003, the government gave exclusive rights to all domestic and international routes for 10 years to Armavia, a private Armenian airline. However, Armavia filed for bankruptcy in March 2013 and suspended operations. Currently, by the criteria "available airline seat km/week", Armenia scores fairly low (100th out of 144 countries) in the global competitiveness ranking (footnote 2). To strengthen competitiveness in civil aviation, the government recently announced a strategy of gradual liberalization of air traffic.

7. **Multimodal transport.** A major problem in Armenia's transport sector is that multimodal transport and logistics services are underdeveloped. Armenia ranks 92nd out of 155 countries in the World Bank's 2014 Logistics Performance Index. It ranks particularly low on the quality of trade- and transport-related infrastructure (108th), quality and competence of logistics services (79th), and efficiency of the customs clearance process (75th).⁷

8. **Sector management.** The Ministry of Transport and Communications (MOTC) is the principal government agency in charge of the transport sector. It administers all interstate roads and about 45% of republican roads. MOTC delegates its road administration functions (including collection of road and traffic data and maintenance of roads) to the Armenian Road Directorate (ARD), a state-owned noncommercial organization, through annual contracts. Regional administrations (*marzes*) and local communities manage around 55% of republican roads and all local roads. Private companies provide road maintenance services under 5-year contracts with ARD, *marzes*, and local communities. The North–South Road Corridor State Non-Commercial Organization implements the North–South Road Corridor Project. The transport project implementation unit in MOTC implements other road construction and rehabilitation projects, including those financed by the World Bank and by the government.

9. To improve transport sector management, regulatory and service-delivery functions need to be fully separated, the capacities of MOTC and ARD need to be strengthened, and the road design, maintenance standards and technical specifications need to be modernized. Furthermore, a modern road asset management system should be established to improve the availability and quality of data on road conditions, programming of road construction, rehabilitation and maintenance works, and prioritization of expenditures on these works. Financing of road maintenance needs to be increased to clear the backlog of maintenance and to ensure that newly constructed and rehabilitated roads are properly maintained. Performance-based contracts should be used to improve the quality of road maintenance. Closer cooperation between concerned government agencies (e.g., MOTC, traffic police, *marzes*) is needed to improve traffic safety.

⁷ World Bank. 2014. *Connecting to Compete 2014: Trade Logistics in the Global Economy*. Washington, DC.

10. **Public–private partnerships.** Armenia’s extensive use of public–private partnerships (PPPs) in the transport sector has so far been largely positive. In particular, Armenian International Airports, a private company, operates two major airports (Zvartnots and Shirak) under a 30-year concession.⁸ Most public bus services in Yerevan and secondary towns as well as intercity routes have been franchised to private operators on a route-by-route basis.⁹ There are more opportunities for PPPs in the transport sector (e.g., in management of urban parking). To make greater and more effective use of PPPs in the transport sector, the government’s capacity to manage PPPs and the relevant legal and regulatory frameworks need to be improved.

B. Government’s Sector Strategy

11. Improving transport infrastructure and services is among the government’s top priorities. Its transport sector strategy is set forth in several documents, such as the Armenia Development Strategy 2025 (ADS) and the latest government program. The ADS calls for an increase in, and more efficient use of, public resources allocated to maintenance and rehabilitation of roads. The transport sector priorities identified in the ADS include reconstruction of the north–south road and of at least one road connecting each settlement with the rest of the country; strengthening of road subsector management; improvement of public transport services; and development of eco-friendly transport. The latest government program also calls for an increase in public funds allocated to maintenance and rehabilitation of roads, and for more efficient use of these funds.¹⁰

12. The National Road Safety Strategy of Armenia articulates the government’s strategy for improving road safety.¹¹ The government has adopted a 5-year action plan and set up the National Road Safety Council of Armenia to implement the strategy. The bankruptcy of Armavia prompted the government to adopt a new Air Transport Development Strategy in June 2013, which envisions gradual liberalization of the market for air transport services.

C. ADB’s Sector Experience and Strategy

13. **Previous program.** ADB has accumulated considerable transport sector experience in Armenia. Indeed, transport was one of the priority sectors of ADB’s 2006 interim operational strategy for Armenia and accounted for a large proportion of ADB assistance to Armenia in 2007–2013. In 2007, ADB approved a loan of \$30.6 million and an advisory technical assistance grant of \$0.6 million to improve about 220 km of rural roads, and to prepare a transport sector development strategy.¹² In 2009, ADB approved a multitranche financing facility (MFF) of \$500 million to improve various sections of the north–south road, modernize border and customs facilities along this road, strengthen road subsector management, and improve road safety.¹³ In

⁸ Armenia has three major airports (Zvartnots, Shirak, and Erebuni), but Zvartnots (Yerevan) International Airport is the country’s principal air gateway.

⁹ Although PPPs in public transport have in general improved the availability and quality of services, fostered entrepreneurship, and increased employment, demonstrations in 2013 against higher bus fares indicate room for better sector management and affordability of services.

¹⁰ The program identifies the following medium-term priorities for the government in the transport sector: reconstruction of the north–south road; construction of bypass roads for Yerevan; accelerated implementation of road projects in the secondary towns; strengthening of management of urban and intercity transport; modernization of public transport; improvement of rural roads; expansion of bilateral cooperation with other countries in air transport; improvement of the quality of air transport services; and diversification of transport links with the rest of the world. Investments for transport during 2013–2015 are expected to form 1.6% of GDP on average, and decline to 1% thereafter. Most of the resources (85%) are expected to be deployed to improve the road network of national significance. Government of Armenia. 2014. *Republic of Armenia Government Program*. Yerevan.

¹¹ *National Road Safety Strategy for Armenia and Yerevan and Five-Year Action Plan*. Appendix to Government Decree N995 dated 13 August 2009.

¹² ADB. 2007. *Report and Recommendation of the President to the Board of Directors: Proposed Loan and Technical Assistance Grant to the Republic of Armenia for the Rural Road Sector Project*. Manila.

¹³ ADB. 2009. *Report and Recommendation of the President to the Board of Directors: Proposed Multitranche Financing Facility to the Republic of Armenia for the North–South Road Corridor Investment Program*. Manila.

2010, ADB approved a private sector loan of \$40 million for the construction of a new terminal at the Zvartnots airport.¹⁴ In 2011, ADB approved an MFF of \$400 million to improve transport infrastructure and services in Yerevan and 11 secondary towns.¹⁵

14. Future public sector lending. ADB's strategy for transport is based on the government's ADS and ADB's Midterm Review of Strategy 2020.¹⁶ ADB's future assistance to Armenia in the transport sector will maintain ADB's long-term sector engagement in transport, focusing on (i) improving implementation of the ongoing north–south road projects; (ii) continued improvement of the north–south road financed by the MFF; (iii) mobilization of financing from other development partners for the north–south road; (iv) improvement of other roads linking Armenia to Georgia; (v) improvement of roads connecting secondary towns—especially those with the highest incidence of poverty—with each other, as well as with the north–south road, and with Yerevan; (vi) strengthening road sector management and sustainability through the Infrastructure Sustainability Support Program; (viii) development of new internal railway links; and (vii) expanded use of PPP.

15. To improve project implementation, ADB will limit the number of ongoing transport sector projects to three at a time, and will supervise project implementation more closely. Private and public sector operations will complement each other. Private sector operations will seek to develop multimodal transport and logistics services and increase the benefits of an improved road network.

16. Knowledge products and services. ADB's policy analysis and advisory services will focus on proper maintenance of Armenia's road network and its sustainability, and on transport planning. A top priority will be to work with the government to develop road sector institutions, and funding for road rehabilitation and maintenance with effective financing instruments.¹⁷ ADB will support the development of the long-term transport sector strategic plan.¹⁸ In addition to a shift to more environmentally friendly transport and reduction of greenhouse gas emissions, ADB's policy dialogue will prioritize road safety and procurement. The current emphasis on capacity development will be continued and scaled up. ADB's strategy will encompass inclusive growth by improving access to markets for areas with high poverty rates, and creating job opportunities during construction. Climate change mitigation and adaptation measures will be explored and implemented where feasible. The policy analysis and dialogue and advisory services will be supported by ADB's regional technical assistance, trust funds, and by ADB's own sector diagnostics work.

¹⁴ ADB. 2010. *Report and Recommendation of the President to the Board of Directors: Proposed Loan to the Republic of Armenia for the Zvartnots Airport Expansion Project (Phase 2)*. Manila.

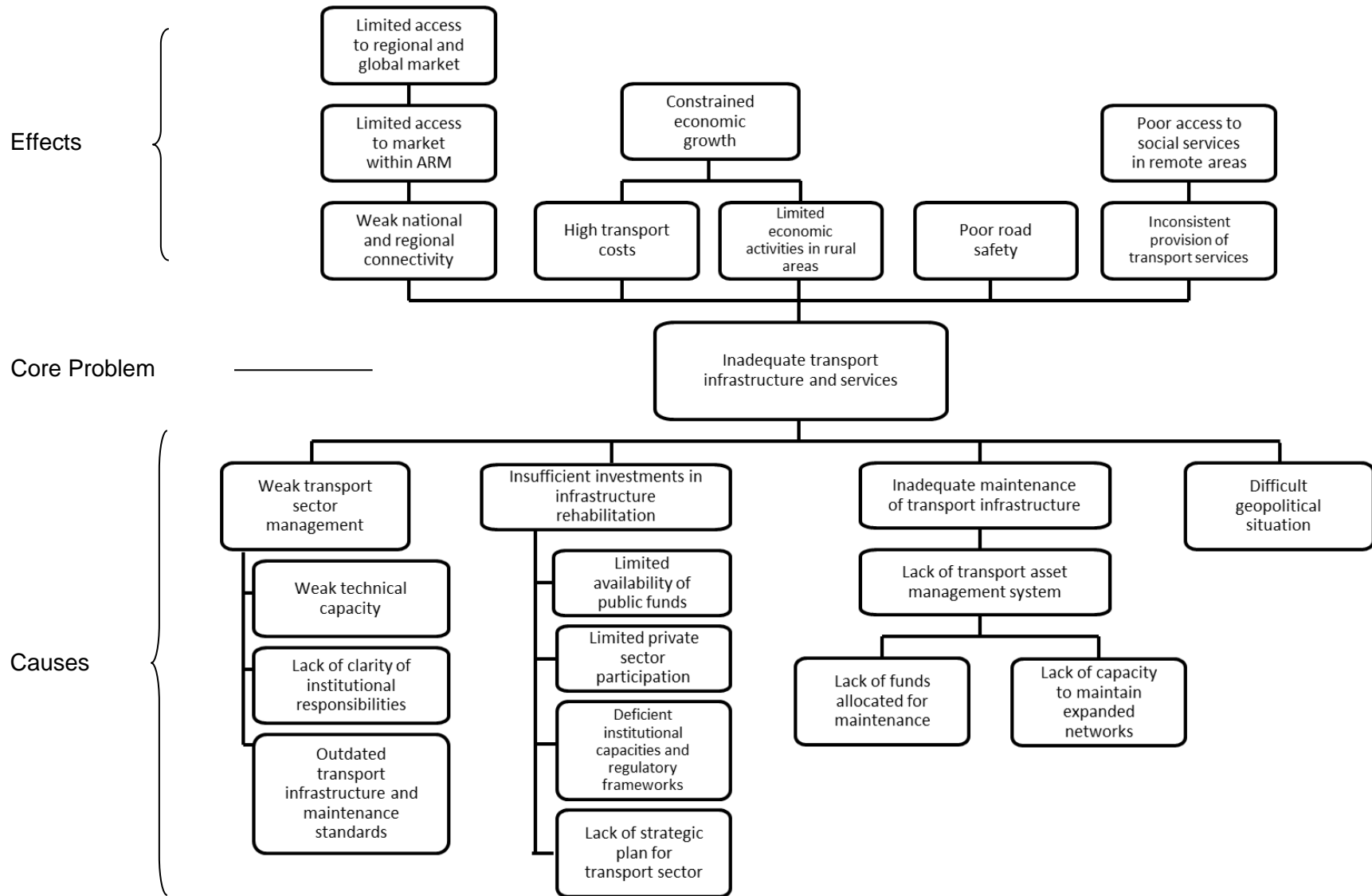
¹⁵ ADB. 2007 *Report and Recommendation of the President to the Board of Directors: Proposed Multitranchise Financing Facility to the Republic of Armenia for the Sustainable Urban Development Investment Program*. Manila.

¹⁶ ADB. 2014. *Midterm Review of Strategy 2020: Meeting the Challenges of a Transforming Asia and Pacific*. Manila.

¹⁷ Supported by ADB's technical assistance (*Infrastructure Sustainability Support Program*, TA 8249), a results-based management framework has been introduced for the roads subsector. Key performance indicators were developed to articulate sector targets, and support sector and financial management.

¹⁸ As part of this work, ADB will promote the A–S–I (avoid/reduce–shift/maintain–improve) approach in designing transport projects. A–S–I seeks to (i) reduce the need to travel and the length of trips through integrated land-use planning and better transport demand management; (ii) induce a shift from more energy-consuming transport modes (such as personal cars) to more environmentally friendly modes (such as public transport); and (iii) improve transport infrastructure and vehicle technology.

Problem Tree for Road Transport Sector in Armenia



Sector Results Framework (Transport, 2014–2018)

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
Increased, more efficient, and safer movement of goods and people	<p>Road freight traffic increased to 770.0 million ton–km by 2018 (2012 baseline: 400.9 million ton–km)</p> <p>Road passenger traffic increased to 2,770 million passenger–km by 2018 (2012 baseline: 2,611 million passenger–km)</p> <p>Number of road collisions falls to 2,400 by 2018 (2012 baseline: 2,602)</p>	Road network improved and properly maintained	<p>Interstate, republican, and local roads built or upgraded by 2018 [500km] (2012 baseline: 0)</p> <p>Total length of roads in satisfactory condition (as % of the total length of the road network) increased to 47% by 2018 (2012 baseline: 41%)</p> <p>Percentage of communities with at least one adequate road connecting them to the regional center rises to 50% by 2018 (2013 baseline: 20%)</p> <p>Road maintenance budget increased by 5% annually (2013 baseline: AMD6,310 million)</p>	<p>Planned key activity areas Interstate roads (71% of funds); Road transport policies and reforms (29% of funds)</p> <p>Pipeline projects with estimated amounts MFF SUDIP, Tranche 2 (\$80 million) and Tranche 3 (\$49 million) ISSP Phase II (\$15.1 million) North-South Road Corridor Investment Program (\$100 million)</p> <p>Nonlending Road Safety (S-PATA, \$225,000) Multimodal Regional Transport Planning and Analysis (PATA, \$1 million) ISSP Phase II (CDTA \$500,000; PPTA \$500,000)</p> <p>Ongoing projects with approved amounts MFF NSRCIP, Tranche 1 (\$60 million); Tranche 2 (\$170 million); MFF Tranche 3 (\$100 million + \$93.6 million cofinancing) MFF SUDIP, Tranche 1 (\$48.6 million) ISSP Phase I (\$12 million; CDTA \$900,000)</p>	<p>Planned key activity areas 550 km of the north–south road improved</p> <p>Road subsector management strengthened</p> <p>Urban transport infrastructure extended and rehabilitated</p> <p>Pipeline projects Urban roads rehabilitation, bus station</p> <p>Municipal transport management strengthening</p> <p>Secondary towns development plans</p> <p>Ongoing projects About 105 km of the north–south road rehabilitated</p> <p>Road subsector institutional effectiveness plan implemented</p> <p>Urban transport infrastructure in Yerevan extended and rehabilitated</p>

ADB = Asian Development Bank, AMD = Armenian dram, CDTA = capacity development technical assistance, ISSP = Infrastructure Sustainability Support Program, km = kilometer, MFF = multitranchise financing facility, NSRCIP = North–South Road Corridor Investment Program, PPTA = project preparatory technical assistance, S-PATA = small-scale policy and advisory technical assistance, SUDIP = Sustainable Urban Development Investment Program.

Sources: Government of Armenia. 2014. *Armenia Development Strategy 2014–2025*. Yerevan; Asian Development Bank analysis.