

## SECTOR ASSESSMENT (SUMMARY): TRANSPORT (ROAD TRANSPORT [NONURBAN])<sup>1</sup>

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

1. **Country context.** Nepal is landlocked and bordered to the north by the People's Republic of China (PRC), and to the south, east, and west by India. Geographically, Nepal has three distinct areas: the Himalayas in the north, an intermediate mid-hill region, and the lowland plains of the Terai in the south. Consequently, Nepal relies heavily on its direct neighbors for international trade, particularly India, with which it shares 19 official trading posts. In fiscal year (FY) 2017, 65% of Nepal's imports were from India and 13% from the PRC, while India received 57% of Nepal's exports and the PRC 2.3%. Biratnagar, located 68 kilometers (km) east of Kanchanpur, is the largest export gateway of Nepal and handles 29.5% of its exports.

2. **Economic performance.** The gross domestic product (GDP) of Nepal grew at an average annual rate of 4.5% during FY2007–FY2017 and is forecast to grow at 5.9% in FY2018 and 5.5% in FY2019.<sup>2</sup> The economy suffers from a lack of competitiveness: the agriculture sector employs 69.4% of the labor force, and exports have alarmingly decreased at an average annual rate of 6.1% in real terms during FY2007–FY2017. The inadequacy of the transport network results in high transport costs, and poor national and regional connectivity hinders economic growth by limiting the development of competitive industries, impeding trade, and reducing the potential of Nepal to benefit from strong growth in neighboring countries.

3. **Transport network.** Roads are the predominant mode of transport in Nepal, transporting over 90% of goods and passengers. However, Nepal has the lowest road density in South Asia, with 47 km of road per 100 square kilometers (km<sup>2</sup>), and 2.5 km of road per 1,000 people.<sup>3</sup> During 2011–2016, (i) international air travel increased by 5.4% annually, from 2.70 million to 3.51 million passengers, but capacity constraints at the only international airport in Kathmandu impede growth; and (ii) domestic air travel increased by 2.0% annually, from 1.59 million to 1.76 million.<sup>4</sup> The railway network has just 59 km of track, and inland waterways are negligible, although projects supported by India and the PRC are expected to progressively increase railway and inland waterway networks. The port of Kolkata is the primary transit point for seaborne freight, as tariff and non-tariff barriers limit the use of the ports of Bangladesh. Consequently, road transport will continue having a major role in the development of Nepal.

4. **Road network.** The road network includes the strategic road network (SRN) and the local road network (LRN). The SRN consists of 3,820 km of national highways and 8,674 km of feeder roads, 51% of which are paved, and provides vital linkages to major economic centers and neighboring countries.<sup>5</sup> It features eight north–south and three east–west corridors, including the 1,027 km East–West Highway (EWH), which is the main domestic and international trade corridor and carries the highest traffic volumes. The LRN consists of about 57,600 km of district and rural roads; 3.5% are paved and 40% are all-weather. The road density of all-weather roads (about 15.8 km of road per 100 square kilometers) is low, highlighting the need for significant investments to provide effective linkages from rural areas to markets and to support economic growth. Out of 77 districts, two still lack road access to their headquarters, and six have no paved access to their headquarters. About 22% of the population has no road access.

<sup>1</sup> This summary is based on the sector assessment currently under preparation for the Nepal country partnership strategy 2020–2024, and on World Bank. 2013. *Nepal Road Sector Assessment Study*. Kathmandu.

<sup>2</sup> Asian Development Bank (ADB). 2018. *Asian Development Outlook 2018: How Technology Affects Jobs*. Manila.

<sup>3</sup> Compared to 12.2 km of road per 1,000 people in Bhutan, 4.1 km in India, and 5.5 km in Sri Lanka.

<sup>4</sup> Government of Nepal, Ministry of Culture, Tourism & Civil Aviation. 2017. *Nepal Tourism Statistics 2016*. Kathmandu.

<sup>5</sup> Government of Nepal, Department of Roads. 2016. *Statistics of Strategic Road Network 2015/16*. Kathmandu.

5. **Federalization and institutions.** The 2015 Constitution introduced a three-tiered federal system, with a federal government overseeing seven provincial governments and 753 autonomous urban and rural municipalities.<sup>6</sup> Associated legal, institutional, financial, and administrative procedures are being formalized. The National Planning Commission sets overall development objectives and coordinates investment programs at the federal level. Highways will remain under the responsibility of the central government and the Department of Roads (DOR) under the Ministry of Physical Infrastructure and Transport (MOPIT).<sup>7</sup> The development and maintenance of the LRN, currently managed by the Department of Local Infrastructure Development and Agricultural Roads under the Ministry of Federal and General Administration, have been entrusted to local and provincial governments. The inventory and distribution of feeder and local roads across all government levels are currently under review. A provincial planning commission has been constituted by five provinces, and provincial governments are preparing drafts of three bills to define policy and operational procedures: (i) a road act for provincial governments, (ii) a vehicle management act, and (iii) a road maintenance bill.

6. **Regional connectivity.** Nepal is hampered by its deficient cross-border infrastructure. Excluding India, just 0.8% of Nepal's total trade is with countries in the South Asian Association for Regional Cooperation (SAARC) and the South Asia Subregional Economic Cooperation (SASEC).<sup>8</sup> Nepal entered into a subregional Motor Vehicles Agreement with Bangladesh, Bhutan, and India in 2015 that aims to improve transport efficiency and facilitate trade by increasing cross-border movements of goods and vehicles. The agreement was ratified by Nepal and approvals for the implementation protocols are underway; the first regional bus service between Dhaka and Kathmandu began in April 2018. With support from SAARC and SASEC, the four countries aim to reduce transport costs and improve regional connectivity.

7. **Traffic growth and transport management.** Imports increased by 21.3% annually during FY2007–FY2017 as a result of increased foreign remittances, which totaled 2.0% of GDP in FY2000 and 31.3% of GDP in FY2015.<sup>9</sup> Vehicle sales increased by 17.5% annually during FY2007–FY2017, although vehicle ownership remains low, with only 0.08 vehicles per capita.<sup>10</sup> The vehicle fleet is estimated at 2.78 million as of FY2017, up from 1 million in FY2010, and is expected to quadruple in the next decade. Motorcycles dominate the market and account for 79.6% of sales. The Department of Transport Management under MOPIT oversees public transport management and road regulations. Public transport services are primarily controlled by private operations, organized under syndicates that restrict supply and modernization of the vehicle fleet. The government abolished the syndicate system in May 2018, which is expected to result in increased regulation and improved operations under government supervision. Enforcement of regulations and traffic rules remains poor; the overloading of freight vehicles is a primary reason for increased deterioration of road conditions.

8. **Road safety.** The high proportion of motorcycles increases road safety risks, as the frequency and severity of motorcycle accidents exceed that of other vehicle classes, particularly on deteriorated pavement. Reported traffic accidents increased from 3,800 in FY2002 to 13,580 in FY2013, an annual increase of 12.3%, while fatalities increased from 879 in FY2002 to 2,385

<sup>6</sup> Elections for local, provincial, and federal governments were held in November 2017.

<sup>7</sup> Annexes 5, 6, 7, 8, and 9 of the Constitution define the broad overall roles and responsibilities for the road network.

<sup>8</sup> Government of Nepal, Department of Customs. 2018. *Nepal Foreign Trade Statistics, Fiscal Year 2016/17*. Kathmandu. SASEC members are Bangladesh, Bhutan, India, Maldives, Myanmar, Nepal, and Sri Lanka; SAARC comprises Afghanistan, Bangladesh, Bhutan, India, Maldives, Nepal, Pakistan, and Sri Lanka.

<sup>9</sup> World Bank. 2017. *Remittance Inflows to GDP for Nepal*. Washington, DC.

<sup>10</sup> Government of Nepal, Department of Transport Management. 2018. *Vehicle Registration Details up to Fiscal Year 2073–74 (2016–17)*. Kathmandu. This compares with 0.42 vehicles per capita in India and 0.80 in the United States.

in FY2017, an annual increase of 6.8%.<sup>11</sup> Accidents and fatalities are likely to be underreported, particularly in the case of minor accidents and injuries. The traffic fatality rate, estimated at 302 fatalities per 100,000 vehicles by the World Health Organization, is one of the highest in Asia.<sup>12</sup> In response, the government prepared a Road Safety Action Plan (2013–2020) aligned with the five pillars of road safety: (i) improved road safety management, (ii) safer roads and mobility, (iii) safer vehicles, (iv) safer users, and (v) improved post-crash response.<sup>13</sup> Most of the SRN and LRN is intermediate or dual lane, increasing the likelihood and severity of head-on collisions and side collisions with pedestrians, bicycles, and motorcycles.

9. **Road maintenance.** Road maintenance of the SRN, LRN, and urban roads is funded through the Roads Board of Nepal (RBN), established in 2003. While the RBN should be funded from fuel levies, vehicle registration fees, and tolls, it directly only collected toll revenues of about NRs95.4 million in FY2017, with a balance of about NRs4,454 million received indirectly from the Ministry of Finance. In FY2017, the allocated maintenance budget met 100% of routine and regular maintenance needs, and about 70% of periodic maintenance needs. The annual maintenance budget of the SRN increased by 41%, from NRs2,661 billion in FY2011 to NRs4,399 billion in FY2016, corresponding to an average annual growth rate of 3.8% in real terms. However, budget utilization has not kept pace with budget increases, and averaged 81% during FY2013–FY2017. The Ministry of Finance committed to fully funding periodic maintenance, contingent with a substantial increase in the disbursement and contracting capacity of DOR. A revised Roads Board Act prepared in 2017 is awaiting approval by Parliament.

## B. Government's Sector Strategy

10. **Sector road map.** The transport sector is guided by the National Transport Policy (2001), the Local Infrastructure Development Policy (2004), and the Priority Investment Plan (2007–2016).<sup>14</sup> The road sector strategy of the Fourteenth Plan (FY2017–FY2019) of the government aims to (i) expand the SRN to improve interprovincial connectivity; (ii) promote economic growth through higher regional integration; (iii) reconstruct roads damaged by the April 2015 earthquake; (iv) provide greater access to social services and markets; (v) improve road safety and road maintenance; and (vi) support the development of the agriculture, industry, energy, and tourism sectors.<sup>15</sup> The strategy aligns with regional policies, including SAARC and SASEC objectives of facilitating trade, enhancing accessibility to national and transnational markets, and improving connectivity through the development of multimodal transport systems.

11. **Investment plan.** MOPIT prepared a 5-year investment plan for 2016–2020 to support the government's objectives of (i) providing a safe, reliable, and all-weather transport network for the entire population; (ii) increasing overall road density to 130 km of road per 100 km<sup>2</sup>, and paved road density to 25 km per 100 km<sup>2</sup>; and (iii) supporting an increase in industry's share of GDP, from 15% to 25%.<sup>16</sup> The investment plan aims to (i) connect isolated districts; (ii) expand the EWH to four lanes; (iii) develop the mid-hill highway; (iv) construct four north–south corridors; (v)

<sup>11</sup> Government of Nepal, Nepal Police, Traffic Directorate. 2015. *Accidents statistics*. Kathmandu; and Department of Roads. December 2013. *Status Paper on Road Safety in Nepal, Europe–Asia Road Safety Forum*, New Delhi.

<sup>12</sup> Compared to 1,134 fatalities per 100,000 vehicles in Bangladesh, 186 in Bhutan, 118 in India, 71 in Sri Lanka, and 66 globally. World Health Organization. 2015. *Global Status Report on Road Safety 2015*. Geneva.

<sup>13</sup> Government of Nepal, MOPIT. 2013. *Nepal Road Safety Action Plan (2013–2020)*. Kathmandu; and World Health Organization. 2010. *Global Plan for the Decade of Action for Road Safety 2011–2020*. Geneva.

<sup>14</sup> Government of Nepal, DOR. 2007. *Sector Wide Road Programme & Priority Investment Plan 2007–2016*. Kathmandu. The priority investment plan—with accessibility targets of bringing the mid-hill population within a 4-hour walk and the Terai population within a 2-hour walk of an all-season road—remains valid as of 2018.

<sup>15</sup> Government of Nepal, National Planning Commission. 2016. *Fourteenth Plan, FY2017–2019*. Kathmandu.

<sup>16</sup> National Planning Commission. 2017. *Sustainable Development Goals, 2016–2030*. Kathmandu.

expand bilateral trade corridors; (vi) construct the Kathmandu–Terai expressway; (vii) upgrade and shorten existing roads with viaducts, tunnels, and bridges; (viii) implement the road safety action plan 2013–2020; and (ix) improve funding for sustainable road maintenance. Resource requirements are estimated at \$6.2 billion over 2016–2020.

12. **Budgetary resources.** The budgetary allocation for the development of the SRN increased substantially, from NRs19,228 million in FY2010 to NRs37,708 million in FY2015, or 6.1% annually in real terms. Department of Roads relied on external assistance for about 41% of the SRN budget in FY2017. In FY2018, the SRN budget allocation increased significantly to NRs95,300 million. However, ambitious capital expenditure targets envisioned in previous budgets for infrastructure development have not been met.<sup>17</sup> The actual budget utilization was 80%–84% during FY2010–FY2017, which reflects capacity constraints of DOR.

13. **Challenges.** Key factors for successful implementation of the strategy of the government include (i) successful implementation and coordination between the three tiers of government under the federal system, including confirmation of institutional arrangements, and adequate staffing of provincial and local governments; (ii) increased budgetary utilization, both for capital and maintenance expenditures; (iii) increased capacity of DOR RBN in asset and contract management; and (iv) increased capacity of the contracting industry. The use of performance-based maintenance contracts is expected to improve the road maintenance situation. While the government intends to develop the Kathmandu–Terai fast-track road through public–private partnership, feasible partnership opportunities are limited.

### C. ADB Sector Experience and Assistance Program

14. **ADB’s assistance.** From 1969 to 2017, the Asian Development Bank (ADB) financed 553 loans, grants, and technical assistance in Nepal for a total amount of \$5.72 billion, including 63 projects in the transport sector for \$986.1 million. Since 2010, ADB’s interventions in the nonurban road sector include (i) Rural Connectivity Improvement Project, approved in 2017 for \$100 million for 388 km of rural roads; (ii) SASEC Roads Improvement Project, approved in 2016 for \$186.8 million, for rehabilitating and upgrading 114 km of the EWH; (iii) three projects totaling \$324 million for the reconstruction of the SRN; and (iv) a project preparatory facility approved in 2010 for \$12 million.<sup>18</sup> Future ADB assistance is expected to support the expansion of the EWH and other highways to four lanes, and the transition to a federal system in the rural road sector.

15. **Strategy.** ADB’s strategic objectives include enhancing global–local connectivity to promote inclusive growth.<sup>19</sup> ADB’s strategy is aligned with SASEC’s objectives of facilitating trade and improving connectivity to national and transnational markets through multimodal transport systems, which includes the upgrade of SASEC road corridors to Asian Highway Class I standard.<sup>20</sup> A technical assistance grant is further included in ADB’s draft country operations business plan 2019–2022, to support the MOPIT and the road sector with the transition to a federal system, and to prepare a strategic master plan and investment plan for 2021–2030.

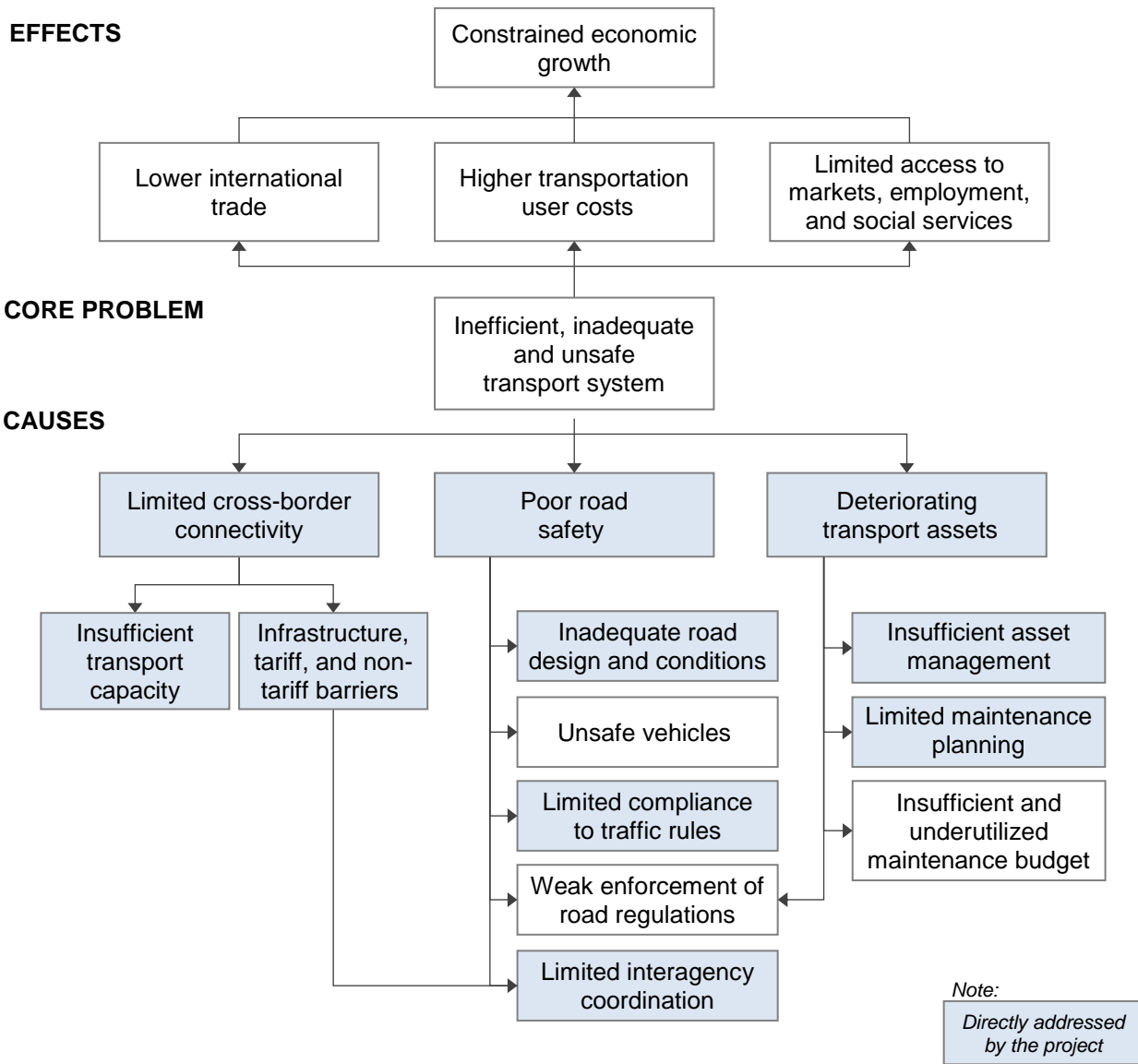
<sup>17</sup> In FY2016, only 5.2% of the budget was used for capital expenditures versus a budgeted target of 9.3%. The FY2018 budget includes a capital expenditure target of 12.0% of GDP, and a capital and recurrent expenditure target of 9.2% of GDP for the transportation sector. In FY2017, 60% of disbursements occurred in the last quarter.

<sup>18</sup> ADB. [Nepal: Rural Connectivity Improvement Project](#); ADB. [Nepal: South Asia Subregional Economic Cooperation Roads Improvement Project](#); ADB. [Nepal: South Asia Subregional Economic Cooperation Road Connectivity Project](#); ADB. [Nepal: Earthquake Emergency Assistance Project](#); ADB. [Nepal: Subregional Transport Enhancement Project](#); and ADB. [Nepal: Transport Project Preparatory Facility](#).

<sup>19</sup> ADB. 2013. *Country Partnership Strategy: Nepal, 2013–2017*. Manila.

<sup>20</sup> SASEC Secretariat. 2016. *Operational Plan 2016–2025*. Manila.

### Problem Tree for Road Transport Sector (Nonurban)



Source: Asian Development Bank.