

SECTOR ASSESSMENT (SUMMARY): TRANSPORT (MULTIMODAL LOGISTICS)¹

A. Sector Road Map

1. Sector Performance, Problems, and Opportunities

1. **Background.** Logistics refers to the gamut of activities related with storage, transportation, and distribution of goods, and the associated planning and management process. Logistics is a vital and enabling service for promoting trade and commerce in a country and critical in improving the country's participation in global value chains. An effective logistics ecosystem, where each component performs optimally, requires effective interoperability among different modes of transportation, and between different functions such as transportation and warehousing. It also requires a robust institutional framework and enabling regulatory environment supported by digitalization of processes to reduce transaction costs and procedural inefficiencies.

2. **Logistics sector is an important contributor to India's output and employment.** Efficient movement of goods from supply centers to consuming markets enables sustainable economic growth and higher employment by improving demand, making external trade more competitive, improving producer margins, reducing wastages during transit, and ensuring reduced carbon emissions.² The logistics sector contributed 13.5% to India's gross domestic (GDP) in 2017 (footnote 2). The total employment in the sector is estimated to increase from 22 million people in 2017 to 31 million by 2022.³ The Logistics Performance Index (LPI), one of the key indicators used to compare logistics performance, ranked India 44 out of 160 countries in 2018, placing India among the top performers in the lower-middle income category.⁴ Given its importance as a key enabler for growth in manufacturing, the government has accorded high priority to logistics sector reforms and infrastructure development as evident from recent initiatives (paras. 9–11).

3. **Existing policy and institutional framework.** The responsibility for regulating the logistics sector and development of logistics-related infrastructure lies with four main transport-related ministries, i.e., Ministry of Road Transport and Highways (MORTH); Ministry of Railways (MOR); Ministry of Civil Aviation (MOCA); and Ministry of Ports, Shipping, and Waterways (MOSPW). State governments are also responsible for road infrastructure and regulating road transport and warehousing. The Central Bureau of Indirect Taxes and Customs (CBIC) has the primary responsibility for regulating the international movement of goods, while 55 other partner government agencies have sector-specific mandate to regulate such trade. The fragmentation

¹ This summary is based on the following key sources: (i) ADB. 2018. *Draft Concept Note to the Government of India for National Integrated Logistics Plan: Key Issues*. India (available on request); (ii) Government of India, National Transport and Development Policy Committee. 2014. [India Transport Report: Moving India to 2032](#). India; (iii) Indian Institute of Management. 2007. [The Logistics Sector in India: Overview and Challenges](#). Ahmedabad; (v) National Council of Applied Economic Research. 2019. [Analysis of India's Logistics Cost](#). New Delhi; and other references cited in the document.

² NITI Aayog, Government of India and Rocky Mountain Institute. 2018. [Goods on the Move- Efficiency and Sustainability in Indian Logistics](#). Global Mobility Summit. Delhi. (i) World Bank research in Latin America showed that reducing the share of logistics costs in the final price of goods by 14% can increase demand for those goods by 8%–18% and increase employment in that sector by 2.5%–16%; (ii) It is estimated that India loses 40% of agricultural production to wastage in the supply chain; and (iii) the share of carbon dioxide (CO₂) emissions from logistics was around 7% of the total CO₂ emissions in India in 2018.

³ Logistics Skills Council. [Demand Supply Gap of Skilled Manpower in Logistics Sector](#) (accessed 18 April 2021). Of the 22 million, 54% were employed in passenger roadways segment, 35% in road freight while remaining were in passenger railways, freight forwarding, warehousing, packaging, and other services.

⁴ World Bank. 2018. [Connecting to Compete 2018-Trade Logistics in the Global Economy: The Logistics Performance Index and Its Indicators](#). Washington, D.C.

across multiple stakeholders has led to inefficient development and sub-optimal use of logistics infrastructure, lack of value-added services, increased regulatory burden for the users to comply with varying policies and regulations, and lack of an integrated information technology (IT) system for better logistics planning and performance management. India lacks an overarching logistics policy and institutional mechanism for coordinated logistics sector development.

4. The sector is predominantly unorganized and suffers from scale disadvantages.

Almost 99% of sector's GDP is contributed by small, and largely unorganized, operators such as owners of less than 5 trucks, affiliated to a broker or a transport company, small warehouse operators, customs brokers, and freight forwarders.⁵ Fragmentation of services across small operators poses many challenges. It impedes the adoption of modern technology and skills. Transaction costs and emissions are higher, and the user must deal with separate operators for each transport mode. Coupled with inefficient road and traffic management for movement of goods, service delivery can be unreliable and compromised. Insurance claims for delays or damages could be difficult when more than one transport mode or operators are involved.

5. Skewed modal-mix is further driving up the logistics costs. Although road transport is the most expensive and polluting among alternative modes of transport, logistics in India relies heavily on this mode (about 59%) followed by railways and coastal shipping in that order.⁶ Moreover, the lack of multimodal infrastructure and modern warehousing facilities, poor first mile and last mile connectivity, inadequate skillsets for logistics operations, and inefficient practices in domestic and international trade facilitation further cause inefficiencies, delays, and higher transaction costs.

6. Various processes related to external trade logistics cause congestion and delays.

Clearances of EXIM shipments at ports and airports are based on manual processes that suffer from a lot of paperwork, redundancy, and duplication. Other impediments related to the movement of EXIM shipments are (i) physical inspection of shipments causes delay, (ii) procedure for paying repositioning costs to use empty EXIM containers for domestic movement is cumbersome, (iii) restriction on mixing of coastal and EXIM cargo on foreign roll-on roll-off (RoRo) vessels imposes extra voyage costs, (iv) port operators are not adequately compensated for offering free coastal cargo storage at port thus adding to user costs, and (v) endorsement of bill of coastal goods is manual.

7. Enabling framework to drive private sector participation in logistics is lacking.

While the public sector is expected to finance basic enabling infrastructure for logistics such as roads, airports, rail tracks, waterways, energy supply, and utilities, the private sector is the main investor in operational infrastructure including logistics parks, warehouses, cold storages, trucks, reefer trucks, rail rolling stock, aircrafts, and ships. However, lack of harmonized standards for the development of physical assets which are required across many industries is an impediment for private investment. For example, construction guidelines are not standardized for warehousing and rolling stock, while energy efficiency norms, protocols and standards for cold chain infrastructure are not harmonized across related industries.

8. Coronavirus disease (COVID-19) caused major disruption in supply chains. India's

⁵ Logistics Skill Council. 2013. [Catalyzing Skill Development in Logistics Sector: Overview on Logistics Industry](#) (accessed 13 May 2021).

⁶ Footnote 2; Deloitte and ASSOCHAM. 2018. [India - On the Cusp of a Logistics Revolution](#). New Delhi. January. Among alternative modes of transport in India, coastal shipping is the cheapest and the most energy efficient costing INR0.15–0.2 per tonne-km (\$0.0020–0.0027 per tonne km) followed by railways which costs INR1.5 per tonne-km (\$0.02 per tonne-km) and road transport at INR2.5 per tonne-km (\$0.027 per tonne-km).

GDP shrank by approximately 8.0% in FY2021 but is expected to see a strong rebound in FY2022 with an expected growth of 11.0%.⁷ Logistics sector played an important role in the economic rebound. By March 2021, there were indications that most operations were close to their full operational capacity. However, the subsequent second COVID-19 wave in India has again increased the downside risks.

2. Government's Sector Strategy

9. **Driving manufacturing competitiveness.** The manufacturing industry in India is poised for rapid growth. The Government of India has undertaken several measures under the *Make in India* program, introduced in 2014, to increase manufacturing share of GDP to 25% by 2025.⁸ Development of logistics facilities and multimodal transport are key components of the *Make in India* program. In 2020, the government also introduced the *Self Reliant India Mission* (Aatmanirbhar Bharat Abhiyan, ABA) in response to the COVID-19 pandemic to support the manufacturing sector, make Indian supply chains more resilient, upgrade industrial infrastructure, and provide production-linked incentives to specific manufacturing sectors.⁹

10. **Logistics development figures as a key reform agenda.** Recognizing the importance of logistics sector as a key enabler for industrial development, India has focused on upgrading transport and logistics infrastructure under various national schemes. The Government of India and state governments conceptualized industrial corridors to develop thriving industrial clusters or zones that are interconnected by multimodal transport networks.¹⁰ The key initiatives currently underway include: (i) Prime Minister's Rural Roads Program (Pradhan Mantri Gram Sadak Yojana, PMGSY), (ii) Bharatmala Programme that involves the development of 26,000 kilometers (km) of Economic Corridors, Golden Quadrilateral and North-South and East-West Corridors to carry Freight Traffic; (iii) Sagarmala National Perspective Plan for the development of India's 7,500 km coastline, 14,500 km of potentially navigable waterways and maritime sector; (iv) Jal Marg Vikas which involves National Waterways for the development of fairway between Varanasi in the state of Uttar Pradesh and Haldia in the state of West Bengal; (v) UDAAN Regional Connectivity Scheme where Airports Authority of India will connect 22 underserved airports to key airports in the first phase through flights with low airfares; and (vi) National Rail Plan which covers the Eastern Dedicated Freight Corridor, Western Dedicated Freight Corridor, and Mumbai-Ahmedabad High Speed Rail Corridor.

11. **Several regulatory and structural reforms have also been undertaken to improve logistics efficiency.** In November 2017, the government granted infrastructure status to the

⁷ Asian Development Bank. 2021. [Financing a Green and Inclusive Recovery](#). Manila. FY2021 demotes the fiscal year ending on 31 March 2021.

⁸ [Make in India Program](#) (last accessed 12 May 2021). Manufacturing generated 17.4% of India's GDP on FY2020 (McKinsey and Company. 2020. [A New Growth Formula for Manufacturing in India](#). Gurgaon)

⁹ Government of India. 2020. [Atmanirbhar Bharat: Part 1- Businesses Including MSMEs; Part 2: Poor, Including Migrants and Farmers; Part 3: Agriculture; Part 4: New Horizons of Growth; Part 5: Government Reforms and Enablers](#). New Delhi.

¹⁰ The industrial corridors in India have been developed around the traditional urban and growth centers, such as, Delhi, Mumbai, Bangalore, Vizag, Kolkata, Chennai, Bhubaneswar, and Guwahati. Key national highway (NH) and rail routes, including the dedicated freight corridors (DFCs), airports, and waterways form the backbone of these corridors providing connectivity to gateways for both international and domestic trade. The Delhi Mumbai Industrial Corridor (DMIC) project was approved by the Union Cabinet of India in 2007. The institutional and financial structure of the project was approved by the Government of India and the Scheme launched in September 2011. The establishment of the National Industrial Corridor Development and Implementation Trust (NICDIT) was approved in December 2016. [Department for Promotion of Industry and Internal Trade: Industrial Corridors](#) (accessed 28 April 2020).

logistics industry, a move targeted to ease logistics firms' access to long-term credit at lower rates for encouraging private investments into the sector. Introduction of goods and services tax (GST) in 2015 has reduced waiting time for interstate border crossing, revision in axle-load norms for heavy vehicles has increased carrying capacity of trucks, use of mandatory electronic toll collection system (FASTag) has reduced time loss at toll plazas, radio frequency identification (RFID) tagging for export-import (EXIM) containers has enabled easy tracking, and introduction of paperless EXIM trade processes has improved efficiency. In addition, the government has set up the National Highways Logistics Management Company (NHLMC) to oversee the development of MMLPs and port connectivity projects. The NHLMC would drive the agenda for seamless hinterland connectivity with ports.

12. A coordinated approach is necessary to achieve the government's reform agenda.

The key issue that is impeding large scale development of multimodal logistics parks and efficient value chains is the lack of a coordinated approach across the concerned ministries for sector development. In this regard, a national logistics policy (NLP) can provide a framework for coordinated sector development across the key ministries, including institutional arrangement and framework for a comprehensive national logistics reform action plan for ensuring efficient intermodal operations. Further, the underlying processes related to key infrastructure developments can be strengthened and standardized for encouraging private investment and improving operational efficiency. These would include warehousing construction and operations, development of MMLPs, and cold chain logistics. Process improvements in external trade logistics can significantly improve international competitiveness of Indian products. Thus, reengineering of checking and clearance processes and automation of operations at ports and airports can reduce delays and transaction costs. Similarly, reforms in processes related to the use of EXIM containers for domestic movement, mixing of coastal and EXIM cargo, and digitization of bill of coastal goods can reduce time and costs for empty container repositioning.

13. System automation can significantly improve efficiency and promote lower-emission logistics.

A secured logistics document exchange for digital transfer of documents among logistics stakeholders can support the adoption of eBill of lading. The following initiatives can be considered for improved management of warehousing construction and operations (i) a single window digital interface to secure all approvals required for warehouse construction, and (ii) a national eRegistry geo-tagging to act as a discovery platform for the users. A system to estimate greenhouse gas (GHG) emissions from different modes of transportation can help stakeholders take informed decisions in the use of modal-mix. Smart road enforcement can ensure consistency in digitization of traffic control and management by state governments for minimizing stoppages and inspections of trucks by different authorities on the road.

3. ADB Sector Experience and Assistance Program

14. ADB's support to the logistics sector in India. Since 2015, ADB has supported several innovative and transformational initiatives in India's logistics sector, including improving regional connectivity with the vibrant global value chains of East and South East Asia through the development of the East Coast Economic Corridor.¹¹ ADB conducted MMLP pre-feasibility studies at Jogighopa in Assam, India and Debaspete in Karnataka as the lead partner for the

¹¹ ADB is conducting analytical studies to advance cooperation in the maritime sector of Bangladesh, India, Maldives, Myanmar, and Sri Lanka (ADB.2019. [TA 9758-REG: Advancing Cooperation in the Maritime Sector in South Asia Subregional Economic Cooperation Program](#). Manila). In a joint consulting effort with Republic of Korea's Knowledge Sharing Program, ADB conducted a comparative analysis of the skill development and training ecosystems between India and the Republic of Korea and identified specific port worker related skill-gaps in India (Ministry of Economy and Finance, Republic of Korea. 2020. [2019/20 KSP-ADB Joint Consultation Report: Skill Enhancement to Improve Port Operations in India](#). Sejong-si).

MORTH's Logistics Efficiency Enhancement Program, which aims to reduce logistics costs and improve the efficiency of transport of goods and commodities.¹² These experiences highlighted the need for inter-ministerial coordination, and process standardization and digitization.

15. ADB's support to other related sectors include transport sector projects that facilitate trade and logistics through (i) assistance in port projects such as rehabilitation of port facilities, modernizing liquid cargo handling systems;¹³ (ii) assistance in road projects in upgrading subregional connectivity by improving state highways that connect to the border with Bangladesh,¹⁴ improvement of road connectivity at the international trade corridor in the North Bengal and Northeastern Region of India bordering Bangladesh, Bhutan, Myanmar, and Nepal;¹⁵ and (iii) assistance in rail projects in modernizing, increasing the capacity, and efficiency of railway infrastructure through electrification and doubling of rail tracks on critical routes which would help local industries access freight transport services and regional integration.¹⁶ In addition, two ADB programs are currently being processed in India for strengthening the institutional ecosystem for micro-small and medium enterprises, and industrial corridor development.¹⁷

16. In 2018, ADB approved a technical assistance for supporting MOCI for critical reform initiatives to deal with logistics challenges in India based on best practices across the world.¹⁸ The key initiatives supported by the TA include: (i) development of a National Logistics Policy to provide a unified policy environment cutting across systems, jurisdictions, and modes of transport; (ii) process reforms at ports and airports including digitizing the import clearance system and risk management system for key partner government agencies (Animal Quarantine, Wildlife Crime Control Bureau, Textile Committee, and Central Drugs Standards Control Organization) to improve turnaround time for EXIM clearances; (iii) assessing the viability of coastal shipping as an alternative mode for logistics supply chain for key commodities like steel, cement, coal, food grain, and fertilizers from a standpoint of cost competitiveness and addressing capacity constraints in rail and road transport modes (iv) domestic trade facilitation through smarter and remote methods of road enforcement; (v) digital initiatives for better logistics planning and performance monitoring, including feasibility of an eMarketplace for warehousing, and a system of secured document exchange for logistics transactions; and (vi) state-led initiatives which include recommendatory guidelines for modern warehousing standards, streamlining approvals processes, and development of state and city logistics plans. In addition, ADB along with support from Korea's Knowledge-Sharing Program, the Ministry of Economy and Finance, Republic of Korea undertook and completed a project on "Skill Enhancement to Improve Port Operations in India" in 2020 to identify specific port worker related skill gaps in India and a comparative analysis of the skill development and training ecosystems between India and Korea. The proposed SMILE program is a culmination of those efforts.

¹² ADB. 2020. [Developing Multimodal Logistics Parks in India](#). Manila.

¹³ ADB. 2011. [Completion Report: Mumbai and Chennai Ports Project](#). Manila (Loan 1556/57-IND).

¹⁴ ADB. 2012. [Completion Report: West Bengal Corridor Development Project](#). Manila (Loan 1870-IND).

¹⁵ ADB. 2014. [Report and Recommendation of the President to the Board of Directors: Proposed Multitranche Financing Facility to India for the South Asia Subregional Economic Cooperation Road Connectivity Investment Program](#). Manila (MFF 0079-IND approved 28 March).

¹⁶ ADB. 2020. [Railway Sector Improvement Project](#). Manila (Loan 1981-IND); and ADB. 2011. [Report and Recommendation of the President to the Board of Directors: Proposed Multitranche Financing Facility to India for the Railway Sector Investment Program](#). Manila (MFF 0060-IND approved 31 August).

¹⁷ The following ADB proposed programs currently being processed to strengthen the competitiveness and global value chain linkages of India's manufacturing sector (i) a \$250 million results-based loan: Strengthening MSME Cluster Ecosystem Through Institutional Network of Enterprise Development Centers, and (ii) a \$500 million policy-based loan for industrial corridor development: Industrial Corridor Development Program.

¹⁸ ADB. 2018. [India: Supporting Logistics Sector Development](#). Manila (funded by e-Asia Knowledge Fund and TASF).

Problem Analysis Diagram for Logistics Sector in India

