

Bangladesh

Rail Sector Profile

Population (2023)
173 Million

Gross domestic product (GDP), PPP (2022)
1.27 Trillion USD

(1,2)

PPP = Purchasing power parity

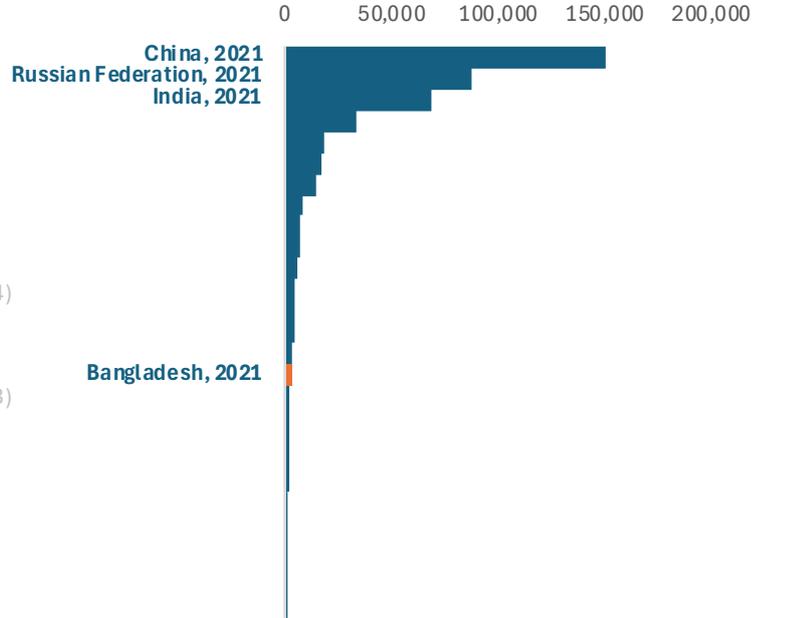
Heavy Railway

Heavy rail route length (2021)
3,039.38 km

(3,6)

Heavy railway route lengths in Asia-Pacific (kilometers)

(3,6)



Between 2000 to 2021, Bangladesh added 325 kilometers of heavy railway routes.

Single-track routes (2010)
59.9%

Double-track routes (2019)
63.8%

(4)

Electrified routes
n.d.

(3)

Density per sqkm

(3,6)

23.3 kilometers per thousand sqkm

(3,6)

sqkm = square kilometer

Availability per capita

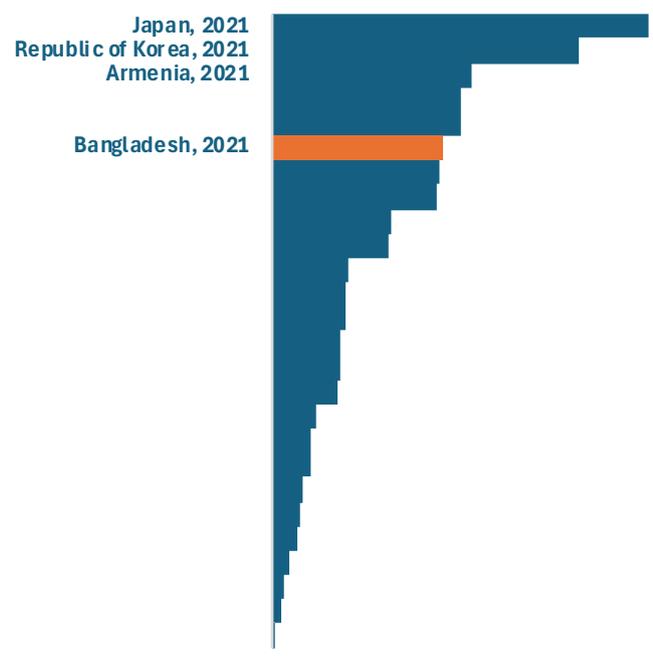
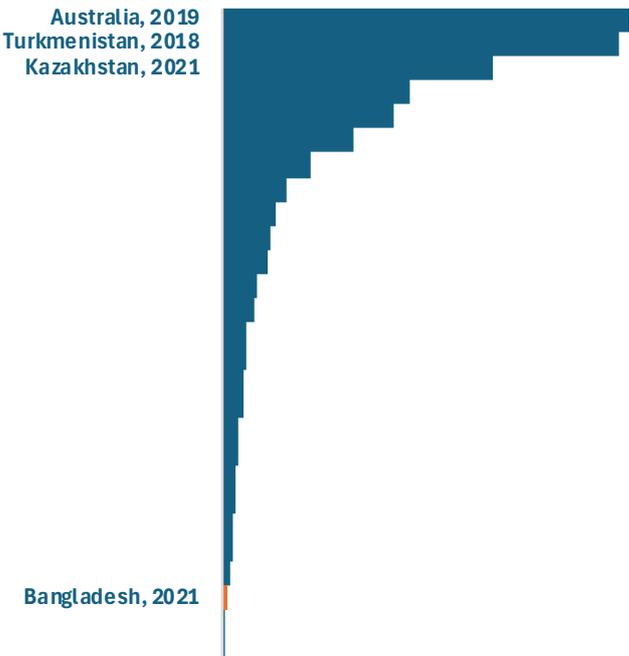
17.9 kilometers per million population

Density per sqkm in Asia-Pacific

Availability per capita in Asia-Pacific

0 200 400 600 800 1,000 1,200 1,400

0 10 20 30 40 50 60



This rail sector profile was developed by the Asian Transport Outlook (ATO) with the contribution by the United Nations Economic and Social Commission for Asia and the Pacific (UNESCAP), which provided information on the Trans-Asian Railway Network routes. The ATO is an initiative developed under TA-6763 REG: Accelerating Innovation in Transport - Asian Transport Outlook: Phase 3 (55119-001) of the Asian Development Bank (ADB) and is also being supported by the Asian Infrastructure Investment Bank (AIIB) through Purchase Order No. CW39446 AIIB Support: Asian Transport Outlook Phase 3.

The Asian Transport Outlook (ATO) project collects, collates, and organizes data from publicly available official, as well as reputable and peer-reviewed secondary sources, which may contain incomplete or inconsistent data. It is important to note that the ATO does not generate data. Moreover, while the ATO carries out quality control and assurance of whether the data are truthfully reflected in the ATO, the ATO does not make any warranties or representations as to the appropriateness, quality, accuracy, or completeness of the data in the ATO databases, and in the knowledge products that are produced from such. Users are encouraged to scrutinize, verify, interpret, and judge the data before utilizing them.

Urban Railway

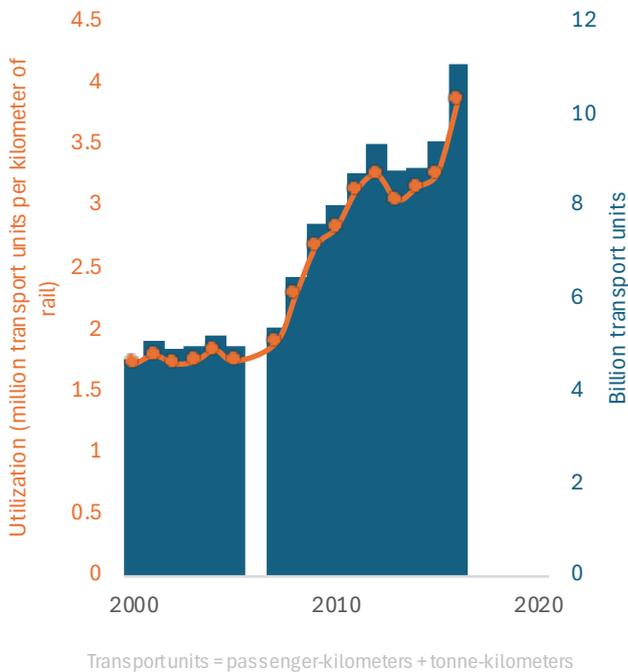
Metro length (2021) n.d.	Light rail transit (LRT) length n.d.	Urban rail availability per capita in Asia-Pacific (4)
Number of cities with urban rail systems (2021) 0		(4)
Urban rail availability per capita (2021) n.d.		(4)

Activity

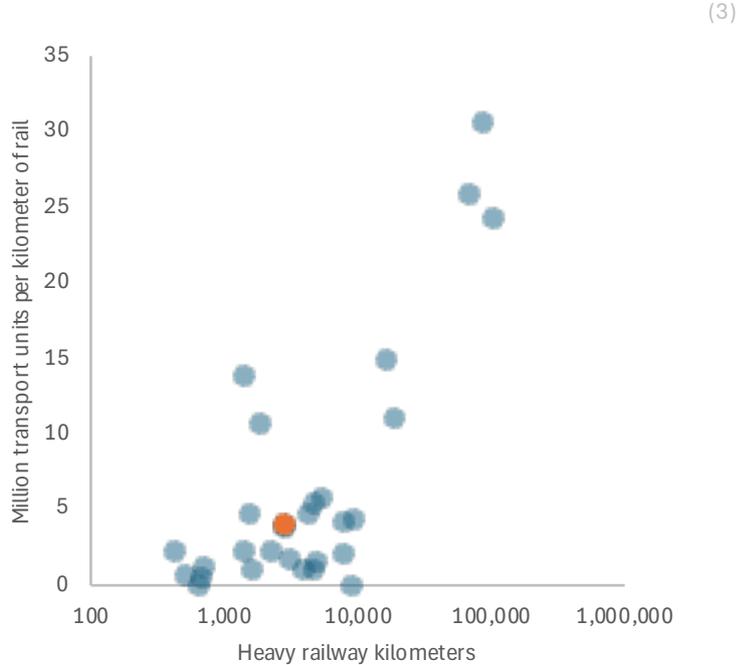
Passenger-kilometers (PKM) (2016) 10.0 billion	Tonne-kilometers (TKM) (2016) 1.1 billion	(3)
--	---	-----

Between 2000 to 2016, PKM increased annually by 6.0%. Between 2000 to 2016, TKM increased annually by 1.9%

Transport units and utilization trend in Bangladesh



Utilization of railways in Asia-Pacific

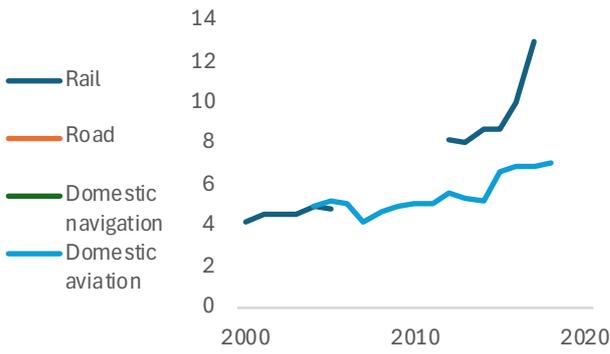


This rail sector profile was developed by the Asian Transport Outlook (ATO) with the contribution by the United Nations Economic and Social Commission for Asia and the Pacific (UNESCAP), which provided information on the Trans-Asian Railway Network routes. The ATO is an initiative developed under TA-6763 REG: Accelerating Innovation in Transport - Asian Transport Outlook: Phase 3 (55119-001) of the Asian Development Bank (ADB) and is also being supported by the Asian Infrastructure Investment Bank (AIIB) through Purchase Order No. CW39446 AIIB Support: Asian Transport Outlook Phase 3.

The Asian Transport Outlook (ATO) project collects, collates, and organizes data from publicly available official, as well as reputable and peer-reviewed secondary sources, which may contain incomplete or inconsistent data. It is important to note that the ATO does not generate data. Moreover, while the ATO carries out quality control and assurance of whether the data are truthfully reflected in the ATO, the ATO does not make any warranties or representations as to the appropriateness, quality, accuracy, or completeness of the data in the ATO databases, and in the knowledge products that are produced from such. Users are encouraged to scrutinize, verify, interpret, and judge the data before utilizing them.

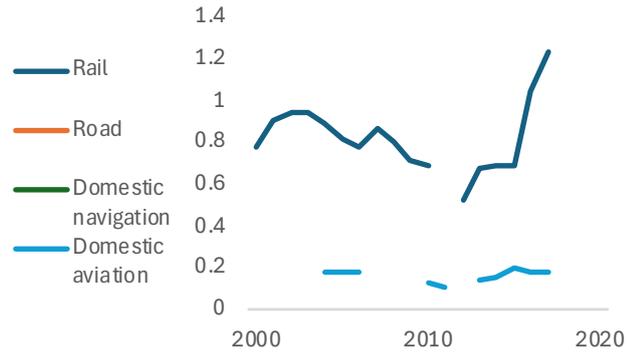
Mode Share

Passenger transport activity (billion passenger-km)



(6)

Freight transport activity (billion tonne-km)



(6)

(6)

Energy

Rail diesel consumption (2020) **332.458 thousand tonnes**

Rail electricity consumption (2021) **n.d.**

Rail energy intensity with GDP (MJ per USD, PPP)

(5)

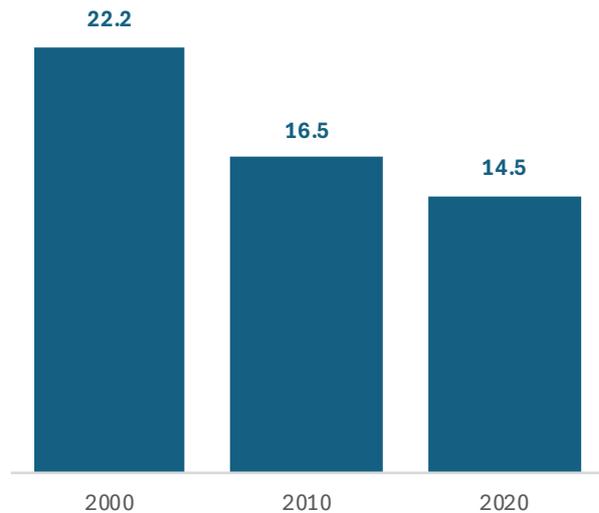
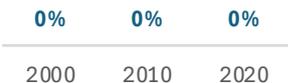
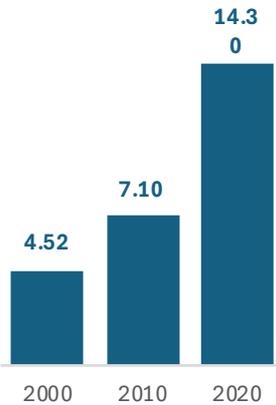
(2,5)

Rail energy consumption (PJ)

Share of electricity in rail energy consumption

(5)

kWh = kiloWatt-hour



PJ = petajoule

MJ = megajoule

This rail sector profile was developed by the Asian Transport Outlook (ATO) with the contribution by the United Nations Economic and Social Commission for Asia and the Pacific (UNESCAP), which provided information on the Trans-Asian Railway Network routes. The ATO is an initiative developed under TA-6763 REG: Accelerating Innovation in Transport - Asian Transport Outlook: Phase 3 (55119-001) of the Asian Development Bank (ADB) and is also being supported by the Asian Infrastructure Investment Bank (AIIB) through Purchase Order No. CW39446 AIIB Support: Asian Transport Outlook Phase 3.

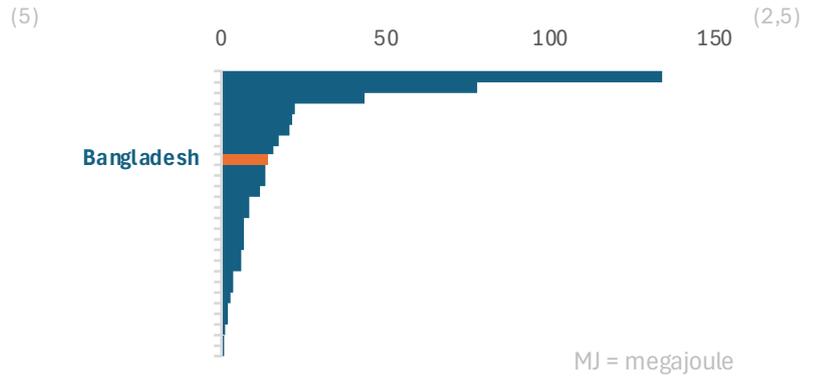
The Asian Transport Outlook (ATO) project collects, collates, and organizes data from publicly available official, as well as reputable and peer-reviewed secondary sources, which may contain incomplete or inconsistent data. It is important to note that the ATO does not generate data. Moreover, while the ATO carries out quality control and assurance of whether the data are truthfully reflected in the ATO, the ATO does not make any warranties or representations as to the appropriateness, quality, accuracy, or completeness of the data in the ATO databases, and in the knowledge products that are produced from such. Users are encouraged to scrutinize, verify, interpret, and judge the data before utilizing them.

Energy

Share of rail in total transport energy consumption

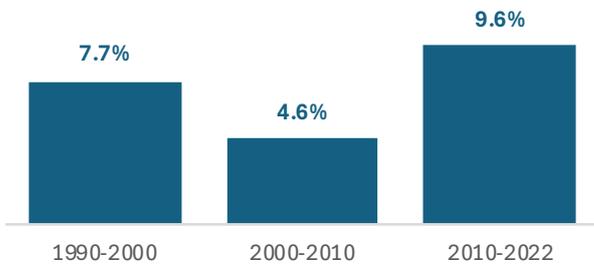


Rail energy intensity with GDP in Asia-Pacific (MJ per USD, PPP, 2020)



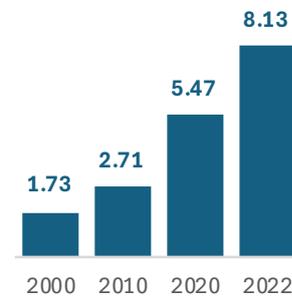
Rail CO2 emissions (2022)
1,586 thousand tonnes

Rail CO2 emissions annual average growth



PM 10

(10) Rail air pollutant emissions (thousand tonnes)



Share of rail in transport air pollutant emissions (2000-2022)

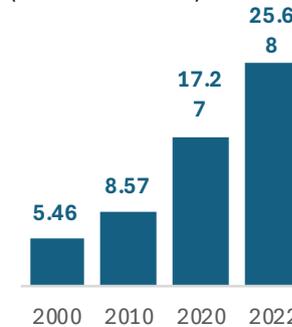


Share of rail in transport CO2 emissions (1990-2022)



NOx

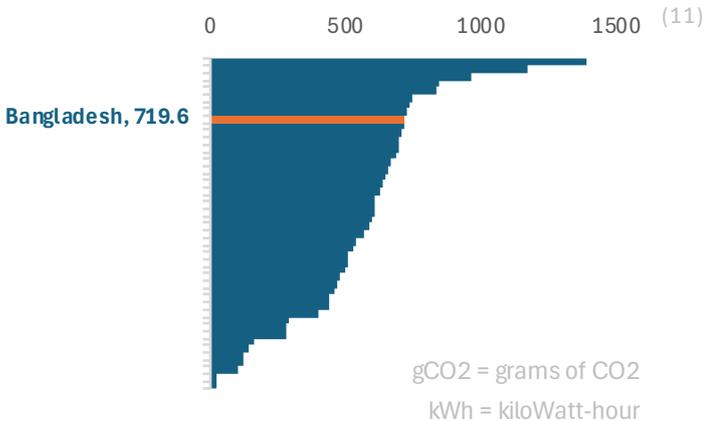
(10) Rail air pollutant emissions (thousand tonnes)



Share of rail in transport air pollutant emissions (2000-2022)

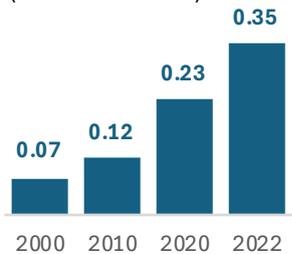


Grid emission factors (gCO2/kWh, 2022)



SOx

(11) Rail air pollutant emissions (thousand tonnes)



Share of rail in transport air pollutant emissions (2000-2022)



This rail sector profile was developed by the Asian Transport Outlook (ATO) with the contribution by the United Nations Economic and Social Commission for Asia and the Pacific (UNESCAP), which provided information on the Trans-Asian Railway Network routes. The ATO is an initiative developed under TA-6763 REG: Accelerating Innovation in Transport - Asian Transport Outlook: Phase 3 (55119-001) of the Asian Development Bank (ADB) and is also being supported by the Asian Infrastructure Investment Bank (AIIB) through Purchase Order No. CW39446 AIIB Support: Asian Transport Outlook Phase 3.

The Asian Transport Outlook (ATO) project collects, collates, and organizes data from publicly available official, as well as reputable and peer-reviewed secondary sources, which may contain incomplete or inconsistent data. It is important to note that the ATO does not generate data. Moreover, while the ATO carries out quality control and assurance of whether the data are truthfully reflected in the ATO, the ATO does not make any warranties or representations as to the appropriateness, quality, accuracy, or completeness of the data in the ATO databases, and in the knowledge products that are produced from such. Users are encouraged to scrutinize, verify, interpret, and judge the data before utilizing them.

Investment in Bangladesh Rail Sector

Public-private partnership (PPP) investments in rail (Million USD)

(17)

Official development assistance (ODA) in rail (Million USD)

(18)

2002-2015

279

2016-2021

2,031

Share of rail in transport PPP

| Between 2000-2015

n.d.

| Between 2016-2022

n.d.

Share of rail in transport ODA

| Between 2002-2015

(17) 13%

| Between 2016-2021

44%

(18)

Import value (Million USD)

2003-2012

711

2013-2022

1,014

National investment in rail - capital expenditure (0)

(20) n.d.

(19)

Includes locomotives, railcars, passenger coaches, freight wagons, rail fixtures, rolling stock parts, and containers

Digitalisation

Internet speed (2022)

| Broadband
40 Mbps

| Mobile

13 Mbps

Mbps = Megabits per second

Digital readiness index (2021)

-0.8/2.5

(8)

(9)

Others

Share of transport in gross value added (GVA) (2022)

8.6%

Average annual losses to rail infrastructure due to all potential hazards (2023)

(12)

24.26 mln. USD

(21)

Quality of railway infrastructure (2017)

2.9/7

Share of rail infrastructure in multihazard average annual loss to transport infrastructure (2023)

(13)

13.6%

(21)

Percent of firms identifying transportation as a major constraint - services (2015)

15.3%

Efficiency of train services (2019)

(14)

3.1/7

(16)

This rail sector profile was developed by the Asian Transport Outlook (ATO) with the contribution by the United Nations Economic and Social Commission for Asia and the Pacific (UNESCAP), which provided information on the Trans-Asian Railway Network routes. The ATO is an initiative developed under TA-6763 REG: Accelerating Innovation in Transport - Asian Transport Outlook: Phase 3 (55119-001) of the Asian Development Bank (ADB) and is also being supported by the Asian Infrastructure Investment Bank (AIIB) through Purchase Order No. CW39446 AIIB Support: Asian Transport Outlook Phase 3.

The Asian Transport Outlook (ATO) project collects, collates, and organizes data from publicly available official, as well as reputable and peer-reviewed secondary sources, which may contain incomplete or inconsistent data. It is important to note that the ATO does not generate data. Moreover, while the ATO carries out quality control and assurance of whether the data are truthfully reflected in the ATO, the ATO does not make any warranties or representations as to the appropriateness, quality, accuracy, or completeness of the data in the ATO databases, and in the knowledge products that are produced from such. Users are encouraged to scrutinize, verify, interpret, and judge the data before utilizing them.

Benchmarking Rail and Road Sectors

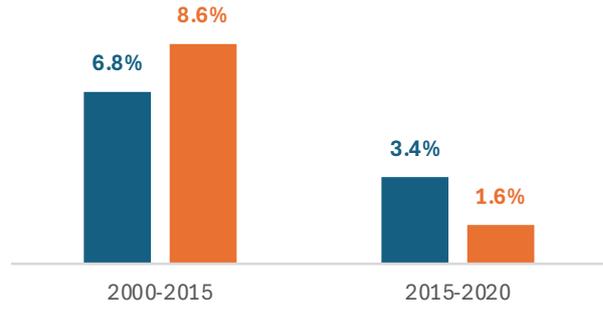
Infrastructure annual average growth of rail (including HSR, LRT, and metro) vs. road



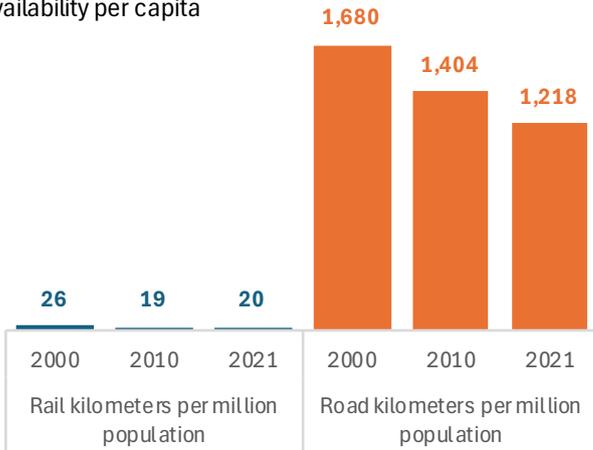
(3,6)

Rail vs. road energy consumption annual average growth rate

(5)



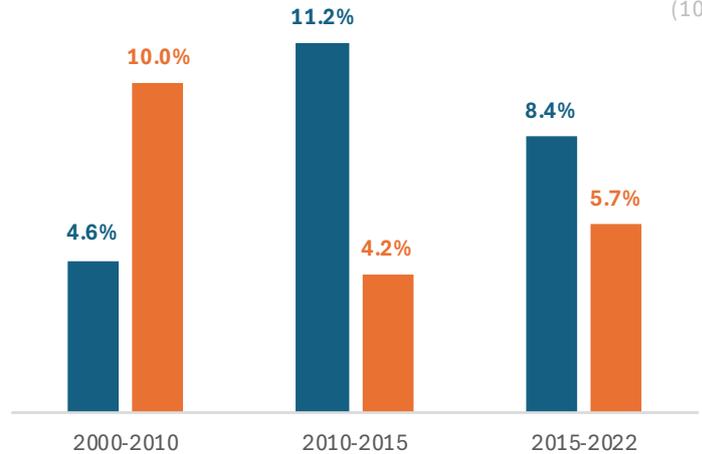
Rail (including HSR, LRT, and metro) vs. road infrastructure availability per capita



(3,6)

Rail vs. road CO2 emissions annual average growth rate

(10)



Sources

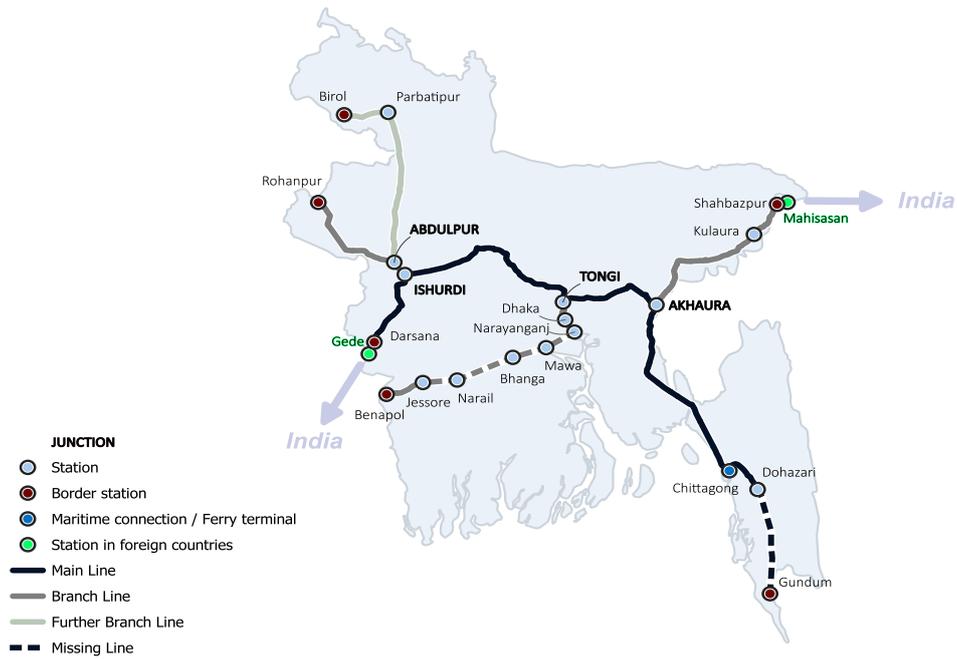
(1) UN Population Database (2022), <https://population.un.org/wpp/>
 (2) World Bank (2022), <https://data.worldbank.org/indicator/NY.GDP.MKTP.PP.CD>
 (3) International Union of Railways (2021), <https://uic-stats.uic.org/>
 (4) Rapid Transit Database (ITDP, 2022), <https://www.itdp.org/rapid-transit-database/>
 (5) UN Energy Statistics (2021), <https://unstats.un.org/unsd/energystats/dataPortal/>
 (6) Country Official Statistics
 (7) Rail Company
 (8) OOKLA (2023), <https://worldpopulationreview.com/countries/internet-speeds-by-country/>
 (9) CISCO (2022), <https://www.cisco.com/c/en/us/about/csr/research-resources/digital-readiness.html>
 (10) Emissions Database for Global Atmospheric Research (EC, 2023), <https://edgar.jrc.ec.europa.eu/>
 (11) Ember (2023), <https://ember-climate.org/data-catalogue/yearly-electricity-data/>
 (12) UN Statistics (2022), <https://unstats.un.org/unsd/snaama/Downloads>

(13) World Economic Forum (2019), http://www3.weforum.org/docs/WEF_TheGlobalCompetitivenessReport2019.pdf
 (14) World Bank (2020), <https://datacatalog.worldbank.org/dataset/enterprise-surveys>
 (15) Koks, et al. (2019), <https://www.nature.com/articles/s41467-019-10442-3>
 (16) World Economic Forum (2019), https://www3.weforum.org/docs/WEF_TheGlobalCompetitivenessReport2019.pdf
 (17) PPI Database (World Bank, 2023), <https://ppi.worldbank.org/en/ppi>
 (18) Organisation for Economic Co-operation and Development (OECD) (2022), <https://stats.oecd.org/Index.aspx?DataSetCode=CRS1#>
 (19) Country Data
 (20) Trademap (ITC, 2024), <https://www.trademap.org/>
 (21) Global Infrastructure Risk Model and Resilience Index (CDRI, 2023), <https://giri.unepgrid.ch/>

This rail sector profile was developed by the Asian Transport Outlook (ATO) with the contribution by the United Nations Economic and Social Commission for Asia and the Pacific (UNESCAP), which provided information on the Trans-Asian Railway Network routes. The ATO is an initiative developed under TA-6763 REG: Accelerating Innovation in Transport - Asian Transport Outlook: Phase 3 (55119-001) of the Asian Development Bank (ADB) and is also being supported by the Asian Infrastructure Investment Bank (AIIB) through Purchase Order No. CW39446 AIIB Support: Asian Transport Outlook Phase 3.

The Asian Transport Outlook (ATO) project collects, collates, and organizes data from publicly available official, as well as reputable and peer-reviewed secondary sources, which may contain incomplete or inconsistent data. It is important to note that the ATO does not generate data. Moreover, while the ATO carries out quality control and assurance of whether the data are truthfully reflected in the ATO, the ATO does not make any warranties or representations as to the appropriateness, quality, accuracy, or completeness of the data in the ATO databases, and in the knowledge products that are produced from such. Users are encouraged to scrutinize, verify, interpret, and judge the data before utilizing them.

Bangladesh Rail Network



Border Crossings to/from Bangladesh

Source: UNESCAP

Country	Border Crossing
Bangladesh - India	Darsana-Gede
Bangladesh - India	Rohanpur-Singhabad
Bangladesh - India	Birol-Radhikapur
Bangladesh - India	Benapol-Petrapol
Bangladesh - India	Shahbazpur-Mahisasan (missing link)

This rail sector profile was developed by the Asian Transport Outlook (ATO) with the contribution by the United Nations Economic and Social Commission for Asia and the Pacific (UNESCAP), which provided information on the Trans-Asian Railway Network routes. The ATO is an initiative developed under TA-6763 REG: Accelerating Innovation in Transport - Asian Transport Outlook: Phase 3 (55119-001) of the Asian Development Bank (ADB) and is also being supported by the Asian Infrastructure Investment Bank (AIIB) through Purchase Order No. CW39446 AIIB Support: Asian Transport Outlook Phase 3.

The Asian Transport Outlook (ATO) project collects, collates, and organizes data from publicly available official, as well as reputable and peer-reviewed secondary sources, which may contain incomplete or inconsistent data. It is important to note that the ATO does not generate data. Moreover, while the ATO carries out quality control and assurance of whether the data are truthfully reflected in the ATO, the ATO does not make any warranties or representations as to the appropriateness, quality, accuracy, or completeness of the data in the ATO databases, and in the knowledge products that are produced from such. Users are encouraged to scrutinize, verify, interpret, and judge the data before utilizing them.

Trans-Asian Railway Lines in Bangladesh

Source: UNESCAP

Line	Length (km)
Darsana – Dohazari	636
Ishurdi – Rohanpur	121
Tongi – Benapol	256
Akhaura – Shabazpur (partial)	416
Abdulpur – Birol	202
Dohazari – Cox's Bazar	93
Ramu – Gundum (missing link)	29
Narayanganj – Benapol (gauge conversion)	212

Total distance 1,965 km

This rail sector profile was developed by the Asian Transport Outlook (ATO) with the contribution by the United Nations Economic and Social Commission for Asia and the Pacific (UNESCAP), which provided information on the Trans-Asian Railway Network routes. The ATO is an initiative developed under TA-6763 REG: Accelerating Innovation in Transport - Asian Transport Outlook: Phase 3 (55119-001) of the Asian Development Bank (ADB) and is also being supported by the Asian Infrastructure Investment Bank (AIIB) through Purchase Order No. CW39446 AIIB Support: Asian Transport Outlook Phase 3.

The Asian Transport Outlook (ATO) project collects, collates, and organizes data from publicly available official, as well as reputable and peer-reviewed secondary sources, which may contain incomplete or inconsistent data. It is important to note that the ATO does not generate data. Moreover, while the ATO carries out quality control and assurance of whether the data are truthfully reflected in the ATO, the ATO does not make any warranties or representations as to the appropriateness, quality, accuracy, or completeness of the data in the ATO databases, and in the knowledge products that are produced from such. Users are encouraged to scrutinize, verify, interpret, and judge the data before utilizing them.

Policy Measures and Targets

Policy document	Year	Rail-related measures
National Integrated Multi-modal Transport Policy	2013	Urban passenger rail infrastructure improvement, General rail improvement, General public transport, Railway electrification, Technical standards for rail infrastructure, Development of rail plan/ policy, Intermodality measures, General transport asset management
Bangladesh. National Communication (NC). NC 3	2018	General transport target - Modal shift
Mujib Climate Prosperity Plan	2021	Railway electrification, Transport infrastructure resilience, Freight transport shifting to rail or inland waterways (IWT), Reduction of transport/ logistics costs
Eighth Five Year Plan	2020	Rail infrastructure expansion, Urban passenger rail infrastructure improvement, High-speed rail (HSR), General rail improvement, Railway electrification, Technical standards for rail infrastructure, Intermodality measures, General transport asset management
First Nationally Determined Contributions (Interim Updated)	2020	Urban passenger rail infrastructure improvement, General rail improvement, Railway electrification
First Nationally Determined Contributions (Updated)	2021	Railway electrification, General transport target - Modal shift
Perspective Plan of Bangladesh 2021-2041	2012	Rail infrastructure expansion, Urban passenger rail infrastructure improvement, Non-urban passenger rail infrastructure improvement, High-speed rail (HSR), General rail improvement, Intermodality measures, General transport asset management
National Land Transport Policy	2004	Urban passenger rail infrastructure improvement, General rail improvement, Technical standards for rail infrastructure, Development of rail plan/ policy, Intermodality measures, General transport asset management
Intended Nationally Determined Contributions	2015	General public transport, General transport target - Modal shift
Final Report on Updating Railway Master Plan	2017	Rail infrastructure expansion, General rail improvement, Development of rail plan/ policy
National Sustainable Development Strategy 2010-2021	2010	Rail infrastructure expansion, Urban passenger rail infrastructure improvement, General transport asset management
Road Master Plan 2009	2009	Intermodality measures
Voluntary National Reviews (VNRs) 2020	2020	Urban passenger rail infrastructure improvement
Roadmap and Action Plan for Implementing Bangladesh NDC	2018	Urban passenger rail infrastructure improvement, General rail improvement
Bangladesh Delta Plan 2100 Vol. 3.a	2018	General rail improvement

This rail sector profile was developed by the Asian Transport Outlook (ATO) with the contribution by the United Nations Economic and Social Commission for Asia and the Pacific (UNESCAP), which provided information on the Trans-Asian Railway Network routes. The ATO is an initiative developed under TA-6763 REG: Accelerating Innovation in Transport-Asian Transport Outlook: Phase 3 (55119-001) of the Asian Development Bank (ADB) and is also being supported by the Asian Infrastructure Investment Bank (AIIB) through Purchase Order No. CW39446 AIIB Support: Asian Transport Outlook Phase 3.

The Asian Transport Outlook (ATO) project collects, collates, and organizes data from publicly available official, as well as reputable and peer-reviewed secondary sources, which may contain incomplete or inconsistent data. It is important to note that the ATO does not generate data. Moreover, while the ATO carries out quality control and assurance of whether the data are truthfully reflected in the ATO, the ATO does not make any warranties or representations as to the appropriateness, quality, accuracy, or completeness of the data in the ATO databases, and in the knowledge products that are produced from such. Users are encouraged to scrutinize, verify, interpret, and judge the data before utilizing them.

Policy Measures and Targets

Policy document	Target year	Rail-related targets
Eighth Five Year Plan	2025	<p>Targets 2025:</p> <ul style="list-style-type: none"> ☑ Construction of 798 km new rail line. ☑ Implement dual gauge double tracking of 897 km to increase line capacity. ☑ Construct 9 important railway bridges ☑ Procure 160 locomotives to enhance the efficiency, ensure reliability & punctuality of running trains and to introduce new trains. ☑ Procure 1704 passenger coaches and 2000 wagons to improve passenger service quality
Eighth Five Year Plan	2025	<p>Target 2025:</p> <ul style="list-style-type: none"> ☑ Modernize Railway Workshop and other infrastructure. ☑ Improvement level crossing gates, other infrastructures and rolling stocks ☑ Construct new ICDs ☑ Procure adequate equipment to modernize railway maintenance ☑ Modernize signaling system of 222 stations to ensure safety. ☑ Increase efficiency and improve performance of Bangladesh Railway ☑ Ensure full operational cost recovery by FY2025.
Final Report on Updating Railway Master Plan	2040	<p>To permit the passage of broad gauge rolling stock on the entire network by 2040 and on the core network by 2035</p> <p>BR plans to update ATP and train control systems before 2040. The Railway will install:</p> <ol style="list-style-type: none"> 1. Automatic Train Protection (ATP)/Train Protection Warning System (TPWS) on all main line sections. 2. Communication Based Train Control (CBTC)/European Train Control System (ETCS) on corridors identified as international TAR (Trans Asian Railway) routes.
Mujib Climate Prosperity Plan	2030	At least 50% of railway infrastructure made climate-resilient and energy efficient.
Eighth Five Year Plan	2025	<p>Targets 2025:</p> <ul style="list-style-type: none"> ☑ Rehabilitate/ Upgrade 846 km existing rail line. <p>Target 2025: Transport Infrastructure quality Country ranking = 80 Score = 47</p> <p>Baseline 2019: Transport Infrastructure quality Country ranking = 100 Score = 42</p> <p>share of Fair to Good road surfaces will be increased from 81% to 90% for overall RHD Road Network</p>
First Nationally Determined Contributions (Updated)	2030	<p>Unconditional: Modal shift from road to rail (10% modal shift of passenger-km) through different Transport projects such as BRT, MRT in major cities, Multi-modal hub creation, Padma Bridge etc.</p> <p>Conditional: Modal shift from road to rail (25% modal shift of passenger-km) through different Transport projects such as BRT, MRT in major cities, Multi-modal hub creation, new bridges etc.</p>
Intended Nationally Determined Contributions	2030	To achieve a shift in passenger traffic from road to rail of up to around 20% by 2030 compared to the business as usual.

Policy Measures and Targets

Policy document

Target year

Rail-related targets



Policy measures and targets were extracted from policy documents as listed in the ATO National Transport Policies Database <https://bit.ly/ATOpolicyrepository>

This rail sector profile was developed by the Asian Transport Outlook (ATO) with the contribution by the United Nations Economic and Social Commission for Asia and the Pacific (UNESCAP), which provided information on the Trans-Asian Railway Network routes. The ATO is an initiative developed under TA-6763 REG: Accelerating Innovation in Transport-Asian Transport Outlook: Phase 3 (55119-001) of the Asian Development Bank (ADB) and is also being supported by the Asian Infrastructure Investment Bank (AIIB) through Purchase Order No. CW39446 AIIB Support: Asian Transport Outlook Phase 3.

The Asian Transport Outlook (ATO) project collects, collates, and organizes data from publicly available official, as well as reputable and peer-reviewed secondary sources, which may contain incomplete or inconsistent data. It is important to note that the ATO does not generate data. Moreover, while the ATO carries out quality control and assurance of whether the data are truthfully reflected in the ATO, the ATO does not make any warranties or representations as to the appropriateness, quality, accuracy, or completeness of the data in the ATO databases, and in the knowledge products that are produced from such. Users are encouraged to scrutinize, verify, interpret, and judge the data before utilizing them.

Policy Insights

Bangladesh Railways (BR) is crucial in the country's transport sector. With 3,039 kilometers of heavy railway infrastructure, it serves millions of passengers and transports significant freight annually. However, the railway system faces challenges due to climate change, including extreme weather events, rising sea levels, and increased temperatures. This narrative explores the intersection of BR and climate change, highlighting data trends, policy documents, and opportunities for a more resilient and sustainable railway system.

Data Trends

- **Infrastructure:** BR has expanded its heavy rail network, adding 271 kilometers between 2000 and 2021. However, most routes are single-track, limiting capacity and efficiency. Bangladesh lacks rapid urban transit systems, impacting urban mobility and contributing to congestion.
- **Activity:** In 2016, BR transported 10 billion passenger-kilometers and 1.1 billion tonne-kilometers.
- **CO2 Emissions:** BR's CO2 emissions have increased, contributing to climate change. Between 2000 and 2010, emissions grew by 5% annually, accelerating to 9.6% between 2010 and 2022. However, the railway sector's share in total transport emissions remains relatively low. The rail sector emitted 1.5 million tonnes of CO2 in 2020, contributing 11.6% to total transport emissions.
- **Energy Consumption:** The rail sector's energy consumption grew significantly from 2010 to 2020. Although electricity consumption remains low, this increase underscores the need for energy-efficient technologies and practices.
- **Climate Resilience:** - the rail infrastructure faces an estimated annual loss of 24.3 million USD due to climate hazards.
- **Investments:** Official development assistance (ODA) to the rail sector increased substantially between 2016 and 2021, highlighting the international community's support for BR's development. However, private investment through public-private partnerships remains limited.

Policy Documents and NDC Gaps

Several policy documents guide Bangladesh's railway development, including the National Integrated Multi-modal Transport Policy, National Land Transport Policy, Eighth Five Year Plan, Perspective Plan of Bangladesh 2021-2041, and Mujib Climate Prosperity Plan. These documents outline various measures to enhance infrastructure, improve services, and address climate change.

However, gaps exist between Bangladesh's Nationally Determined Contributions (NDCs) and transport policy implementation. The NDCs aim for a modal shift from road to railway, targeting a 10% unconditional shift and 25% conditionally by 2030. However, current policies and investments may not be sufficient to achieve these ambitious targets.

Aligning NDCs with policy priorities and ensuring effective implementation is crucial for a climate-resilient railway system.

Policy Priorities and Opportunities

- **Railway Electrification:** Expanding railway electrification can significantly reduce carbon emissions and improve energy efficiency. Bangladesh could prioritize electrifying its rail network to align with its climate goals.
- **Climate-Resilient Infrastructure:** Investing in climate-resilient infrastructure is essential to protect the railway system from extreme weather events and rising sea levels. This could include upgrading embankments, bridges, and drainage systems.
- **Modal Shift:** Promoting a modal shift from road to railways requires improving passenger services, expanding freight capacity, and integrating railways with other modes of transport. This can reduce congestion, lower emissions, and enhance transportation efficiency.
- **Strengthen intermodal connectivity:** Improve connectivity between different modes of transport, such as railways, roads, and waterways, to facilitate seamless movement of goods and passengers.
- **Digitalization:** Embracing digital technologies can improve operational efficiency, enhance passenger experiences, and optimize resource management. Bangladesh could invest in digital infrastructure and capacity building for the railway sector.
- **Public-Private Partnerships:** Encouraging public-private partnerships can leverage private investment and expertise for infrastructure development and service improvement. Creating a conducive environment for PPPs is crucial.
- **Green Financing:** Exploring green financing mechanisms to fund sustainable rail projects.
- **Technology Transfer:** Collaborating with international partners to access and implement advanced rail technologies.
- **Capacity Building:** Investing in training and capacity building for rail personnel to manage and maintain modern rail systems.

This rail sector profile was developed by the Asian Transport Outlook (ATO) with the contribution by the United Nations Economic and Social Commission for Asia and the Pacific (UNESCAP), which provided information on the Trans-Asian Railway Network routes. The ATO is an initiative developed under TA-6763 REG: Accelerating Innovation in Transport - Asian Transport Outlook: Phase 3 (55119-001) of the Asian Development Bank (ADB) and is also being supported by the Asian Infrastructure Investment Bank (AIIB) through Purchase Order No. CW39446 AIIB Support: Asian Transport Outlook Phase 3.

The Asian Transport Outlook (ATO) project collects, collates, and organizes data from publicly available official, as well as reputable and peer-reviewed secondary sources, which may contain incomplete or inconsistent data. It is important to note that the ATO does not generate data. Moreover, while the ATO carries out quality control and assurance of whether the data are truthfully reflected in the ATO, the ATO does not make any warranties or representations as to the appropriateness, quality, accuracy, or completeness of the data in the ATO databases, and in the knowledge products that are produced from such. Users are encouraged to scrutinize, verify, interpret, and judge the data before utilizing them.