Aichi 2030 Declaration on Environmentally Sustainable Transport (EST): Country Profile

Timor - Leste

Credits: luna tan

Developed by:

Asian Transport Observatory

Developed with the support of:

ADB ASIAN DEVELOPMENT BANK

AIIB ASIAN INFRASTRUCTURE INVESTMENT BANK

UNCRD

Timor-Leste

Suggested Citation: Asian Transport Outlook (ATO). (2024). Aichi 2030 Declaration on Environmentally Sustainable Transport (EST): Country Profile (Timor-Leste), https://asiantransportoutlook.com/analytical-outputs/countryprofiles/

For any questions or information related to this publication, please write to asiantransportoutlook@gmail.com.

Photographs used are copyright free.

Aichi 2030 Declaration on Environmentally Sustainable Transport (EST): Country Profile (Timor-Leste)

2024

The publication is available at: https://asiantransportoutlook.com/analyticaloutputs/countryprofiles/

Timor-Leste, a country in the South East Asia region, having Low and lower middle income status, was recorded to have a national population of about 1 million in the year 2024.

The urban population share in total is about 33%. The age wise distribution of the national population accounts for 43% and 7% of <18 years old (minors) and >60 years old (seniors) population, respectively. The GDP per capita (PPP) for the year 2022 was 4,657 USD.

The motorisation rate of the road transport vehicles for the year 2022, for all vehicles combined, stood at n.d. vehicles per thousand population. Similarly, the rate for 2&3 wheelers, LDV, freight vehicles and buses were n.d., n.d., n.d., and n.d. respectively.

Introduction to the profiles: The Asian Transport Outlook (ATO) project serves as a comprehensive data repository that organizes transport-relevant data and information from various official and secondary sources. These profiles are meticulously crafted using data from this extensive collection and draw upon a carefully curated selection of key indicators from a pool of over 500 transport-related metrics (visit https://asiantransportoutlook.com/snd for more information).

These profiles also provide comprehensive summaries of national targets that are relevant to the Aichi 2030 Declaration goals as contained in ATO's national policy trackers. The profile is structured by goals, followed by policy insights and enumeration of sample projects by the MDBs corresponding to the 6 Goals.

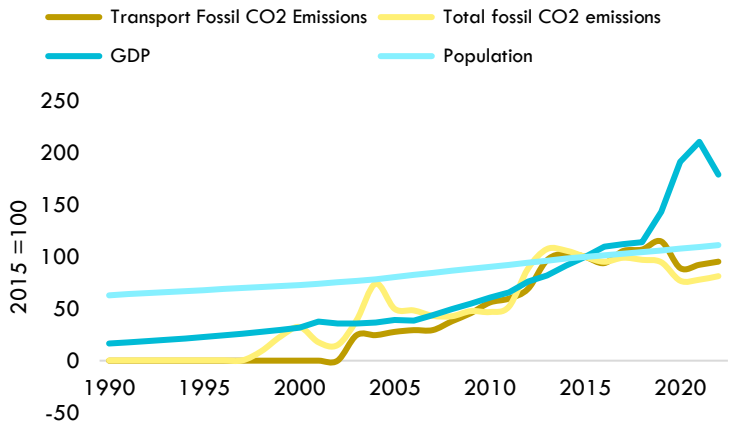
Contents:

Goal 1a – Low-Carbon (climate change mitigation):

By 2030, aim to peak transport CO2 emissions and initiate reductions in transport related CO2 emissions with the intention to move towards decarbonization of the transport sector by 2050, or shortly thereafter (Based on SDG 7.2, 9.1, 13.2, Paris Agreement)

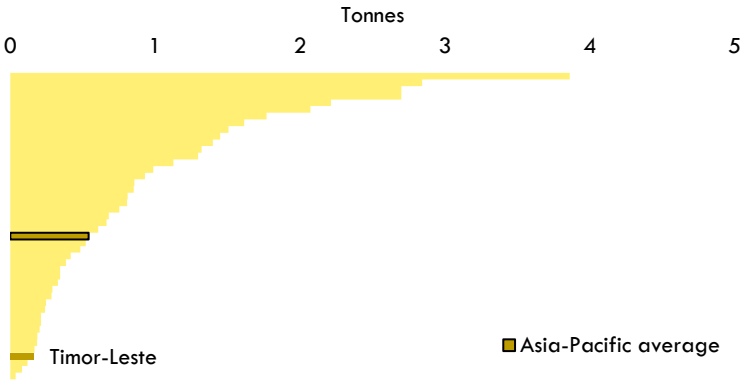
Transport CO2 emissions (fossil)

Growth of transport fossil CO2 emissions, total fossil CO2 emissions, population and GDP (PPP) (1990 - 2022)



(EDGAR, 2023)

Transport fossil CO2 emissions per capita (2022)



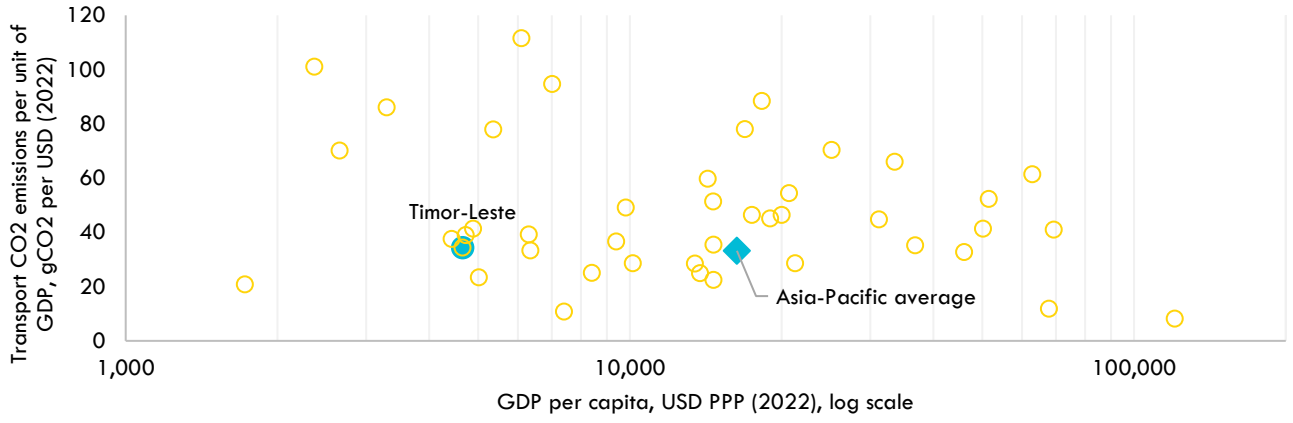
(EDGAR, 2023)

- Transport emissions: Between 2015 and 2022, Timor-Leste demonstrated a decrease in transport fossil CO2 emissions, averaging an annual decline of 1%. This contrasts with the Asia-Pacific regional average increase of 1% during the same period.

- Emissions per capita and intensity: In 2022, transport CO2 emissions per capita in Timor-Leste were 0.2 tonnes, lower than the Asia-Pacific average of 0.5 tonnes. However, the transport CO2 emissions intensity (emissions per unit of GDP) was slightly higher at 34.4 compared to the regional average of 33.2.

- Road transport dominance: Road transport constitutes the primary source of transport CO2 emissions in Timor-Leste, contributing 86% of the total in 2022.

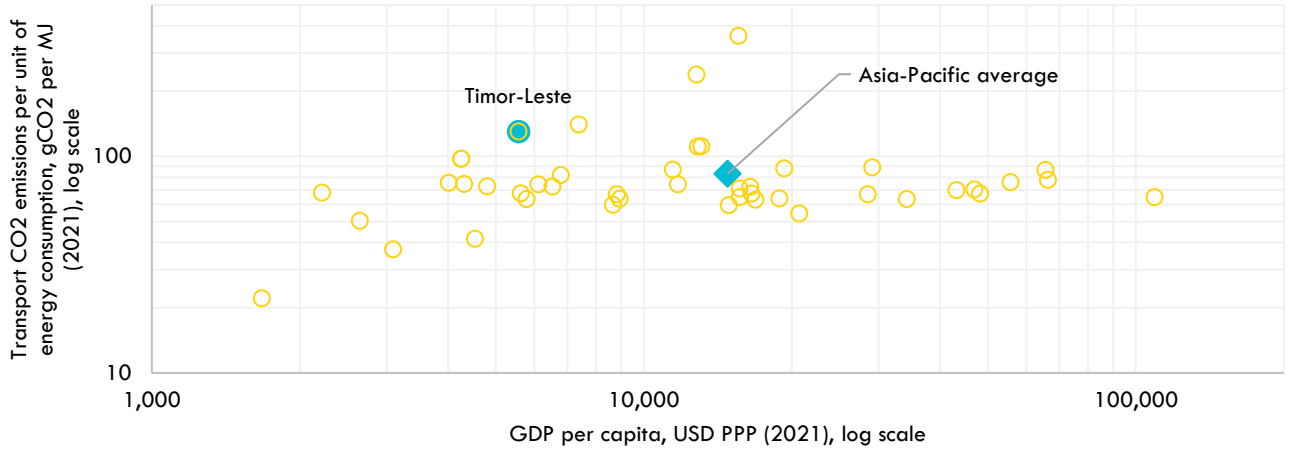
Transport CO2 emissions per unit of GDP (2022)



(EDGAR, 2023)

Transport energy consumption

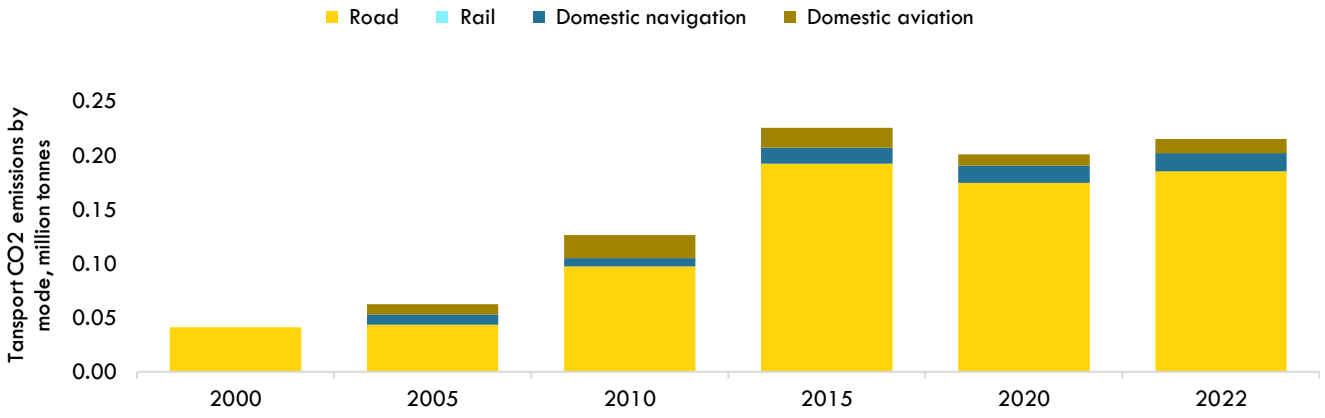
Transport CO2 emissions per unit of energy consumption and GDP per capita (2021)



(EDGAR, 2023)

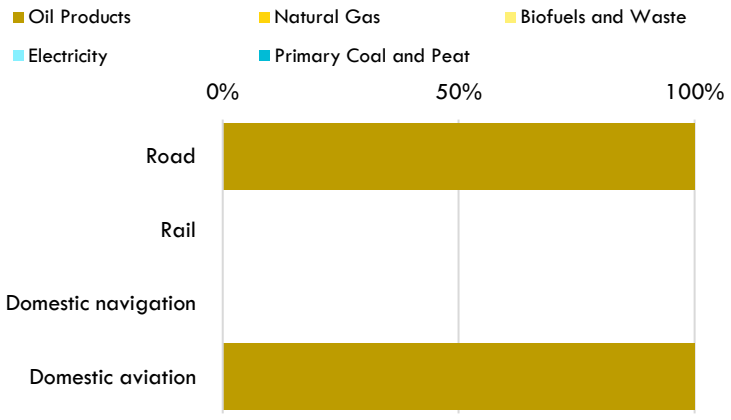
Transport CO2 emissions (fossil) and energy consumption modeshare

Growth of transport CO_2 emissions by mode



(EDGAR, 2023)

Share of transport energy consumption by mode and by source (2021)



(EDGAR, 2023)

Share of transport in renewable energy consumption:

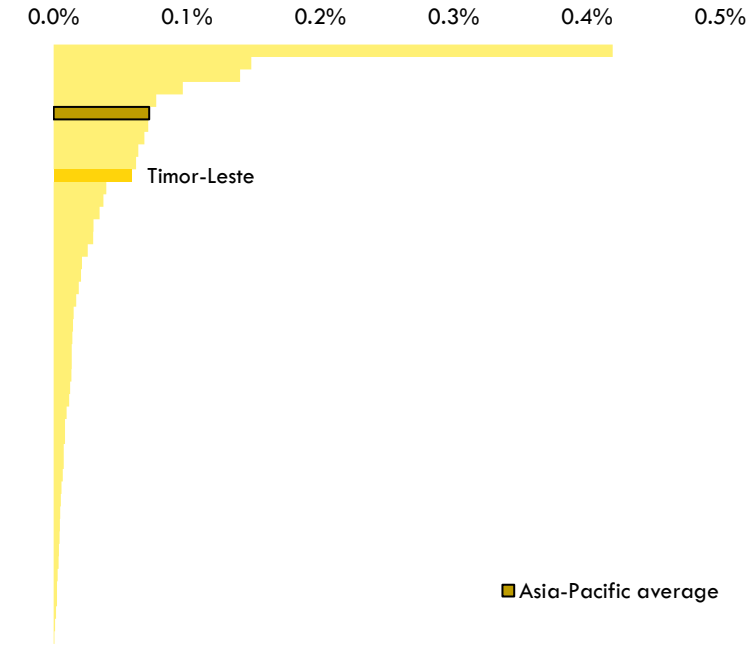
(Data not available)

Goal 1b – Resilience:

By 2030, increase resilience and adaptive capacity of transport system to climate-related hazards and pandemics such as COVID-19. (Based on SDG 13, Paris Agreement and the Sendai Framework for Disaster Risk Reduction 2015-2030)

Estimated average annual losses to transport infrastructure due to hazards

Average annual losses to transport infrastructure due to hazards, as a share of GDP, in Asia-Pacific (2023)



(CDRI, 2023)

• Vulnerability to hazards: Road infrastructure in Timor-Leste is particularly vulnerable to hazards, accounting for 94% of average annual losses to transport infrastructure in 2023.

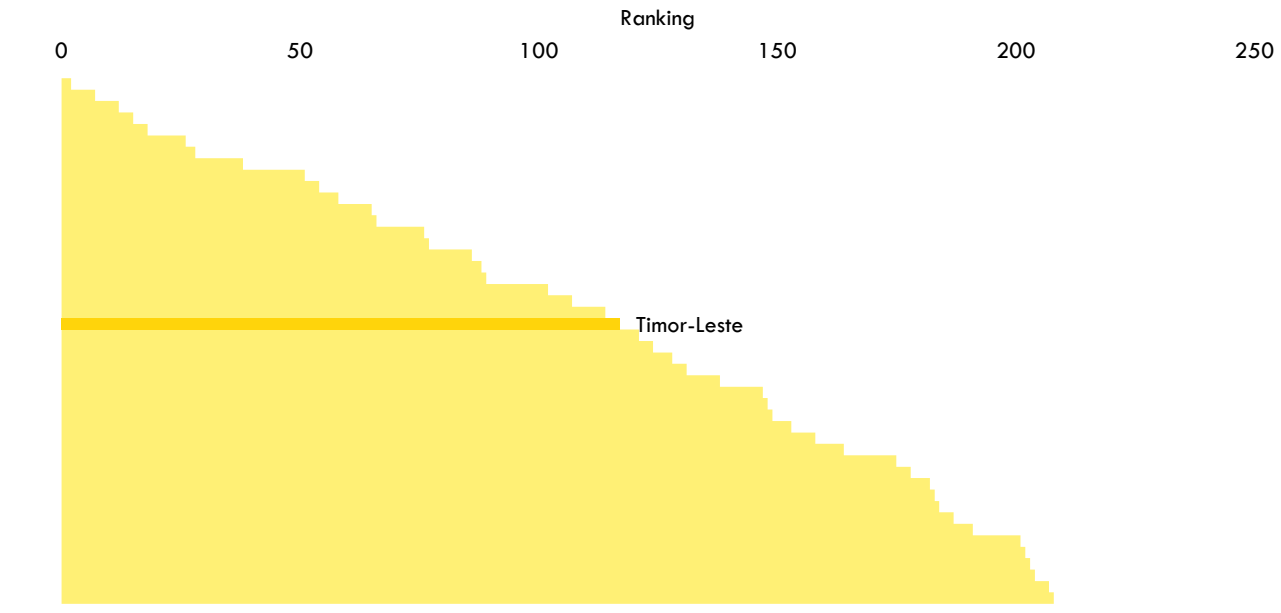
• Low elevated coastal zones: A small percentage (1%) of the population resides in low-elevated coastal zones, potentially exposed to climate-related risks.

• National road vulnerability: Timor-Leste's ranking of 117th out of 208 countries on the National Road Vulnerability Index indicates a moderate level of disruption to trips following climate hazards.

Note: National road vulnerability index ranking (NRVI), highest rank = 1 means fewer disruptions to trips after climate hazards due to sufficient network redundancy.

Climate change vulnerability

National road vulnerability index (NRVI) ranking (2023)



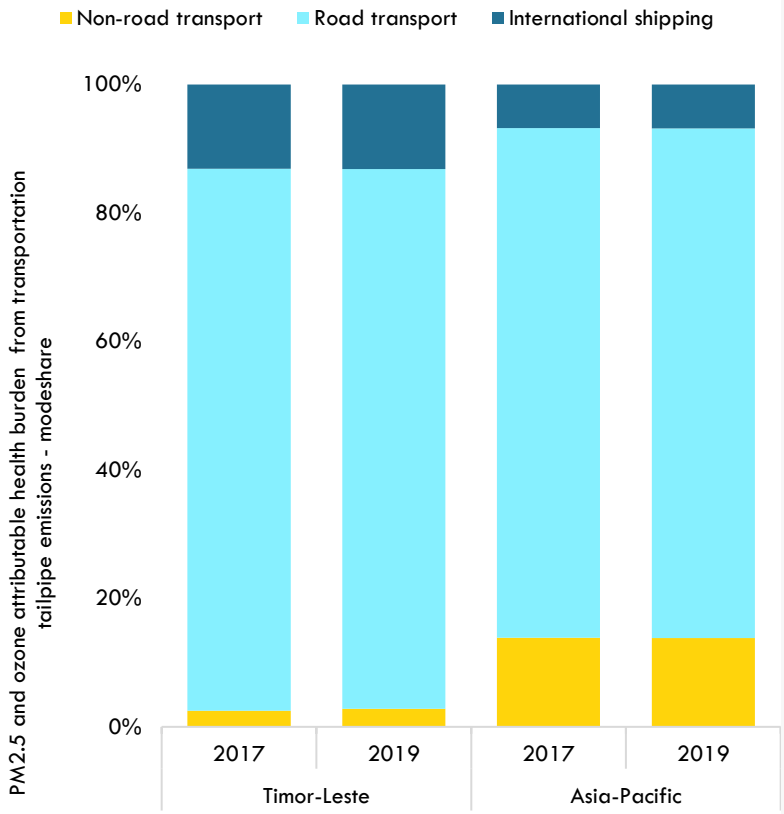
(Koks, et al., 2023)

Goal 1c – Air pollution:

By 2030, reduce air pollution and contamination caused by traffic, including PM2.5, other air pollutants and noise. (Based on SDG 3.9, 11.6).

Transport air pollution health impact

Transport air pollution health impact (PM 2.5)



(McDuffie et al., 2021)

- Air pollutant emissions: Between 2015 and 2022, Timor-Leste experienced a decrease in PM2.5, NOx, SOx, and BC road transport air pollutant emissions, despite a 9% GDP growth.

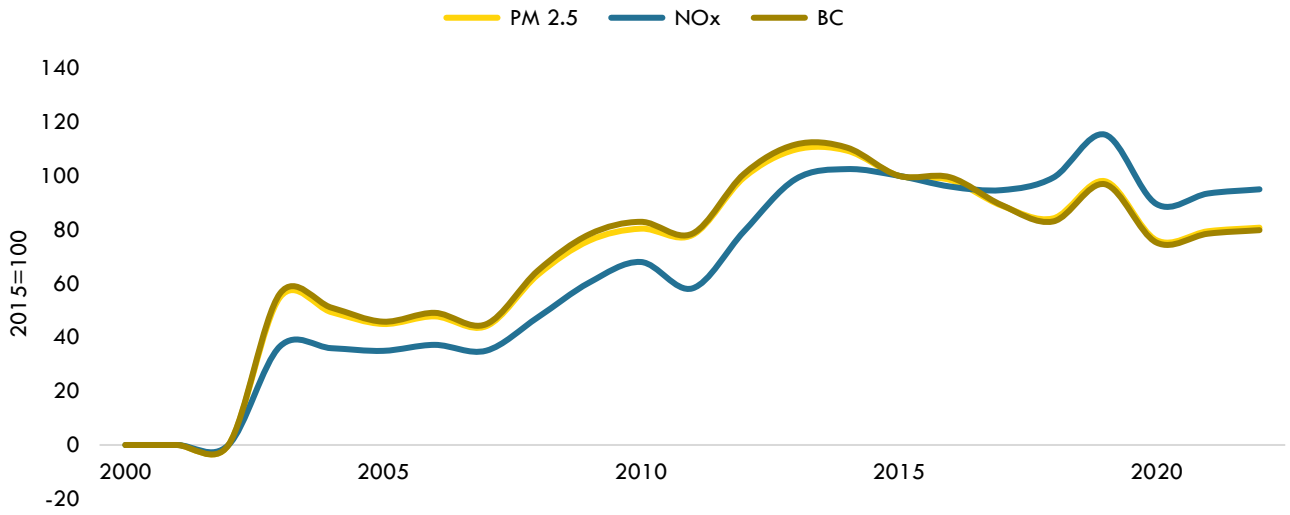
- Road transport's share: Road transport is a significant contributor to air pollution, accounting for 7% of PM2.5 emissions and 27% of BC emissions in 2022.

- Mortality from air pollution: The estimated deaths due to PM2.5 and ozone air pollution from transport increased slightly between 2017 and 2019. Non-road transport, particularly domestic aviation, is the primary contributor to these deaths.

- In Timor-Leste, the total attributable deaths due to the PM2.5 and ozone air pollution from the transport sector changed from 20 to 21 between 2017 to 2019.
- The numbers for Asia-Pacific were about 236 thousand and 253 thousand, respectively, for the same time period.

Transport air pollutant emissions

Growth of road transport air pollutant emissions



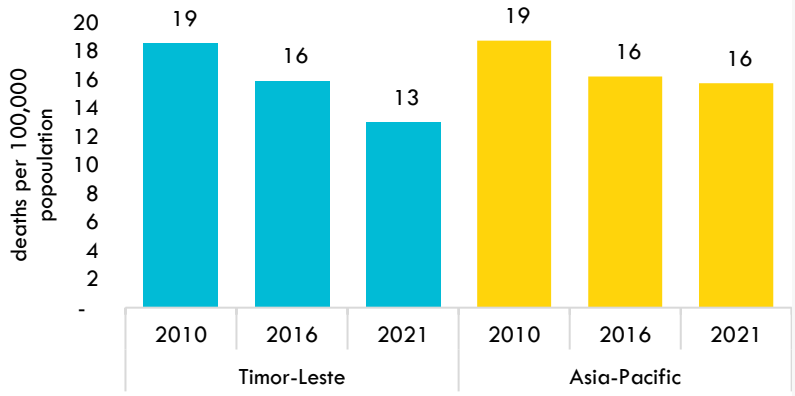
(EDGAR, 2023)

Goal 2 – Road safety:

By 2030, halve the number of deaths and injuries from road traffic accidents in Asia compared to 2020, with specific attention to vulnerable road users. (Based on SDG 3.6 and second UN Decade of Action on Road Safety 2021 – 2030, Stockholm Declaration on Road Safety)

Road traffic crash fatalities

Road traffic crash fatality rate



(WHO, 2023)

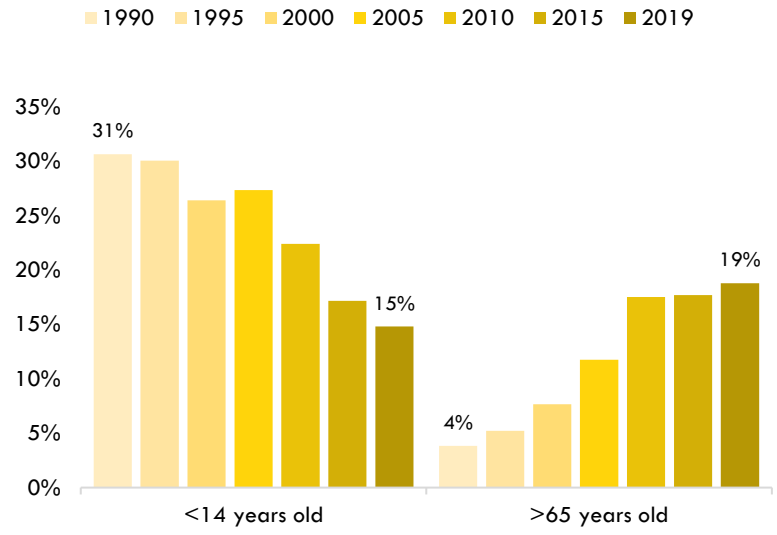
Road traffic crash fatalities (absolute values)

(Data not available)

- Road traffic fatalities: Estimated road traffic fatalities in 2021 were around 200, resulting in a fatality rate of 13.0 per 100,000 population. These fatalities represent a significant economic cost, equivalent to 3% of Timor-Leste's GDP.
- Vulnerable road users: The share of minors and seniors in road crash fatalities decreased slightly between 2015 and 2019. The share of females in fatalities also decreased during this period.
- Pedestrian and cyclist safety: Data on pedestrian and cyclist fatalities is limited, but the combined share was 0% in 2021.

Share of vulnerable groups

Share of road crash fatalities by age



(GBD, 2021)

Share of road crash fatalities by mode

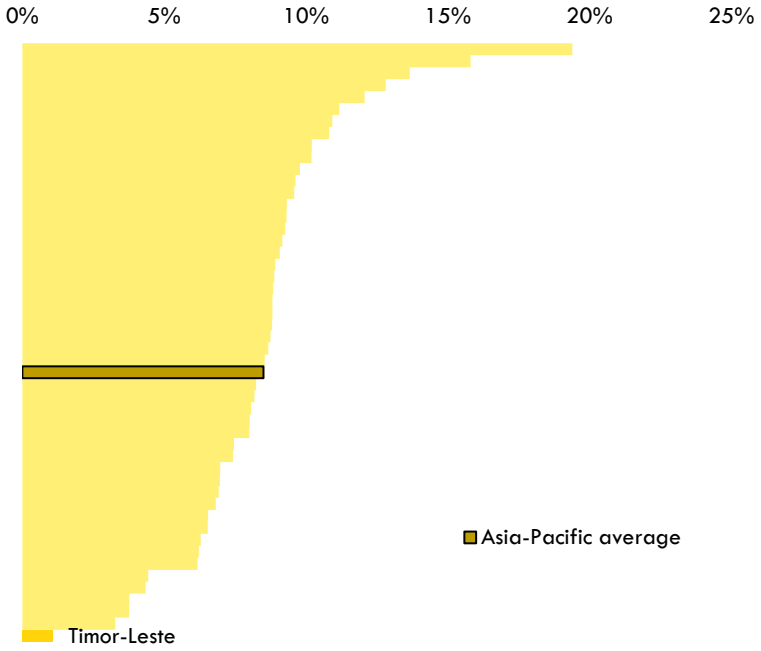
(Data not available)

Goal 3 - Economic sustainability:

By 2030, realize sustainable economic and employment growth by leveraging science, technology and innovation and green investments in quality passenger and freight transport infrastructure and services in a manner that fully incorporates environmental and social impacts throughout the lifecycle of the transport infrastructure and services, (Based on SDG 8.4, SDG 9.1, 12.1 and 12.c)

Transport sector and GDP

Transport as a share of GDP

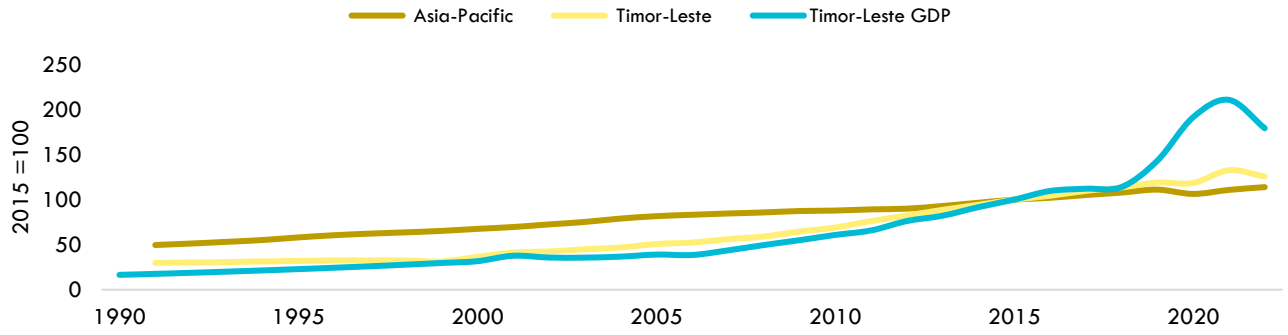


(UN, 2023)

- Transport sector's contribution: The transport sector's contribution to GDP decreased from 2% in 2015 to 1% in 2022, lower than the Asia-Pacific average of 9%.
- Employment: The transport sector experienced moderate employment growth between 2015 and 2022, with female employment growing at a faster rate than the regional average.
- Logistics performance: Timor-Leste's logistics performance ranking and sustainable freight index ranking indicate room for improvement in this area.

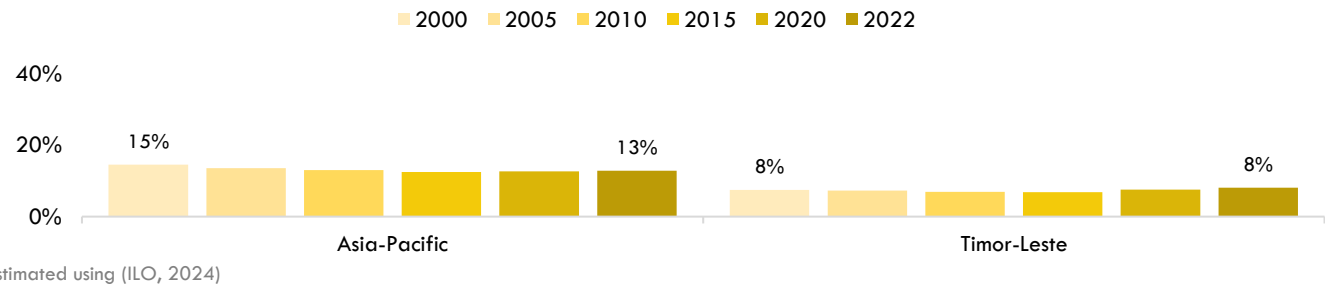
Transport employment

Growth of transport sector employment



(ILO, 2024)

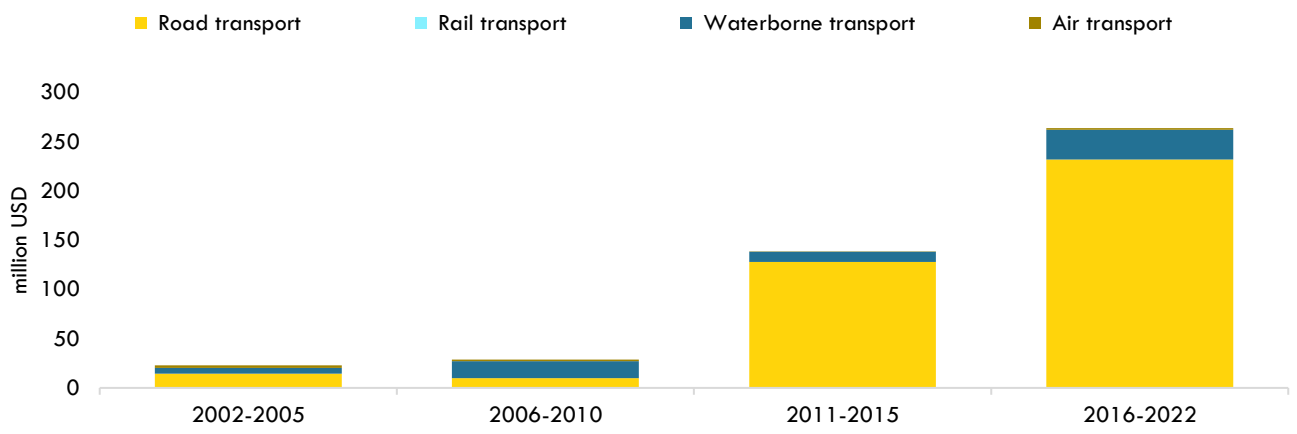
Female share in the transport employment



Estimated using (ILO, 2024)

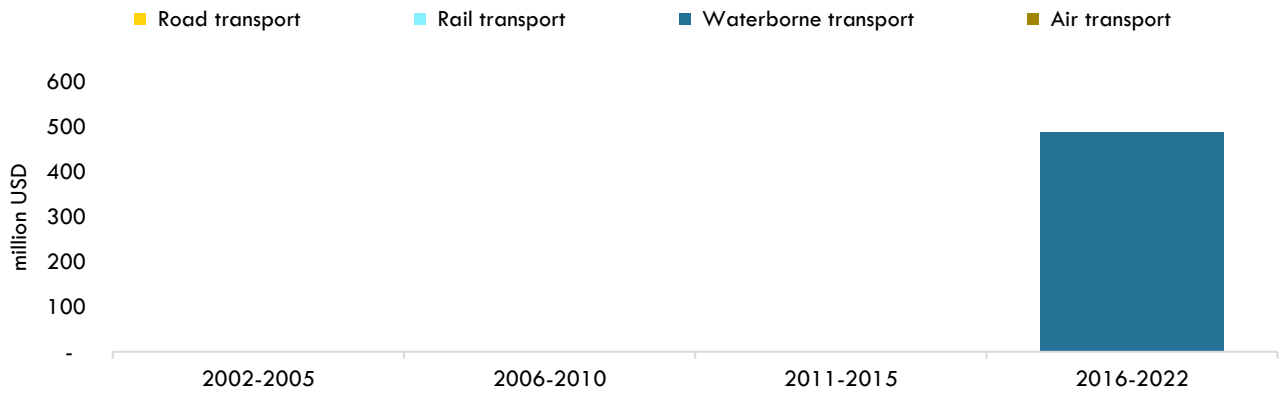
Transport investments

Official development assistance for Transport



(OECD, 2022)

Public Private Partnership in Transport



(WB, 2023)

Freight sector

Domestic Logistics Performance Index, Rank change (2016 - 2023)

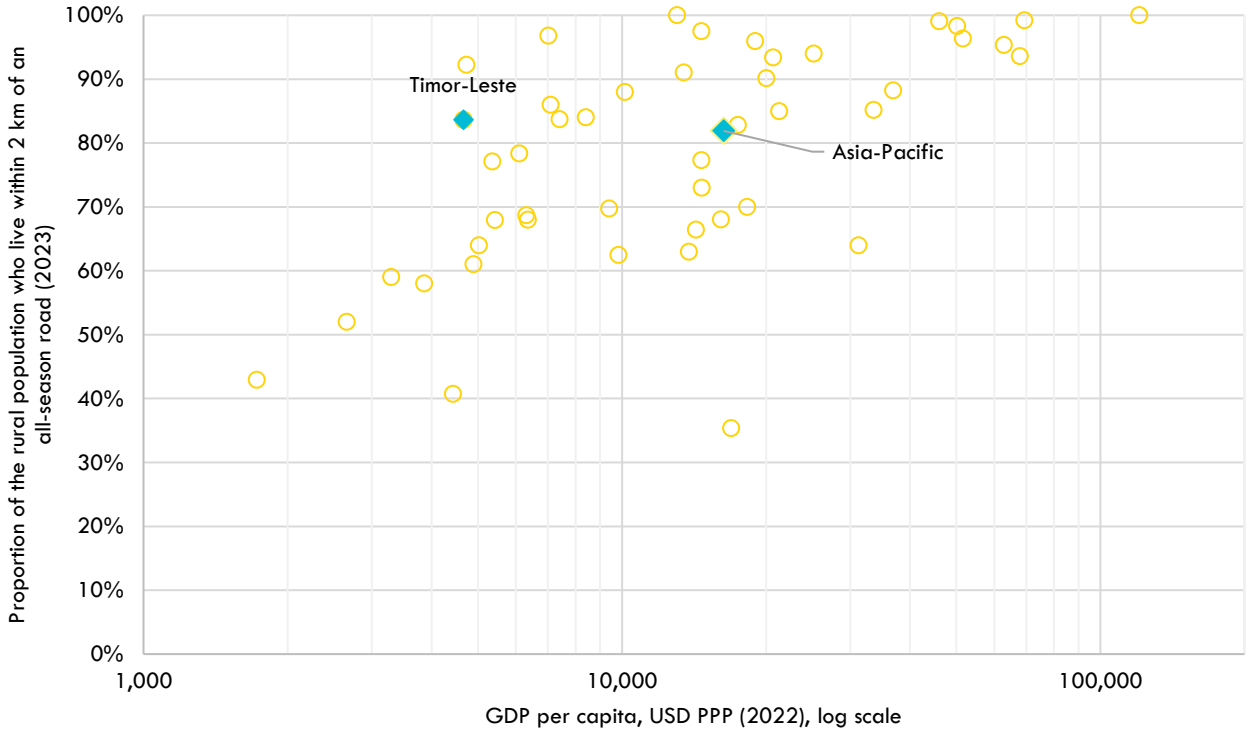
(Data not available)

Goal 4 - Rural access:

By 2030, realize accessible, inclusive, safe, affordable, and resilient rural transport infrastructure and services, thus facilitating improved access to markets, basic utilities and services including health and education by the farming community, and other rural population including physically disabled and vulnerable groups (Based on SDG 2 and SDG 9.1)

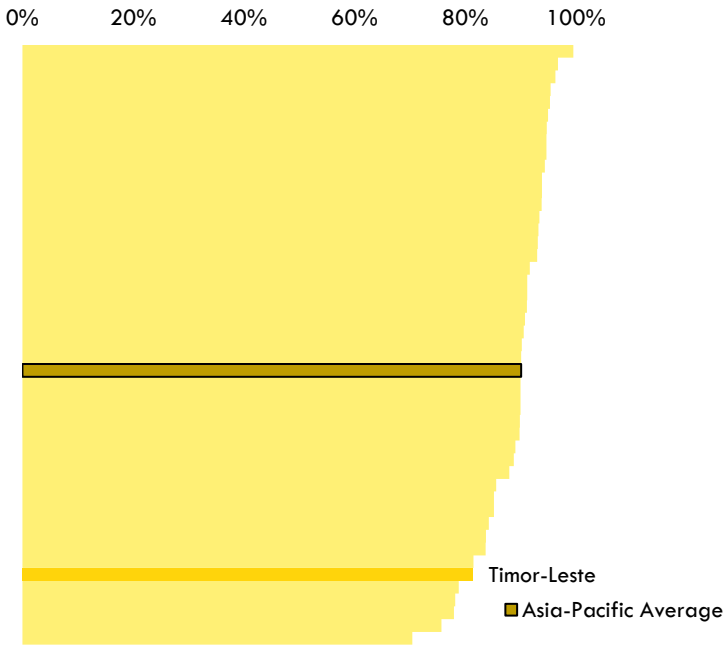
Rural access

Rural access index



(CIESIN-rural, 2023)

Share of Secondary and Tertiary roads in Total road network



(ATO and Country estimates)

• Rural access to roads: A significant portion (84%) of the rural population lives within 2km of an all-weather road, exceeding both the Asia-Pacific and global averages.

• Population lacking decent access: An estimated 161 thousand people in Timor-Leste still lack decent rural access.

Goal 5 - Urban access:

By 2030, ensure access to accessible, inclusive, safe, efficient, affordable, and sustainable transport facilities, systems and services for urban dwellers, including physically disabled and vulnerable groups through the development of urban transport infrastructure and services (Based on SDG 11.2 and 11.7)

Urban rapid transit infrastructure

Rapid transit infrastructure to resident ratio (RTR)

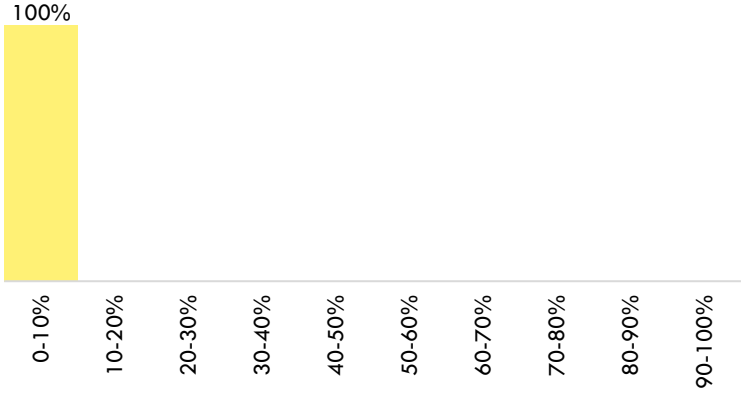
(Data not available)

Urban rapid transit infrastructure length

(Data not available)

Urban access

Share of cities by level of urban access (out of 1 cities)



(CIESIN-urban, 2023)

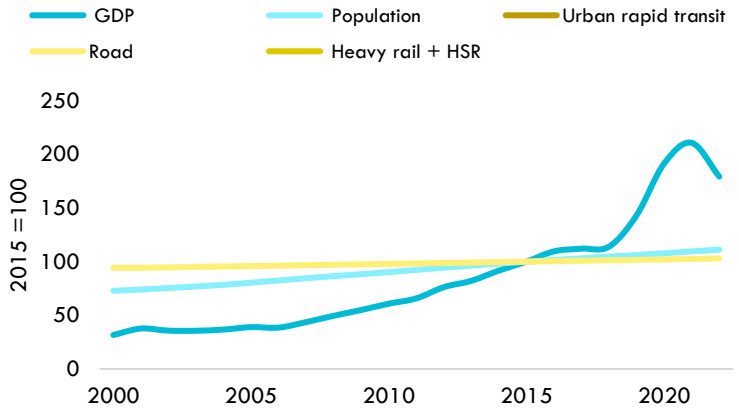
• Data limitations: Data on urban access to public transport is limited, hindering a comprehensive assessment.

Goal 6 - National access and connectivity:

By 2030, facilitate inclusive multi-modal national (including rural-urban) and regional (cross-border) connectivity through the provision of sustainable multi-modal freight and passenger transport infrastructure and services (Based on SDG 9.1)

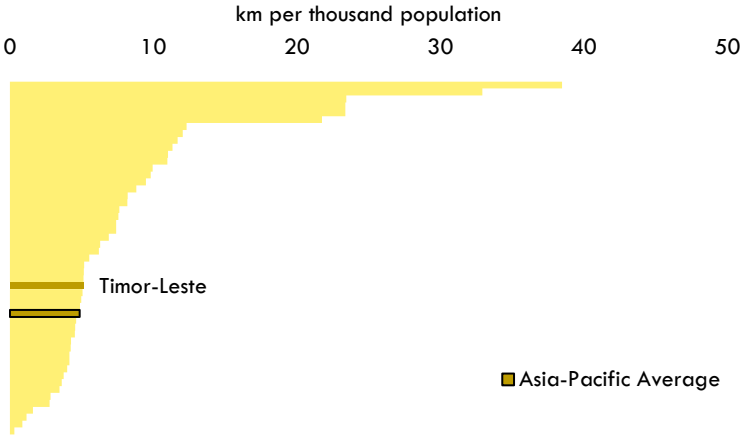
Transport infrastructure

Growth of transport infrastructure



(IRF, 2024) (UIC, 2024) (ITDP, 2022) (ATO and Country estimates)

Road transport infrastructure availability (2022)



(IRF, 2024) (ATO and Country estimates)

Rail transport infrastructure (including HSR) availability (2021)

(Data not available)

- Transport infrastructure: Road length remained relatively stable between 2015 and 2022, while heavy rail infrastructure is absent.

- Bus motorization: The bus motorization index remained low between 2015 and 2022.

- Shipping connectivity: Timor-Leste's liner shipping connectivity index improved slightly between 2015 and 2023.

- Telecommunication infrastructure: Mobile network coverage is extensive, but 4G coverage is relatively low. Internet usage increased significantly between 2015 and 2022.

Transport connectivity

Transport connectivity

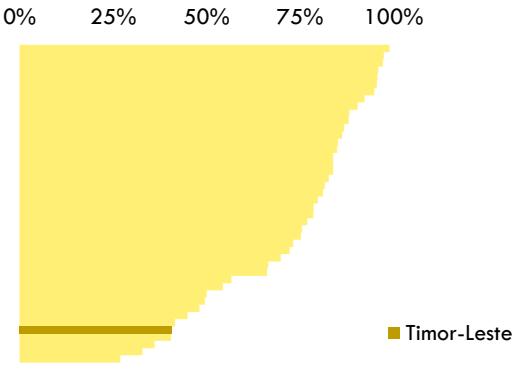
(WEF, 2018) (UNCTAD, 2024)

Container port traffic (TEU)

(Data not available)

ICT

Percentage of individuals using the internet (2022)



(ITU, 2023)

Transport Policy insights:

The insights are based on the transport policy trackers developed by the ATO. Trackers include analysis of policy measures and targets from all the transport relevant policy documents for a country published after the adoption of the Aichi 2030 Declaration, i.e. 2021.

• Policy adoption: Timor-Leste has adopted 8 policy documents related to transport since 2015, with 4 published after the Aichi 2030 Declaration.

• Policy focus: The majority of policy documents focus on Goal 1a (Low-Carbon), with some attention to Goal 1c (Air pollution), Goal 2 (Road safety), and Goal 6 (National access and connectivity). Other goals receive limited coverage in policy documents.

Transport relevant policy documents

Red - Poor coverage; Orange - Moderate coverage; Green - Extensive coverage

Doc. No.	Document Name	Year	Goal 1a	Goal 1b	Goal 1c	Goal 2	Goal 3	Goal 4	Goal 5	Goal 6
1	Regulation No. 1/2015 of 2015 - First Amendment to Regulation No. 1 of 2014 on Fuel, Biofuel and Lubricant Quality Standards and Specifications	2015								
2	Intended Nationally Determined Contributions	2016								
3	Transport Sector Master Plan	2018								
4	Second National Communication - TLS	2020								
5	Timor-Leste's National Adaptation Plan	2021								
6	Timor-Leste Updated NDC 2022-2030	2022								
7	National Policy for Climate Change (Government Resolution 8/2022)	2022								
8	Voluntary National Reviews 2023 - TLS	2023								

(ATO National policy tracker)

Poor coverage
Moderate coverage
Extensive coverage

Transport relevant national targets

Doc. No.	Target	Year	Goal 1a	Goal 1b	Goal 1c	Goal 2	Goal 3	Goal 4	Goal 5	Goal 6
3	**Transport Sector Master Plan**									
	Upgrade to climate-resilient roads: Core Rural Roads in Coffee producing areas (D) Non-Core Rural Roads Low traffic (E1 Roads)	2025	x	x	x	x		x		
	Upgrade to climate-resilient roads: Other non coffee linked rural roads (D)	2030	x	x	x	x		x		
	Non-Core Rural Roads low Traffic (E2 Roads)	2022	x	x	x	x		x		

(ATO National policy tracker)

Transport relevant sample projects:

A sample list of projects by the MDB highlights their focus with respect to the Aichi 2030 Declaration Goals.

Transport relevant projects

Year	Project name	Amount (million USD)	Goal 1a	Goal 1b	Goal 1c	Goal 2	Goal 3	Goal 4	Goal 5	Goal 6
2021	Presidente Nicolau Lobato International Airport Expansion Project	135					x			x
2021	Capacity Building for Presidente Nicolau Lobato International Airport Expansion Project	0.2					x			x
2021	Preparing the East to South Coast Road Connectivity Project and Strengthening the Road Sector Institutional Capacity	2		x			x			
2022	Preparing the Timor-Leste Public Transport Project	0.3		x			x			

(MDB Projects database)

References:

Asian Transport Outlook (ATO) + Country. (2024). ATO estimates based on Country Official Statistics	(ATO and Country estimates)
Asian Transport Outlook (ATO) + UNEP. (2024). ATO analysis of UNEP Index using latest data	(ATO analysis of UNEP data)
Coalition for Disaster Resilient Infrastructure (CDRI). (2023). Building & infrastructur. https://giri.unepgrid.ch/facts-figures/building-infrastructures	(CDRI, 2023)
Socioeconomic Data and Applications Center (SEDAC). (2023). SDG Indicator 11.2.1: Urban Access to Public Transport, 2023. https://sedac.ciesin.columbia.edu/data/set/sdgi-11-2-1-urban-access-publictransport-2023	(CIESIN-urban, 2023)
Socioeconomic Data and Applications Center (SEDAC). (2023). SDG Indicator 9.1.1: The Rural Access Index (RAI), 2023. https://sedac.ciesin.columbia.edu/data/set/sdgi-9-1-1-rai-2023	(CIESIN-rural, 2023)
Asian Transport Outlook (ATO). (2024). ATO National policy tracker. The trackers are based on the national level policies.	(ATO National policy tracker)
Emissions Database for Global Atmospheric Research (EDGAR). (2023). EDGAR - Emissions Database for Global Atmospheric Research. https://edgar.jrc.ec.europa.eu/	(EDGAR, 2023)
Ember. (2023). Yearly electricity data. https://ember-climate.org/data-catalogue/yearly-electricity-data/	(EMBER, 2023)
Global Burden of Disease (GBD). (2021). GBD Results. http://ghdx.healthdata.org/gbd-results-tool	(GBD, 2021)
International Council on Clean Transportation (ICCT). (2023). https://theicct.org/	(ICCT, 2023)
International Energy Agency (IEA). (2022). Fossil Fuels Consumption Subsidies 2022. https://www.iea.org/reports/fossil-fuels-consumption-subsidies-2022	(IEA, 2022)
International Monetary Fund (IMF). (2024). Climate Change Dashboard. https://climatedata.imf.org/pages/access-data	(IMF, 2024)
International Road Federation (IRF). (2024). https://irfnet.ch/data-statistics/4	(IRF, 2024)
International Trade Centre (ITC). (2024). Trademap. https://www.trademap.org/	(ITC, 2024)
Institute for Transportation and Development Policy (ITDP). (2022). Rapid Transit Database. https://www.itdp.org/rapid-transit-database/	(ITDP, 2022)
International Telecommunication Union (ITU). (2023). Statistics. https://www.itu.int/en/ITU-D/Statistics/Pages/stat/default.aspx	(ITU, 2023)

Koks, et al. (2023). A global assessment of national road network vulnerability. https://iopscience.iop.org/article/10.1088/2634-4505/acd1aa	(Koks, et al., 2023)
McDuffie et al. (2021). Global Burden of Disease-Major Air Pollution Sources. https://costofairpollution.shinyapps.io/gbd_map_global_source_shinyapp/	(McDuffie et al., 2021)
Organisation for Economic Co-operation and Development (OECD). (2022). Data Explorer. https://stats.oecd.org/Index.aspx?DataSetCode=CRS1#	(OECD, 2022)
International Organization of Motor Vehicle Manufacturers (OICA). (2023). Statistics. https://www.oica.net/production-statistics/	(OICA, 2023)
Tracking SDG 7. (2024). The energy progress report. https://trackingsdg7.esmap.org/	(Tracking SDG 7, 2024)
International Union of Railways (UIC). (2024). https://uic-stats.uic.org/	(UIC, 2024)
UN. (2023). Downloads. https://unstats.un.org/unsd/snaama/Downloads	(UN, 2023)
UN. (2018). Environmental Vulnerability Indicators. https://www.un.org/development/desa/dpad/least-developed-country-category/evi-indicators-ldc.html	(UN, 2018)
UN. (2021). Energy Statistics. https://unstats.un.org/unsd/energystats/	(UN, 2021)
UN. (2022). Population Database. https://population.un.org/wpp/	(UN, 2022)
UN Conference on Trade and Development (UNCTAD). (2024). Statistics. https://unctadstat.unctad.org	(UNCTAD, 2024)
UNEP. (2023). Global Materials Flow Database. https://www.resourcepanel.org/global-material-flows-database	(UNEP, 2023)
World Bank. (2022). https://data.worldbank.org/	(WB, 2022)
World Bank. (2023). PPI Database. https://ppi.worldbank.org/en/ppi	(WB, 2023)
World Economic Forum (WEF). (2020). Global Competitiveness Report Special Edition 2020. https://www.weforum.org/publications/the-global-competitiveness-report-2020/	(WEF, 2018)
World Helath Organisation (WHO). (2023). Global Status Report on Road Safety 2023. https://www.who.int/teams/social-determinants-of-health/safety-and-mobility/globalstatus-report-on-road-safety-2023	(WHO, 2023)
International Labour Organization (ILO). (2024). Statistics. https://www.ilo.org/global/statistics-and-databases/lang--en/index.htm	(ILO, 2024)
Asian Transport Outlook (ATO). (2024). ATO compilation of the MDB projects. The database is a compilation of the transport relevant projects undertaken by 3 MDBs - ADB, AIIB and World Bank having the project approval year 2019 or after.	(MDB Projects database)
Country official statistics. (varies). Country official statistics in the form of statistical yearbooks, handbooks, databanks etc.	(Country official statistics)

GDP data is sourced from (WB, 2022) and Population data from (UN, 2022)