

Aichi 2030 Declaration on Environmentally Sustainable Transport (EST): Country Profile Lao People's Democratic Republic



Credits: unsplash

Developed by:



Developed with the support of:



Disclaimer: The ATO project collects, collates, organizes, and presents transport-relevant data from publicly available official sources and reputable, peer-reviewed secondary sources. Users should be aware that: the ATO does not generate any primary data; the source data may contain inconsistencies or gaps; despite rigorous quality control measures, the ATO cannot guarantee the absolute accuracy, completeness, or suitability of the data for specific purposes.

Users of the data and derived knowledge products are strongly advised to: independently verify and validate all data before use; exercise professional judgment in data interpretation and application; and acknowledge that any reliance on ATO data is at the user's own risk. Users should also note that data may be subject to updates or revisions. It is the user's responsibility to ensure they are working with the most current version of the data available.

The ATO, and all affiliated organizations: make no representations or warranties, express or implied, regarding the data's accuracy, completeness, or fitness for any particular purpose; and disclaim all liability for any direct, indirect, incidental, consequential, or special damages arising from the use of or reliance upon ATO data or derived products.

The designations, presentations, and materials in this publication, including citations, maps, and bibliography, do not express or imply any opinion on the part of the ATO or involved organizations regarding the legal status of any country, territory, city, area, or its authorities, or concerning the delimitation of frontiers or boundaries.

By using the data or derived products, users agree to indemnify and hold harmless the ATO, its supporting organizations, and all affiliated organizations from any claims, losses, or damages resulting from such use.

Suggested Citation: Asian Transport Outlook (ATO). (2024). Aichi 2030 Declaration on Environmentally Sustainable Transport (EST): Country Profile (Lao People's Democratic Republic), <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 (Lao People's Democratic Republic)

2024

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



Lao People's Democratic Republic, a country in the South East Asia region, having Low and lower middle income status, was recorded to have a national population of about 8 million in the year 2024.

The urban population share in total is about 39%. The age wise distribution of the national population accounts for 38% and 8% of <18 years old (minors) and >60 years old (seniors) population, respectively. The GDP per capita (PPP) for the year 2022 was 9,387 USD.

The motorisation rate of the road transport vehicles for the year 2022, for all vehicles combined, stood at 424 vehicles per thousand population. Similarly, the rate for 2&3 wheelers, LDV, freight vehicles and buses were 313, 93, 16, and 1 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:

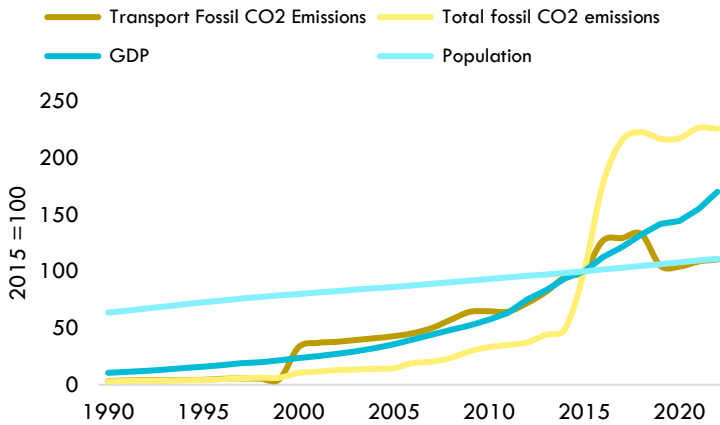
Executive Summary	3
Goal 1a – Low-Carbon (climate change mitigation)	4
Goal 1b – Resilience	6
Goal 1c – Air pollution	7
Goal 2 – Road safety	8
Goal 3 - Economic sustainability	9
Goal 4 - Rural access	11
Goal 5 - Urban access	12
Goal 6 - National access and connectivity	13
Transport Policy Insights and relevant sample projects	14

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)

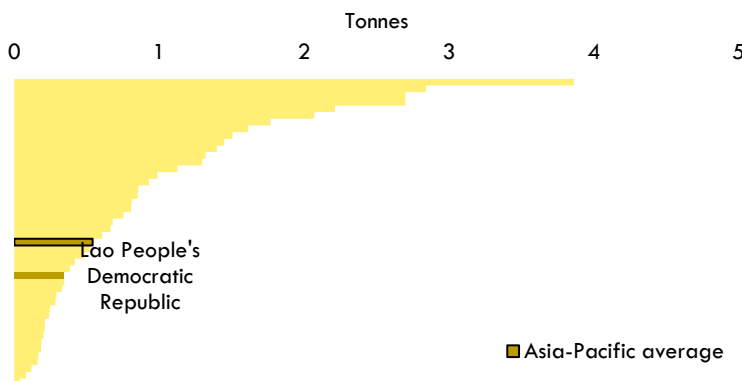
Transport CO2 emissions (fossil)

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



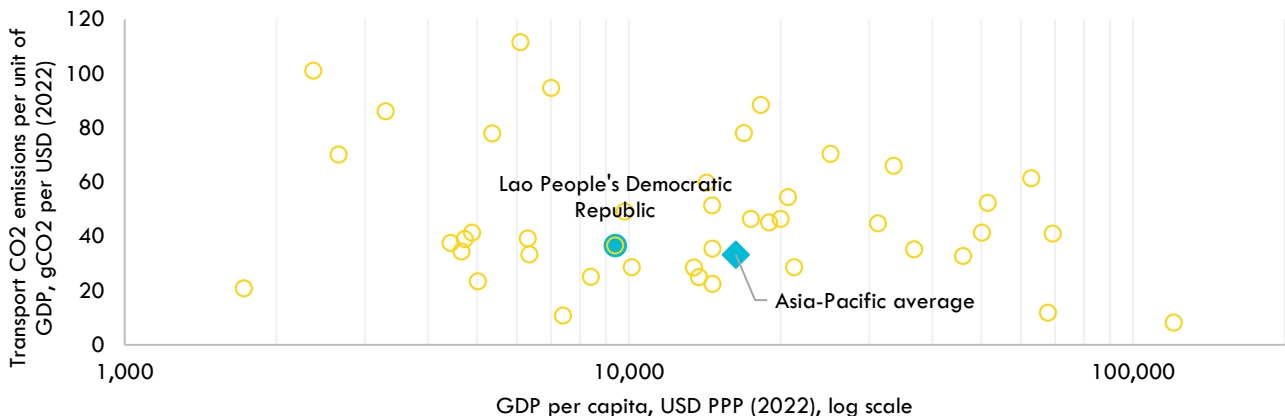
(EDGAR, 2023)

Transport fossil CO2 emissions per capita (2022)



(EDGAR, 2023)

Transport CO2 emissions per unit of GDP (2022)

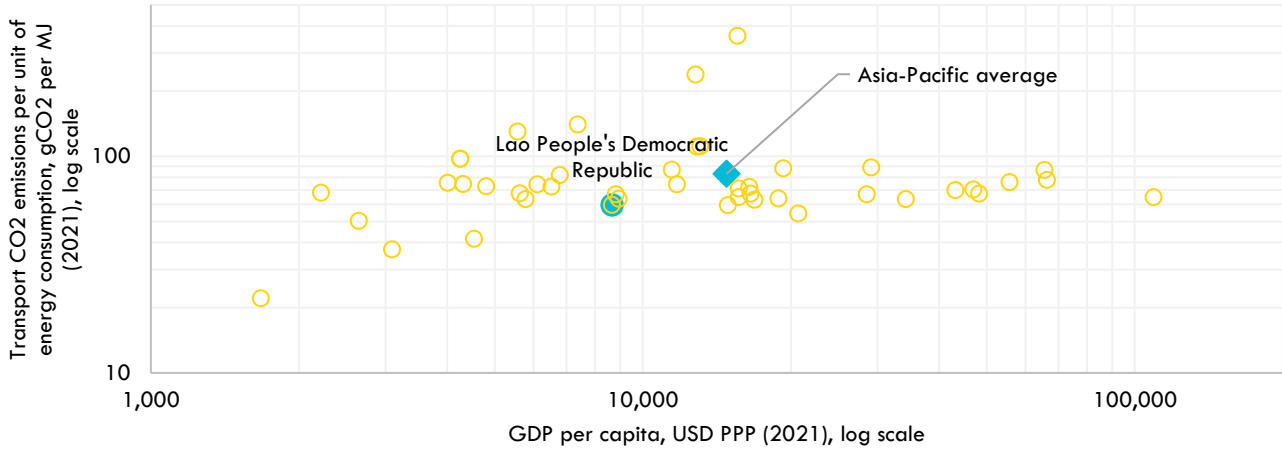


(EDGAR, 2023)

- **Motorization:** The motorization rate in 2022 was 424 vehicles per thousand population, with 2&3 wheelers being the most common.
- **Emissions:**
 - Transport fossil CO2 emissions grew at an average annual rate of 1% between 2015 and 2022, slower than the regional average of 2%.
 - Per capita transport CO2 emissions in 2022 were 0.3 tonnes, lower than the Asia-Pacific average of 0.5 tonnes.
 - The share of transport in total CO2 emissions decreased from 26% to 13% between 2015 and 2022.
 - Road transport accounts for 100% of transport CO2 emissions.
- **Energy consumption:** Transport energy consumption in 2021 was 0.04 EJ.

Transport energy consumption

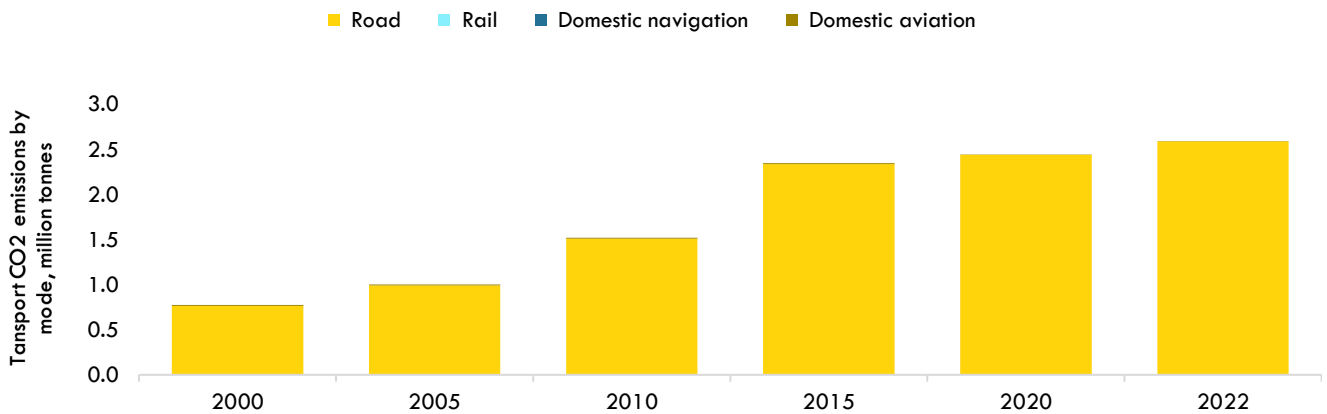
Transport CO₂ emissions per unit of energy consumption and GDP per capita (2021)



(EDGAR, 2023)

Transport CO₂ emissions (fossil) and energy consumption modeshare

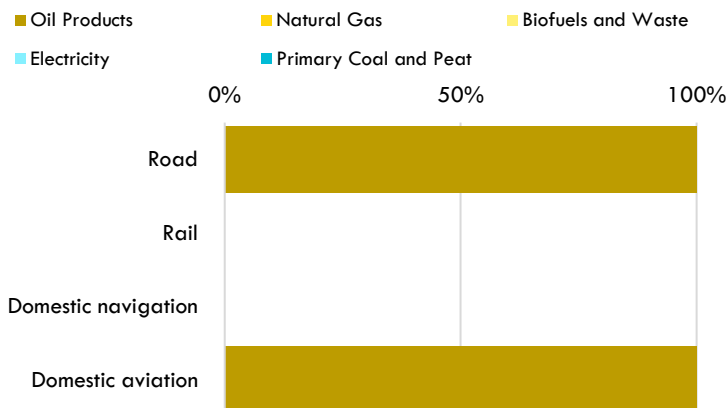
Growth of transport CO₂ emissions by mode



(EDGAR, 2023)

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

Share of transport in renewable energy consumption:



(Data not available)

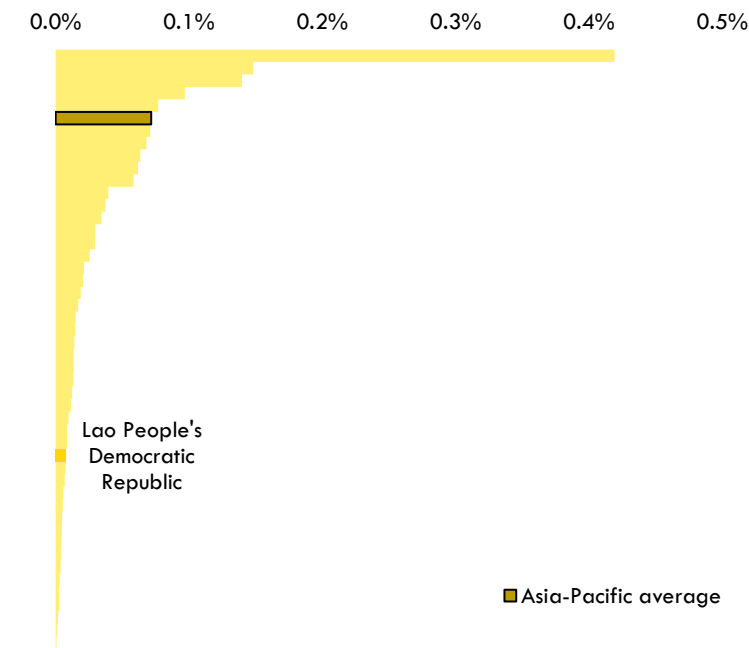
(EDGAR, 2023)

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)

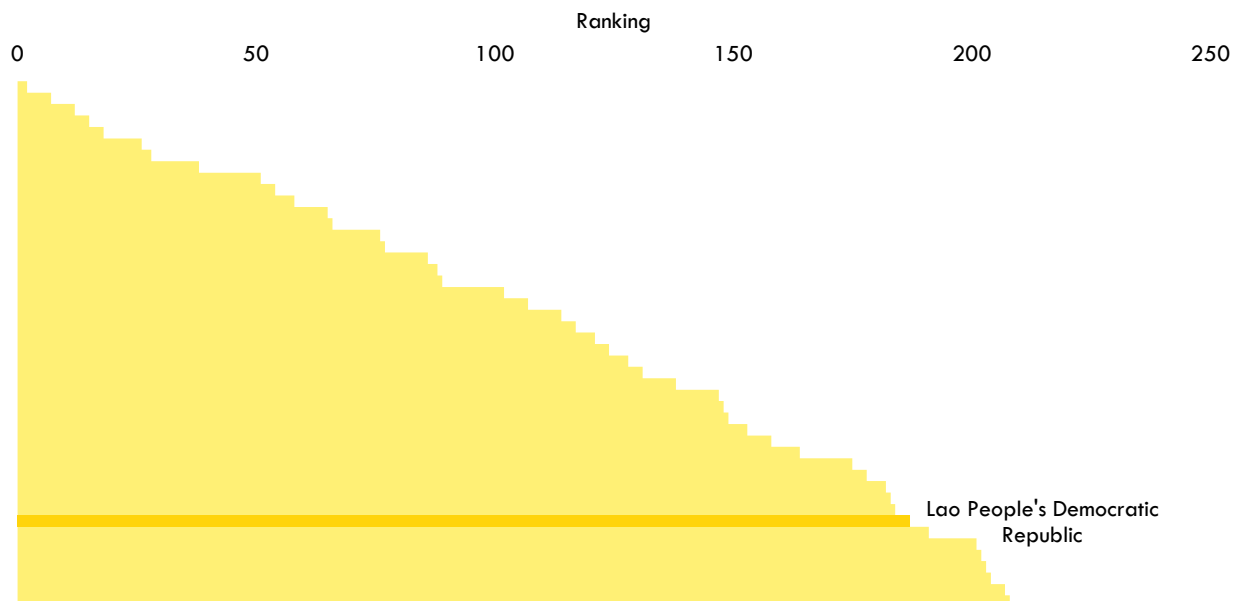
- **Vulnerability:** Lao PDR ranks 187th out of 208 countries in terms of National Road Vulnerability Index, indicating a high susceptibility to disruptions from climate hazards.

- **Losses:** Road infrastructure accounts for 85% of average annual losses to transport infrastructure due to 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)



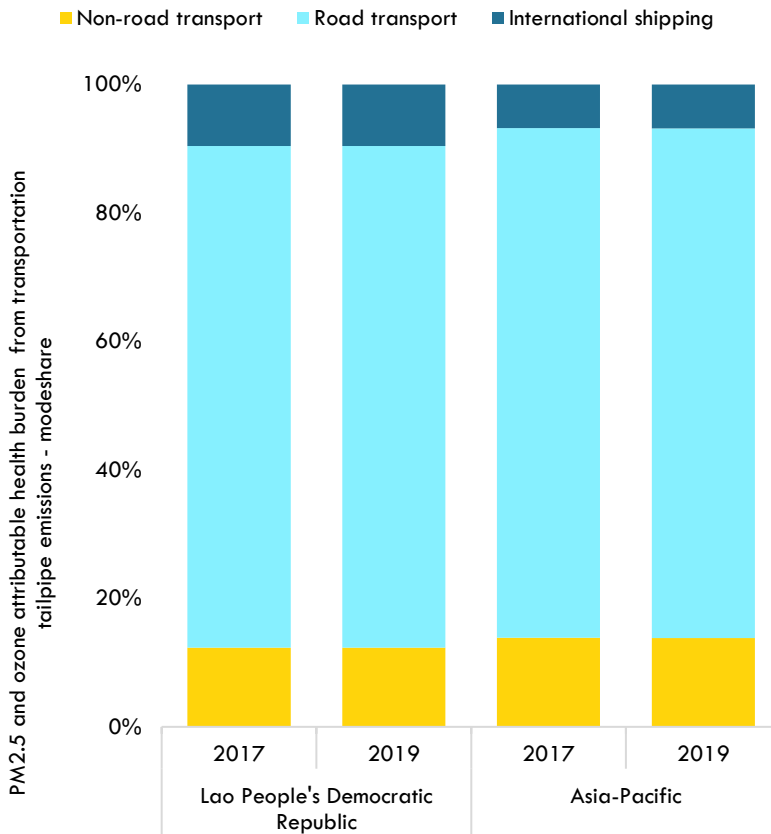
(Koks, et al., 2023)

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)

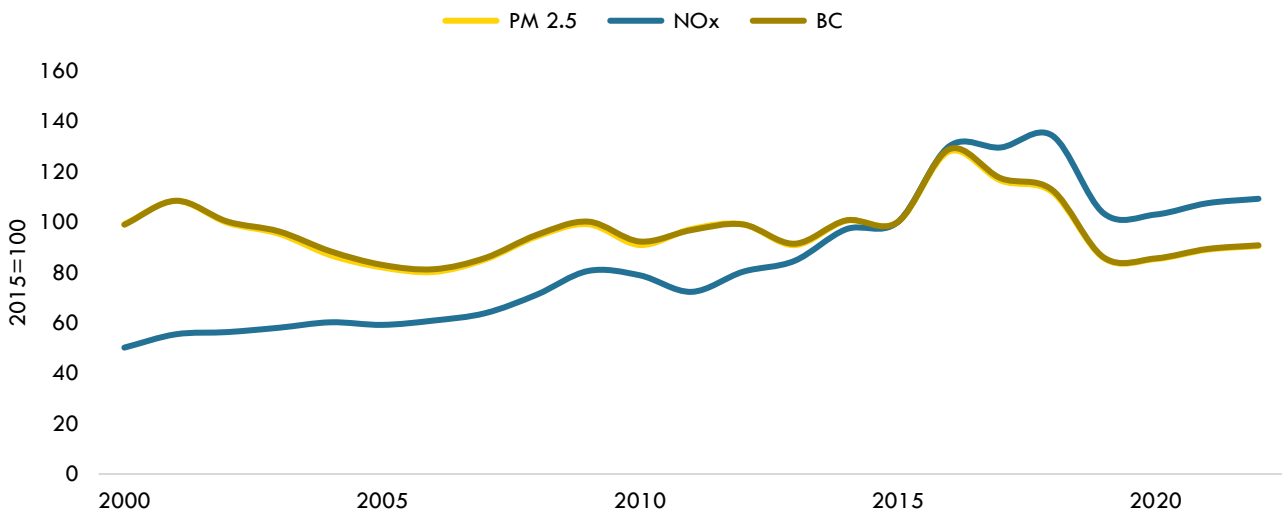


(McDuffie et al., 2021)

- Emissions: PM2.5, NOx, SOx, and BC emissions from road transport decreased or remained stable between 2015 and 2022, despite GDP growth of 8%.
- Health impacts: Estimated deaths due to PM2.5 and ozone pollution from transport increased from 79 to 94 between 2017 and 2019. Non-road transport is the major contributor to these deaths.
- In Lao People's Democratic Republic, the total attributable deaths due to the PM2.5 and ozone air pollution from the transport sector changed from 79 to 94 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



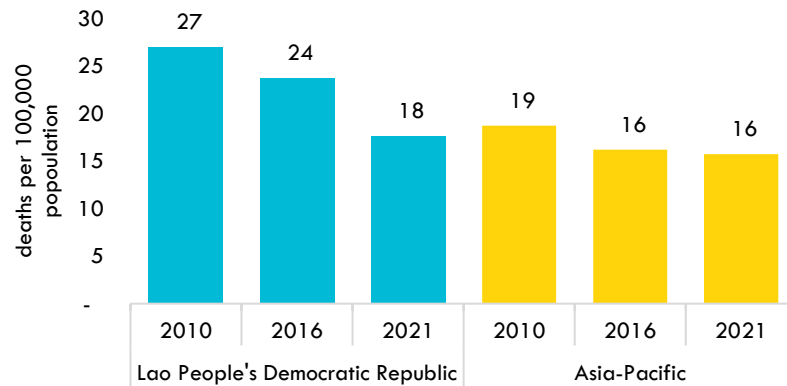
(EDGAR, 2023)

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)

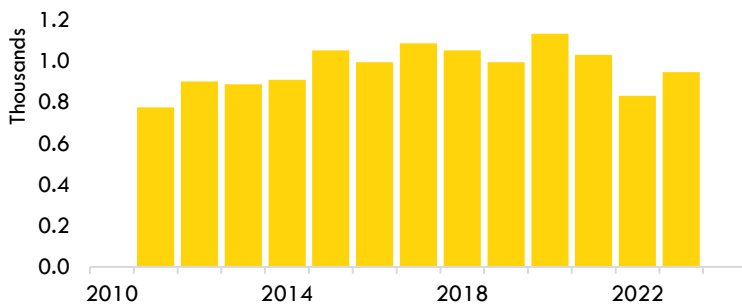
Road traffic crash fatalities

Road traffic crash fatality rate



(WHO, 2023)

Road traffic crash fatalities (absolute values)

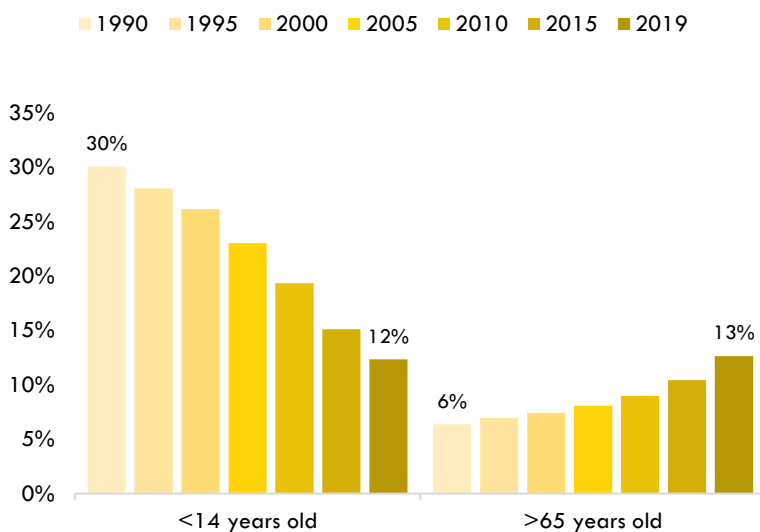


(Country official statistics)

- **Fatalities:** Estimated road traffic fatalities in 2021 were around 1,000.
- **Economic cost:** Road crash fatalities and serious injuries cost about 4% of Lao PDR's GDP in 2021.
- **Vulnerable groups:** The share of minors and seniors in road crash fatalities decreased slightly between 2015 and 2019. The share of females remained stable.
- **Pedestrian and cyclist safety:** The share of pedestrians and cyclists in total road traffic fatalities is lower than the regional average.

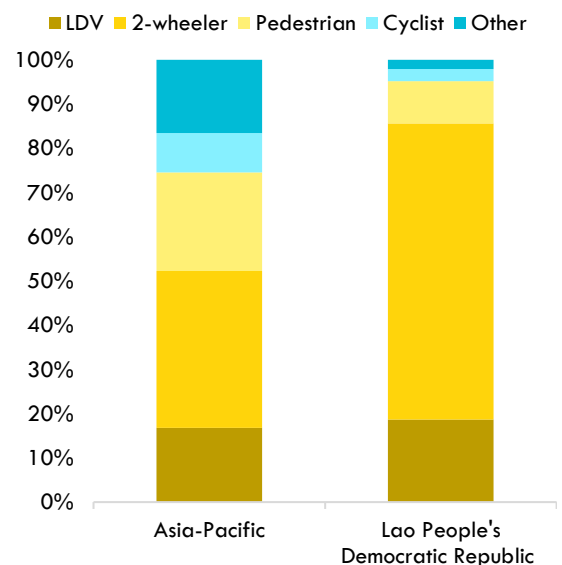
Share of vulnerable groups

Share of road crash fatalities by age



(GBD, 2021)

Share of road crash fatalities by mode



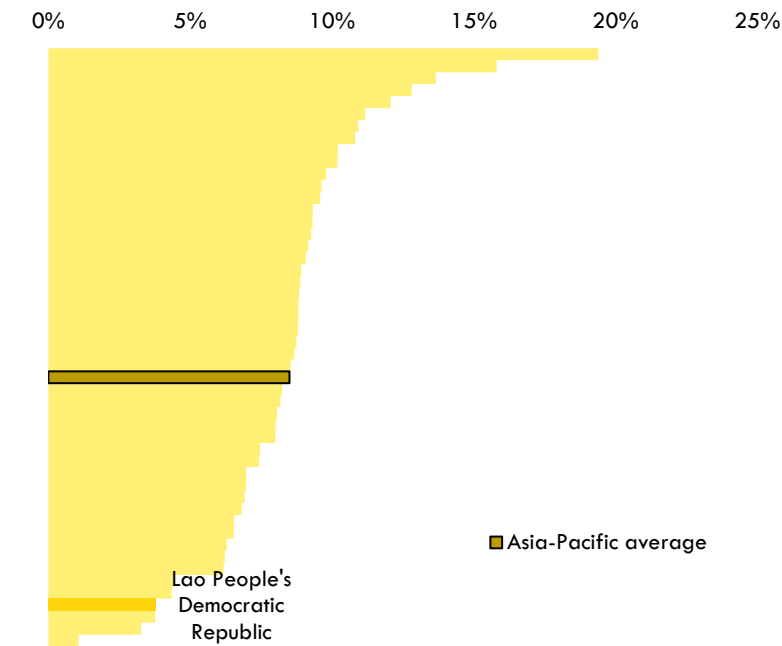
(WHO, 2023)

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

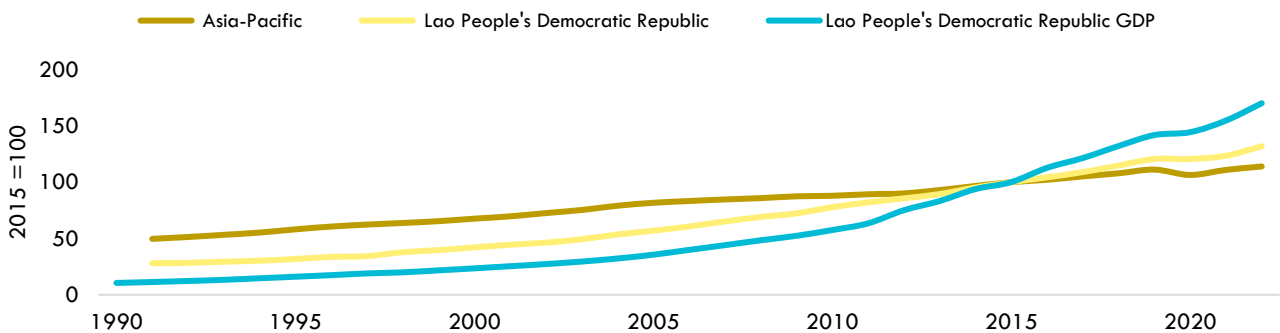


(UN, 2023)

- Contribution to GDP: Transport sector's gross value added as a share of GDP increased from 3% to 4% between 2015 and 2022.
- Employment: Transport sector employment grew at an average annual rate of 4% between 2015 and 2022.
- Logistics performance: Lao PDR's ranking in the Logistics Performance Index declined from 82nd in 2018 to 115th in 2023.

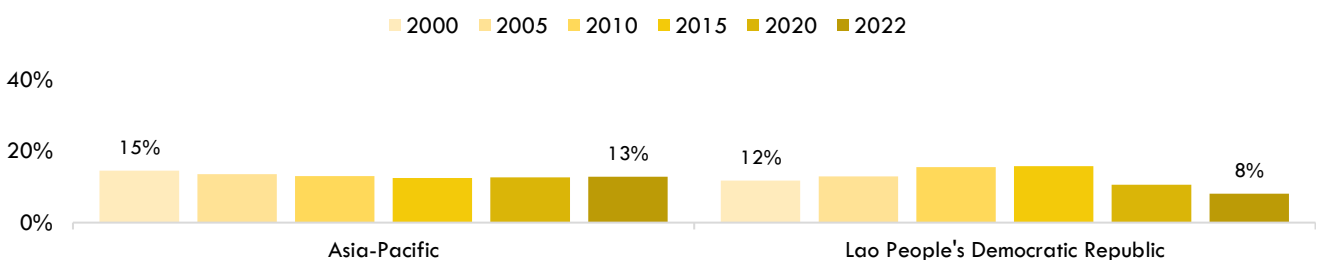
Transport employment

Growth of transport sector employment



(ILO, 2024)

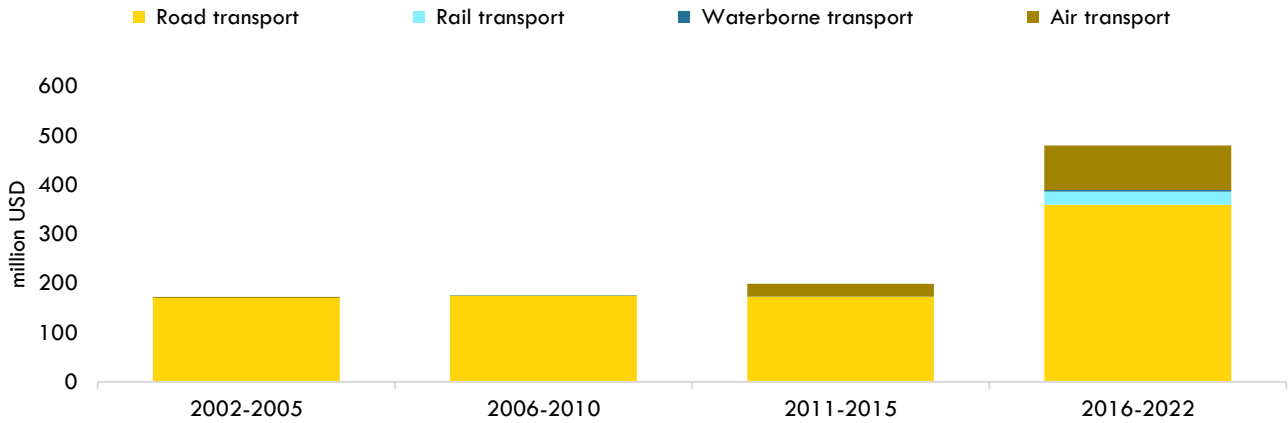
Female share in the transport employment



Estimated using (ILO, 2024)

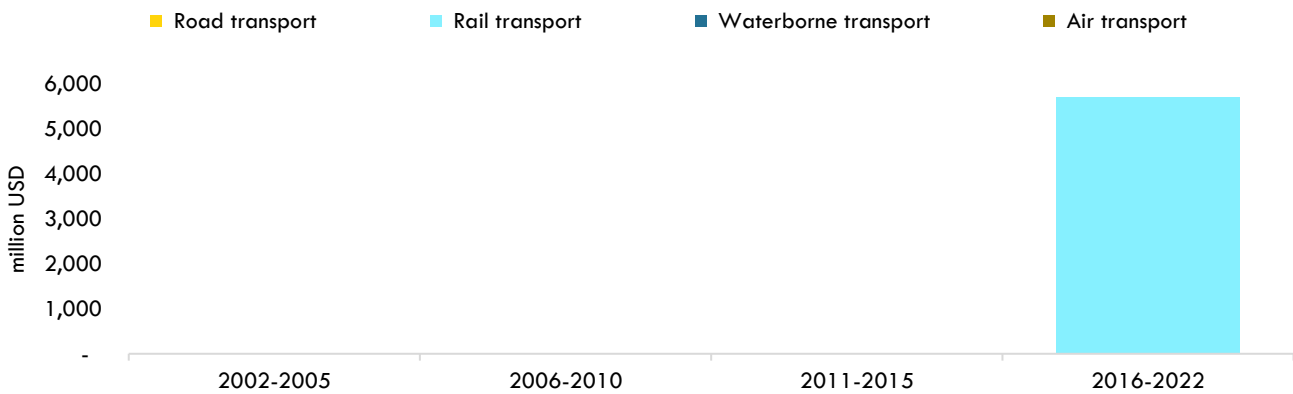
Transport investments

Official development assistance for Transport



(OECD, 2022)

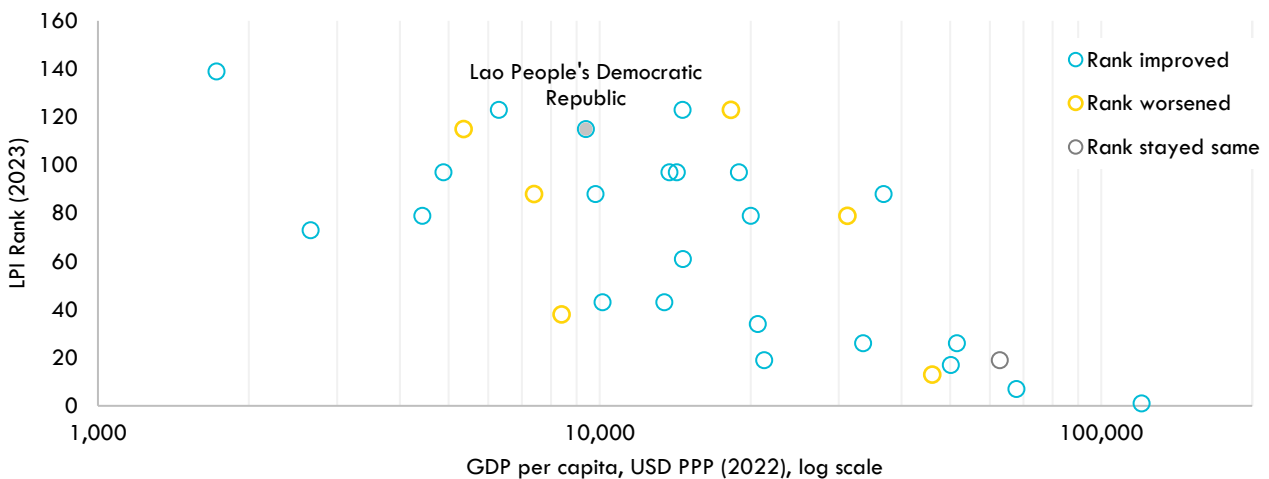
Public Private Partnership in Transport



(WB, 2023)

Freight sector

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



(WB, 2022)

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)

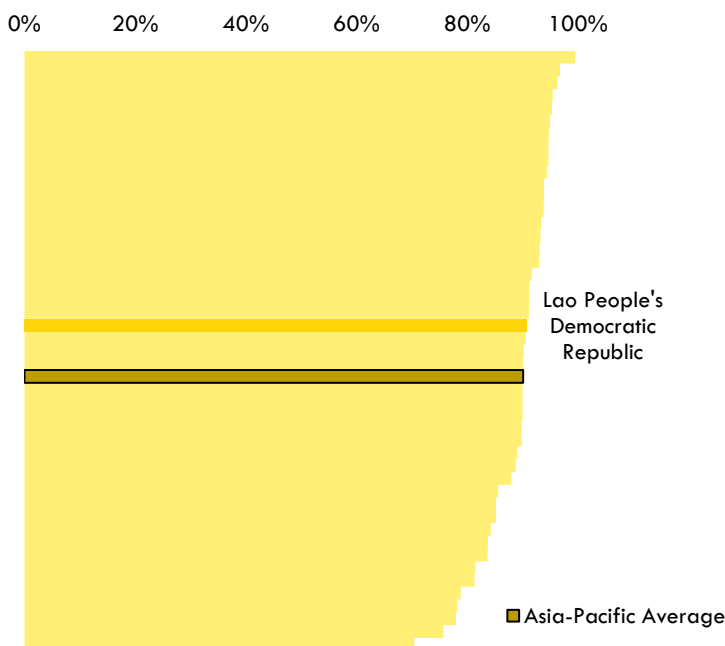
Rural access

Rural access index



(CIESIN-rural, 2023)

Share of Secondary and Tertiary roads in Total road network



(ATO and Country estimates)

- Accessibility: 70% of the rural population lived within 2km of an all-weather road in 2023, lower than the regional and global averages.
- Population without access: An estimated 1 million people in Lao PDR 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)

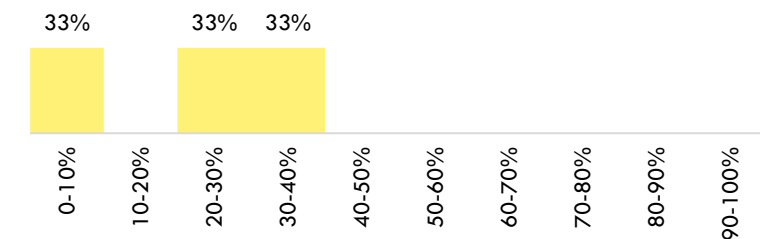
(Data not available)

Urban rapid transit infrastructure length

(Data not available)

Urban access

Share of cities by level of urban access (out of 3 cities)



(CIESIN-urban, 2023)

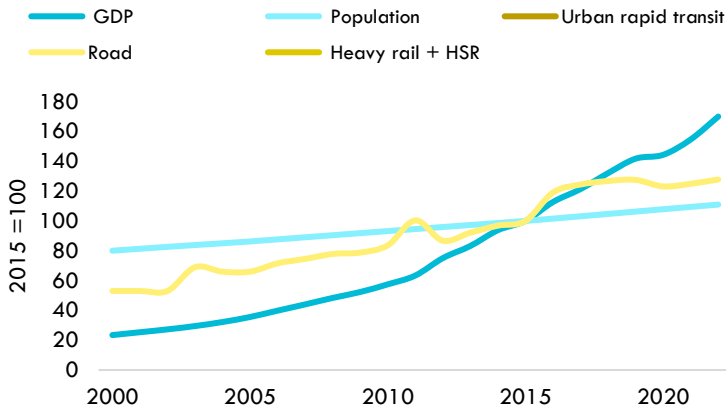
• Public transport accessibility: Data from a sample of 3 cities indicates limited access to public transport in urban areas.

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)

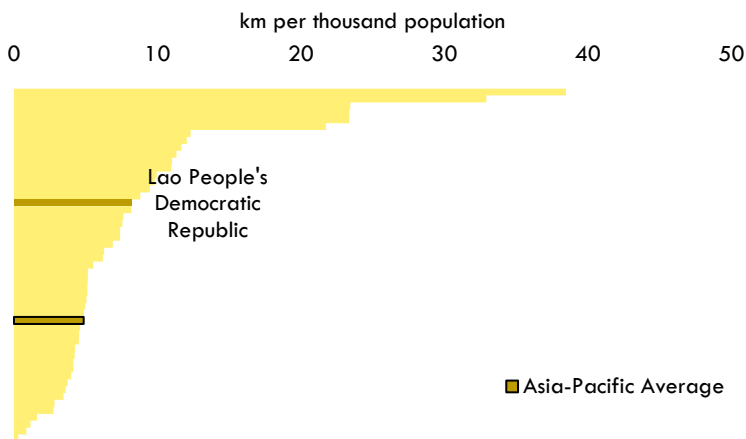
Transport infrastructure

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)

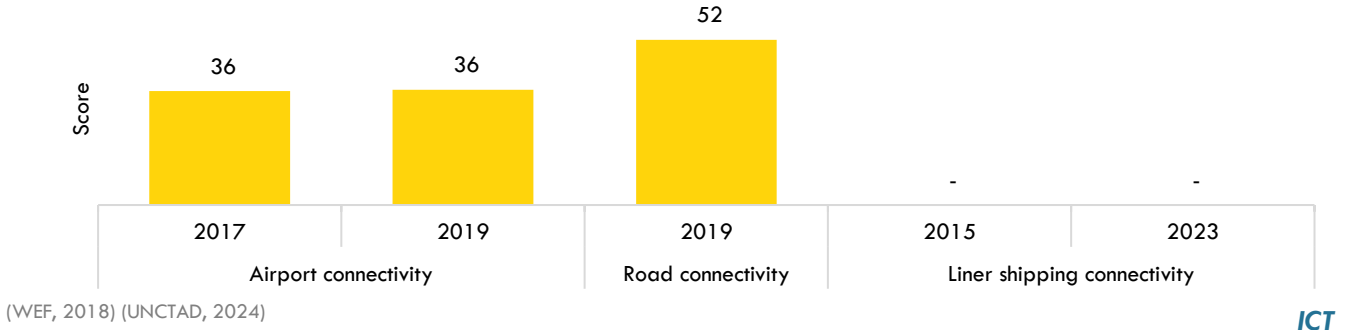
Rail transport infrastructure (including HSR) availability (2021)

(Data not available)

- Infrastructure: Road length increased between 2015 and 2022, while heavy rail length remained unchanged.
- Public transport: Bus motorization index increased slightly between 2015 and 2022.
- Connectivity: Lao PDR's IATA airport connectivity score remained at 36.
- Telecommunications: Mobile network coverage and internet usage increased significantly between 2015 and 2022.

Transport connectivity

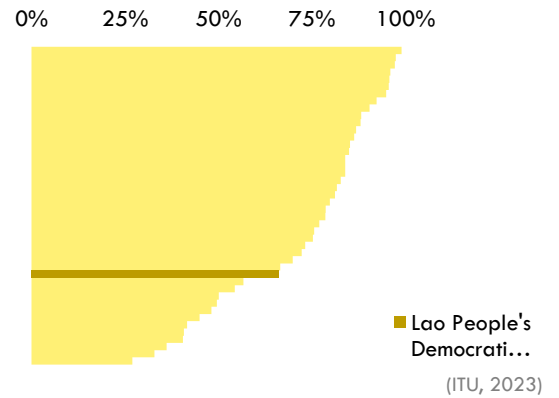
Transport connectivity



Container port traffic (TEU)

(Data not available)

Percentage of individuals using the internet (2022)



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.

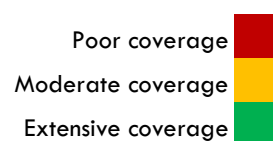
- Policy adoption: 9 policy documents were adopted since 2015, with 4 published since 2021.
- Focus areas: Most policy documents focus on Low-Carbon (climate change mitigation) and Air pollution goals.

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	Intended Nationally Determined Contribution	2015	Green	Yellow	Yellow	Yellow	Red	Red	Yellow	Yellow
2	8th Five-Year National Socio-Economic Development Plan (2016-2020)	2016	Green	Yellow	Yellow	Yellow	Red	Red	Red	Green
3	Vision to 2030 and 10-Year Socio-economic Development Strategy	2016	Green	Red	Green	Green	Red	Red	Red	Green
4	Lao PDR GCF Country Programme	2019	Green	Red	Green	Yellow	Red	Red	Yellow	Yellow
5	The First Biennial Update Report of the Lao PDR	2020	Green	Red	Green	Yellow	Red	Red	Red	Yellow
6	2021-2030 National Road Safety Strategy and 2021-2025 Action Plan	2021	Yellow	Red	Yellow	Green	Red	Red	Red	Yellow
7	9TH FIVE-YEAR NATIONAL SOCIOECONOMIC DEVELOPMENT PLAN (2021-2025)	2021	Green	Red	Green	Yellow	Red	Red	Red	Yellow
8	Updated Nationally Determined Contribution - LAO	2021	Yellow	Yellow	Yellow	Yellow	Red	Red	Yellow	Yellow
9	Voluntary National Review 2021 - LAO	2021	Green	Red	Green	Red	Red	Red	Red	Red

(ATO National policy tracker)



Transport relevant national targets

Doc. No.	Target	Year	Goal 1a	Goal 1b	Goal 1c	Goal 2	Goal 3	Goal 4	Goal 5	Goal 6
1	Intended Nationally Determined Contribution									
	For transport fuels the objective is to increase the share of biofuels to meet 10% of the demand for transport fuels by 2025.	2025	x		x					
	To increase the share of renewable energy to 30% of energy consumption by 2025 - Economy wide	2025	x		x					
4	Lao PDR GCF Country Programme									
	Increase the share of biofuels to meet 10% of the demand for transport fuels by 2025.	2025	x		x					
	Economy wide: Implement the Renewable Energy Development Strategy, i.e. to increase the share of renewable energy to 30% of energy consumption by 2025. (Note that large scale technologies with installed capacity equal to or greater than 15MW are not included in this target).	2025	x		x					
5	The First Biennial Update Report of the Lao PDR									
	10% of the fuel use in transport sector replaced by biofuel by 2025	2025	x		x					
	Renewable energy shares 30% of energy consumption by 2025 - Economy wide	2025	x		x					
	15% of the emissions in transport sector reduced by 2030	2030	x							
6	2021-2030 National Road Safety Strategy and 2021-2025 Action Plan									
	Safety classification of the International Safety Assessment Agency (iRAP) for the ASEAN highway network = At least 3 stars Traveling on major roads in the city requires a safety rating of three stars or higher = 75%	2025				x				x
	The driver uses excessive speed = >25% decrease Car drivers use seat belts properly = at least 95% Motorcyclists wear helmets properly = at least 95% Detected drivers drinking alcohol more than the amount prescribed by law = <0.1%	2025				x				
	By 2035, the road safety vision of Lao PDR is to reduce the rate of deaths and serious injuries to 70% in 2035	2035				x				
	By 2035, the road safety vision of Lao PDR is to reduce the rate of deaths and serious injuries to 70% in 2035	2035				x				
	New vehicles must meet UN safety standards at least 7 out of 8 priorities = 87,5%	2025	x		x	x				
7	9TH FIVE-YEAR NATIONAL SOCIOECONOMIC DEVELOPMENT PLAN (2021-2025)									
	Build more than 100 charging stations/bio-fuel stations nationwide (20 stations in the northern region, 50 stations in the central region and 30 stations in the southern region);	2025	x		x					
	Build more than 100 charging stations/bio-fuel stations nationwide (20 stations in the northern region, 50 stations in the central region and 30 stations in the southern region);	2025	x		x					x

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
2024	Lao PDR Climate Resilient Road Connectivity Improvement Project	56	x	x	x		x	x		x
	Lao PDR: National Road 13 South Extension Improvement and Maintenance Project	40		x		x	x			x
	Lao PDR: Thanaleng Dry Port	10		x		x	x	x		
2024	Lao Airlines Sustainable Development Project	2					x			x
2022	Southeast Asia Regional Economic Corridor and Connectivity Project	132					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 & infrastructure. <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)

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

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 Health 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)	