

# Lao People's Democratic Republic

## Green Roads Profile

### General

Road length (2022)  
**61,848 kilometers**

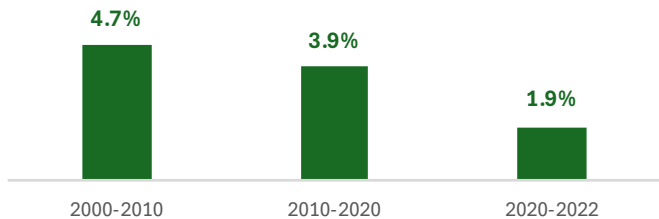
Subregion  
(1) **South East Asia**

Income class  
**Low and lower middle income**

Average annual growth rate of road length

Population (2024)  
(1) **7.7 million**

Land area  
**231 thousand sqkm** (2,3)



Urban population  
**39%**

Rural population  
**61%** (2)

Gross domestic product (GDP PPP, 2022)  
**70.68 billion USD**

GDP per capita (PPP, 2022)  
**9,387 USD** (2,3)  
(3)

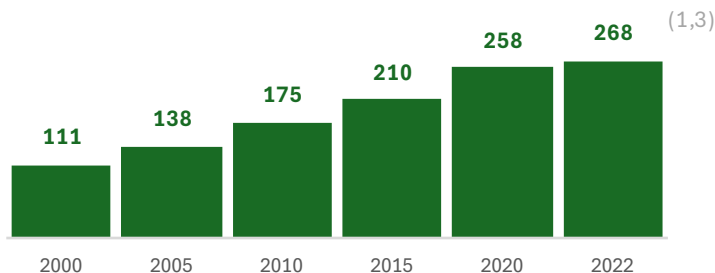
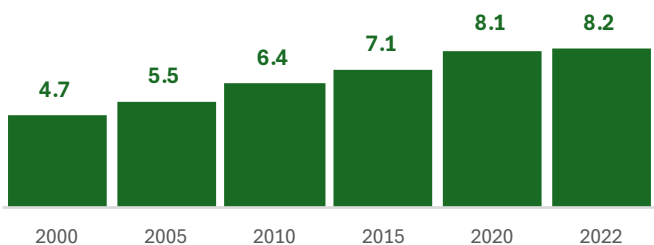
*Lao People's Democratic Republic's road network is comprised of 9.2% motorways, highways, and primary roads and 90.8% secondary roads, local roads, and other roads*

Road infrastructure availability (2022)  
**8.2 kilometers per thousand population**

Road infrastructure density (2022)  
(1,2) **268 meters per square kilometer** (1,3)

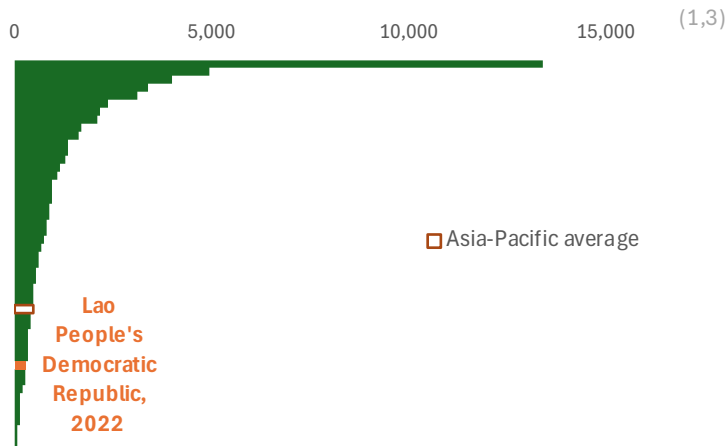
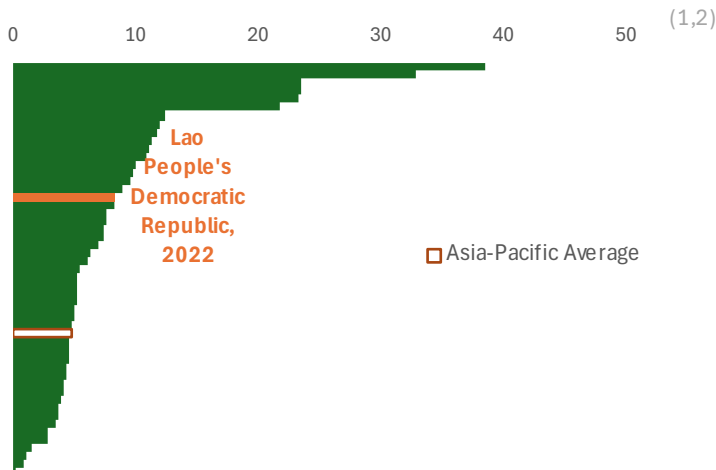
Road infrastructure availability trend, kilometers per thousand population

Road infrastructure density trend, meters per thousand population



Road infrastructure availability in Asia-Pacific, kilometers per thousand population

Road infrastructure density in Asia-Pacific, meters per square kilometer

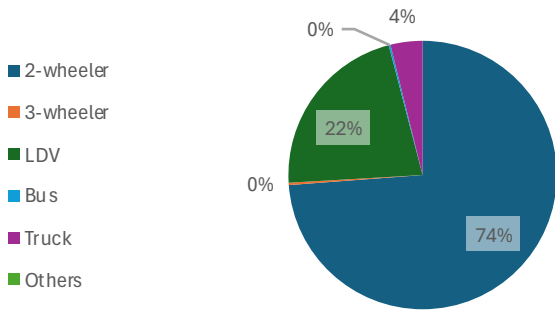


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Road vehicles (2022)  
**3.19 million vehicles**

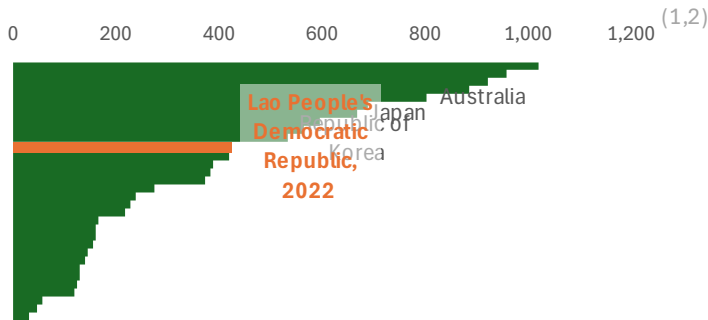
Share of vehicles by type



Motorization rate (2022)  
**424 vehicles per thousand population**

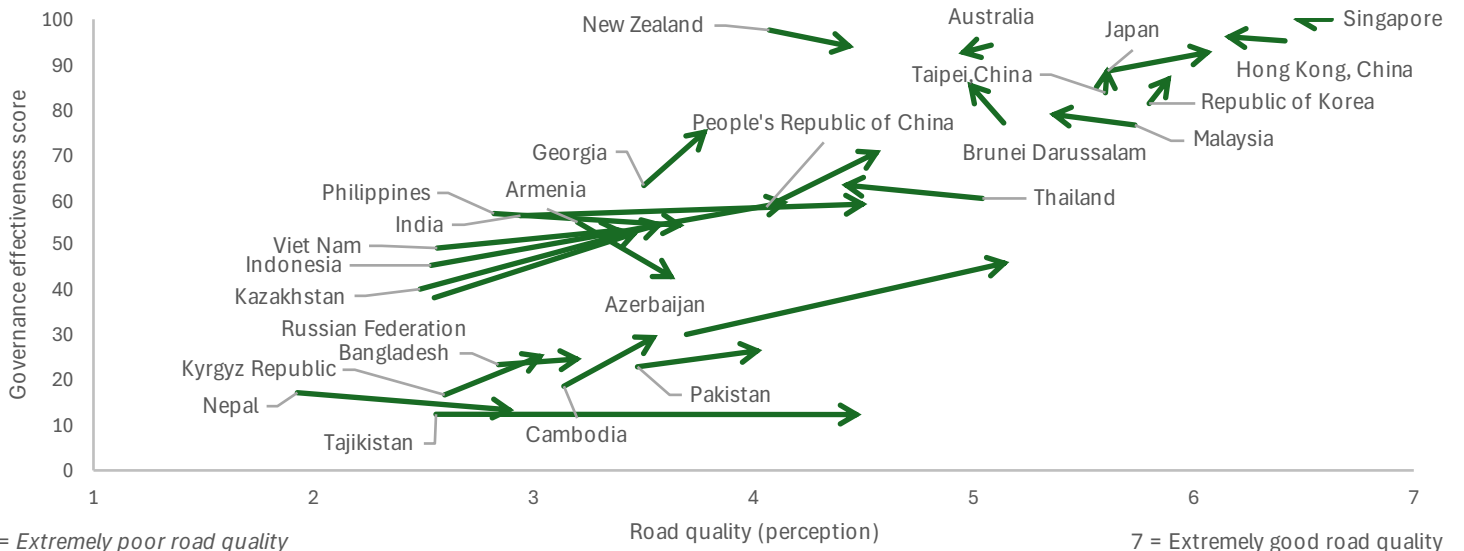
*In 2000, Lao People's Democratic Republic had 60 vehicles per thousand population. By 2022, this has increased to 424 compared with Asia-Pacific average of 577 in 2022.*

Motorization rate in Asia-Pacific, vehicles per thousand population



*Road vehicles include 2- and 3-wheelers, LDVs, buses and other informal public transport, trucks, and other unclassified types*

Road quality (perception) vs. governance effectiveness score (2009-2019)



1 = Extremely poor road quality

7 = Extremely good road quality

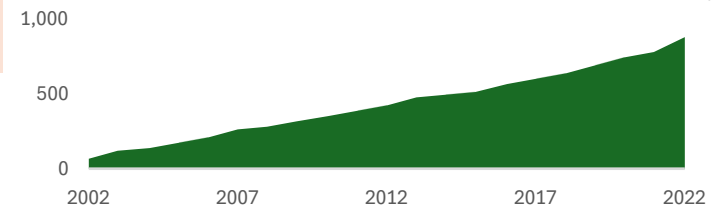
Public-private partnership investments in road sector, cumulative million USD

(1)

Share of road in total public-private partnership investments

Official development assistance in road sector, cumulative million USD

(5)



Share of road in total official development assistance

(5)



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Quality of Life and Fostering Inclusive Growth

Rural access index (2023)  
70%

(6)

Based on 2015 estimates, only 14% of the population could reach the nearest city in 30 minutes, another 8% could reach in 1 hour, and another 32% could reach only after 3 hours.

Rural population without access to all-season roads (2023)  
1.39 million

(2,6)

Logistics performance index score (2023)

2.4/5

(10)

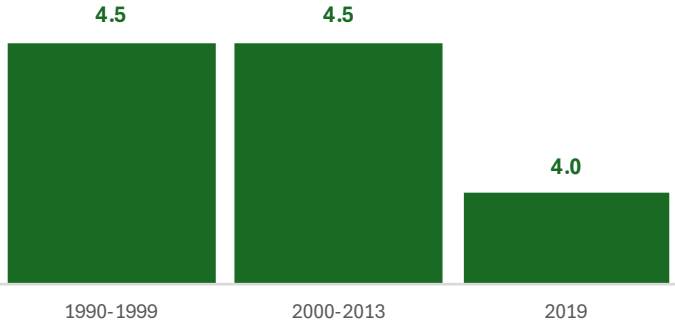
| Infrastructure score

(7)

2.3/5

(10)

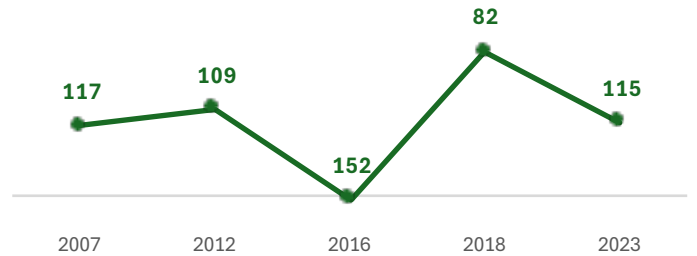
National street network disconnectedness index



This indicator is a summary scalar measure for street-network sprawl describing connectivity of local street networks across the world

Logistics performance index ranking trend

(10)



Road crash fatalities (2019)  
1.3 thousand deaths

(8)

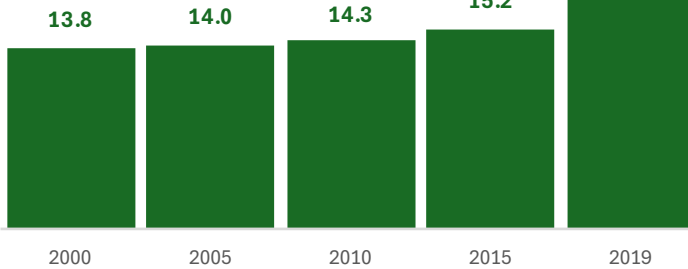
Road crash fatality rate per 100 thousand population

(2,8)

Percent of firms choosing transportation as their biggest obstacle - Manufacturing (2018)

4.4%

(11)



Asia-Pacific average is 15.7 fatalities per 100 thousand population

Percent of respondents answering high/very high - Level of Fees and Charges on Road transport (2018)

100.0%

(11)

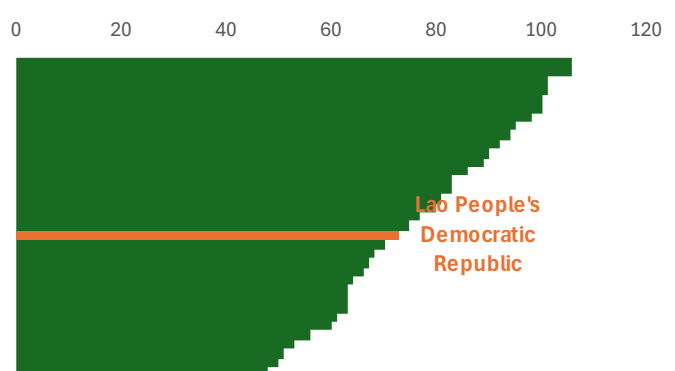
Level of fees and charges for less than full truck loads are considered

Mean speed in Asia-Pacific, kilometers per hour (2022)

(9)

Mean speed (2022)  
73 kilometers per hour

(9)



Employment in transport sector (2022)

**60.1 thousand employees**

Share of transport sector in total employment (2022)

(12) **2.0%**

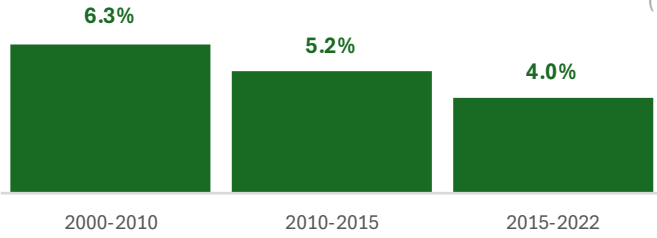
(12)

Average annual growth rate of transport sector employment

(12) Share of females in total transport sector employment (2022)

(12) **8.1%**

(12)



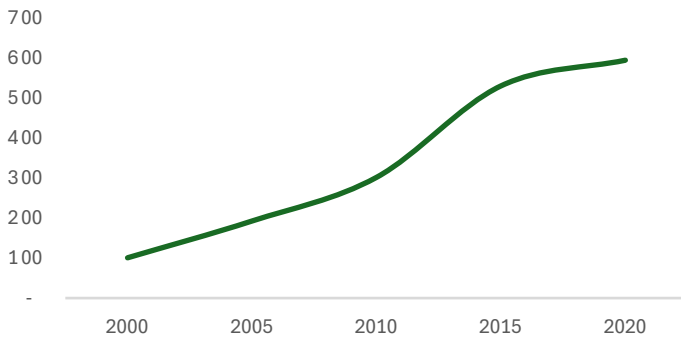
## Decarbonization

Road transport energy consumption trend

Assuming 2000 value as base (100)

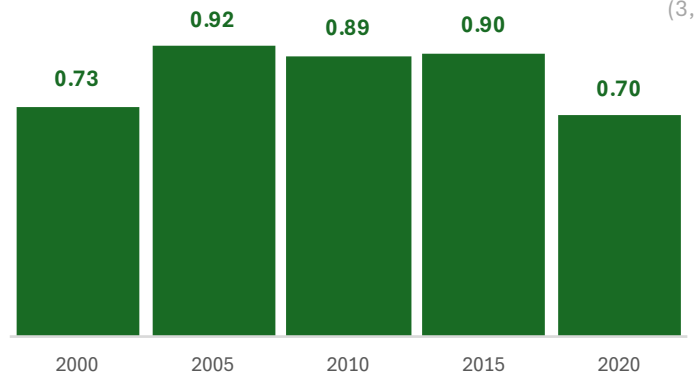
(13)

99% of Lao People's Democratic Republic's transport energy consumption is in the road sector.



Road transport energy intensity with GDP, TJ per USD (PPP)

(3,13)



Asia-Pacific average is 0.4 MJ per USD in 2020

Between 2000-2010, Lao People's Democratic Republic's road transport energy consumption grew 11.6% annually. Between 2010-2020, road transport energy consumption grew 7.0% annually.

Grid emission factor (2022)

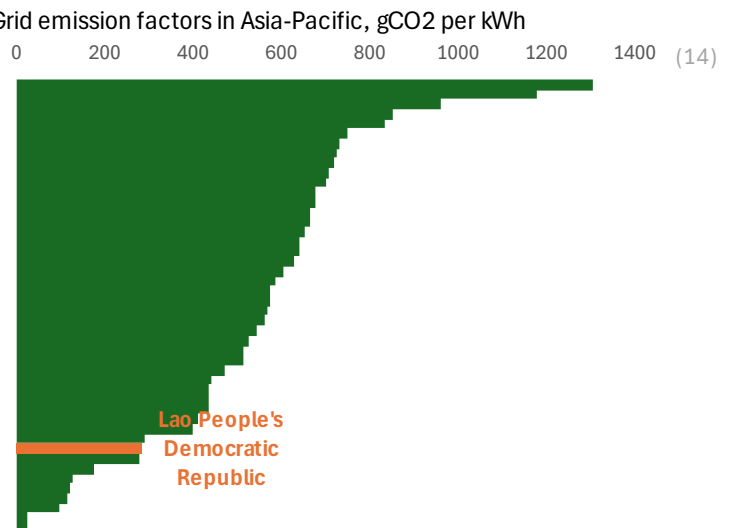
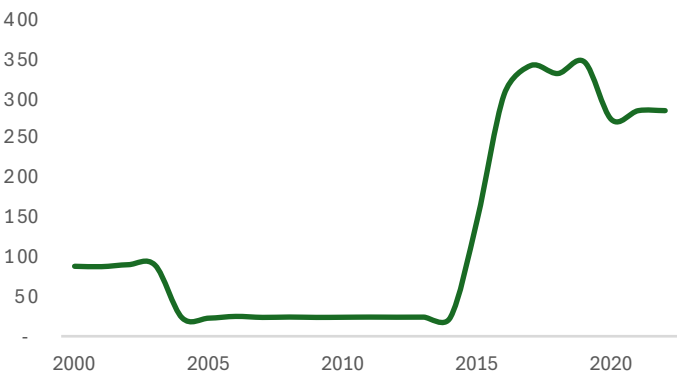
**284.2 gCO2 per kWh**

Grid emission factors in Asia-Pacific, gCO2 per kWh

(14)

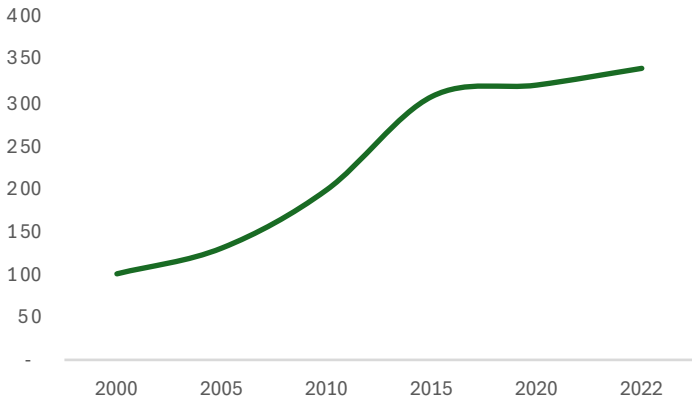
(14)

Grid emission factor trend, gCO2 per kWh

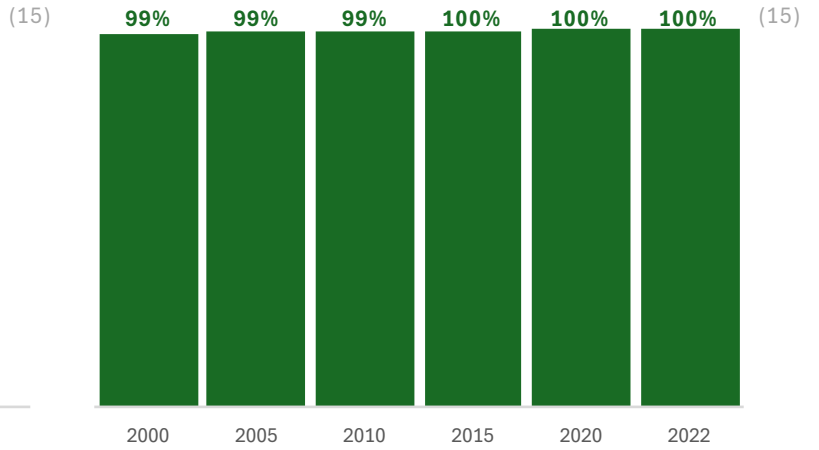


Road transport CO2 emissions trend

Assuming 2000 value as base (100)

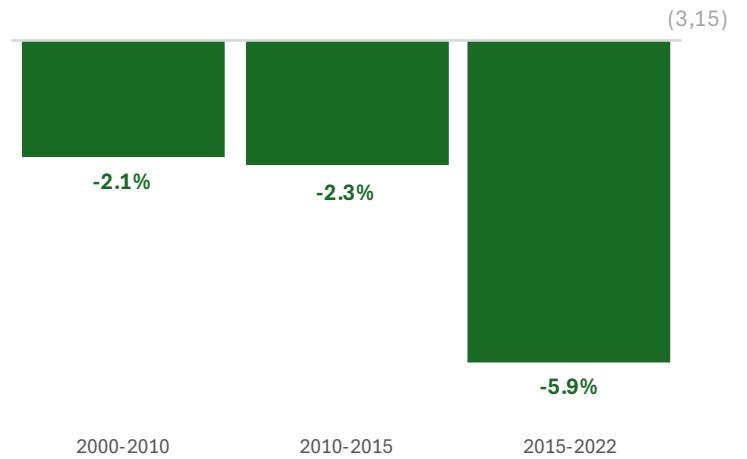


Share of road transport in total transport CO2 emissions



Between 2010-2019, Lao People's Democratic Republic's road transport fossil CO2 emissions was growing 5.5% annually. After the COVID-19 pandemic, road transport CO2 emissions was growing 3.0%

Road transport CO2 emissions intensity with GDP trend

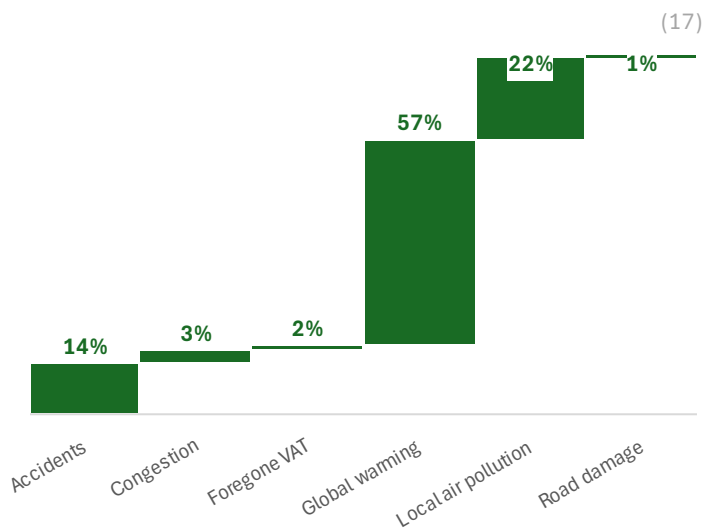


Transport fossil fuel subsidies, cumulative from 2010 to 2022

None

0.0% of Asia-Pacific total

Implicit fossil fuel subsidies due to externalities



Data includes all sectors and all fuel types

Climate Resilience and Disaster Preparedness

Expected annual damages to road and rail infrastructure due to hazards (2019)  
**43.8 million USD**

(18)

National road vulnerability index ranking (2023)  
**n.d.**

(20)

Share of road in total transport infrastructure in multihazard average annual loss to transport infrastructure (2023)  
**85.4%**

(19)

Share of population in low elevated coastal zones (2018)  
**0.0%**

(21)

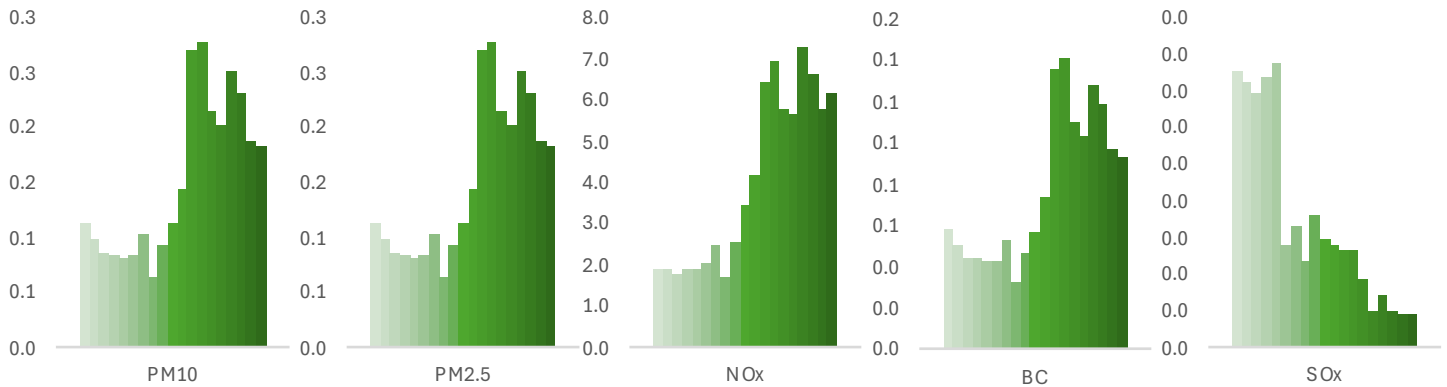
Pollution, Water and Land Management, Preserving Biodiversity, and Sustainable Materials

Paved roads (2020)  
**23%**

(1)

Road transport air pollutant emissions, thousand tonnes (2000-2018)

(15)



*In 2022, road transport contributed 24.2%, re-suspended dust contributed 18.0% in transport PM10 emissions. In total, road transport contributed about 0.6% in total PM10 emissions in Lao People's Democratic Republic.*

Deaths due to occupational exposure to diesel engine exhaust | 2000-2010 | 2011-2018  
**95 deaths** | **113 deaths**

(22)

Terrestrial and marine protected areas (2022)  
**18.7%**

(3)

Share of biofuels in road transport energy consumption (2020)  
**n.d.**

(13)

Terrestrial protected areas  
**18.7%**

(% of total land area)

Marine protected areas  
**n.d.**

(3)

(% of territorial waters)

Domestic consumption per capita, tonnes (2024)  
 | Lao People's Democratic Rep | Asia-Pacific  
**15.2 tonnes** | **13.8 tonnes**

(23)

Forest area (2021)  
**71.8%**

(% of land area)

(3)

*Domestic consumption is the total amount of materials directly used in the economy (used domestic extraction plus imports), minus the materials that are exported.*

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## Policy Measures

Policy document	Year	Road-related measures
Strategy on Climate Change of the Lao PDR	2010	Relocation from climate-risk areas, Transport infrastructure resilience, General transport asset management, Development of transport adaptation/ emergency/ disaster plan/ policy, Disaster monitoring and risk assessment for transport infrastructure
8th Five-Year National Socio-Economic Development Plan (2016-2020)	2016	General infrastructure improvements, Asphalt mix resurfacing, General transport asset management, Road infrastructure expansion
Urban Development Sector Assessment, Strategy, and Road Map	2012	Asphalt mix resurfacing, General transport finance, Development of transport plan/ policy
2021-2030 National Road Safety Strategy and 2021-2025 Action Plan	2021	Vehicle inspection and maintenance, Technical standards for road infrastructure, Transport asset management information system, Transport asset condition assessment, General transport asset management, General transport finance, Reference to finance mechanisms within country, National road safety strategy, Audits/ star rating for existing roads for road safety
Global Status Report on Road Safety 2018	2018	Design standards for sidewalks and bicycle paths, Upgrading high risk locations for road safety, National road safety strategy, National speed law, Audits/ star rating for existing roads for road safety
9TH FIVE-YEAR NATIONAL SOCIOECONOMIC DEVELOPMENT PLAN (2021-2025)	2021	General infrastructure improvements, Technical standards for road infrastructure, Target - Transport activity, General transport asset management, Road infrastructure expansion, Road-side checks on overloading
Intended Nationally Determined Contribution	2015	Climate-resilient design standards, Transport infrastructure resilience, Road infrastructure expansion
Renewable Energy Development Strategy in Lao PDR	2011	Development of transport plan/ policy
Updated Nationally Determined Contribution - LAO	2021	Transport infrastructure resilience, Development of transport adaptation/ emergency/ disaster plan/ policy
Technology Needs Assessment Report Climate Change Mitigation	2013	General infrastructure improvements
Vision to 2030 and 10-Year Socio-economic Development Strategy	2016	General infrastructure improvements
Road Safety Opportunities and Challenges: Low- and Middle-Income Country Profiles	2020	Vehicle inspection and maintenance, Implementation of vertical deflections on roads

## Policy Targets

Policy document	Target year	Road-related targets
2021-2030 National Road Safety Strategy and 2021-2025 Action Plan	2025	<p>Safety classification of the International Safety Assessment Agency (iRAP) for the ASEAN highway network = At least 3 stars</p> <p>Traveling on major roads in the city requires a safety rating of three stars or higher = 75%</p>
9TH FIVE-YEAR NATIONAL SOCIOECONOMIC DEVELOPMENT PLAN (2021-2025)	2025	<p>Build, upgrade, rehabilitate and maintain 2,800 km of land transport infrastructure, including roads, bridges and express ways as part of the network along the economic corridors connecting the countries in the region in accordance with ASEAN technical standards.</p> <p>Increase the volume of passenger transport in the transport connectivity network with countries in the region, via all modes of transport: road by 7% per year, waterways by 5%, airways by 12%, railway by 3-5%;</p>
9TH FIVE-YEAR NATIONAL SOCIOECONOMIC DEVELOPMENT PLAN (2021-2025)	2025	<p>Increase freight volume in the transport connectivity network with countries in the region, via all modes of transport: road by 7% per year, waterways by 5%, airways by 12%, railway by 3-5%</p>



## Notes



(\*) Policy measures and targets were extracted from policy documents as listed in the ATO National Transport Policies Database

<https://bit.ly/ATOpolicyrepository>

## References

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- (9) Moszoro & Soto (IMF, 2022), <https://www.imf.org/en/Publications/WP/Issues/2022/05/20/Road-Quality-and-Mean-Speed-Score-518200>
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## Disclaimer

This profile was developed by Asian Transport Outlook in support of TA-6756 Improving Infrastructure Sustainability Through Better Asset Management – Developing a Green Roads Toolkit and Guidance for ADB Projects. 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.

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