Papua New Guinea

Green Roads Profile

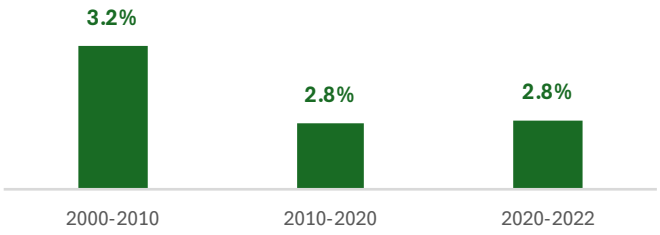
General

Road length (2022)
35,096 kilometers (1)

Subregion
Pacific

Income class
Low and lower middle income

Average annual growth rate of road length (1)



Population (2024)
10.5 million

Land area
453 thousand sqkm (2,3)

Urban population
14%

Rural population
86% (2)

Gross domestic product (GDP PPP, 2022)
44.96 billion USD

GDP per capita (PPP, 2022)
4,433 USD (2,3) (3)

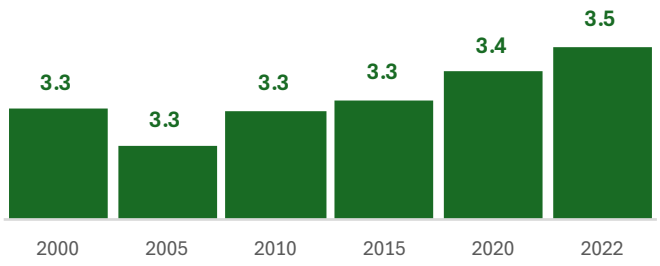
Papua New Guinea's road network is comprised of 10.0% motorways, highways, and primary roads and 90.0% secondary roads, local roads, and other roads

Further information on road length, pavement, and quality by road class is available in Appendix A

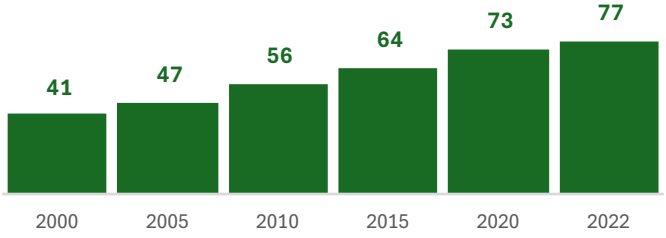
Road infrastructure availability (2022)
3.5 kilometers per thousand population (1,2)

Road infrastructure density (2022)
77 meters per square kilometer (1,3)

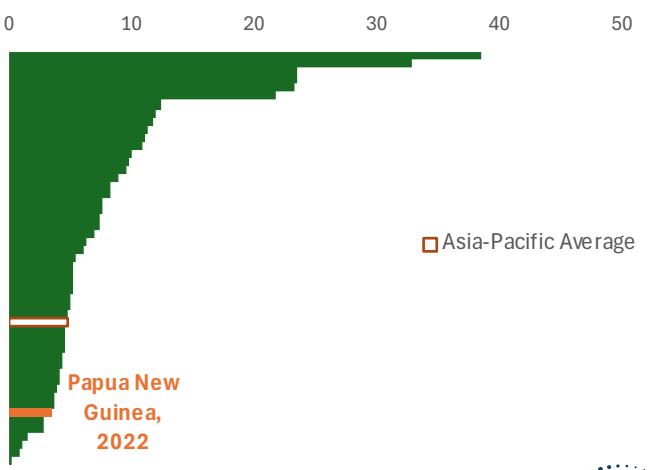
Road infrastructure availability trend, kilometers per thousand population (1,2)



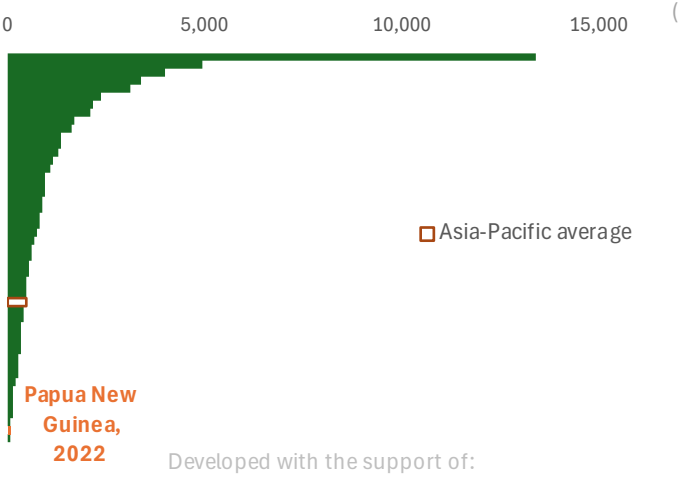
Road infrastructure density trend, meters per thousand population (1,3)



Road infrastructure availability in Asia-Pacific, kilometers per thousand population (1,2)



Road infrastructure density in Asia-Pacific, meters per square kilometer (1,3)



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Road vehicles (2023)
n.d.

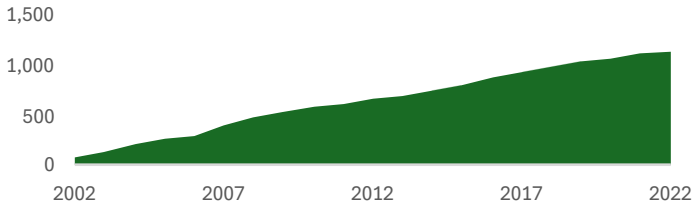
Share of vehicles by type

Public-private partnership investments in road sector, cumulative million USD (1)

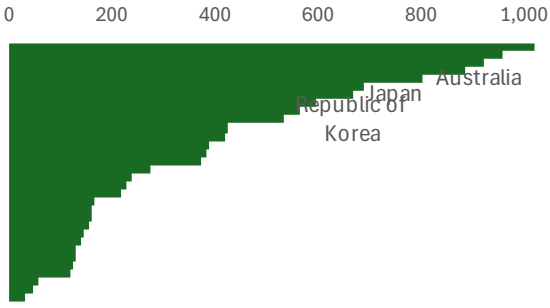
Share of road in total public-private partnership investments

Motorization rate (2023)
n.d. (1,2)

Official development assistance in road sector, cumulative million USD (5)



Motorization rate in Asia-Pacific, vehicles per thousand population (1,2)

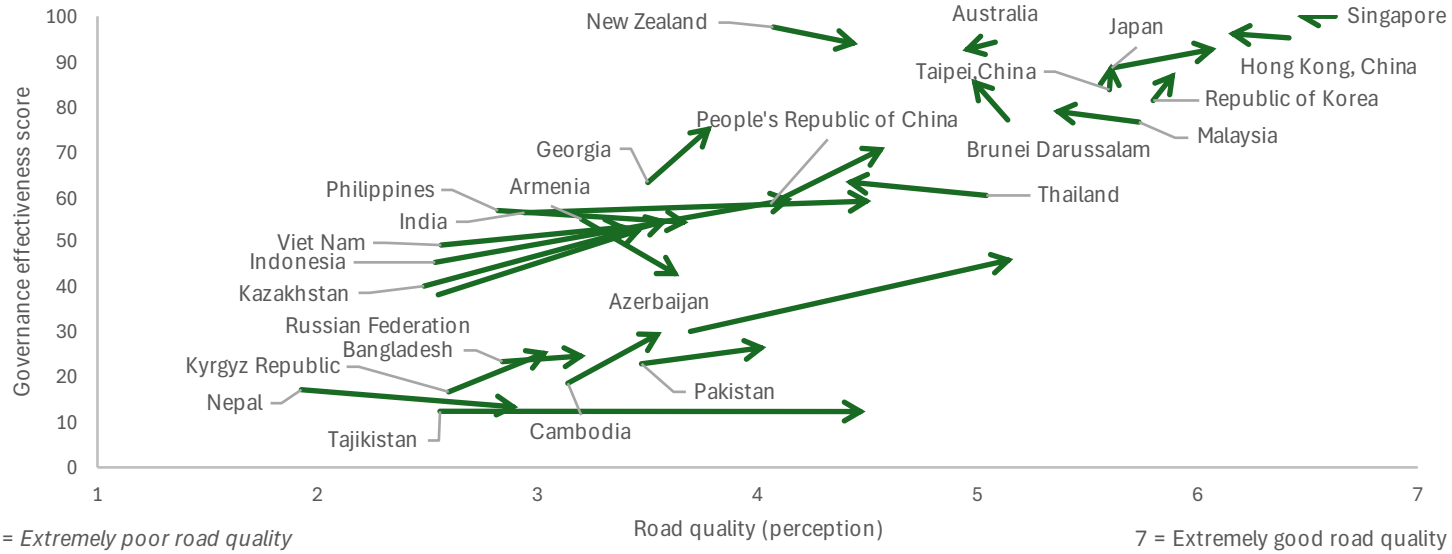


Share of road in total official development assistance (5)

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

Road maintenance budget and deficit is available in Appendix B. Road user charging revenue information is available in Appendix C

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



1 = Extremely poor road quality

7 = Extremely good road quality

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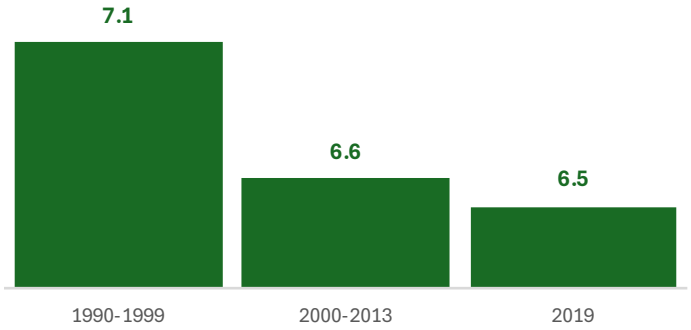
Quality of Life and Fostering Inclusive Growth

Rural access index (2023)
41% (6)

Based on 2015 estimates, only 13% of the population could reach the nearest city in 30 minutes, another 5% could reach in 1 hour, and another 15% could reach only after 3 hours.

Rural population without access to all-season roads (2023)
4.66 million (2,6)

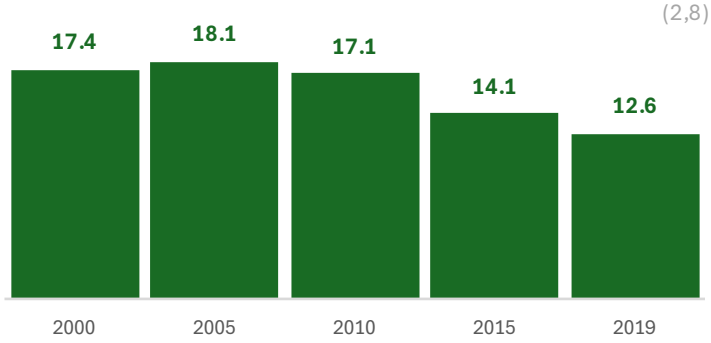
National street network disconnectedness index (7)



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

Road crash fatalities (2019)
1.1 thousand deaths (8)

Road crash fatality rate per 100 thousand population (2,8)



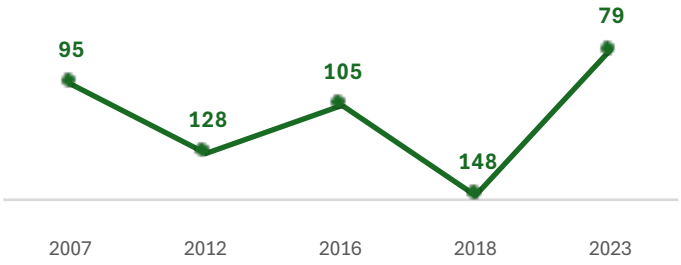
Asia-Pacific average is 15.7 fatalities per 100 thousand population

Mean speed (2022)
67 kilometers per hour (9)

Logistics performance index score (2023)
2.7/5 (10)

| Infrastructure score
2.4/5 (10)

Logistics performance index ranking trend (10)

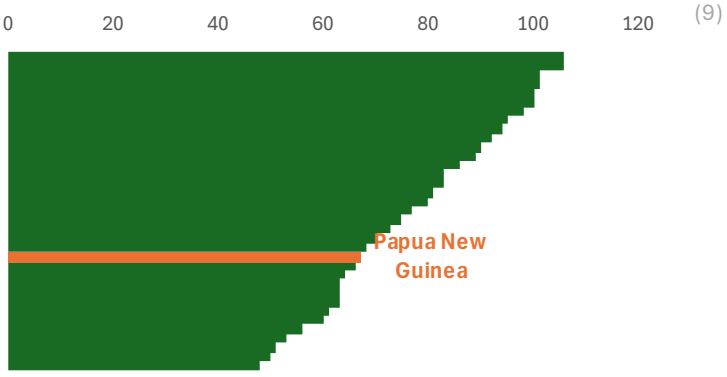


Percent of firms choosing transportation as their biggest obstacle - Manufacturing
n.d. (11)

Percent of respondents answering high/very high - Level of Fees and Charges on Road transport
n.d. (11)

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

Mean speed in Asia-Pacific, kilometers per hour (2022) (9)



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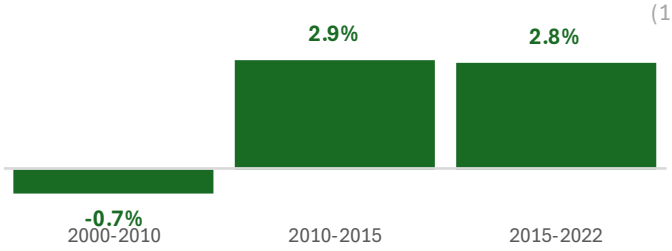
Employment in transport sector (2022)
85.4 thousand employees (12)

Share of transport sector in total employment (2022)
2.8% (12)

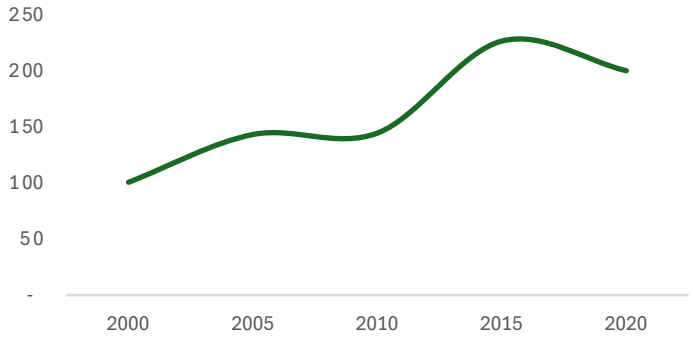
Average annual growth rate of transport sector employment (12)



Share of females in total transport sector employment (2022)
10.7% (12)

Decarbonization

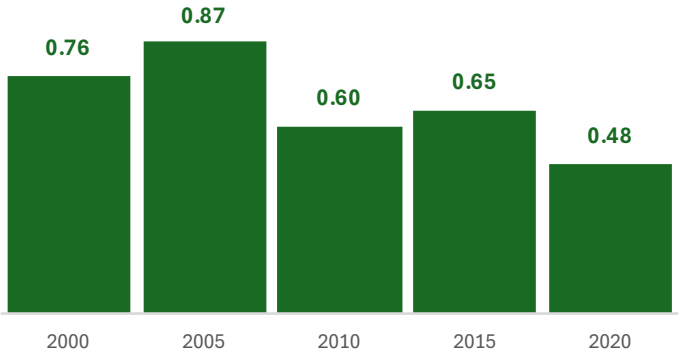
Road transport energy consumption trend
Assuming 2000 value as base (100) (13)



Between 2000-2010, Papua New Guinea's road transport energy consumption grew 3.7% annually. Between 2010-2020, road transport energy consumption grew 3.3% annually.

85% of Papua New Guinea's transport energy consumption is in the road sector.

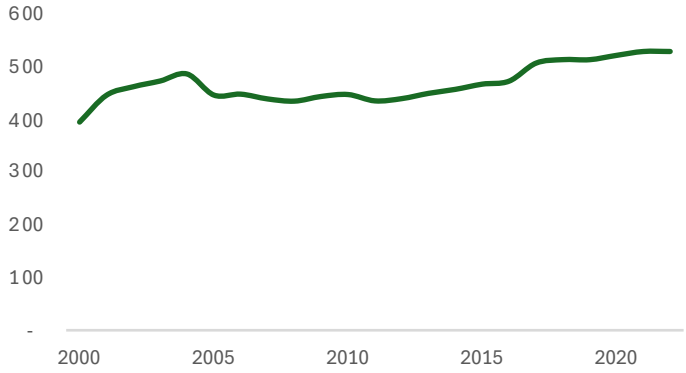
Road transport energy intensity with GDP, TJ per USD (PPP) (3,13)



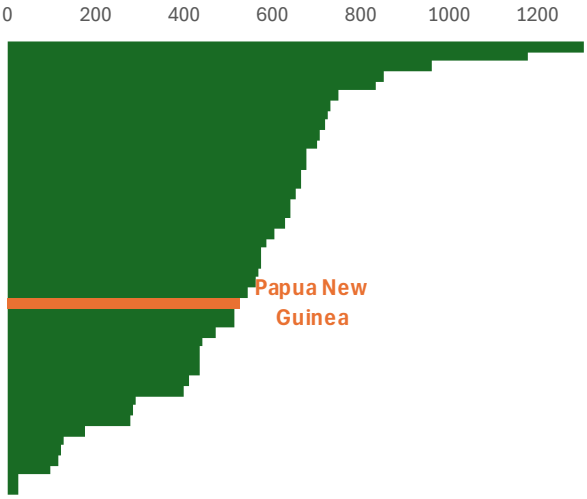
Asia-Pacific average is 0.4 MJ per USD in 2020

Grid emission factor (2022)
526.8 gCO2 per kWh (14)

Grid emission factor trend, gCO2 per kWh (14)



Grid emission factors in Asia-Pacific, gCO2 per kWh (14)



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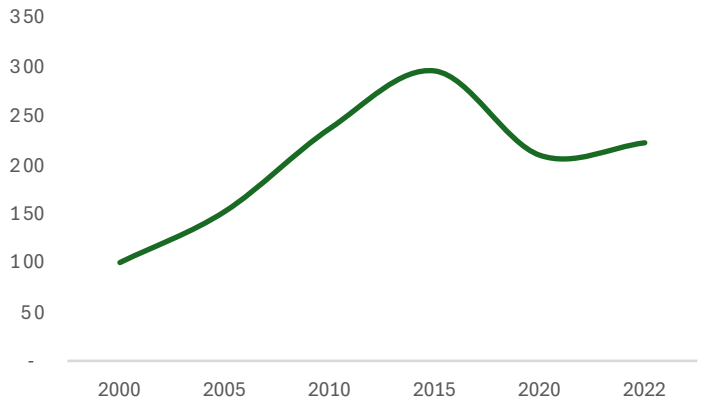
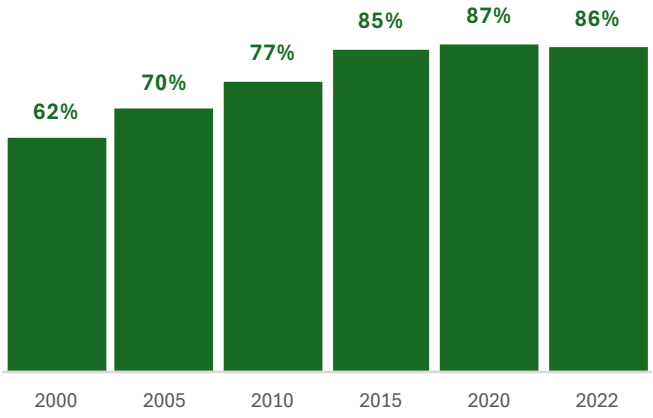
Road transport CO2 emissions trend

Assuming 2000 value as base (100) (15)



Share of road transport in total transport CO2 emissions (15)



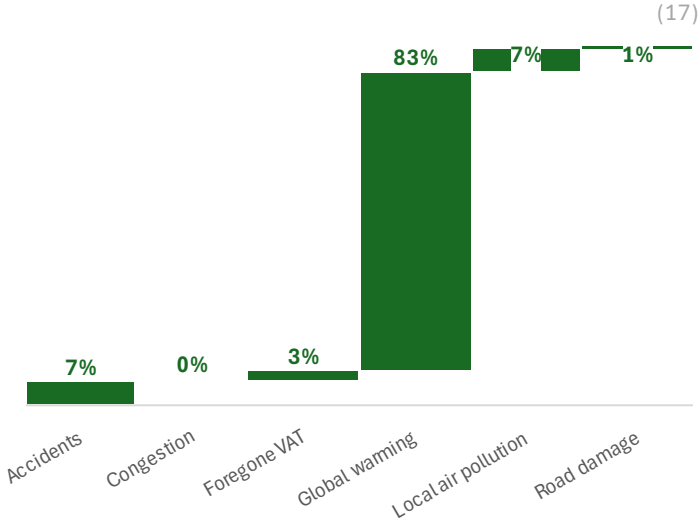
Between 2010-2019, Papua New Guinea's road transport fossil CO2 emissions was growing 5.1% annually. After the COVID-19 pandemic, road transport CO2 emissions was growing 3.0% annually.

Transport fossil fuel subsidies, cumulative from 2010 to 2022 (16)

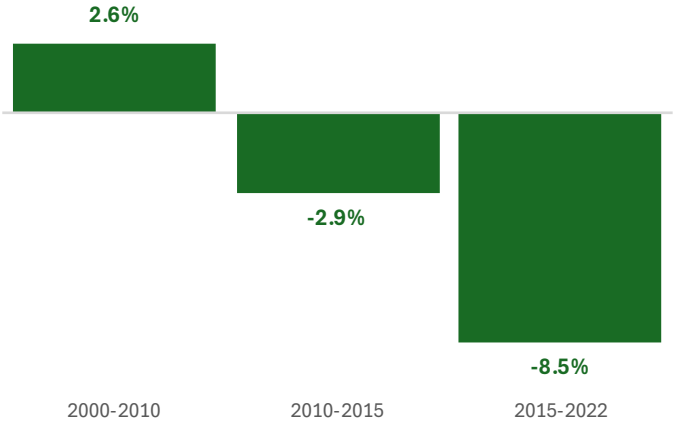
None

0.0% of Asia-Pacific total

Implicit fossil fuel subsidies due to externalities (17)



Road transport CO2 emissions intensity with GDP trend (3,15)



Data includes all sectors and all fuel types

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Climate Resilience and Disaster Preparedness

Expected annual damages to road and rail infrastructure due to hazards (2019)
46.14 million USD (18)

Share of road in total transport infrastructure in multihazard average annual loss to transport infrastructure (2023)
85.9% (19)

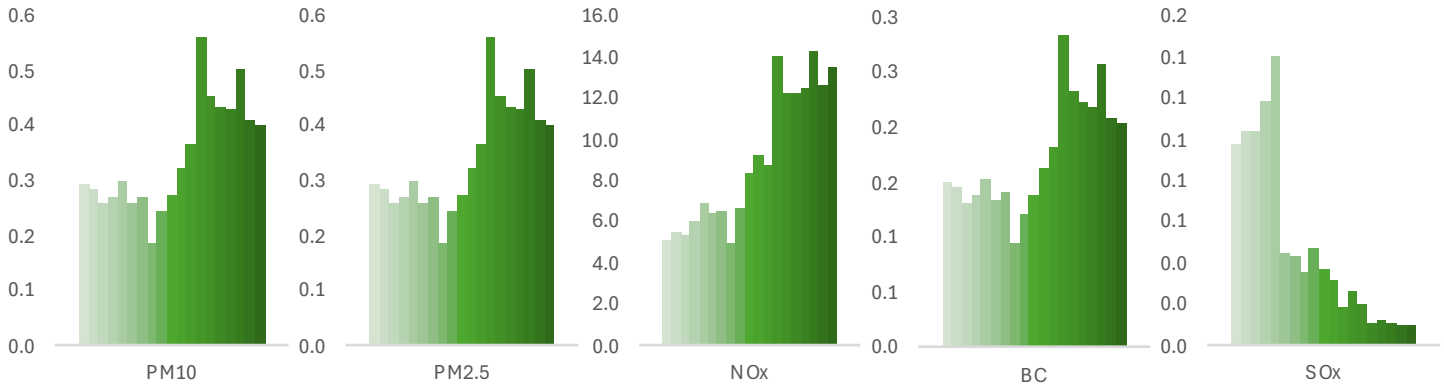
National road vulnerability index ranking (2023)
n.d. (20)

Share of population in low elevated coastal zones (2018)
0.5% (21)

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

Paved roads (2023)
n.d. (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 18.9% in total PM10 emissions in Papua New Guinea.

Deaths due to occupational exposure to diesel engine exhaust

2000-2010	2011-2018
52 deaths	**68 deaths**

(22)

Share of biofuels in road transport energy consumption (2020)
n.d. (13)

Domestic consumption per capita, tonnes (2024)

Papua New Guinea	Asia-Pacific
7 tonnes	**13.8 tonnes**

(23)

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

Terrestrial and marine protected areas (2022)
0.7% (3)
(% of total territorial area)

Terrestrial protected areas	Marine protected areas
3.7%	**0.1%** (3)
(% of total land area)	*(% of territorial waters)*

Forest area (2021)
79.1% (3)
(% of land area)

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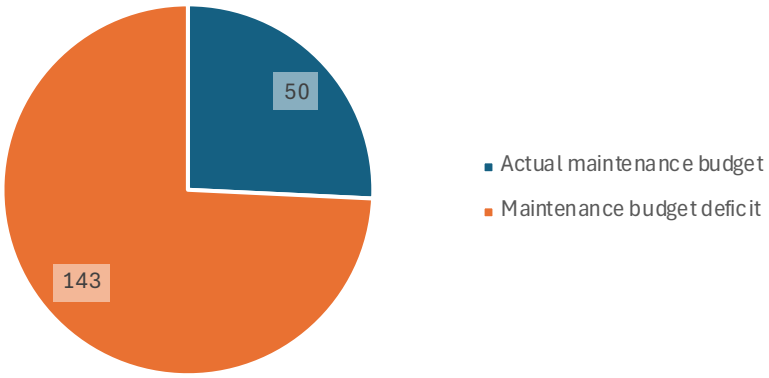
Appendix

A. Road length, pavement ratio, and quality by road class

Road class	Length	Paved	Quality			
			Good	Fair	Poor	Very Poor
National	8,738	39%		41%	34%	25%
Provincial, district, local, and ot	21,000					

Definitions and sources are available in "Asian Development Bank, 2024. The Future of Road User Charging in Developing Asia and the Pacific: Road Maintenance Financing and Cost Recovery Options"

B. Maintenance needs and budget, million USD



C. Road user charge revenues

Road user charge	Revenue (million USD)
Fuel excise tax	91.0
Vehicle registration fees	27.3
Driving license fees	4.5
Goods and services tax	51.0

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Notes

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

https://bit.ly/ATOpolicyrepository

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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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