Transport in Review

Working Paper Series

PAPUA NEW GUINEA

Asian Transport Observatory

Asian Transport Observatory

An Asian Transport Observatory (ATO) Publication

Transport in Review Working Paper Series: Papua New Guinea

June 2026

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ATO (2026). Transport in Review Working Paper Series: Papua New Guinea
https://asiantransportobservatory.org/analytical-outputs/transport-in-review/papua-new-guinea/

This report was made possible through the support of the Asian Development Bank (ADB), the Asian Infrastructure Investment Bank (AIIB), the World Bank (WB), Foreign, Commonwealth & Development Office (FCDO), and the Climate Compatible Growth (CCG) programme.

ADB ASIAN DEVELOPMENT BANK · AIIB ASIAN INFRASTRUCTURE INVESTMENT BANK · THE WORLD BANK · Foreign, Commonwealth & Development Office · Climate Compatible Growth

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Abbreviations

ADB	Asian Development Bank
AIFFP	Australian Infrastructure Financing Facility for the Pacific
ATO	Asian Transport Observatory
BAMS	Bridge Asset Management Systems
BAU	Business-as-Usual
BC	Black Carbon
BUR	Biennial Update Report
CAGR	Compound Annual Growth Rate
CCDA	Climate Change and Development Authority
CDRI	Coalition for Disaster Resilient Infrastructure
CIESIN	Center for International Earth Science Information Network
CIF	Cost, Insurance, and Freight
CNG	Compressed Natural Gas
CO2	Carbon Dioxide
COPD	Chronic Obstructive Pulmonary Disease
COVID-19	Coronavirus Disease 2019
CRS	Creditor Reporting System
DHS	Demographic and Health Survey
DICT	Department of Information and Communications Technology
DMC	Domestic Material Consumption
DOW	Department of Works
DOWH	Department of Works and Highways
DSP	Development Strategic Plan
DWT	Deadweight Tons
EC	European Commission
EDGAR	Emissions Database for Global Atmospheric Research
EU-JRC	European Commission Joint Research Center
EV	Electric Vehicle
GBD	Global Burden of Disease
GDP	Gross Domestic Product
GEF	Grid Emission Factor
GESI	Gender Equity and Social Inclusion
GHG	Greenhouse Gas
GIS	Geographic Information System
GVA	Gross Value Added
HDM-4	Highway Development and Management software
IATA	International Air Transport Association
ICAO	International Civil Aviation Organization
ICCC	Independent Consumer and Competition Commission
ICE	Internal Combustion Engine
ICT	Information and Communications Technology
IHME	Institute for Health Metrics and Evaluation
ILO	International Labour Organization
IMO	International Maritime Organization
INFORM	Index for Risk Management
IPCC	Intergovernmental Panel on Climate Change
IRAP	International Road Assessment Programme
IRENA	International Renewable Energy Agency
IRI	International Roughness Index
ISIC	International Standard Industrial Classification
ITU	International Telecommunication Union
K	Kina (PNG currency)
km	kilometer
kWh	kilowatt-hour
LDV	Light-Duty Vehicle
LPG	Liquefied petroleum gas
LPI	Logistics Performance Index
LSCI	Liner Shipping Connectivity Index
MJ	Megajoule
MtCO2e	Million tons of CO2 equivalent
MTDP IV	Medium Term Development Plan IV
MVIL	Motor Vehicles Insurance Ltd
NAC	National Airports Corporation
NAP	National Adaptation Plan
NCDC	National Capital District Commission
NCR	National Capital Region
NDC	Nationally Determined Contribution
ND-GAIN	Notre Dame Global Adaptation Initiative
NOx	Nitrogen Oxides
NSO	National Statistical Office
ODA	Official Development Assistance
OECD	Organisation for Economic Co-operation and Development
OEM	Original Equipment Manufacturer

OSM	OpenStreetMap
PIC	Pacific Island Countries
PKM	Passenger-Kilometers
PM2.5	Particulate Matter 2.5 micrometers
PMV	Public Mobility Vehicle
PNG	Papua New Guinea
POMTECH	Port Moresby Technical College
PPP	Public-Private Partnership
PRIF	Pacific Region Infrastructure Facility
RAMS	Road Asset Management Systems
RMMP	Road Maintenance and Management Program
RTA	Road Traffic Authority
RTK	Revenue Ton Kilometers
SDES	Socio-Demographic and Economic Survey
SDG	Sustainable Development Goal
SDSN	Sustainable Development Solutions Network
SFT	Sustainable Freight Transport
SIDS	Small Island Developing States
SNDi	Street-Network Disconnectedness Index
SOx	Sulphur Oxides
SPREP	Secretariat of the Pacific Regional Environment Programme
TEU	Twenty-foot Equivalent Unit
TKM	Ton-Kilometers
UAS	Universal Access and Service
UN	United Nations
UNCTAD	United Nations Conference on Trade and Development
UNDP	United Nations Development Programme
UNEP	United Nations Environment Programme
UNESCAP	United Nations Economic and Social Commission for Asia and the Pacific
UNFCCC	United Nations Framework Convention on Climate Change
UNSD	United Nations Statistics Division
USD	United States Dollar
VKT	Vehicle Kilometers Traveled
VNR	Voluntary National Review
WEF	World Economic Forum
WLTP	Worldwide Harmonized Light Vehicle Test Procedure

Executive Summary

Papua New Guinea's geography fundamentally shapes its development trajectory. Rugged mountains, dispersed islands, and remote valleys render transport not simply a service sector but the essential foundation for development. In 2023, transport, storage, and communications contributed approximately 5.1% of gross domestic product (GDP), underpinning the economy that supports daily livelihoods.

Roads constitute the primary mode of transport. The network extends approximately 50,000 kilometers; however, road condition is more critical than total length. Only 32% of roads are rated as good, while 35% are classified as poor. Approximately 25% of the network remains unsurveyed. With just 11% of roads paved, reliability is particularly low in rural and highland regions, where demand is highest. Bridge infrastructure is also limited: Papua New Guinea has 5.3 meters of bridge per thousand people, significantly below levels observed in comparable Pacific island states.

The investment gap for transport infrastructure remains significant. Annual maintenance requirements are estimated at approximately USD 195 million, yet current budget allocations cover only about 24% of this need. Consequently, the maintenance backlog increases by K300 million annually.

Papua New Guinea's development strategy demonstrates a commitment to expanding connectivity nationwide. The Connect PNG Program aims to develop over 16,000 kilometers of strategic economic roads, more than 5,600 kilometers of priority national roads, 1,900 kilometers of missing links, and 9,000 kilometers of provincial and district roads, in addition to bridge investments. The objective is to achieve nationwide connectivity by 2040. By 2027, an additional 2,500 kilometers of roads are projected to be added to the network. However, expansion alone will not address systemic challenges. Without synchronized improvements in maintenance and governance, new investments may exacerbate the existing maintenance backlog.

Road safety represents a significant public health and economic challenge. In 2023, road crashes resulted in 17.7 deaths per 100,000 people, making it the eleventh leading cause of death nationwide. The associated economic cost was approximately USD 969 million, equivalent to about 4% of GDP. An annual investment of USD 52 million has the potential to prevent approximately 500 deaths each year, underscoring the importance of prioritizing road safety interventions.

Climate-related risks to transport infrastructure are increasing. Average annual losses from flooding, landslides, and extreme weather events range from USD 4 million to USD 46 million, with roads accounting for 86% of these losses. Approximately USD 22 million in trade is vulnerable to climate-induced disruptions. Furthermore, transport is responsible for 20% of national greenhouse gas emissions, with road transport comprising 86% of this total.

Access to transport services remains highly uneven. Approximately 86% of the population resides in rural areas, and between 23% and 41% lack reliable access to all-weather roads. In Port Moresby, only 23% of residents have convenient access to public transport, compared to a Pacific regional average of 62%. The informal public motor vehicle (PMV) system partially addresses this gap, but operates without formal schedules, offers limited safety, and functions outside established regulatory frameworks.

There are genuine grounds for optimism. Port logistics rankings have improved. Investment in ports and key corridors is proceeding. The government is moving toward risk-informed planning and climate-resilient design. These are real shifts. Sustaining them requires consistent political attention, stable financing, and institutions with the capacity to deliver.

Introduction

Papua New Guinea (PNG) is the most populous island nation in the Pacific. It is home to over 10 million people (NSO, n.d.). It is a country of contrasts—rich in natural resources yet constrained by geography i.e., rugged mountains, scattered islands, and remote valleys. Economic growth has been driven largely by extractive industries such as gold, copper, and oil (OEC, n.d.). Yet this growth has not delivered equitable access to infrastructure, especially transport—the network that ties people, markets, and opportunities together.

Transport in PNG is more than a network of roads, ports, and airports. It is the backbone of trade, agriculture, and social connections. Two-thirds of its export earnings come from minerals and petroleum, but the path to a "Kina"— one trillion—economy by 2048 (Government of Papua New Guinea 2025a) depends on how effectively it builds and maintains its transport systems. Today, that path is uneven. In 2023, transport, storage, and communication contributed about 5.1% of total gross value added to GDP (UNStats, n.d.). It anchors the non-resource economy, the part of PNG that sustains everyday livelihoods and emerging businesses. Yet the sector operates under increasing pressure from climate change, natural hazards, and limited fiscal capacity. The result is a paradox common across Pacific Island states, i.e., deep dependence on transport for growth, coupled with limited capacity to sustain it.

Sustainability now ranks as a vital element of long-term planning. Our assessment provides a thorough baseline of PNG's transport system at a pivotal moment. It benchmarks performance against regional and global standards through seven interconnected diagnostic frameworks aligned with the UN Decade of Sustainable Transport (UN 2025a): ensuring access for everyone to sustainable transport; improving sustainable connectivity and freight; enhancing transport safety and security; promoting people-centered urban mobility; deploying low-carbon, resilient, and environmentally friendly transport systems; and utilizing science, technology, and innovation for sustainable transport progress. A cross-sector analysis explores the sector's economic contributions, employment trends, and gender disparities (see Figure 1). This report reviews PNG's multimodal transport—land, sea, and air—and assesses advances in digital transformation, urban growth challenges, and rural access gaps.

By investing in climate-resilient infrastructure that enhances access, connectivity, and reduces emissions, PNG can turn its transport vulnerabilities into drivers of sustainable growth.

Transport in PNG is more than a network of roads, ports, and airports. It is the backbone of trade, agriculture, and social connections.

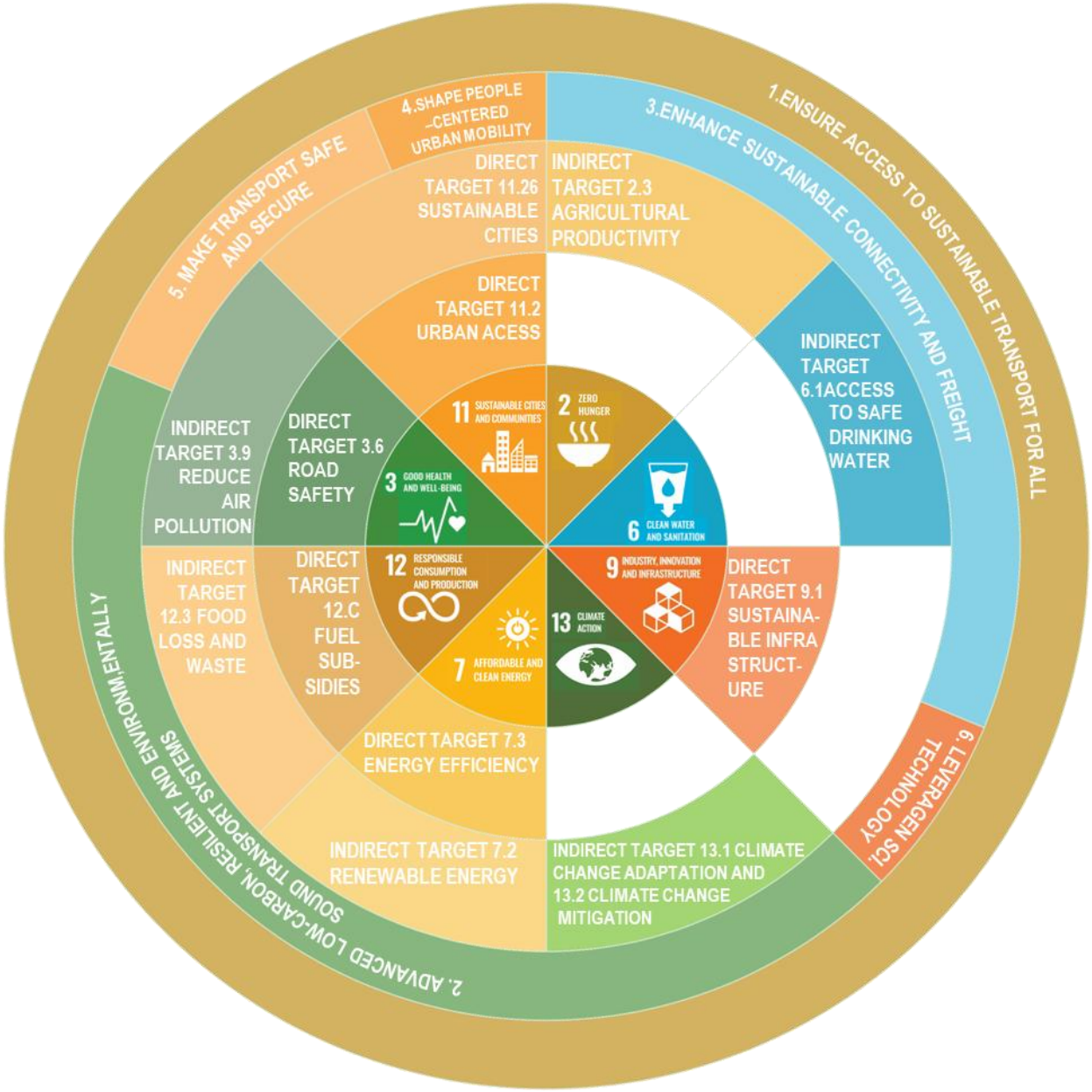

Figure 1. Sustainable Transport Assessment Framework
Source: (ATO 2025a)

Enhance Sustainable Connectivity and Freight

Enhance Sustainable Connectivity and Freight

Quality infrastructure is the foundation of economic and social progress. It directly supports Sustainable Development Goal 9 and impacts the entire 2030 Agenda.

Road Transport

As of 2026, extracted data based on OpenStreetMap (OSM) (Geofabrik GmbH 2026) reveals that PNG has around 50 thousand kilometers of roads. This is based on the methodology, and road classifications employed by Nirandjan et al. (2022).[1] Based on the classifications used by Nirandjan et al. (2022), 6% of the length of the road network is tagged under primary roads.[2] But the network is beset by serious challenges. This translates to road network density of around 111 meters per square kilometer and 4.6 kilometers per thousand people Figure 3. This density is slightly lower than the average for Small Island Developing States of 134 and 5, respectively. [3]

Recently, the declaration and classification of new national roads under the Road (Management and Funding) Act 2020 mark a significant milestone for Papua New Guinea's infrastructure. This legislation updates previous laws to create a more coordinated management system. An important development is the approval by the National Executive Council to designate 6,300 km of roads within the Connect PNG (Phase 1) Programme[4] as National Roads, increasing the network from 8,740 km to 11,535 km (Ministry of Works and Highways 2025).

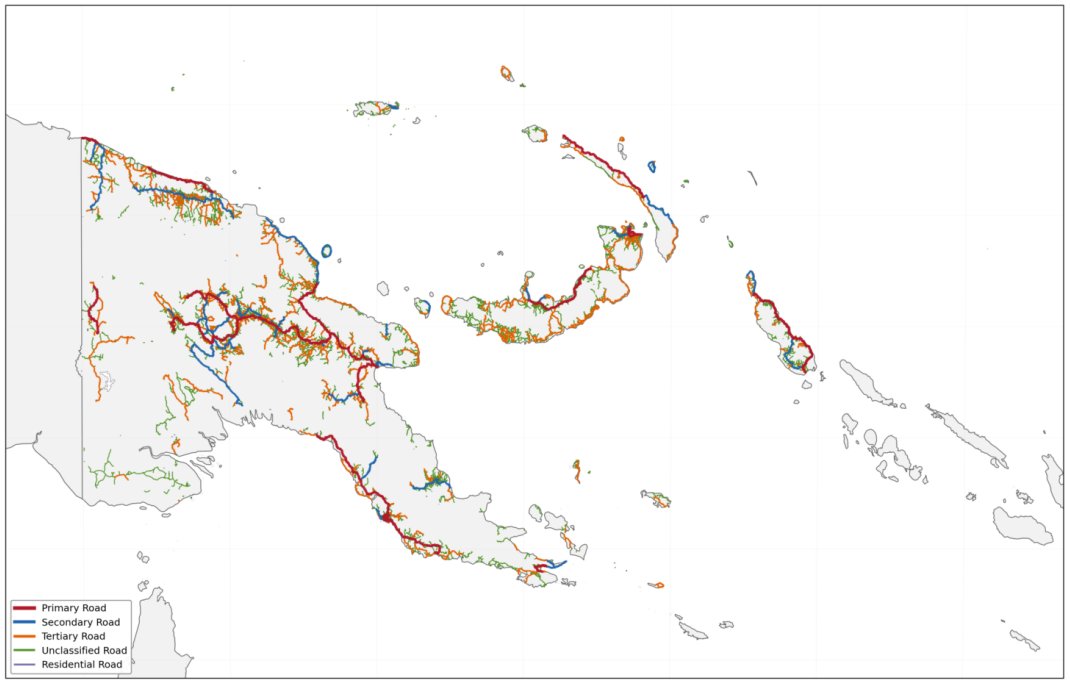

Figure 2. PNG Road Network (2026)
Source: OpenStreetMap contributors (2026)

[1] The analysis includes roads that have been tagged as: motorways, motorway links, trunk, trunk links, primary, primary links, secondary, secondary links, tertiary, tertiary links, residential, road, unclassified, living street, service.
[2] See Nirandjan et al. (2022) for the reclassified OSM categories.
[3] Analysis using Nirandjan, et al. (2022a); United Nations Department of Economic and Social Affairs Population Division (2022); World Bank (2022a)
[4] The Connect PNG Program is a long-term infrastructure initiative (2020–2040) designed to improve road connectivity across Papua New Guinea and expand access to services, markets, and economic opportunities. The first phase (2020–2027) targets key connectivity gaps, including completing sections of the Trans-Island Highway between Lae and Port Moresby.

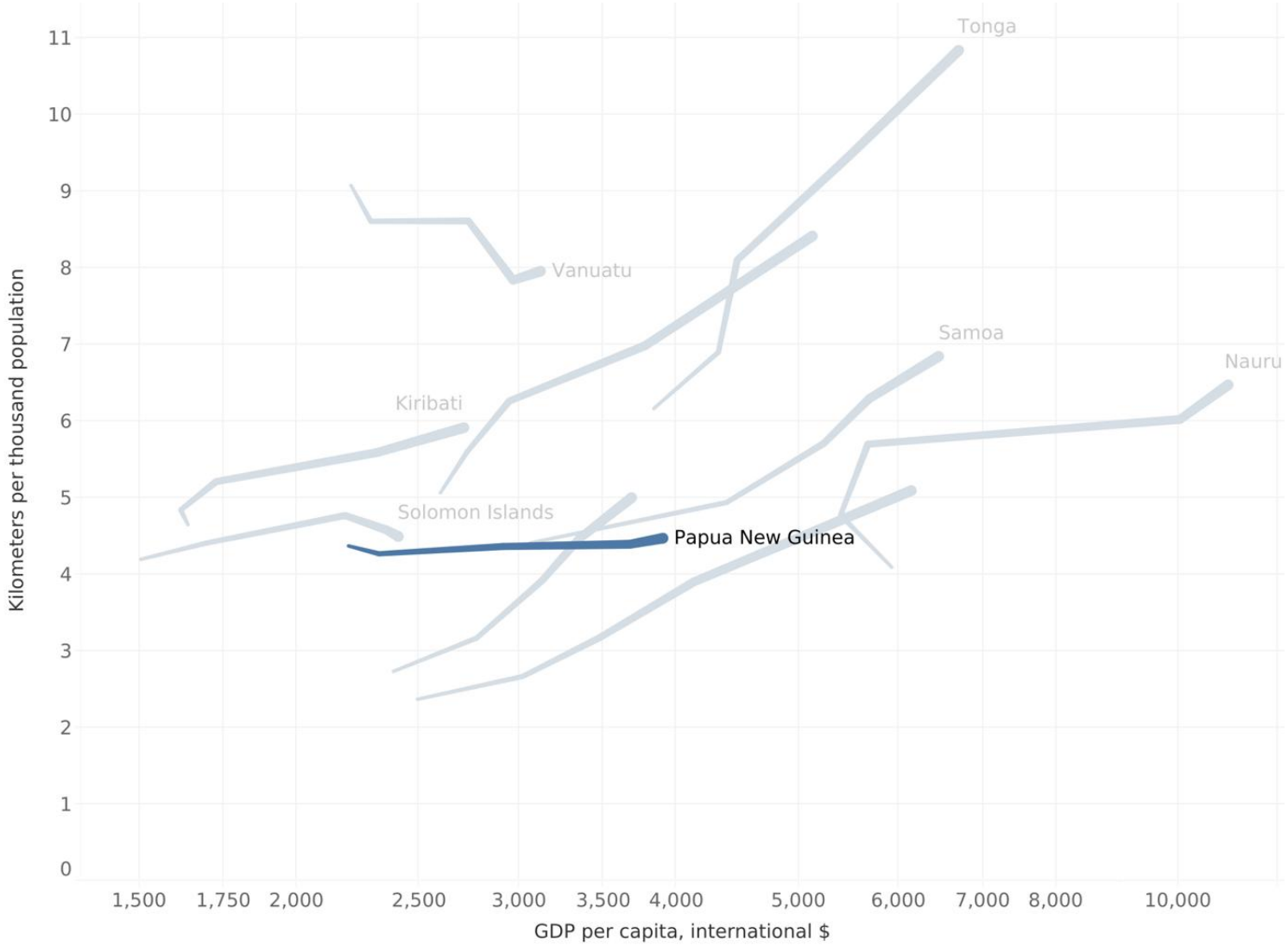

Figure 3. Road Infrastructure kilometers per thousand population (2000-2026)
Source: Analysis and visualization based on Nirandjan, et al. (2022a)

The 2023 National Road Network Survey (DOWH 2025a) reveals a concerning state of Papua New Guinea's roads. It shows that just 32% are in Good condition, with 8% rated Fair. A worrying 35% are in Poor condition, and 25% of the network has not been surveyed. Additionally, only about 11% of the road network is paved, according to estimates (van Dissel and Anyala 2024). These figures are more than just statistics; they represent a limit on economic development.

The outlook for national roads is slightly more optimistic but remains fragile. Currently, 48% of these roads are rated good, and an additional 12% are rated fair. However, a significant 40% are in poor condition, which incurs high costs (DOWH 2025a).

Bridge infrastructure is a further constraint. PNG has 5.3 meters of bridge per thousand people. Vanuatu has 9.3 meters; Kiribati, 22.5 meters (Figure 3). Gaps in the bridge network cut connectivity at critical river crossings and inter-island links. (Figure 4).

Annual road maintenance needs are estimated at USD 195 million (van Dissel and Anyala 2024). The allocated budget covers only USD 47 million—24% of requirements (Figure 4). The DOWH Road Management and Maintenance Plan 2025–2040 estimates a maintenance backlog of K21 billion (approximately USD 4.8 billion), growing by K300 million annually. Fuel-based taxes contribute about USD 144 million in road user revenues, but only 8.5% of that flows to road maintenance (Noll et al. 2026). The shortfall is structural and longstanding.

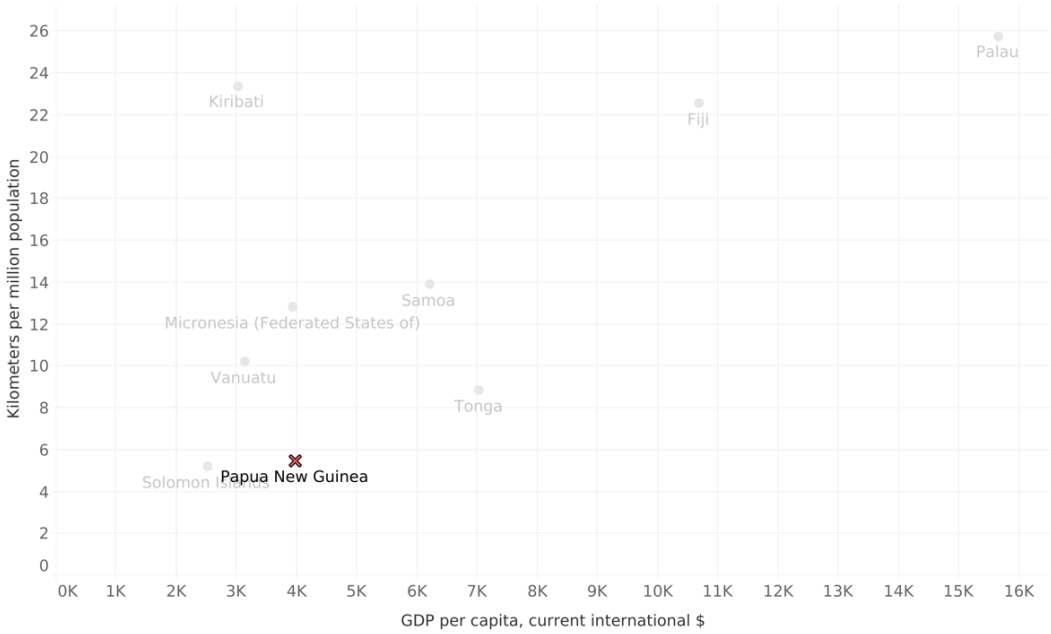

Figure 4. Availability of Bridges and Tunnels per capita vs. GDP per capita, 2021
Source: Analysis and visualization based on Wiedenhofer et al. (2024) and World Bank (2025)

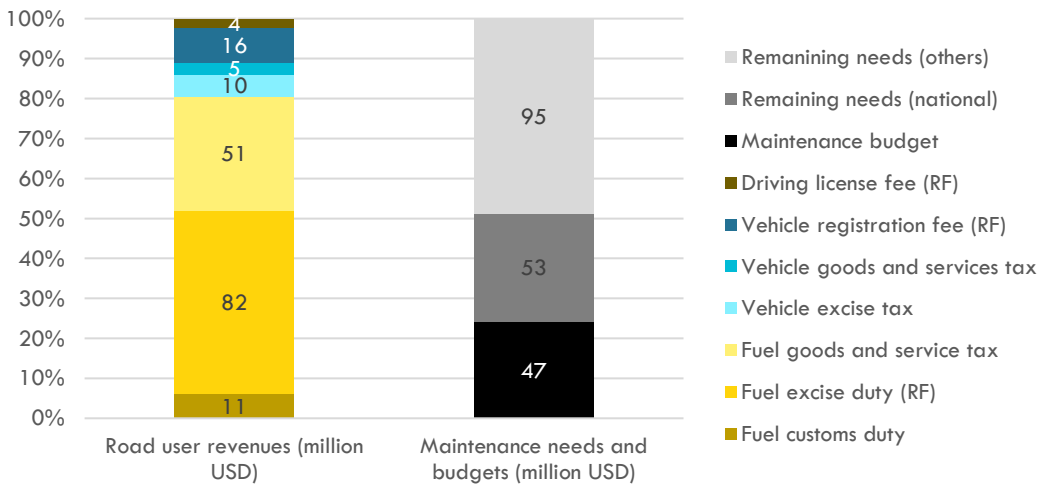

Figure 5. Road user revenues versus maintenance needs and budgets, 2022
Source: (van Dissel and Anyala 2024) Notes: (RF = Road Fund)

Papua New Guinea is firmly committed to strengthening and sustaining its national road network. The Connect PNG Program (Government of Papua New Guinea 2021a) is the government's leading initiative to expand, upgrade, and link key transport corridors nationwide. It focuses on developing:

- 16,579 km of Priority National Roads,
- 5,677 km of Missing Links,
- 1,900 km of Provincial and District Roads, and
- 3,000 meters of Bridges.

The national road network aims to achieve full national connectivity by 2040. By 2027, an extra 2,500 km of roads will be added, with particular focus on 14 major corridors, seven of which are prioritized under the Medium-Term Development Plan IV 2023-2027 (Government of Papua New Guinea 2023b). The government aims to increase the length of well-maintained roads to 25,000 km by 2030. To deliver on infrastructure priorities, a K7.2 billion investment is required by 2027. (Government of Papua New Guinea 2023b)

The Road Maintenance and Management Program (RMMP) (DOWH 2025b) supplements these improvements by offering a unified framework for maintenance. The approach is shifting from reactive repairs to proactive, asset-based management that safeguards current infrastructure and maximizes the value of every kina spent. It incorporates a "Maintenance First Policy", prioritizing rehabilitation, routine upkeep, and periodic work over new construction. This aims to reduce a K21 billion maintenance backlog, which grows by K300 million annually, and to keep more of the National Road Network in Good and Fair condition while upgrading roads in Poor condition over a 15-year rolling plan. The RMMP's (Government of Papua New Guinea 2024b) core pillars are safety, serviceability, and sustainability: safety measures minimize risks to all road users; serviceability ensures reliable access for people and freight; and sustainability emphasizes climate-resilient practices, material recycling, and environmental safeguards in routine activities. Additionally, the program links maintenance funding to the PNG Road Fund[5] and allocates 5.6% of the government budget to the PNG Road Fund, as mandated by the Connect PNG Act (Government of Papua New Guinea 2021a).

The Road (Management and Fund) Act 2020 (Government of Papua New Guinea 2020b) and the Connect PNG (Implementation and Funding Arrangements) Act 2021 (Government of Papua New Guinea 2021a) establish the legal framework for road management in PNG. These comprehensive laws cover all aspects of road operations, including planning, design, construction, maintenance, repairs, management, public road rights, and fund mechanisms. They empower the state to protect its infrastructure, regulate activities on public roads, and define the public's right to access the road network. The 2020 Act (Government of Papua New Guinea 2020b) also repealed the National Road Authority Act 2003 (Government of Papua New Guinea 2003), facilitating the integration of the National Road Authority into the Department of Works and Highways (DOWH). As a result, the institutional structure now features a centralized, hierarchical governance system led by the federal authorities DOWH.

Papua New Guinea is firmly committed to strengthening and sustaining its national road network.

[5] To improve the sustainability of road maintenance financing, the PNG Road Fund was established as an independent entity under the Road (Management and Fund) Act 2020 to manage and allocate maintenance funding. The Fund is financed through dedicated road user charges—including diesel fuel levies, vehicle registration and licensing fees, and road damage charges on heavy vehicles—introduced to address the chronic funding shortfall identified in the National Road Network Strategy (PNG RF 2026).

Aviation

According to UNCTAD (2025b), Papua New Guinea had the lowest score in terms of air connectivity among 38 small-island developing states (SIDS).[6] In this context, aviation requires attention. It serves as the primary artery for tourism, high-value trade, and global integration, while remaining one of the crucial domestic modes of transport as well. Because of this extreme reliance, even minor systemic disruptions trigger disproportionate shocks to national stability and cost structures. For PNG, a resilient aviation network is the foundation of a resilient economy and an antidote to geographical isolation.

PNG's air transport is served by about 34 square kilometers (sq.km) of aerodrome area (equivalent to 0.08 square kilometer (sqkm) per thousand sqkm of land area) (Figure 7) distributed over at least 82 airports and airstrips (Nirandjan et al. 2022a; NAC 2026; Government of Papua New Guinea 2023d). ADB (ADB 2022) however notes that PNG has over 600 rural airstrips in various states of repair and use.

The National Airports Corporation (NAC) manages 22 national airports across Papua New Guinea. According to State Action Plan (Government of Papua New Guinea 2025d), four airports are designated for international operations: Jacksons International Airport, Nadzab Tomodachi International Airport, Kagamuga International Airport, and Tokua International Airport. (Figure 8). Additionally, a few other airports offer international services under special arrangements. In a review by JICA in 2019, it suggests that most of the airports in PNG rely on government subsidies for operations, and that only five airports (Port Moresby, Nadzab, Tokua, Mount Hagen, and Madan) generate sufficient revenue to cover maintenance & operation costs (JICA 2019). Research by Fallon and Sofe (2022) state that most of PNG's national airports are not profitable and require cross-subsidies, donor funding, and government support to continue operating and meeting safety standards.

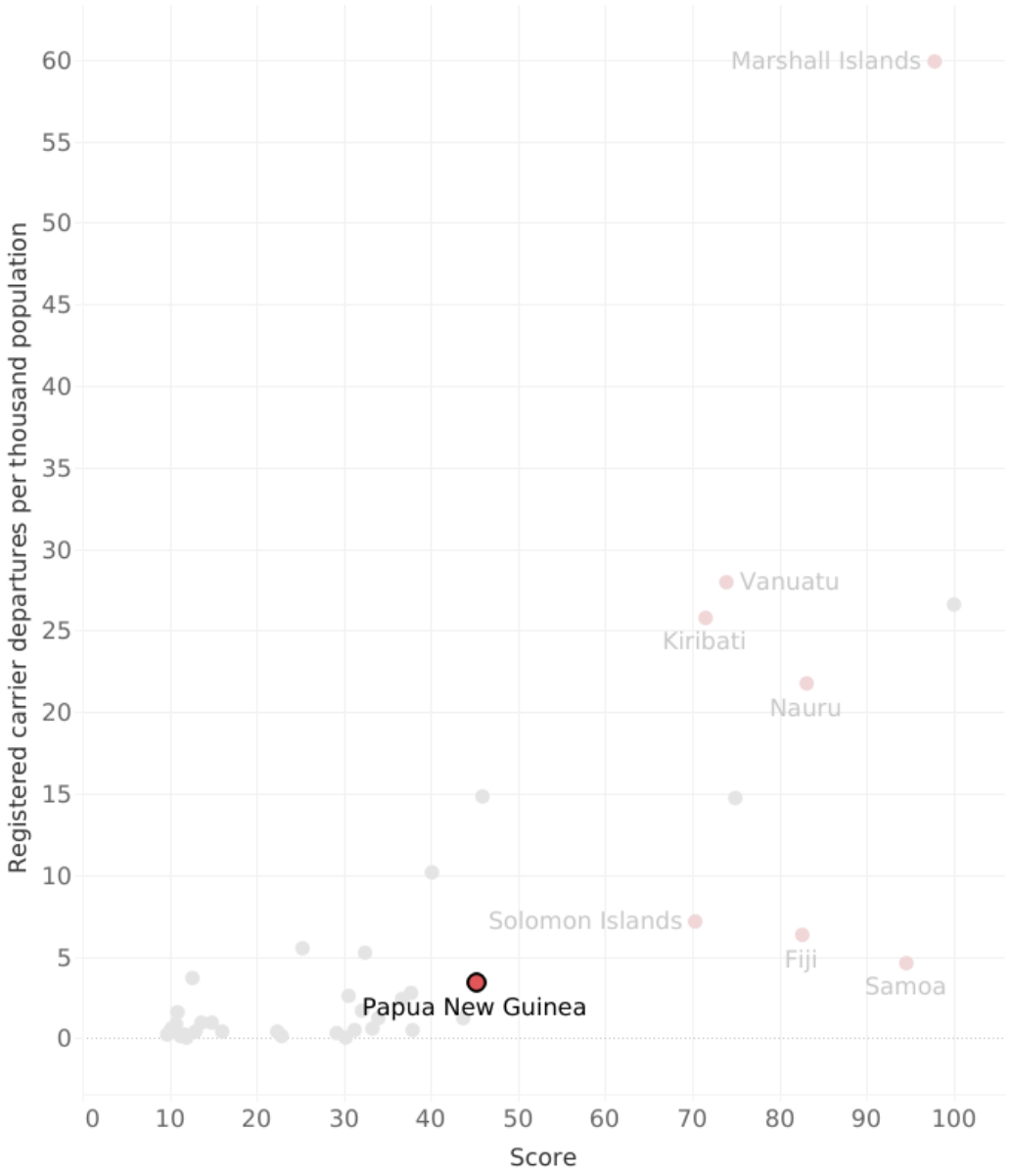

Figure 6. Distance to Market Score[7] and Registered Carrier Departures per thousand population, 2019
Source: Own analysis and visualization based on UNCTAD (2021); World Bank (2021)

[6] The estimates were for 2019, based on number of international flights per year relative to the population.
[7] 'Geographical distance from markets' is the traditional dimension of remoteness, indicating geographical proximity to other territories and separation from relevant economic centers. It will be measured through three variables: distance to nearest neighbor, distance to economic centers, and distance to trading partners.

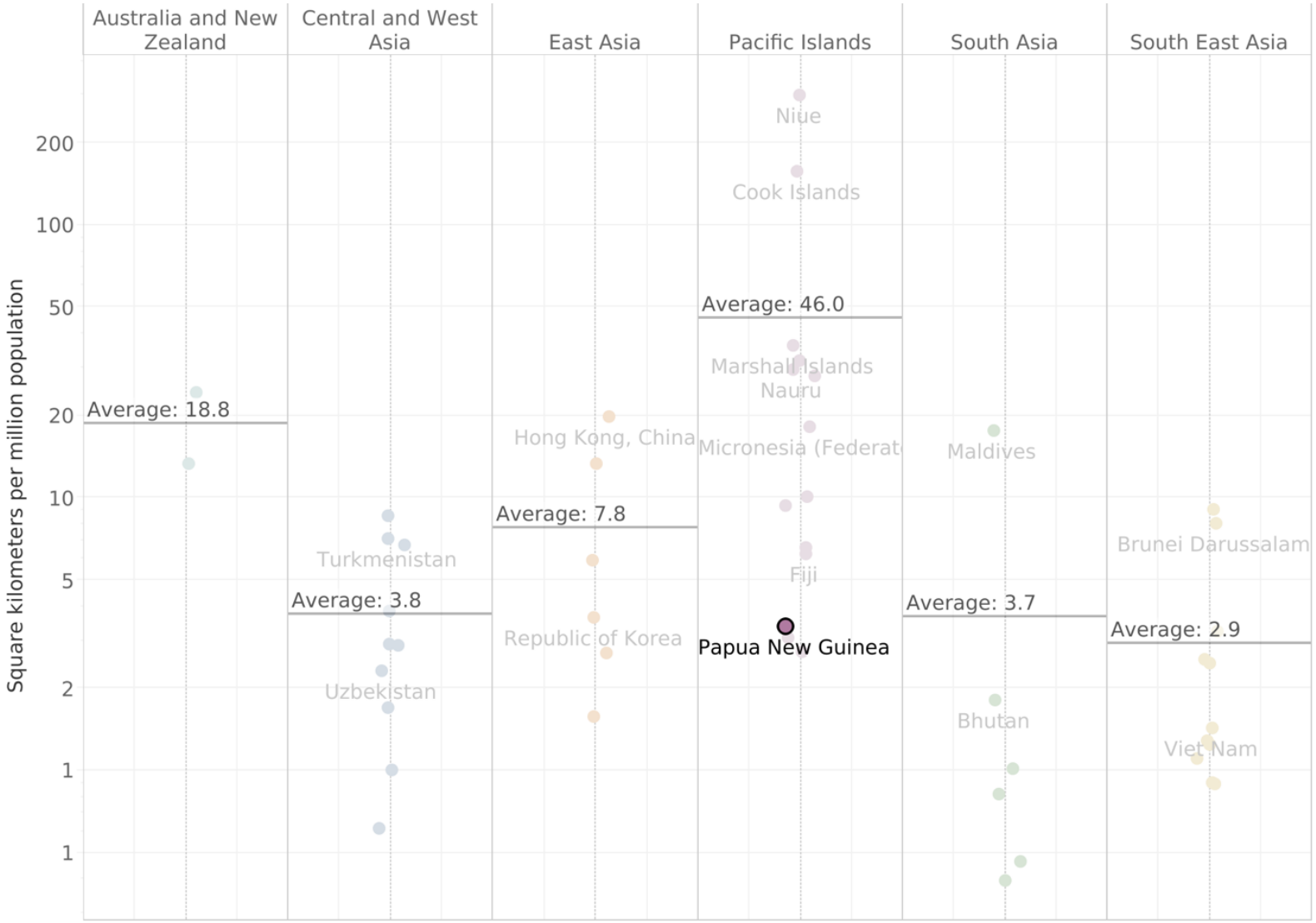

Figure 7. Aerodrome Area per capita, 2024
Source: Analysis and visualization based on Nirandjan et al. (2022b)

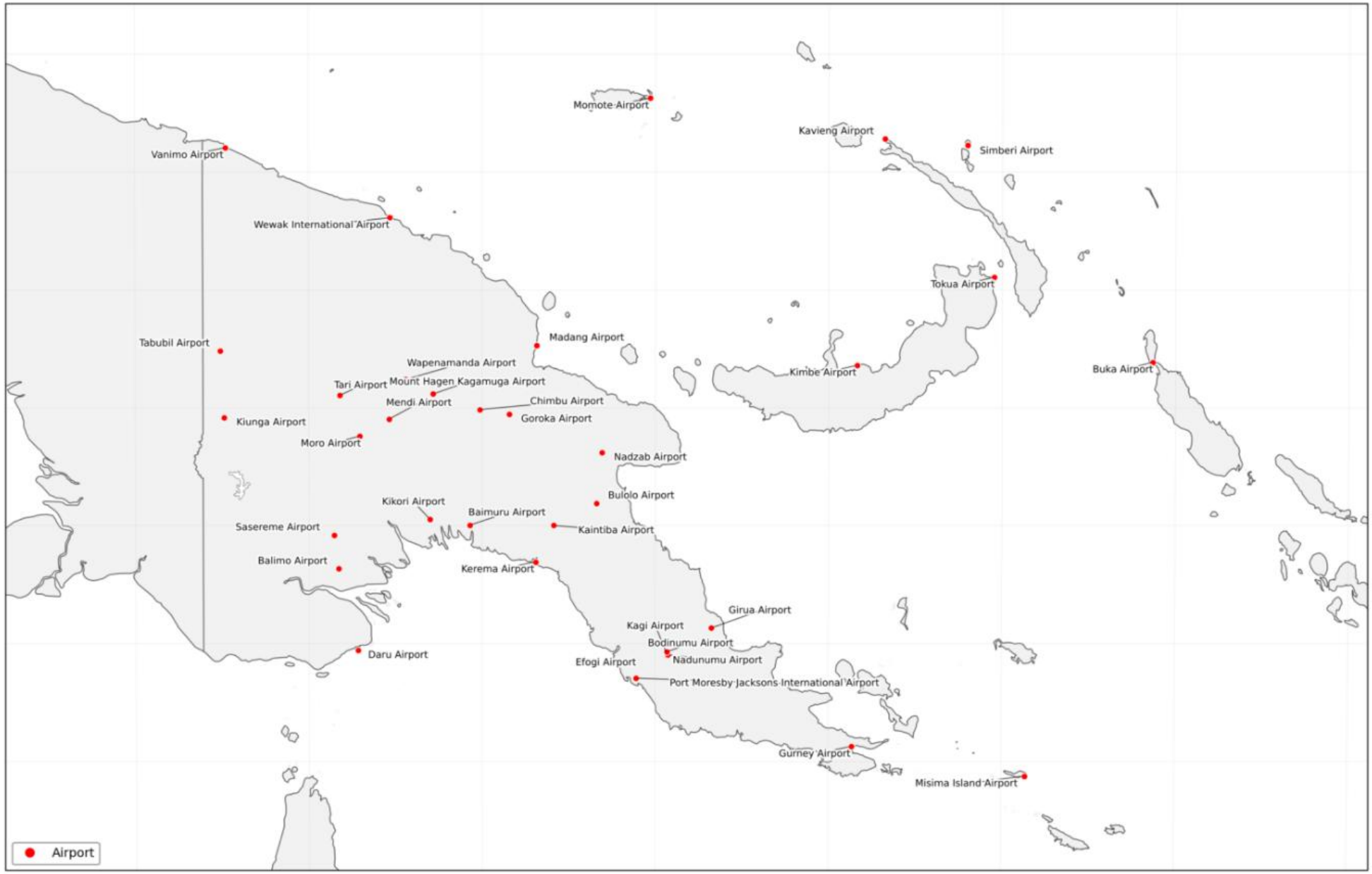

Figure 8. Airports in PNG

Source: Own visualization based on Open Flightsmap Association (n.d.)

The PNG aircraft registry comprises around 211 aircraft, from small commuter planes servicing remote airstrips to larger jets used for domestic and international flight routes (Civil Aviation Agency 2025).

In 2024, scheduled international flights carried more than 300 thousand passengers while domestic operations transported just above 1 million passengers. The total domestic air cargo in 2024 was at 8.5 thousand tons, and the total international air cargo was around 5.5 thousand tons (Government of Papua New Guinea 2025d).

Operational activity has struggled to regain pre-pandemic momentum (Figure 9); in 2021, flight departures stood at 34 thousand, a significant decrease from the 54.3 thousand recorded in 2019 (World Bank 2026). Despite this, the sector is pivotal for international mobility, accounting for 7% of total passenger-kilometers (PKM) (with international) and 0.2% of freight ton-kilometers (TKM) in 2025 (with international) (Tjandra et al. 2024).

The propensity to travel by air (domestic and international combined) in PNG remains low by regional standards, estimated at 0.2 aviation trips per person in 2024—a decline from 0.24 in 2019 and well below the Asia-Pacific average of 0.90 and the Pacific Islands average of 0.59 (Airbus 2024). However, long-term projections suggest a gradual recovery to 0.29 trips by 2034 and 0.36 by 2044 (Airbus 2024). The sector's role in the tourism economy is critical. In 2024, of the roughly 134 thousand international visitors to PNG, 75% travelled by air (Tourism Promotion Authority 2025).

The aviation sector in PNG is projected to grow in the coming years. The Papua New Guinea Development Strategic Plan 2010-2030 (DSP 2030) (Government of Papua New Guinea 2010b) envisioned 1.5 million tourists and 9 million domestic aviation passengers by 2030. Air travel demand is about 1 million people per year in 2017 and expected to be about 2 million people per year in 2030 (JICA 2019). Tjandra et al. (2024) projects that, by 2035, passenger activity will grow by 153% and freight activity by 108%. Such growth would also result in environmental impacts. The PNG State Action Plan on CO_2 Emissions Reduction from International Aviation (2025)

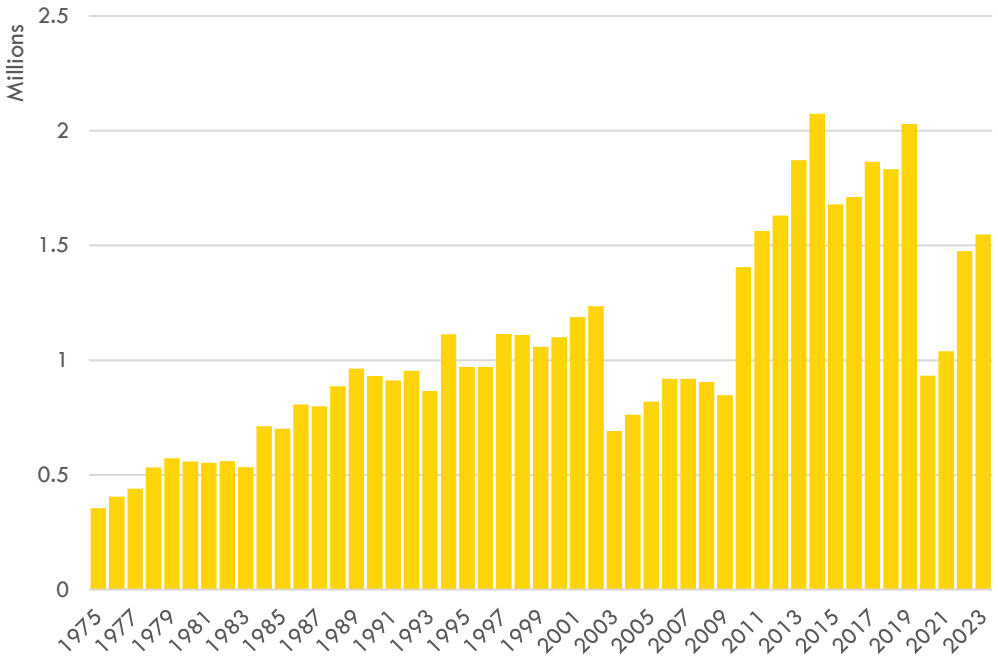

Figure 9. Air transport, passengers carried
Source: (World Bank 2026)

(Government of Papua New Guinea 2025d) recognizes this, and states that, in the absence of efficiency- and mitigation-focused policies, revenue ton kilometers (RTK) might rise from 125 million RTK in 2024 to 540 million RTK by 2050. Similarly, international aviation fuel consumption could grow from 31,183 tons in 2024 to 135,066 tons in 2050 (Government of Papua New Guinea 2025d).

PNG's aviation sector operates under a coordinated institutional landscape. The Department of Transport coordinates broad aviation policy. It serves as the policy holder and international liaison for civil aviation, managing bilateral air service agreements and issuing flight permits. This central authority works closely with the Civil Aviation Safety Authority of PNG, which regulates comprehensive standards for aircraft design, production, and operations. NiuSky Pacific Limited functions as PNG's air navigation service provider, delivering air traffic management, communications, navigation surveillance, and search-and-rescue services across the Port Moresby Flight Information Region. The National Airports Corporation (NAC) operates all 22 government-owned national airports, providing ground navigation aids, runway infrastructure, and critical terminal services. Air Niugini serves as PNG's flag carrier, operating the majority of scheduled international and domestic services with a fleet of 22 aircraft. The Climate Change and Development Authority tracks progress on climate goals. (KCH, n.d.; Government of Papua New Guinea 2023b; NP, n.d.)

The Connect PNG Air Transport Program (Government of Papua New Guinea 2023b) aims to upgrade national airports to improve safety and reduce travel costs. Five regional hubs, including Jacksons Airport, will be upgraded to accommodate international flights. At the same time, the state aims to activate at least 500 rural airstrips to connect remote communities. Safety remains a core priority; all 22 national airports must meet International Civil Aviation Organization (ICAO) standards. This massive undertaking requires significant capital. Through the Civil Aviation Development Investment Program, PNG intends to close critical gaps in runways and navigational surveillance (Government of Papua New Guinea 2020c).

Aviation safety and security remain central priorities of the Government of Papua New Guinea. This commitment is embedded in the country's national development framework and reflected in the corporate plans of key aviation agencies to ensure coordinated implementation (Government of Papua New Guinea 2024a). The advancement of the civil aviation sector is articulated under Strategic Priority Area 2 of the Medium-Term Development Plan IV (2023–2027) (Government of Papua New Guinea 2023b). Within this framework, the Government has approved substantial investments in aviation infrastructure and systems, including the upgrading of international airport security systems as a targeted intervention to be completed before 2027 (Government of Papua New Guinea 2023b).

Maritime Transport

Papua New Guinea is a maritime nation. It comprises more than 600 islands and a mainland coastline of 5,152 kilometers (PRIF 2018), collectively providing substantial marine resources and strategic importance in Oceania. The economic stakes are high. Sea transport remains the primary conduit for both domestic and international trade. More than 90 percent of internationally traded goods in Papua New Guinea are transported via sea (AIFFP, n.d.). To put these statistics in context, in 2023, PNG reported a GDP of USD 31 billion and merchandise trade worth USD 18.24 billion (IBS 2025).

PNG maintains 23 declared ports (IBS 2025), with 15 operated by PNG Ports Corporation (PNG Ports Corporation Limited 2024b) and the remainder managed by local authorities or private operators. Only three of the 15 state-managed ports are profitable. Currently, the profits from Lae, Port Moresby, and Kimbe subsidize the rest of the network. However, the entire network contributes nearly K29 billion to the economy every year (PNG Ports Corporation Limited 2025a). This contribution represents 22% of PNG's Gross Domestic Product (GDP). Thus, the value of these ports extends beyond mere revenue. They are not just gateways for cargo; they are the arteries of commerce and lifelines for remote communities. Collectively, the network handled 9.8 million tons of cargo and over 3,200 vessel calls in 2024 (PNG Ports Corporation Limited 2025a). PNG's two international sea ports -Lae and Port Moresby – have been placed in the top fifty percent of the ports on the basis of Container Port Performance Index[8] (The World Bank 2024) in the Oceania region

[8] Container Port Performance Index (CPPI) is a composite measure developed by the World Bank and S&P Global Market Intelligence that assesses container port performance based on vessel turnaround times and operational efficiency indicators, including berth productivity and container-handling performance.

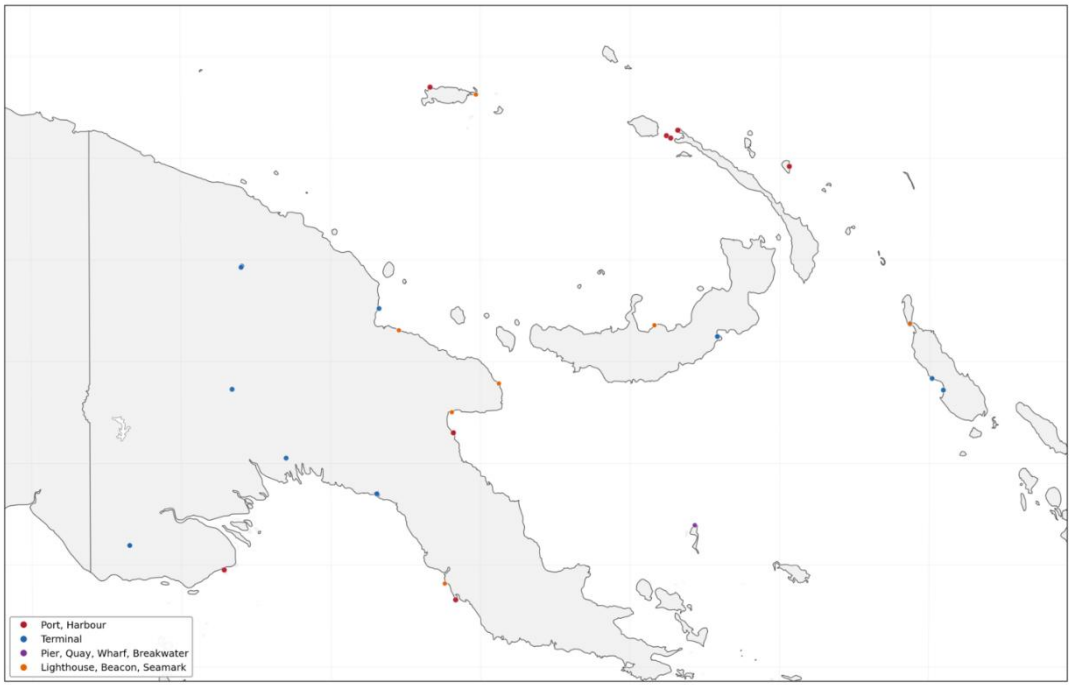

Figure 10. Waterborne Transport Facilities in PNG
Source: Own visualization based on OpenStreetMap contributors (2026)

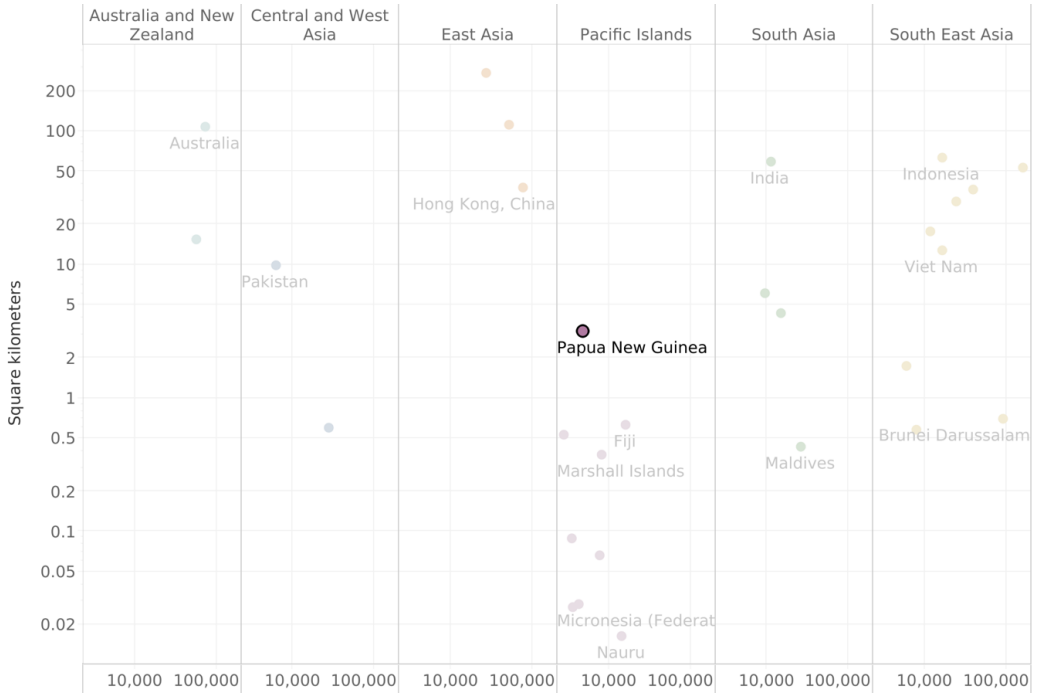

Figure 11. Port Area in 2024 (x-axis is GDP per capita in USD)
Source: Analysis and visualization based on Hanson and Nicholls (2020)

(PNG Ports Corporation Limited 2024a). While Lae and Port Moresby serve as the country's primary maritime gateways, international cargo operations are distributed across nine ports, supporting trade flows from resource, agricultural, and industrial centres throughout Papua New Guinea (PNG 2019).

In total, PNG has 3.1 square kilometers of port area (Figure 11) for cargo handling, storage, and other port facilities. PNG's port area is the largest among PICs, however, in terms of availability per capita, it only has 0.3 sqkm per million capita, half of Solomon Islands (0.6) and Fiji (0.7)

Papua New Guinea's national fleet includes 210 vessels with a total capacity of around 220,000 deadweight tons (DWT), with 127,000 DWT owned domestically. The fleet mainly consists of general cargo ships (143,100 DWT), followed by container ships (36,200 DWT), and other vessel types (31,400 DWT) (Figure 12). Despite a 10.3% capacity increase in 2023, PNG does not have significant domestic shipbuilding or recycling facilities, so most vessels are purchased and maintained abroad (IBS 2025).

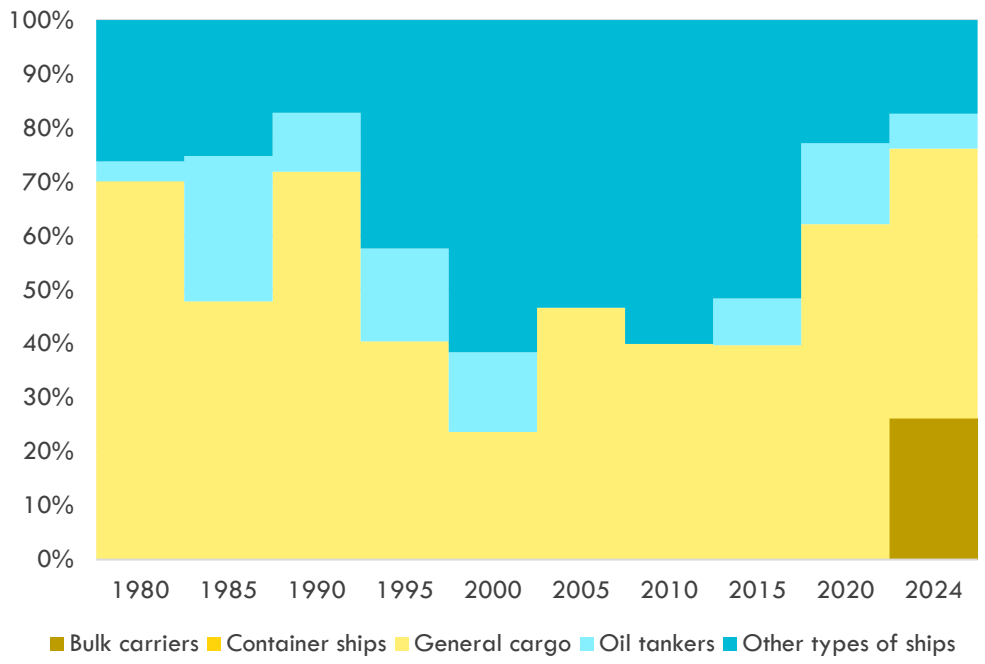

Figure 12. Merchant Fleet Share by Type
Source: Own visualization based on UNCTAD (2025a)

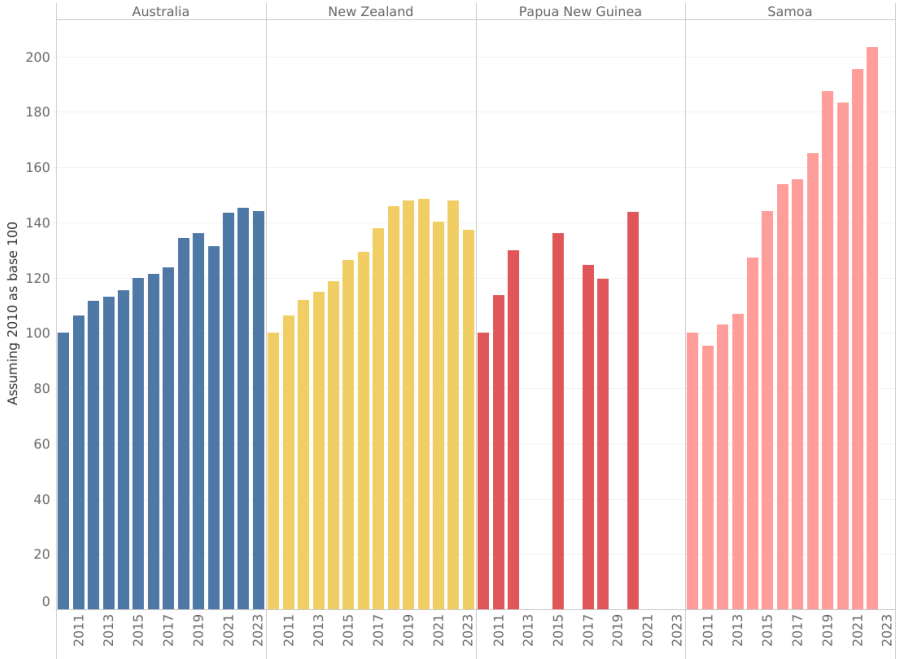

Figure 13. Container Port Traffic (TEU) growth (2010 = 100)
Source: Own visualization based on UNCTAD (n.d.-c)

Since 2010, container port traffic has consistently increased in Pacific nations, including Australia and New Zealand (Figure 13). In contrast, PNG experienced a slow growth in container port traffic between 2015 and 2020, averaging a 1.1% annual increase. During this same timeframe, the Asia-Pacific region recorded a 19% rise in container port traffic, with an average yearly growth rate of 3.5% (UNCTAD, n.d.-c).

Between 2020 and 2024, cargo volumes steadily grew: Lae's throughput rose from approximately 4.2 to 5.3 million tons, Port Moresby from 2.5 to 3.3 million tons, Kimbe from 1.2 to 1.6 million tons, with smaller increases in Madang and Rabaul (IBS 2025). The operational improvements were supported by a long-term terminal management concession with ICTSI, which introduced new cargo-handling equipment, digital systems, and operational practices that improved port productivity and vessel turnaround times (ICTSI 2024).

PNG Ports delivers essential services including landlord duties, pilotage, and wharf operations, with tariffs regulated by the Independent Consumer and Competition Commission (ICCC). PNG Ports is undertaking its largest infrastructure program ever, supported by the Australian Infrastructure Financing Facility for the Pacific (AIFFP). Major upgrades at Kimbe and Lae—including new wharves and modern terminal facilities—are targeted for completion by 2026 and are designed to handle larger vessels, improve cargo efficiency, and lift safety standards. Additional investments in Rabaul, Daru, and Kavieng, supported by the European Union and other partners, extend this transformation across key regional gateways, spreading the benefits of trade and lowering logistics costs for remote communities. (AIFFP, n.d.) Complementing these efforts, the Asian Development Bank has supported upgrades to maritime infrastructure and port management systems in Papua New Guinea to improve operational efficiency, safety, and service delivery across the sector (ADB 2012, 2025).

The Government aims to invest over K2.2 billion to fulfill maritime infrastructure priorities by 2027. An estimated K714 million is required to achieve these goals. The funding will target several programs including: i) building five National Wharves in Wewak, Vanimo, Kikori, Arafura Port, and Manus; ii) upgrading and rehabilitating PNG's National Ports; iii) repairing Jetties; iv) strengthening the national maritime navigational aids system; v) creating a national shipping service through PPP arrangements to serve the 15 Maritime Provinces; and vi) developing the Madang Maritime College into a National Maritime University. (Government of Papua New Guinea 2023b)

The goal is clear. The ambition is to build a resilient port network that can serve PNG's economy for the next fifty years, withstand climate and disaster risks, and anchor export-led growth. Yet the task is challenging. A large share of aging assets in urgent need of repair threaten to slow momentum and increase lifecycle costs if not addressed quickly. Thus, PNG Ports is actively pursuing new sources of finance—including climate and blended finance options—to sustain and modernize the network through to 2075 (The National 2025) and beyond, ensuring that these ports remain PNG's most strategic investments for equity, inclusion, and long-term development.

Maritime transport governance in Papua New Guinea is coordinated primarily through the Department of Transport, which leads policy and sector coordination. Maritime safety regulation, search-and-rescue, and compliance with international conventions are handled by the National Maritime Safety Authority. (IALA, n.d.) Operational port infrastructure is managed by PNG Ports Corporation Limited under the state-owned enterprises framework (PNG Ports Corporation Limited 2025b).

Freight and Logistics

Over the past decade, investments in port and road infrastructure have boosted PNG's logistics performance. The Logistics Performance Index (LPI) ranking has significantly improved from 148th in 2018 to 79th in 2023 (Figure 14) (World Bank 2024b). Still, PNG faces significant logistical challenges due to limited access and connectivity. The country's roads, ports, and airports require substantial upgrades to support efficient transportation of goods and services. A lack of infrastructure

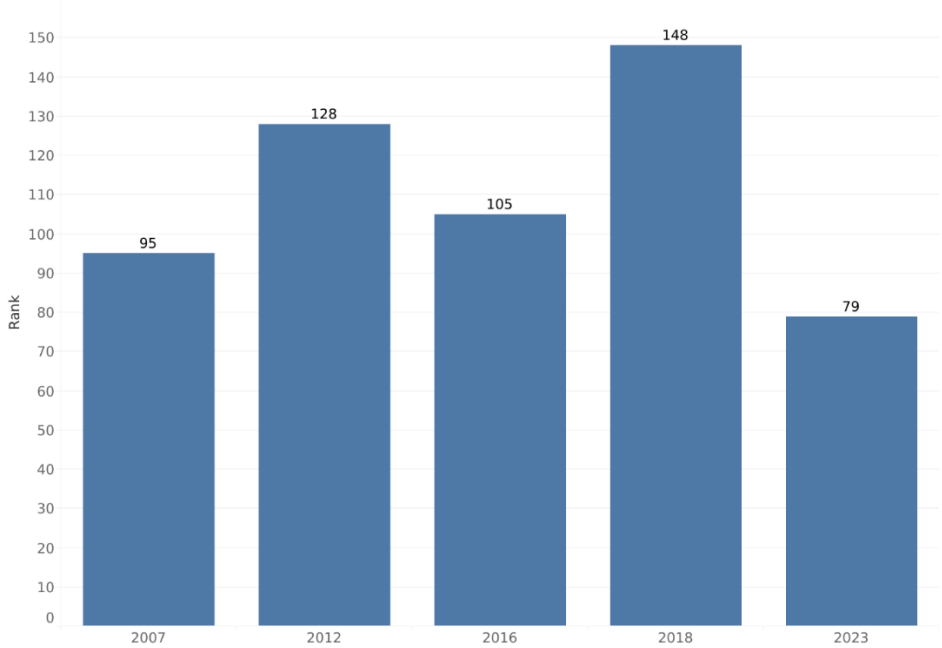

Figure 14. Logistics Performance Index (LPI)
Source: Analysis and visualization based on World Bank (2024b)

increases transport costs, causes delays, and leads to supply chain inefficiencies, which negatively impact LPI score.

In terms of sustainable freight, PNG's ranking is relatively low compared to global averages, at 146th out of 165 countries based on the 2024 UNCTAD Sustainable Freight Transport (SFT) Index[9] as shown in Figure 15. PNG's scores reflects that it lags across various sustainability performance indicators, particularly in the environmental dimension (UNCTAD, n.d.-a). Within the SFT framework, PNG's scores are mainly in the lower range, showing considerable room for improvement. The country performs relatively better in the economic dimension, particularly in productivity, quality, and reliability. On the other hand, environmental scores are very low, highlighting a significant opportunity to adopt modern technologies that can enhance both productivity and environmental outcomes.

[9] The index measures countries' freight transport sustainability by combining indicators on infrastructure and logistics performance, safety and inclusiveness, and environmental impacts such as emissions and air pollution.

Although logistics infrastructure in PNG is improving, the country is experiencing a decoupling of economic growth from domestic material consumption (DMC) as shown in Figure 16. While the population grew by 3.0% and DMC increased by 0.9%, GDP grew by 6.2% per year. The decline in material intensity (DMC per unit of GDP) relative to DMC per capita indicates that economic output has grown faster than the physical throughput of materials. (UNEP 2024b)

This pattern may reflect changes in sectoral composition, commodity price dynamics, or differences in how export-oriented extraction is captured in material flow accounts. From a freight and logistics perspective, slower growth in domestic material consumption relative to GDP can indicate that physical freight demand may not scale proportionally with economic expansion. Moreover, despite a strong post-pandemic GDP rebound, material demand has not risen proportionally, which could indicate structural constraints in logistics capacity, infrastructure bottlenecks, or limited infrastructure investments.

PNG's freight policy aims to improve transport efficiency, support freight movement, and promote open trade (Government of Papua New Guinea 2021b). It encourages state-owned entities to optimize utilisation of available transport modes and do the feasibility of railways for transportation of coal products. The focus is on large-scale cargo transport, leveraging economies of scale and fuel efficiency. PNG also aims to foster an open, competitive trade environment aligned with international standards, ensuring trade policies are sustainable and free of unnecessary restrictions. The policy highlights the importance of comprehensive infrastructure development, with the "National Transport Strategy" (Government of Papua New Guinea 2013) advocating for complete road networks to facilitate freight movement. This includes creating district commodity roads and filling gaps in freight corridors. Ports are targeted to reduce handling times to one day in Lae and Port Moresby, and upgrading wharves in Wewak, Vanimo, and other locations will boost sea freight capacity (Government of Papua New Guinea 2023b).

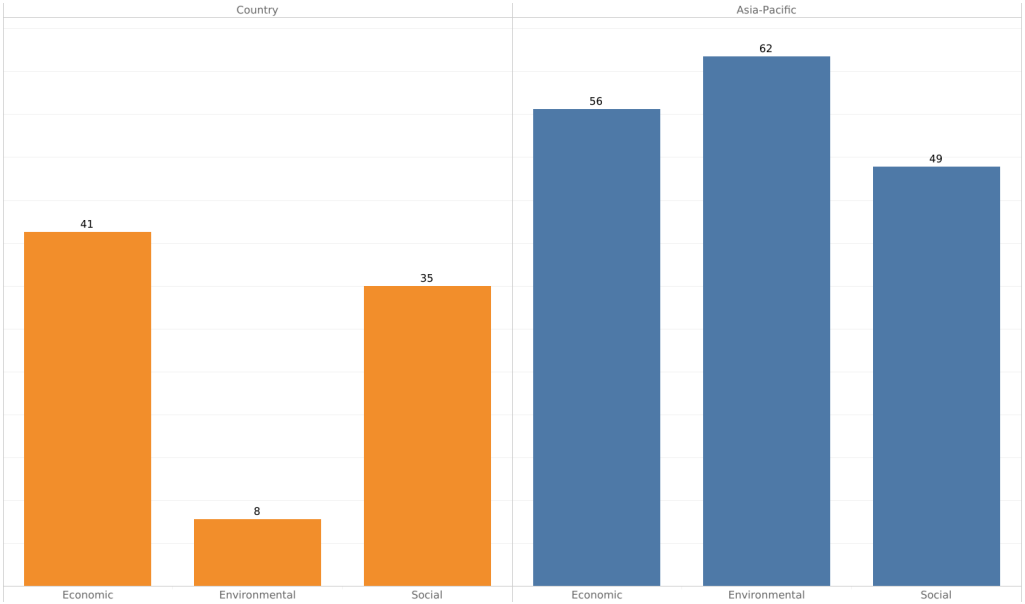

Figure 15. UNCTAD's Sustainable Freight Transport (SFT) Index (Score), 2023
Source: Own visualization based on UNCTAD (n.d.-b)

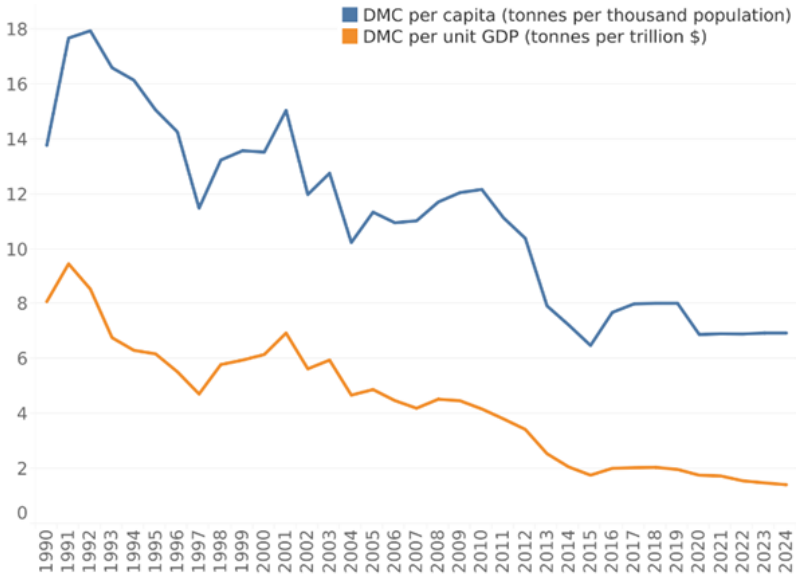

Figure 16. Domestic material consumption trends
Source: Own visualization based on UNEP (2024b)

Ensure Access to Sustainable Transport for All

Ensure Access to Sustainable Transport for All

Access to transport unlocks opportunities. In cities, good transport access results in shorter, safer commutes and boosts local economies. In rural areas, it reduces isolation by linking communities to markets, schools, and vital services. Whether urban or rural, this access is essential for sustainable transport.

Rural Access

Access to rural regions in PNG remains a major challenge due to the country's terrain, dispersed population, and inadequate transport infrastructure. By 2024, approximately 86% of the population lives in rural areas, largely reliant on agriculture; however, many communities lack dependable all-weather roads (UN 2018). The estimates on rural access vary significantly. Studies indicate that about 23%-41% of rural residents live more than 2 kilometers away from all-weather roads (Figure 17), i.e., 4-6 million people without rural access as per SDG definitions. In comparison, the share of the population without rural access is 55% in pacific and 18% in Asia[10]. In the landlocked Highlands Region, home to more than one-third of Papua New Guinea's population, many people still live far from basic transport links.

Transport networks are vital to determining proper access to services and facilities, especially medical care, where quick arrival times can significantly impact health outcomes. The quality of roads, public transit, walking paths, and other infrastructure dictates whether individuals can reach hospitals, clinics, doctors, pharmacies, or emergency services without unnecessary delays. Figure 18 demonstrates this concept using isochrone analysis, a technique that shows areas reachable from specific points—marked by orange circles, likely indicating medical facilities—within a set time limit, considering the road network. In the example below, this is based on a simulated 30-minute drive to medical facilities. The red zone represents the extent to which 30 minutes of driving can reach and thus highlights the priority areas for intervention. In this example, only around half of the residents fall within that catchment, i.e., have access to the medical facilities within 30 minutes of driving.[11]

Figure 17. Rural Access Index vs. GDP per capita, 2023
Source: Own analysis and visualization based on Center for International Earth Science Information Network (2023); SDSN (2025); World Bank (2023)

[10] Analysis based on CIESIN (2023a), UN (2018)
[11] The analysis presented is mainly for illustration purposes, as it is limited by the use of open data sets which might not accurately capture the actual infrastructure and points of interest.

The National Transport Strategy (Government of Papua New Guinea 2013) sets clear goals. It aims to bring 95% or more of the population within easy reach of all-weather transport services, subject to economic feasibility and environmental and social safeguards. Road, water, or air modes connect to the national network.

Papua New Guinea's rural transport policies focus on enhancing connectivity, safety, and accessibility for remote communities. The government plans to upgrade and operationalize at least 500 rural airstrips to facilitate regular flights and improve travel efficiency (Government of Papua New Guinea 2023b). In terms of road infrastructure, 4,000 km of provincial and district roads, 60 rural bridges, and various economic corridor roads will be constructed or rehabilitated. The Connect PNG Program (Government of Papua New Guinea 2021a) recommends over 16,000 km of roads. It links rural areas to urban centers by 2040. Climate-resilient designs ensure year-round access.

The Asian Development Bank's (ADB) Bridge Replacement for Improved Rural Access Program (ADB 2011) will further boost connectivity. Additional efforts could prioritize primary access to rural areas, integrating remote communities into the national transport network through road, water, or air, and ensuring sustainable funding mechanisms via community service obligation policies.

Urban Access

PNG has experienced significant urbanization with the urban population increasing from 700 thousand to 1.3 million between 2000 and 2024 (UN 2018). The population density has increased from 12 to 23 persons per square kilometer (UNDESA - Population Division 2022; World Bank 2022a). Access to public transport is deemed convenient if an officially recognized stop is within 500 meters walking distance along the street network from a reference point such as a home, school, workplace, or market, for low-capacity systems like buses or Bus Rapid Transit, and within 1 kilometer for high-capacity systems like rail, metro, or ferries (UNStats 2025).

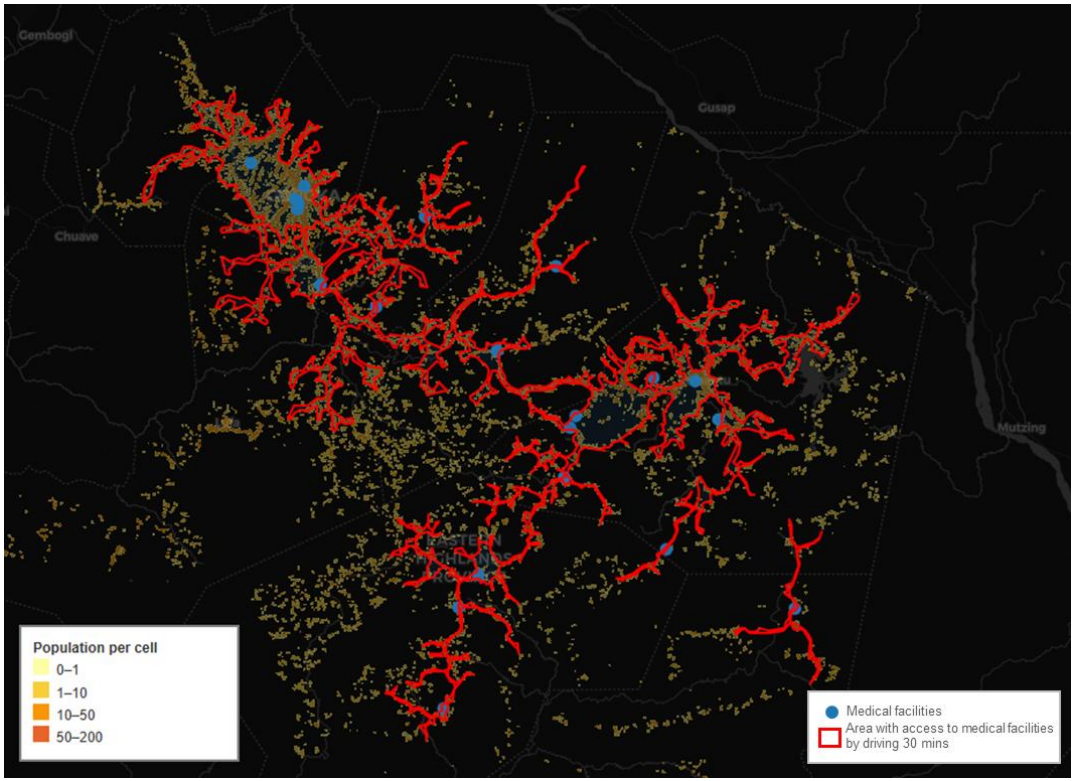

Figure 18. Access (30 Minutes by Driving) to Medical Facilities – Eastern Highlands
Source: Own analysis and visualization based on OpenStreetMap contributors (2025) and WorldPop (2025)

Based on current estimates, only 23% (CIESIN 2023b) of the population in Port Moresby have convenient access to public transport, significantly lower than the Pacific average of 62% (Figure 18). Limited infrastructure and services restrict access to opportunities and exacerbate social inequality.

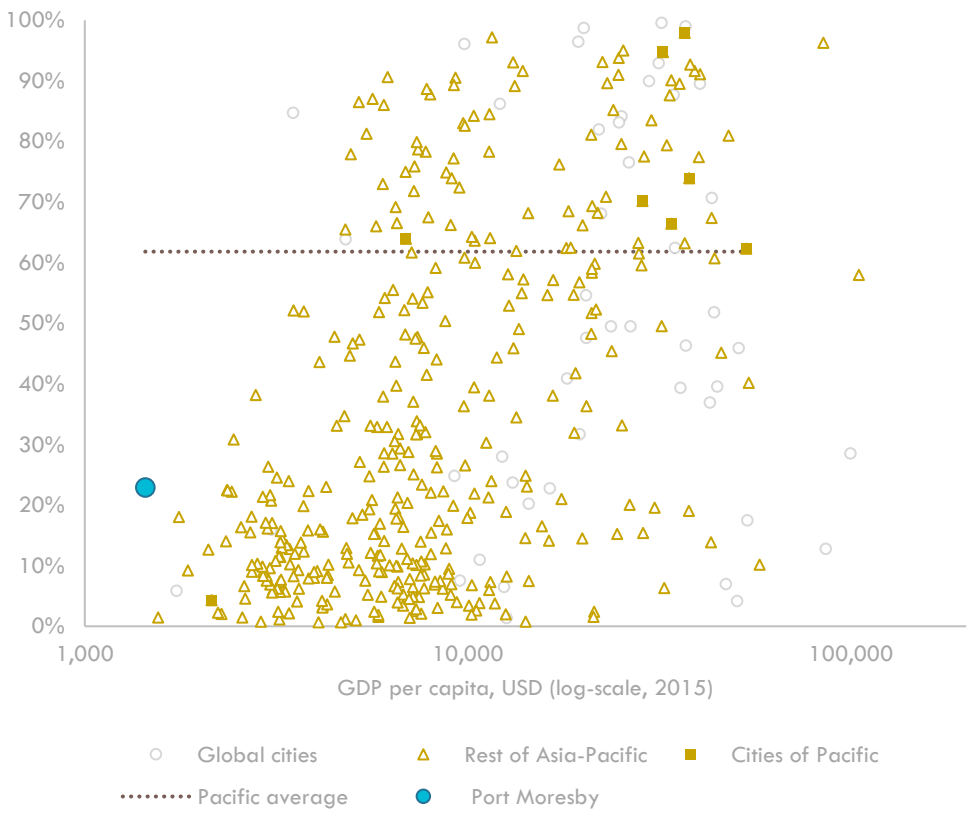

Figure 19. Percentage of Population with Convenient Access to Public Transport
Source: Visualization based on CIESIN (2023b), World Bank (2025)

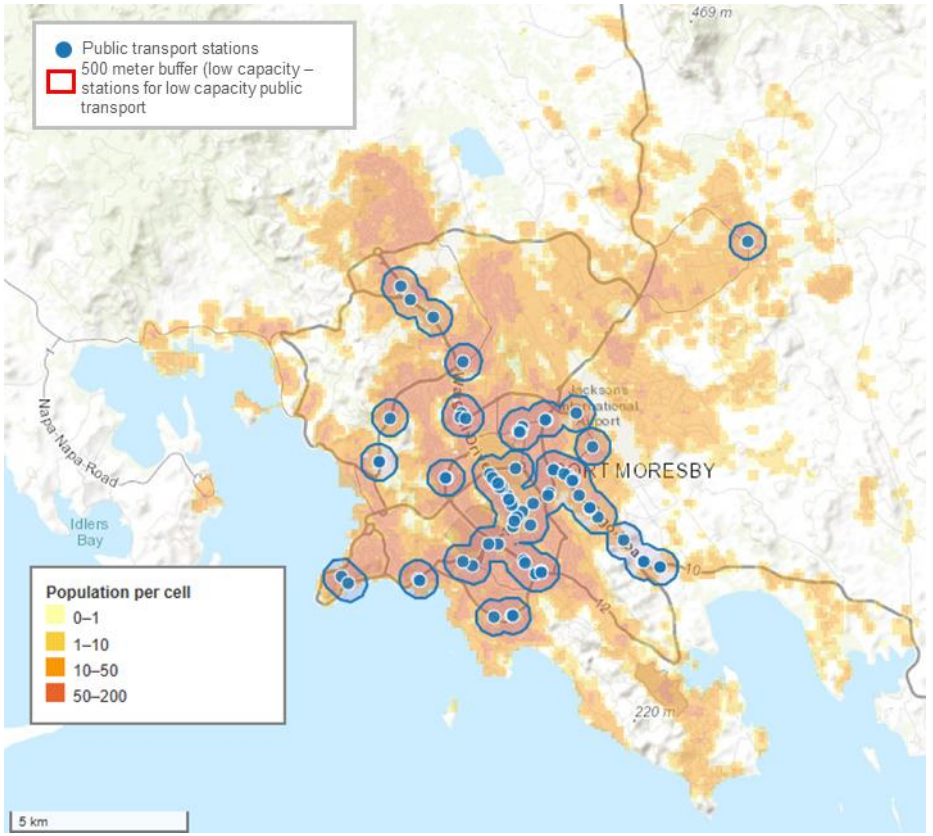

Figure 20. Public Transport Stations and Population Distribution – National Capital Region
Source: Own analysis and visualization based on OpenStreetMap contributors (2025) and WorldPop (2025)

Figure 20. Public Transport Stations and Population Distribution – National Capital Region shows a visual representation of the results of the analysis consistent with the methodology used by CIESIN (2023b) using the latest data from OpenStreetMap (2025), considering the mapped public transport stations, and the latest population distribution estimates from Worldpop (2025) for the National Capital Region (NCR). The estimated % of population with convenient access to public transport stations is estimated to be at 23%. In response, the Asian Development Bank is supporting the preparation of a Sustainable Urban Mobility Plan for the National Capital District to guide future investments and improvements in urban transport (Policy commons 2023).

PNG has experienced significant urbanization with the urban population increasing from 700 thousand to 1.3 million between 2000 and 2024.

National Access and Connectivity

PNG suffers from poor maritime connectivity. PNG's Liner Shipping Connectivity Index (UNCTAD 2025c) is low, with no significant improvement over the last decade, indicating limited connectivity to global shipping networks relative to other countries (Figure 21). Major ports with connectivity to global shipping networks include Lae, Port Moresby, Motukea Island, Rabaul, Madang, and Kimbe. Lae is PNG's primary commercial port for international and domestic trade, serving as the gateway to Morobe Province and the Highlands region.

The "Medium Term Development Plan IV 2023-2027" (MTDP IV) (Government of Papua New Guinea 2023b) sets a clear path. It aims to triple water transport capacity by 2030. The policy is not just about ships, but also about connectivity and efficiency. The policy objectives include cutting handling times to just one day at the country's two main ports, Port Moresby and Lae. The PNG Ports Corporation is currently implementing the 30-Year Port Infrastructure Master Plan (PNG Bulletin 2021). This plan guides the "priority repair and modernization" of major ports. It focuses on rebuilding wharves, jetties, and berths to handle larger vessels and higher cargo volumes.

For PNG, geographical isolation creates unique economic and developmental hurdles. PNG's remoteness can be measured using the UNCTAD remoteness index. The said remoteness index (Figure 22. Remoteness Index by Sub-indicator, 2021) captures a country's relative distance from global markets, expressed as an index derived from the trade-weighted average distance to world markets, adjusted for factors such as being landlocked. Examining PNG's geographic distance from markets, the country fares better among the Pacific nations. However, remoteness is also affected by contributing factors such as transport connectivity, digital connectivity, and cultural and political connectivity. Considering these compounding factors, PNG records an overall remoteness index value of 73, with transport components scoring the most remote at 96. This places PNG toward the lower end among Pacific SIDS. Within the region, Palau has the lowest index value at around 60, indicating comparatively

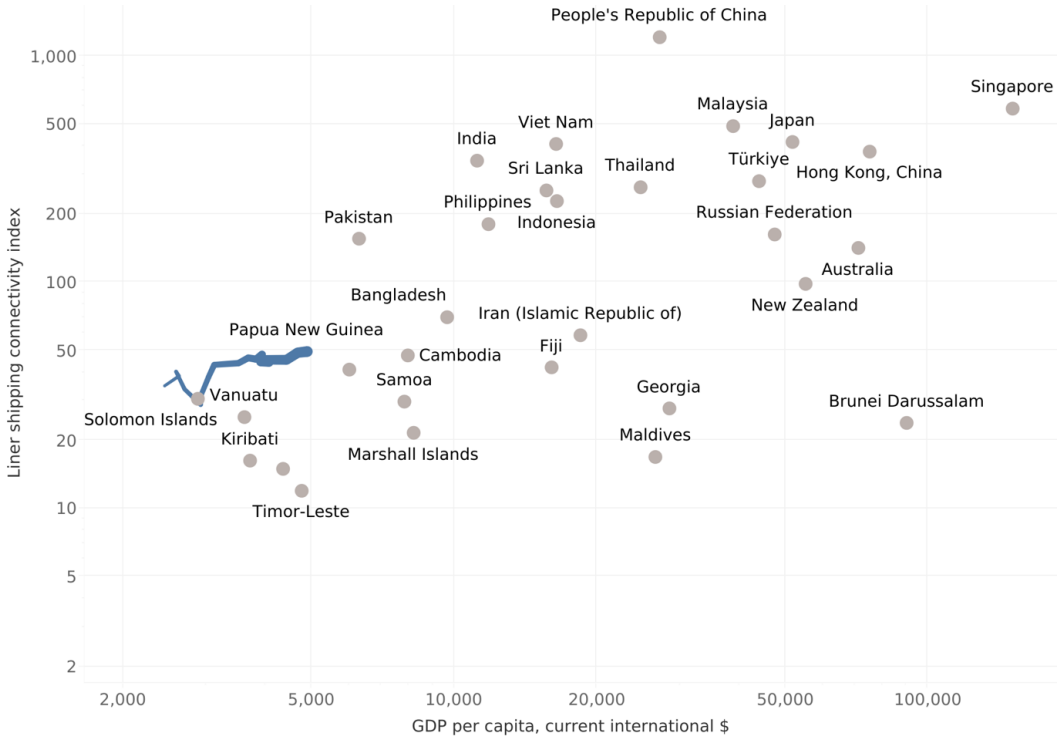

Figure 21. Liner Shipping Connectivity Index[12], 2006-2024
Source: Own analysis and visualization based on UNCTAD (2024)
Note: The points for the other countries are for the year 2024

[12] The Liner Shipping Connectivity Index (LSCI) is derived from six components: weekly scheduled ship calls, annual deployed capacity in TEU, number of regular liner shipping services, number of shipping companies serving the country, TEU capacity of the largest deployed ship, and the number of countries connected via direct shipping services.

better proximity to markets, while Tonga records the highest level of remoteness at approximately 85 (Figure 22). PNG's position reflects its substantial isolation, not only in geographic sense, but also in its level of transport connectivity which continues to shape trade costs, connectivity challenges, and the performance of the transport system across the economy. (UNCTAD 2025b)

PNG has set ambitious goals to improve national connectivity, outlined in the Connect PNG Economic Road Transport Infrastructure Development Program 2020-2040 (Government of Papua New Guinea 2021a). The plan aims for complete road coverage by 2040, targeting 16,000 kilometers of roads. This includes upgrading existing highways and building new "missing links." This initiative seeks to connect 1.7 million people to the main network for the first time. Improved roads will reduce costs and increase access, allowing, for example, a Highlands farmer to reach the market more easily Lae.

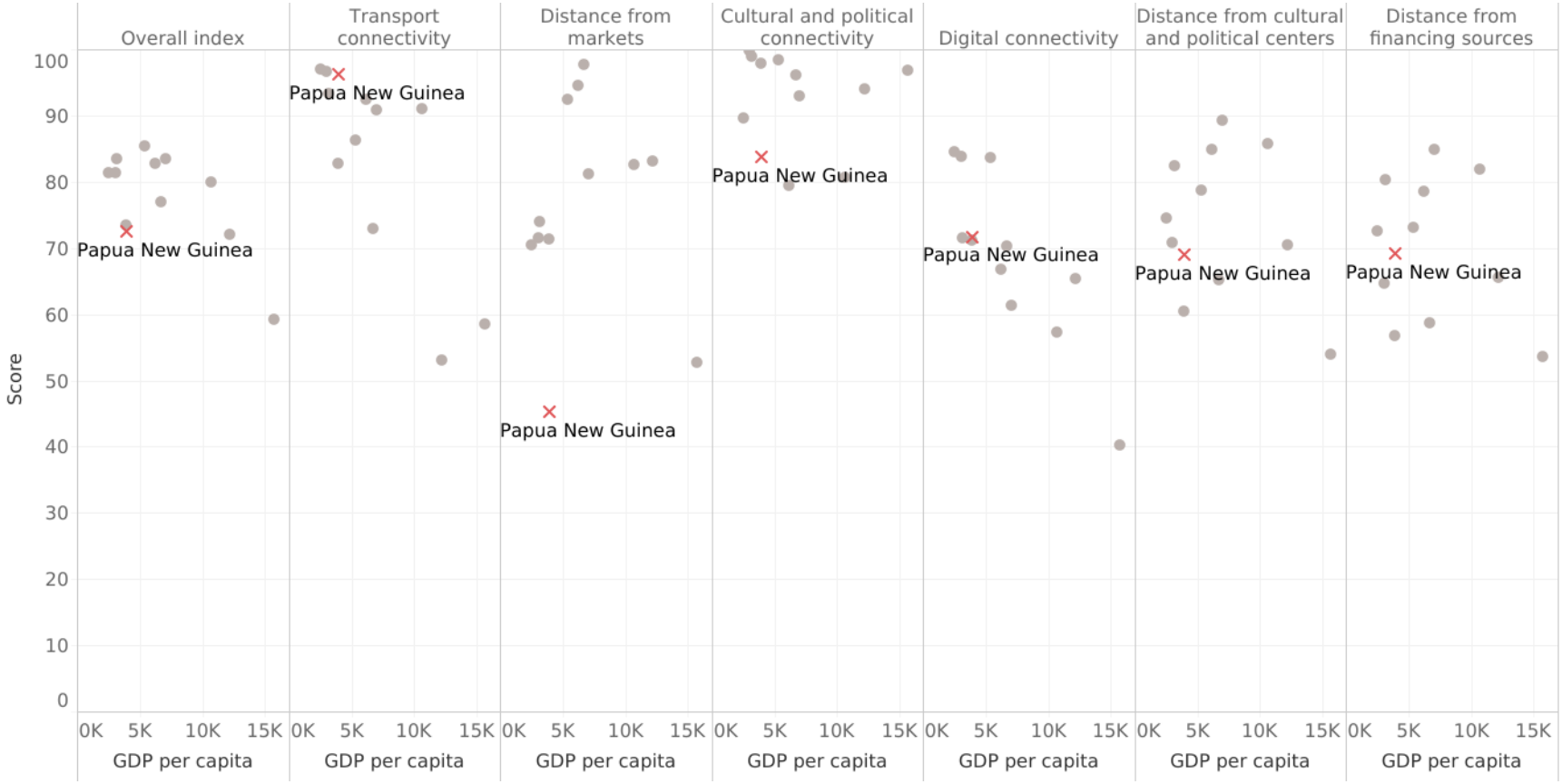

Figure 22. Remoteness Index by Sub-indicator, 2021
Source: Analysis and visualization based on UNCTAD (2021)

Connectivity must be sustainable, with a focus on resilience as outlined in the National Transport Strategy (Government of Papua New Guinea 2013). Roads should endure heavy rainfall, and bridges must withstand floods. The policy now emphasizes a "maintenance first" approach, recognizing that repairing roads now is more cost-effective than rebuilding them later. This strategy ensures that current investments will benefit future generations.

The Connect PNG Air Transport Program (Government of Papua New Guinea 2021a) and related measures in the Medium Term Development Plan IV 2023–2027 (Government of Papua New Guinea 2023b) will upgrade national airports and rural airstrips to meet national civil aviation regulations and International Civil Aviation Organization standards, enabling more airports to accommodate larger aircraft. In parallel, the Connect PNG Sea Water Transport Program (Government of Papua New Guinea 2021a) will construct and rehabilitate strategic provincial and district ports, wharves, and jetties, upgrading key facilities such as Lae, Motukea, Aitape, Alotau, Buka, Daru, Kavieng, Kieta, Kimbe, Lorengau, Madang, Oro Bay, Rabaul, Vanimo, and Wewak to commercial status. These actions, consistent with the National Transport Strategy (Government of Papua New Guinea 2013), will improve road links to ports and airports and streamline transfers for passengers and freight at major gateways.

PNG suffers from poor maritime connectivity. PNG's Liner Shipping Connectivity Index is low, with no significant improvement over the last decade, indicating limited connectivity to global shipping networks relative to other countries.

Shape People Centric Urban Mobility

Shape People Centric Urban Mobility

Urban Transport in Port Moresby

Port Moresby, Papua New Guinea's capital, faces significant urban transport challenges. The current population of Port Moresby is estimated at 444 thousand (World Population Review 2026), with an equivalent population density of 1,850 people per square kilometer (World Population Review 2026). [13]

The city lacks a mass transit system, such as bus rapid transit or light rail. Instead, it depends on informal public motor vehicles (PMVs) and taxis, both of which operate without adequate regulation. This leads to services that are unreliable, unsafe, and inequitable.

Although motorization level remains low— estimated at around 40 vehicles per thousand people[14]—and there is no mass transit system such as bus rapid transit or light rail, this inadequacy in public transport results in heavy dependence on informal public motor vehicle (PMV) services and taxis. PMVs (25-seater buses operating under a licensed route system) run without timetables, and waiting environments lack basic facilities such as seating, shelter, lighting, and separation from traffic, making stops one of the most unsafe parts of the journey. While 25 designated PMV routes exist (Figure 23), not all are operational, and routes are sometimes altered or shortened to maximize operator profits, creating service gaps, particularly in expanding peripheral areas. The life-line network of PMVs is also at a walking distance of only about 36% of the population (NCDC 2020).

Figure 23. PMV Route Network in Port Moresby
Source: NCDC (2020)

[13] Surface area is at 240 square kilometers as per World Population Review (2026).
[14] Estimated based on vehicle numbers stated in CTNC (2022)

A 2024 survey of 73 Port Moresby residents revealed that 39 felt unsafe on public buses (Igah et al. 2025). The most common issue reported was theft. Buses were commonly described as poorly maintained, with broken seats, cracked windscreens, and faulty windows. Drivers often overlooked stops during busy times. Participants expressed a strong preference for centralized control by the National Capital District Commission, advocating for formal driver training, uniform schedules, and digital ticketing systems(Igah et al. 2025).

Based on the 2025 fare review of the Independent Consumer and Competition Commission (ICCC), the regulated maximum fare stands at K1.40, yet in practice, most operators charge K2 for full routes, reflecting widespread non-compliance with official fare structures. Taxi services operate almost entirely outside the regulatory framework, with most taxis either lacking functional meters or deliberately not using them, instead negotiating fares informally with passengers, despite Road traffic Act (2014) policy requiring workable licensed meters. (ICCC 2025)

Literature (Climate Trace 2025) indicates that Port Moresby has a vehicle kilometer travelled (VKT) per capita of 3,457, which is higher than a few other Pacific island capital cities: Honiara (3,194) and Suva (3,080). However, compared to the broader Asia-Pacific region, Port Moresby's VKT per capita falls within the mid-range (Figure 24). Port Moresby's estimated transport sector emissions CO2 for 2022, stand at 164 thousand tons. (Climate Trace 2025).

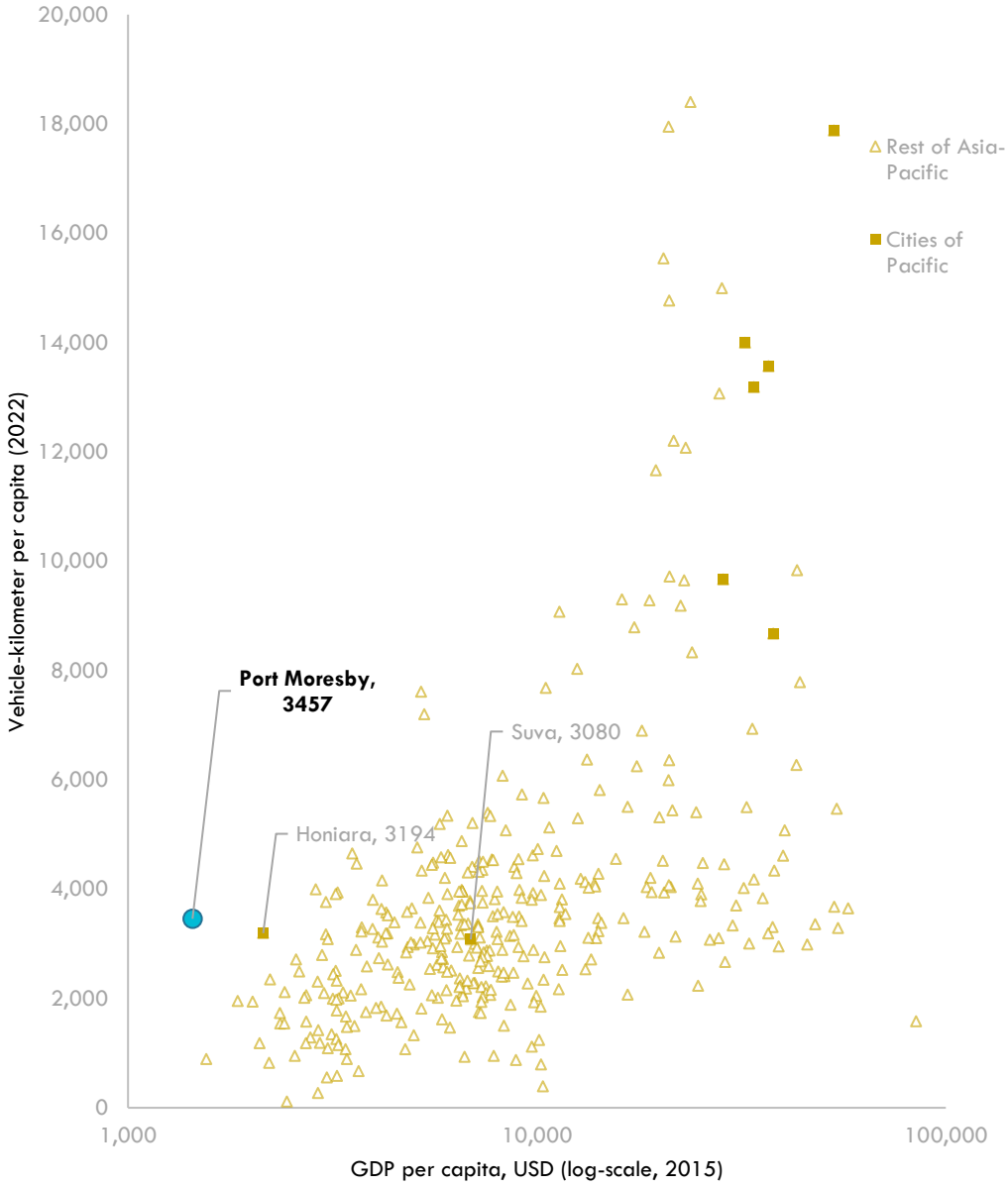

Figure 24. Vehicle-kilometer per Capita (2022)
Source: Own visualization based on Climate Trace (2025), and GHS (2023)

Port Moresby's 'Towards 2030' urban development plan, "One City, One People, One Future,' outlines the city's growth strategy under the National Capital District (NCDC 2020),. Port Moresby's vision for 2030 centers on a safe, connected, and integrated capital.

Projections indicate the population will reach 1.24 million by 2030, with a significant share residing in informal settlements. Employment is primarily concentrated in three key areas: Town, Boroko, and Waigani. A significant change occurred in 2018 when the port relocated to Motukea in the northwest, shifting the city's economic hub. As a result, the transport sector plays a vital role in this vision. The city aspires to be well-connected, safe, and cohesive, with transport links and pedestrian routes linking everyday life to compact urban centers. These centers would facilitate mobility that supports both social inclusion and economic growth. (NCDC 2020)

The master plan (NCDC 2020) indicates that the current walking and cycling network has substantial deficiencies. Many streets lack basic pedestrian and cycling infrastructure. Completing the pedestrian and public transport network requires fixing broken links and creating new connections throughout Port Moresby.

Port Moresby's urban transport strategies focus on electrification, infrastructure resilience, and efficiency improvements. The plans promote EV adoption through grants for charging stations, establish standardized tariffs, and encourage private-sector investment. Public transport upgrades aim to achieve 50% of new buses as electric, supported by ongoing EV bus pilot projects (NCDC 2020). Urban road improvements prioritize climate resilience, complemented by structured maintenance, better traffic flow, and safety enhancements. To reduce congestion, port planning includes inland terminals, road connections, and logistics coordination. Gender-inclusive initiatives like 'Meri Saif' buses and EV job training programs are also emphasized. The strategy involves expanding public transit options, exploring bus transit-ways or light rail, improving PMV regulation, and strengthening overall transport governance. Pedestrian and cycling infrastructure are key, with integrated pathways and a citywide network to boost walkability. (NCDC 2020; Government of Papua New Guinea 2020c)

Port Moresby is the main testing site at the national level for new mobility solutions, including a 2023 pilot project to buy five electric buses, with at least three slow chargers at bus depots for overnight charging operated by the National Capital District Commission (NCDC 2020). Developing accessible public charging infrastructure is essential, aiming to place public chargers within 5 km by road of any point in Port Moresby, through formal bidding processes inviting private companies to set up charging stations on government land with reduced rental rates. Port Moresby also aims to become a regional EV ecosystem training hub, offering courses for EV drivers, mechanics, and charging station staff at skill centers (e.g. POMTECH) (Government of Papua New Guinea 2022a). Recently a Green Climate Fund-supported e-mobility programme focused on developing national EV policies, building technical capacity, and supporting the broader transition to electric transport (GGGI 2025).

Increasing Street Sprawl

Urban accessibility is significantly affected by the road network's structure. "Street sprawl"—characterized by road expansions ending in dead ends and large gaps between intersections—reduces connectivity. The Street-Network Disconnectedness Index (SNDi) measures this disparity among cities by evaluating factors such as nodal degree, dead ends, circuity, and sinuosity. A higher SNDi signifies greater sprawl and lower connectivity. (Barrington-Leigh and Millard-Ball 2025)

Globally, street disconnection has declined since the early 2010s, with an average annual rate of 3.3%. The Asia-Pacific region, however, shows a slower reduction of only 1.5% per year. Interestingly, low-income Asian cities deviate from this trend, with a 5% yearly rise in disconnection levels. For example, PNG exemplifies these regional issues; its SNDi score was 6.3 in 2020, making it the fifth-highest in Asia-Pacific for the sprawl index, indicating a highly dispersed network with low street connectivity and few intersections. (Barrington-Leigh and Millard-Ball 2025) (Figure 25).

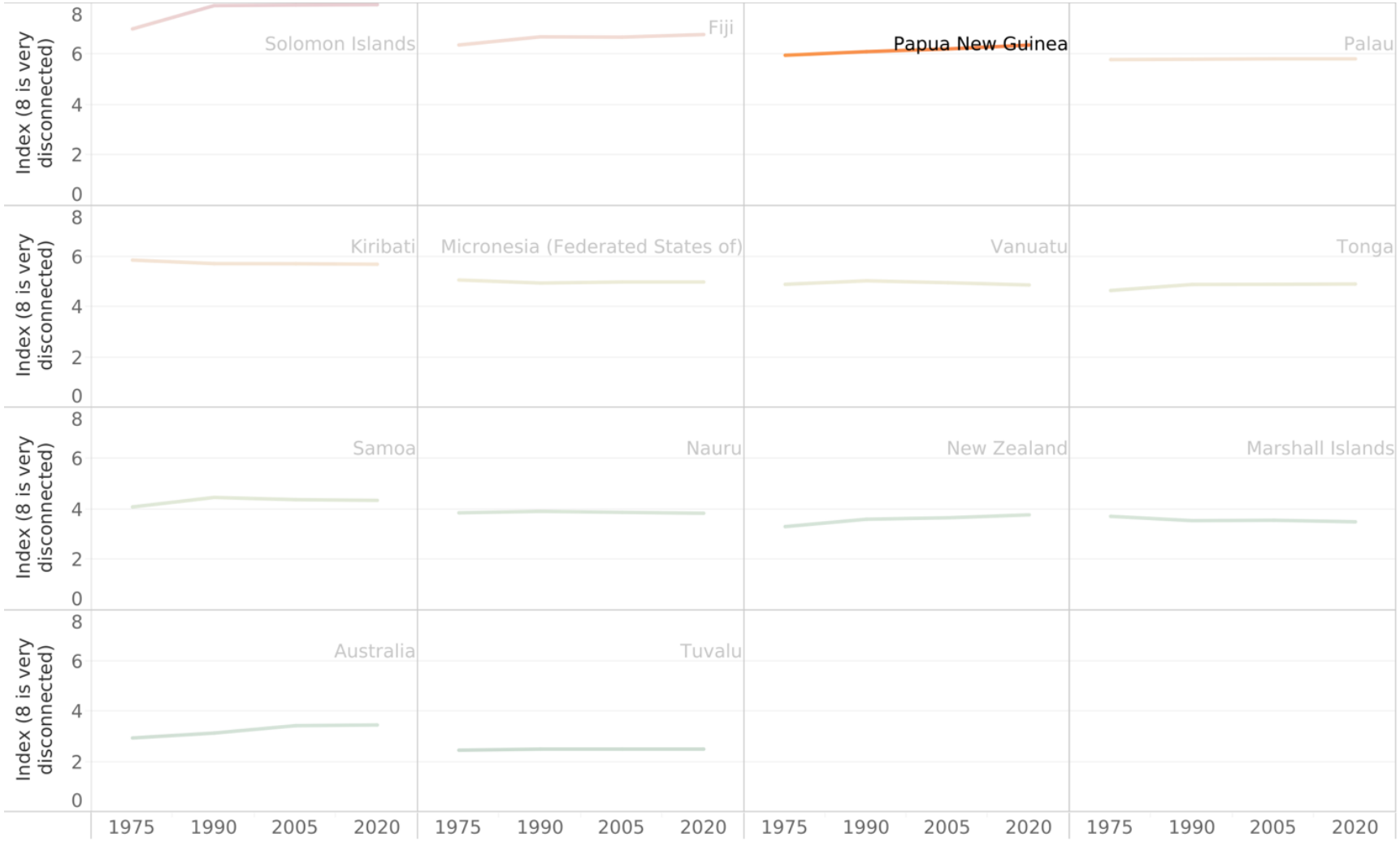

Figure 25. Street Network Disconnectedness Index
Source: Own analysis and visualization based on Barrington-Leigh and Millard-Ball (2025)

Make Transport Safe And Secure

Make Transport Safe And Secure

Road Crashes: A Persistent Public Safety Challenge

Road crashes remain a major public health issue in PNG. In 2023, they resulted in 17.7 deaths per 100,000 people, making them the 11th leading cause of death nationwide (IHME 2026, Figure 25). The proportion of female fatalities increased from 32% in 2015 to 35% in 2023, surpassing the Asia-Pacific average of 25%. Together, children under 14 and adults over 60 constitute 22% of all road crash deaths.

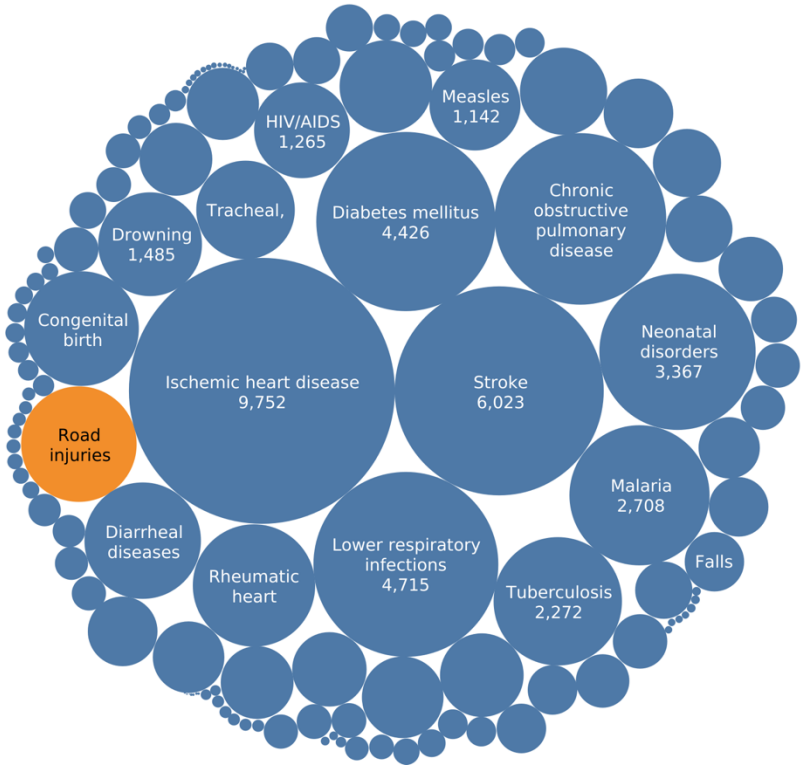

Figure 26. Causes of Mortalities in PNG, number of deaths (2023)
Source: Own analysis and visualization based on IHME (2026)

Road accidents also impose a substantial economic burden, costing about 969 million USD in 2021, which is roughly 4% of PNG's GDP (ATO 2025c). This figure includes expenses related to approximately 65 thousand serious injuries (iRAP 2024). This is almost twice the national health expenditure, which stood at 2.3% of GDP (World Bank 2024a). The scale underlines how collisions strain the economy. Female road crash fatalities increased from 32% in 2015 to 35% by 2023 further exceeding the Asia-Pacific average at 25%. Children under 14 and adults over 60 made up 22% of all road crash deaths in 2023 (Figure 27).

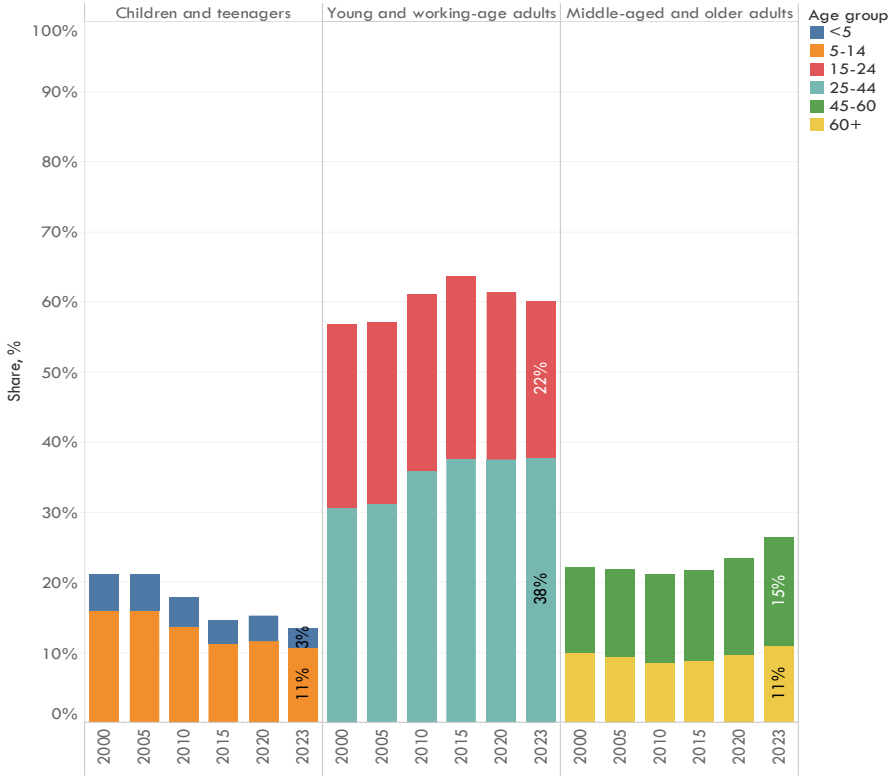

Figure 27. Road Crash Fatalities –by Age Groups
Source: Own analysis and visualization based on IHME (2026)

Road crashes also account for 90% of the implicit external costs associated with fossil fuel subsidies in transport (IMF 2024). Yet solutions are within reach. According to iRAP (2024), an annual investment of USD 52 million—around 0.2% of GDP—could save about 500 lives each year (Figure 28).

Infrastructure quality remains a core concern. As of 2024, only 1% of roads in Papua New Guinea met a 3-star or higher iRAP standard for pedestrians, and just 2% for vehicle occupants (Figure 29) . Both figures fall well below regional benchmarks (iRAP 2024).

The Road Traffic Act (PNG Parliament 2017) serves as the primary legislative foundation for road safety. It established the Road Traffic Authority (RTA) as the lead agency for safety coordination. This body now manages tasks previously handled by the National Road Safety Council. The Road Traffic (Offences and Penalties) Regulation 2017 (Government of Papua New Guinea 2017b) has outlined a clear path for improved enforcement. It introduced severe penalties for driving under the influence of alcohol or drugs. These measures aim to change driver behavior through strict accountability. The Road Traffic Act 2014 was amended in 2017, and provides clarifications relating to definitions of important concepts such as "motor vehicle owner," "trade enforcement officer," and the power of traffic enforcement officers (PNG Parliament 2017). In October 2017, the Minister for Transport & Infrastructure released the Road User Rules 2017 which details how road users must behave on public streets (Minister for Transport & Infrastructure 2017).

PNG is upgrading its road safety measures by strengthening oversight and enhancing technical capacity. This includes adding more inspection stations and testing officers, a move outlined in the Road Traffic Authority Corporate Plan 2017-2019 (RTA 2017a). Ensuring vehicles are in good condition is crucial to reducing crashes. Education also plays a key role, with the plan emphasizing road safety promotion and citizen awareness, which leads to safer driving behaviors. The government plans to protect vulnerable road users by establishing proper public walkways in urban areas, as well as promoting bicycles, motorcycles, and scooters for a more efficient transport system. By combining infrastructure upgrades with public education, PNG is working towards a safer, more sustainable transport network.

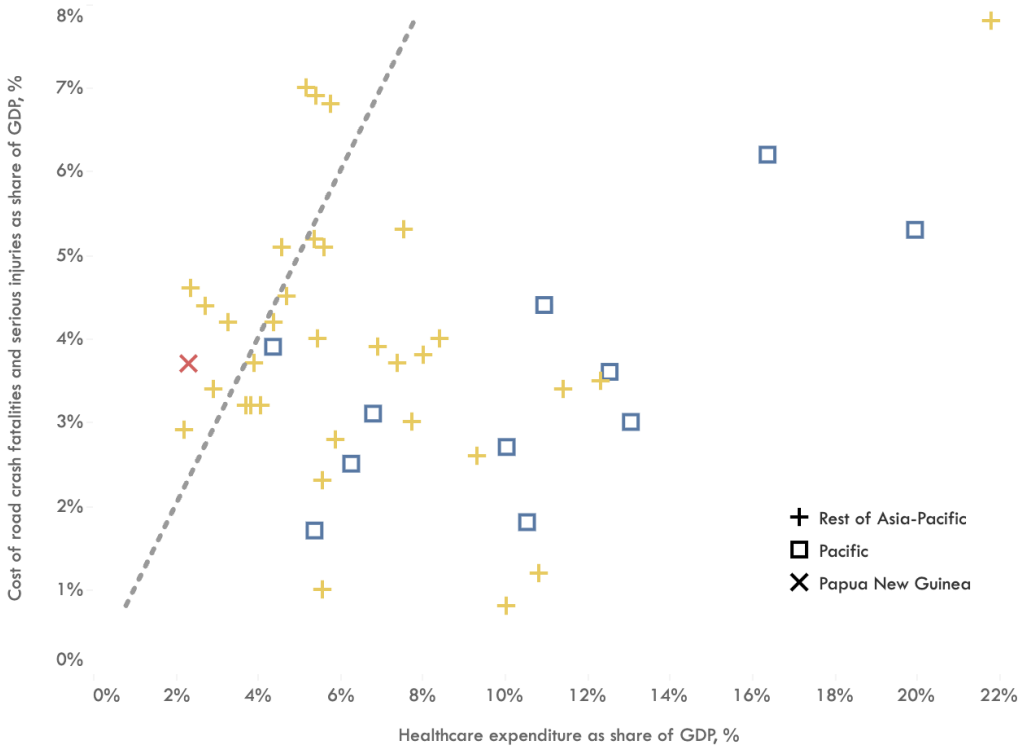

Figure 28. Cost of Road Crash Fatalities, 2019
Source: Own analysis and visualization based on World Bank (2024a); iRAP (2024)

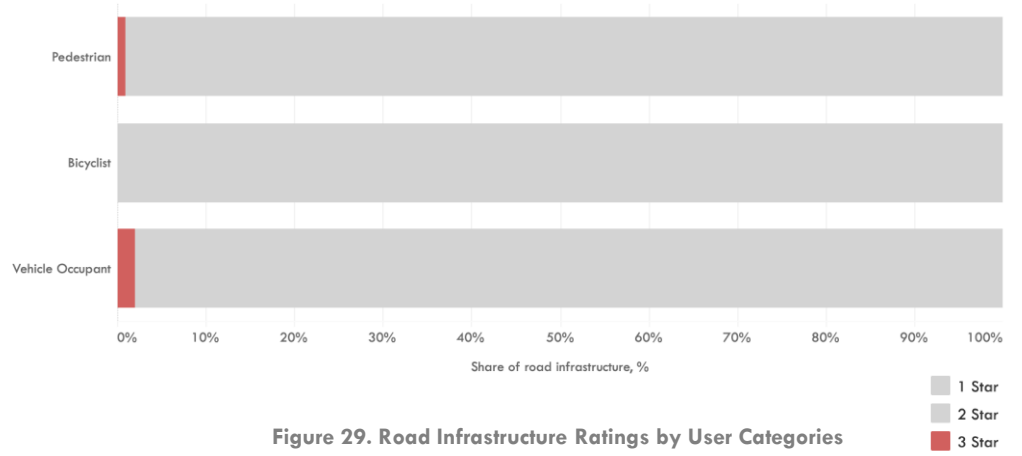

Figure 29. Road Infrastructure Ratings by User Categories
Source: Own analysis and visualization based on iRAP (2024)

[15] Rating based on 3,660 kilometers of road surveyed

Advance low-carbon, resilient, and environmentally sound transport systems

Advance low-carbon, resilient, and environmentally sound transport systems

Transport Energy and Carbon Emissions

PNG's reliance on refined fossil fuels results in substantial fuel-related expenditures. Fuel imports fell sharply from 22% in 2000 to approximately 17% in 2023 (World Bank 2026) as a percentage of total merchandise imports. However, fuel exports rose significantly from 29% in 2000 to around 43% in 2023 (World Bank 2026) as a percentage of total merchandise exports. In 2014, PNG began commercial operations of liquefied natural gas, and high demand made it the country's top revenue-generating export product.

The transport sector is the primary user of energy in PNG, when compared to manufacturing, construction and mining, commerce and public use, agriculture, forestry and fishing, and households. In 2023, it used 23 thousand terajoules of energy (UNSD 2026). Since 2000, its energy use consistently increased at an annual rate of 3%. PNG's energy intensity for transport (energy used per USD of GDP) has shown improvement, dropping from 0.92 Megajoule per USD of GDP (MJ/USD) in 2000 to 0.73 MJ/USD in 2015 and 0.48 MJ/USD in 2023.[16] Nonetheless, this is marginally higher than the Asia-Pacific average of 0.37 MJ/USD in 2023, which also improved from 1.00 MJ/USD in 2000 and 0.60 MJ/USD in 2010, but below the Pacific subregion[17] average of 0.74 MJ/USD in 2023. It is well above the 0.24 MJ/USD average for low and lower-middle-income economies in 2023 (Figure 30).

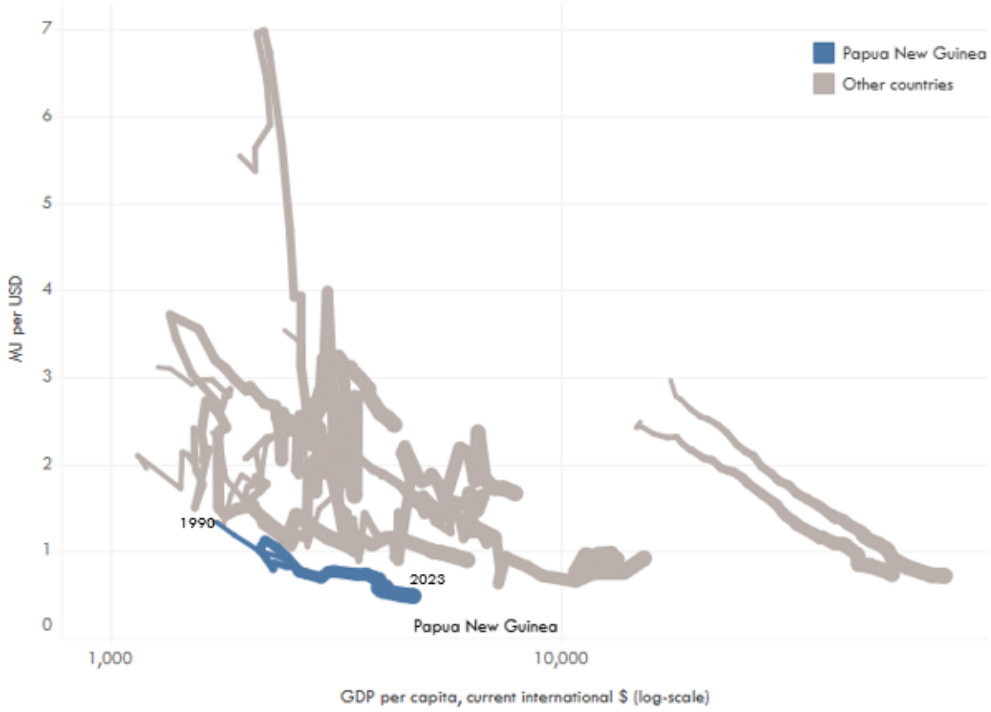

Figure 30. Transport Energy Intensity (MJ/USD) with GDP per Capita (1990-2023)
Source: Own analysis and visualization based on UNSD (2026), World Bank (2025)

[16] ATO analysis using estimates from UNSD (2026) and World Bank (2023).
[17] Including Australia and New Zealand

In 2023, transport comprised 17% of total energy use (IEA et al. 2024), marginally lower than the Asia Pacific average of 18%. Within the transport category, road transport accounted for 83% of Papua New Guinea's total transport energy consumption, while domestic navigation and aviation accounted for the remaining 17% (UNSD, 2026). Interestingly, all energy consumed by the road sector in 2023 came exclusively from oil products, with no measurable input from CNG, LPG, biofuels, or electricity.

Recent movements in domestic fuel prices further underscore the sector's exposure to fossil fuel volatility (Figure 32). Between early February and early April 2026, diesel, gasoline, and kerosene prices rose sharply, with increases of approximately 82%, 43%, and 91% respectively. Such steep fuel price increase highlights the vulnerability of PNG's transport system to external price shocks. This volatility reinforces the structural dependence on oil-based fuels described above, with direct implications on transport costs, energy security, and overall economic resilience.

PNG is making efforts to enhance the energy efficiency of its transport sector. Fuel standards and vehicle efficiency are central to the strategy. The Climate Change (Management) Act 2015 (No. 19 of 2015) (Government of Papua New Guinea 2015) states that a "Fuel Standards Regulation shall prescribe the standard of refining and maximum permissible content of sulphur and other targeted greenhouse gas pollutants in all fuel." This regulation targets road, sea, and air transport.

The updated National Energy Policy 2017-2027 (Government of Papua New Guinea 2022c) focuses on the following measures, which also support the National Transport Strategy (Government of Papua New Guinea 2013): introduction of fuel-efficient transport and engines that are able to operate on biofuels; domestic biodiesel and bioethanol; operation and maintenance of equipment in a manner that minimizes consumption and emissions; and use of fleet-weighted fuel and emissions efficiency. However, biofuels accounted for 0% of transport energy consumption in 2023, suggesting that implementation has yet to translate into significant market uptake (UNSD 2026).

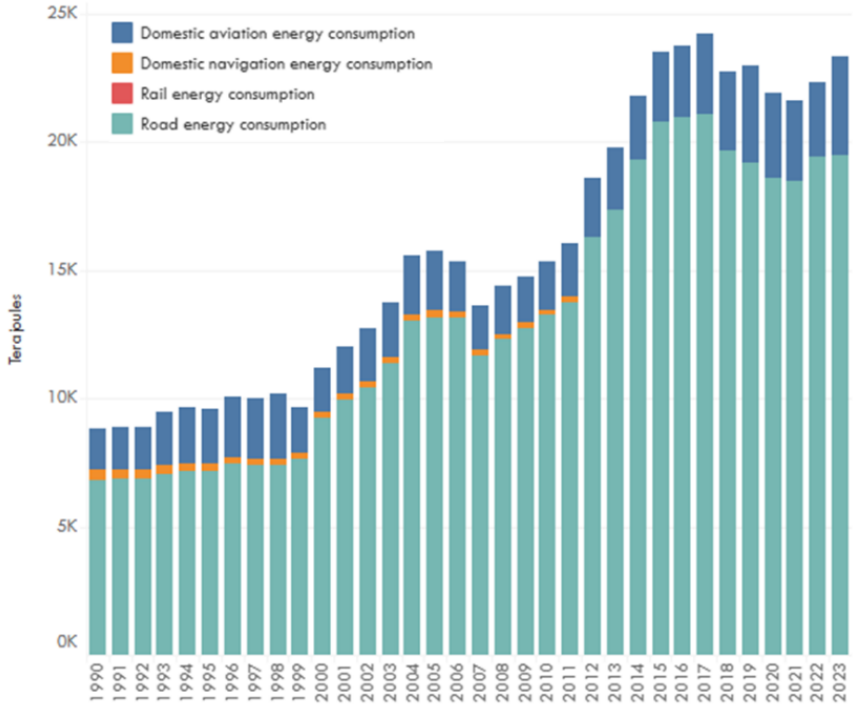

Figure 31. Transport Energy Consumption (Tejajoules) by Mode
Source: Own analysis and visualization based on UNSD (2026)

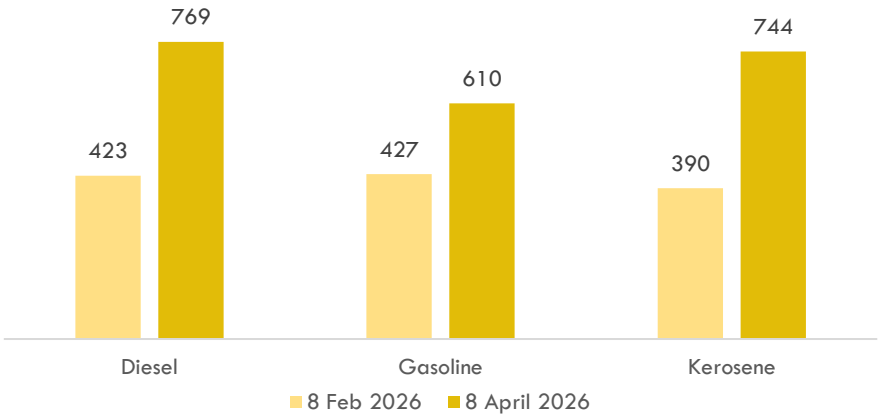

Figure 32. Fuel Prices in PNG (in Toea/liter)
Source: (Nomane 2026; ncholohei 2026)

The aviation sector is also adopting efficiency measures. The Papua New Guinea State Action Plan (Government of Papua New Guinea 2025d) notes that "the Airline is introducing B737 technology with winglets". These winglets reduce drag and lower fuel consumption. Furthermore, the National Climate Compatible Development Management Policy (Government of Papua New Guinea 2014) advocates for reducing vehicle activity through more compact development patterns and mandating higher fuel efficiency through new national and international standards. The policy (Government of Papua New Guinea 2014) also supports a "system of fees and incentives" to encourage the manufacture and purchase of fuel-efficient vehicles.

In 2023, PNG faced a substantial implicit fossil fuel subsidy of USD 110 million (constant 2021) (IMF 2024). These implicit subsidies arise when retail prices do not reflect external costs, including standard consumption taxes (Figure 31). External costs encompass climate change contributions from greenhouse gas emissions, local health impacts (mainly premature deaths) due to harmful pollutants like fine particulates, and traffic congestion and accident-related externalities tied to road fuel.

PNG's transport sector accounts for 20% of the country's economy-wide GHG emissions, making it a major contributor to PNG's total emissions. The annual growth rate has varied over time: a 1.1% decline from 1990 to 2000, a rapid 7.7% increase from 2000 to 2010, and a more moderate 0.3% increase from 2010 to 2024. (EDGAR 2025). The domestic transport sector has significantly increased as compared to the overall economy's GHG emissions since the turn of the century (Figure 34). The road sector, as with many other countries, is the main contributor responsible for 86% of transport emissions GHG emissions in PNG (Figure 35).

PNG's transport GHG emissions intensity with GDP in 2024 was 41 gCO2e per USD (Figure 36). This figure exceeds the Asia-Pacific average of 29.0 gCO2e per USD, the average for low and lower-middle-income countries at 24 gCO2e per USD but is below the Pacific average of 57 gCO2e per USD.

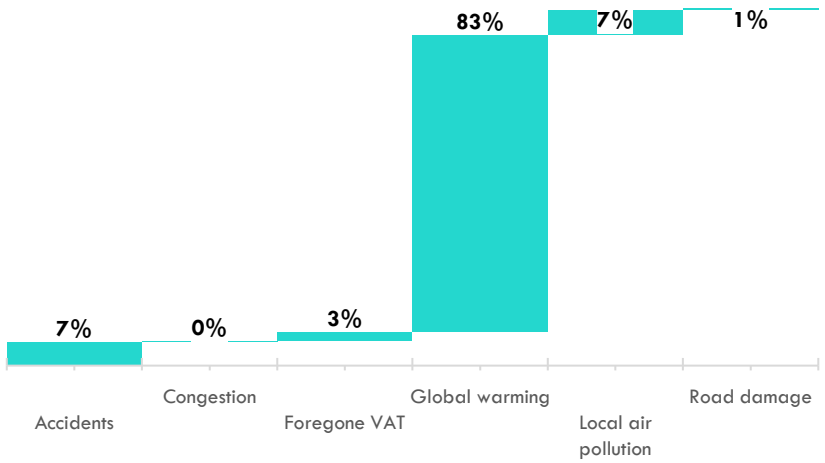

Figure 33. Fossil Fuel Subsidies – Societal Costs Estimates for PNG
Source: Analysis and visualization based on IMF (2024)

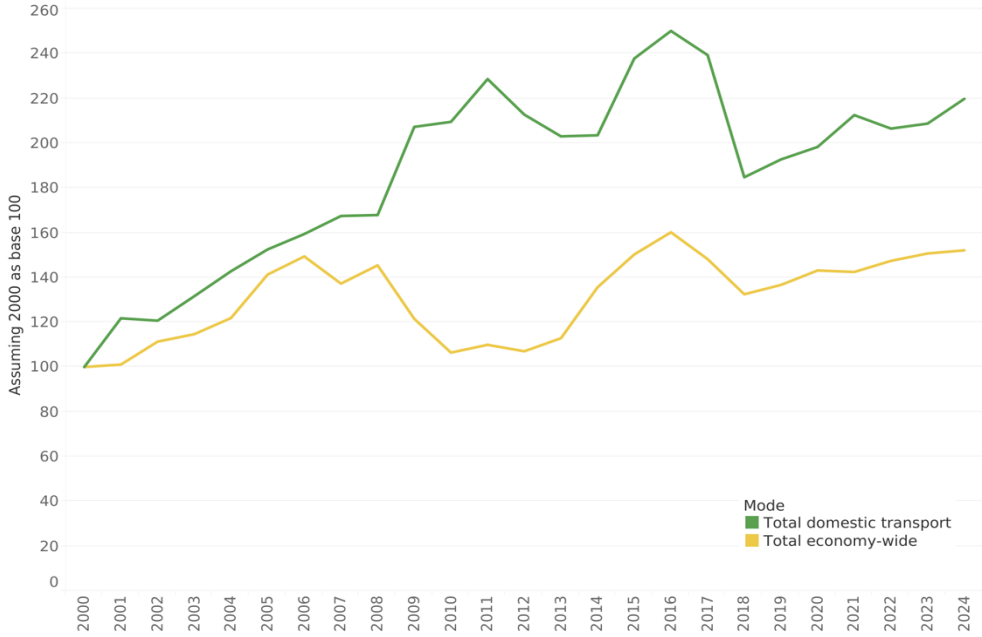

Figure 34. Transport and economy-wide GHG Emissions trend
Source: Own visualization based on EDGAR (2025)

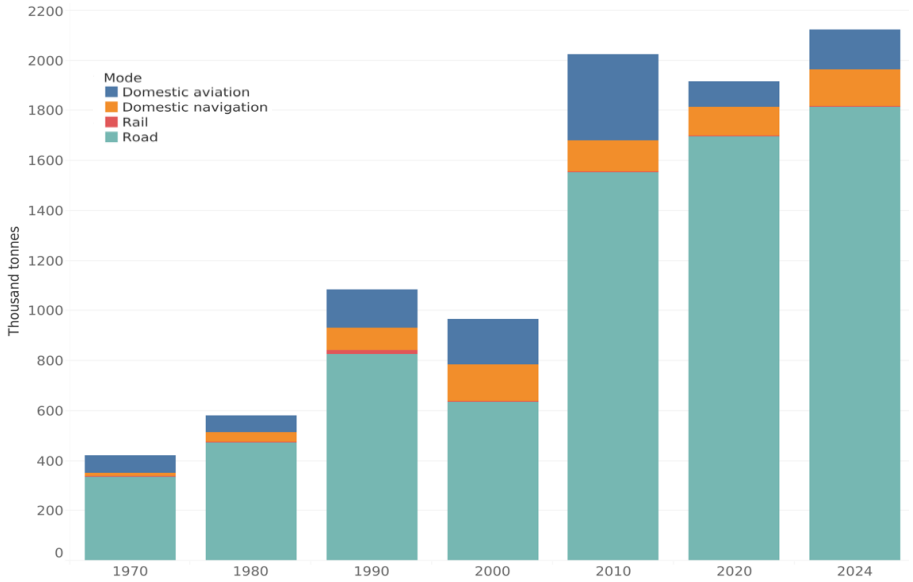

Figure 35. PNG GHG Emissions (Thousand Tons)
Source: Own analysis and visualization based on EDGAR (2025)

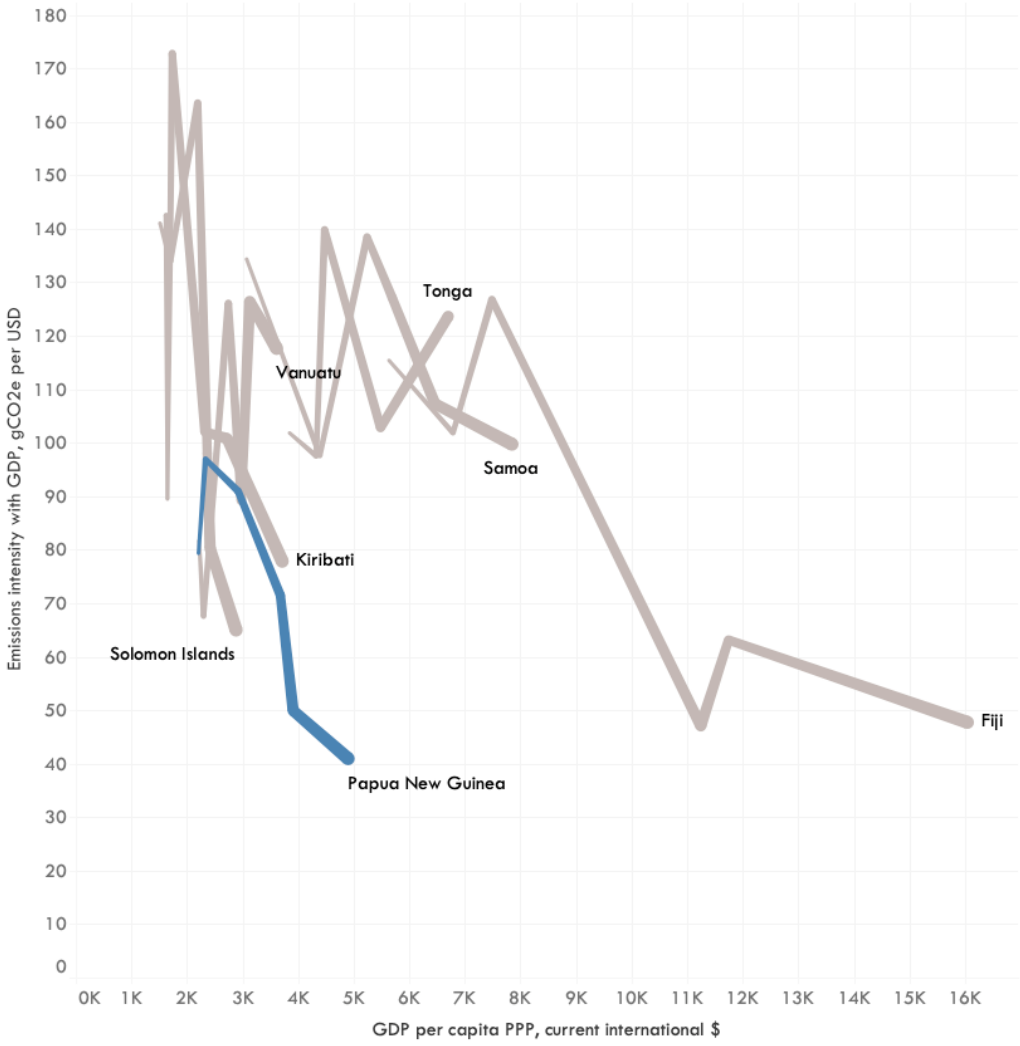

Figure 36. Transport GHG Emissions Intensity with GDP (2000,2005,2010,2015,2020,2024)
Source: Own analysis and visualization based on EDGAR (2025); World Bank (2023)
Note: The gray lines depict values for other PICs

Used vehicle imports may play significant roles in determining the overall levels of energy efficiency of the transport sector. In PNG, recent estimates show that at least 40% of road vehicle imports are used vehicles (Figure 37). In 2019, less than a fourth of the vehicle imports were used vehicles. The volume of imported vehicle imports have essentially doubled between 2019-2022 based on the data from ICCC (2023).

There are some restrictions on used vehicle imports. Light vehicles up to 3.5 tons must be no more than five years old, while heavier vehicles may be up to 15 years old. Customs charges are high. Vehicles with engine sizes above 2,701 cc face a 110% duty on the CIF value. Commercial vehicles with fewer than ten seats attract a 40% duty, while those with more than ten seats pay only 10%. Other import costs add significantly to the final price. A 10% import GST is also levied, along with brokerage, quarantine, port handling, inspection, and registration fees. Combined, these charges can easily double the vehicle's original cost (J. C. T. Team 2021).

Electrification is a strong driver for PNG's transport energy efficiency and decarbonization. Between 2017 and 2024, electric vehicles made up a small but increasing share of PNG's vehicle imports (ITC 2025). Overall, PNG imported USD 27 million worth of electric vehicles, primarily goods vehicles (98%), followed by light duty vehicles (2%). The share of electric vehicles among total road vehicle imports grew to 6.7% in 2023 (ITC 2025). Meanwhile, the broader Pacific region (including Australia and New Zealand) had a significantly higher electric import share of 11.6% by 2023 (ITC 2025).

Electric vehicles do not emit pollutants directly from the tailpipe. As a result, reducing carbon from electric vehicles depends significantly on the electricity grid's emissions. In Asia, where most electricity is generated from fossil fuels, grid emissions are among the highest globally. Since 2000, the carbon intensity of the region's electricity grids has shown minimal change, only slightly dropping from 635 gCO2/kWh in 2015 to 581 gCO2/kWh in 2022 (EMBER n.d.).

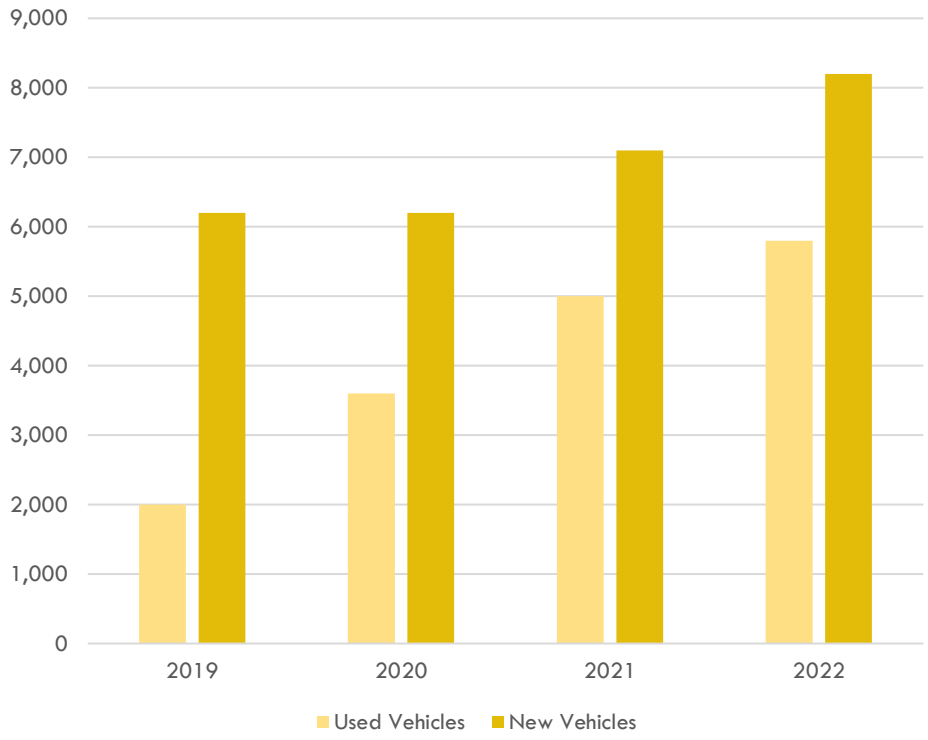

Figure 37. New and Used Vehicle Imports
Source: (ICCC 2023)

The transport sector is the primary user of energy in PNG.

For PNG, the electricity grid emissions were 467 gCO2/kWh in 2015 and increased to 514 gCO2/kWh in 2023 (EMBER n.d.) (Figure 38). This trend indicates an increase in the carbon intensity of the electricity supply, highlighting the importance of expanding low-carbon generation to maximize the climate benefits of transport electrification (Figure 38).

Despite abundant, untapped energy resources, energy access remains a major challenge. Fewer than 15 percent of people have access to on-grid power. This is among the lowest rates in the world. The country has vast potential in hydropower, solar, wind, and geothermal energy. Yet these resources remain largely unexploited. To address this, PNG's Vision 2050 (Government of Papua New Guinea 2009) aims to achieve carbon neutrality in power generation by mid-century. Further, power reliability is the next frontier. Power grids suffer from frequent blackouts. Firms in PNG face 42 outages every month (OWID 2023). This is far higher than the average in East Asia. Modern transport needs stable energy.

On average, the percentage of electricity generated from renewable sources in PNG have decreased since the turn of the century, from roughly 42%in 2000 to 31% in 2023 (IRENA 2026) (Figure 39).

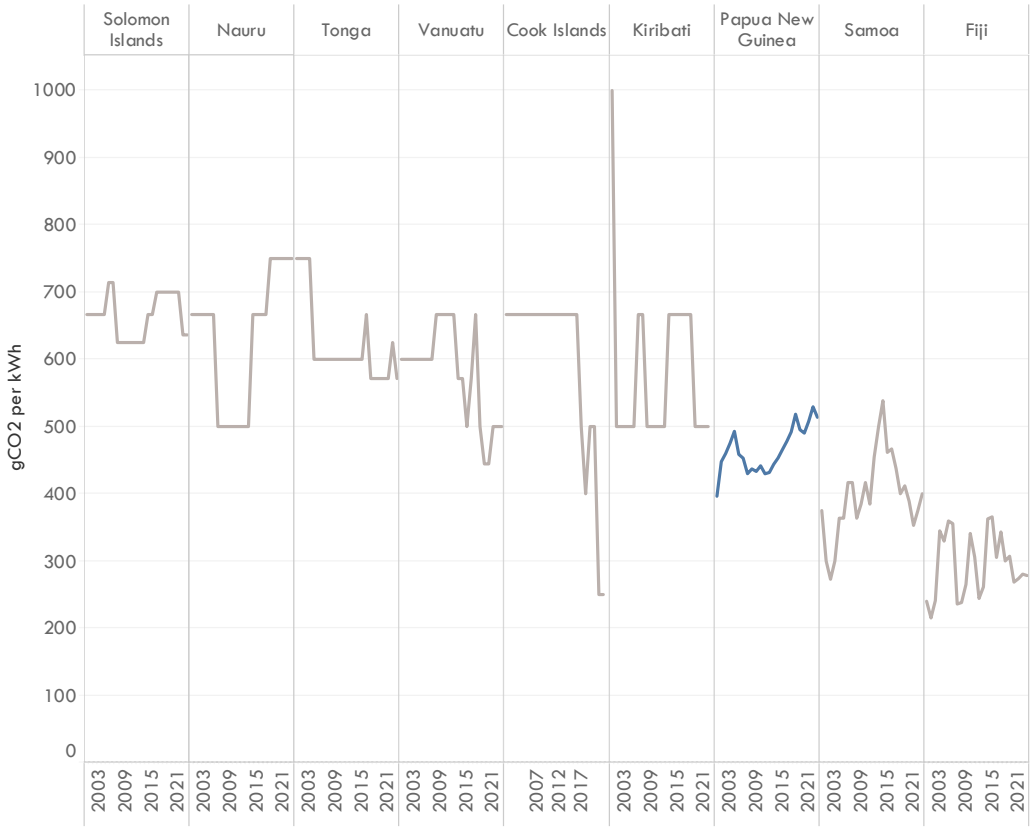

Figure 38. Grid Emission Factors -Pacific 2000-2023
Source: Own analysis and visualization based on EMBER (n.d.)

Despite abundant, untapped energy resources, energy access remains a major challenge.

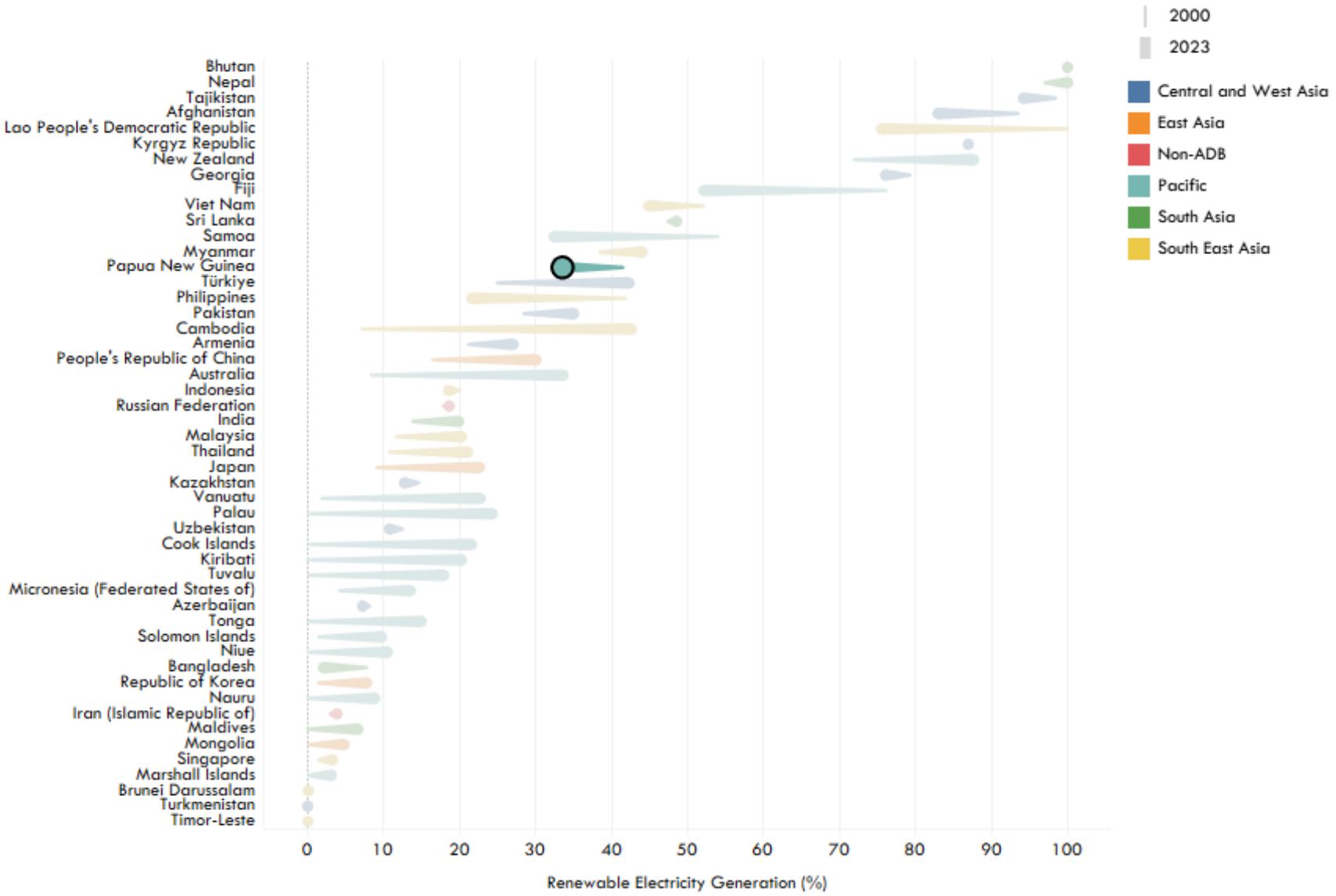

Figure 39. Percentage of Renewable Energy in Electricity Generation
Source: Own analysis and visualization based on IRENA (2026)

The discussions on electricity relate directly to e-mobility transition. PNG's 2024 E-mobility Readiness Index (UNEP 2024a) score is 43 out of 100, broken down into component scores of 5 out of 25 for technology access, 10 out of 25 for EV policy support, 13 out of 25 for clean energy access, and 15 out of 25 for the availability of financial instruments (Figure 40). Out of 51 economies in Asia and the Pacific, PNG sits at the lower tier of the overall scores for the said index.

Papua New Guinea has begun to position transport decarbonization as a core development priority. The Updated Nationally Determined Contribution (Government of Papua New Guinea 2020d) commits to reducing emissions from transport through more efficient vehicles, a shift to public transport, and the introduction of low- and zero-emission technologies, including electric mobility measures. The Medium Term Development Plan IV 2023-2027 (Government of Papua New Guinea 2023b) calls for better-integrated corridors and a "maintenance first" approach so that emissions gains from new technologies are not lost to poor infrastructure and congestion.

The National Transport Strategy (Government of Papua New Guinea 2013) translates these goals into programmatic measures across road, maritime, and aviation modes. They emphasize improved vehicle fuel efficiency, incentives for cleaner technologies, and stronger regulatory frameworks for road safety and asset management. Measures to "encourage the introduction of hybrid and electric vehicles" and to develop "electrified bus rapid transit systems in urban centers and climate-resilient supporting infrastructure" are embedded in these strategic documents and signal a clear shift away from a purely road-expansion paradigm. In parallel, the Climate-Compatible Development Strategy (Government of Papua New Guinea 2015) and the Climate Change (Management) Act (Government of Papua New Guinea 2015) provide the overarching legal and planning framework that anchors all sectoral measures in PNG's long-term low-carbon vision.

Electrification is now a central pillar of PNG's emerging transport policy.

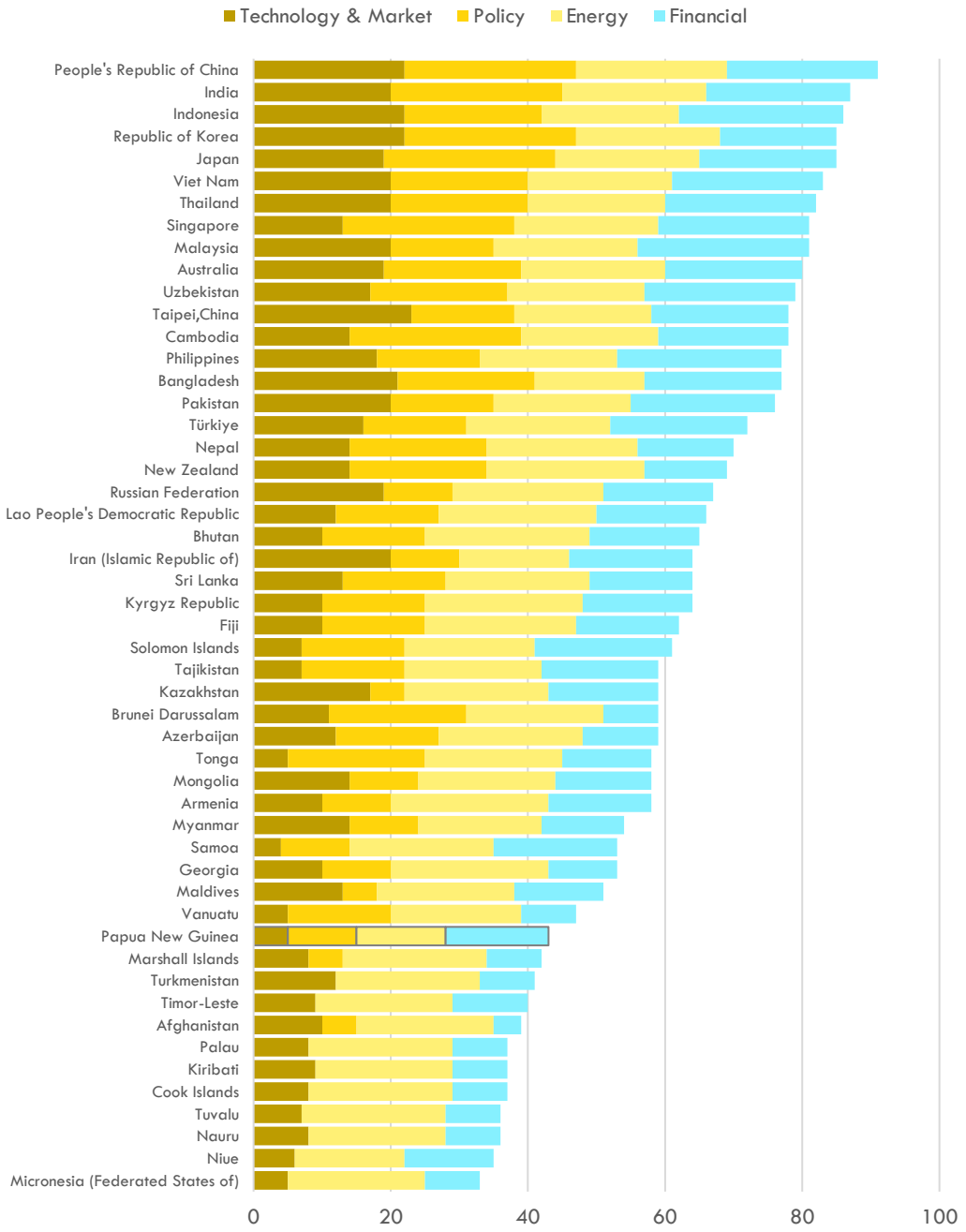

Figure 40. 2023 E-mobility readiness index
Source : Own visualization based on UNEP-a (2024)

PNG's draft National EV Policy (Government of Papua New Guinea 2022a), led by the Department of Transport, aims to achieve 15% of new vehicle registrations as electric by 2030. The Draft EV Policy for PNG proposes that all new vehicles procured by the national government will be electric, unless no suitable electric model exists, ensuring that the public fleet leads the transition. Under the same Draft EV Policy for PNG, all leased and hired cars used for the commutes of government officials are to be transitioned to electric by the end of the policy period, and Port Moresby's city buses are identified as an early market for electric buses. The policy further proposes that at least 50 per cent of all new buses (15 seats or more) procured for the Port Moresby public transport fleet between 2022 and 2027 should be fully electric, backed by national incentives and technical support. A pilot purchase of five electric buses in 2023 for Port Moresby, with donor support, is intended to demonstrate feasibility, build local capacity and de-risk future scale-up under the same Draft EV Policy for PNG. (Government of Papua New Guinea 2022a)

In June 2025, the GGGI, the Department of Transport, and CCDA held a Validation Workshop to review and validate the draft Electric Vehicle Policy Framework, Investment Plan, and Implementation Roadmap before finalization.(Government of Papua New Guinea 2025c).

Charging infrastructure is treated as a system, not an afterthought. The EV Policy Draft for PNG requires accessible public charging within 5 km in urban areas and mandates national standards for AC and DC chargers. Buildings are to become "EV-ready" through revisions to the Building Act and Regulations, ensuring future-proofed parking and electrical capacity. Electricity tariffs for charging will encourage off-peak use to protect grid stability. (Government of Papua New Guinea 2022a)

Electrification is aligned with power sector decarbonization. The Updated NDC (Government of Papua New Guinea 2020d) and National Energy Policy (Government of Papua New Guinea 2022c) commit to increasing the share of renewable electricity to up to 78% by 2030 and to moving towards 100% renewable electricity by 2050. This ensures that electric mobility delivers real emissions reductions, not just upstream fuel switching.

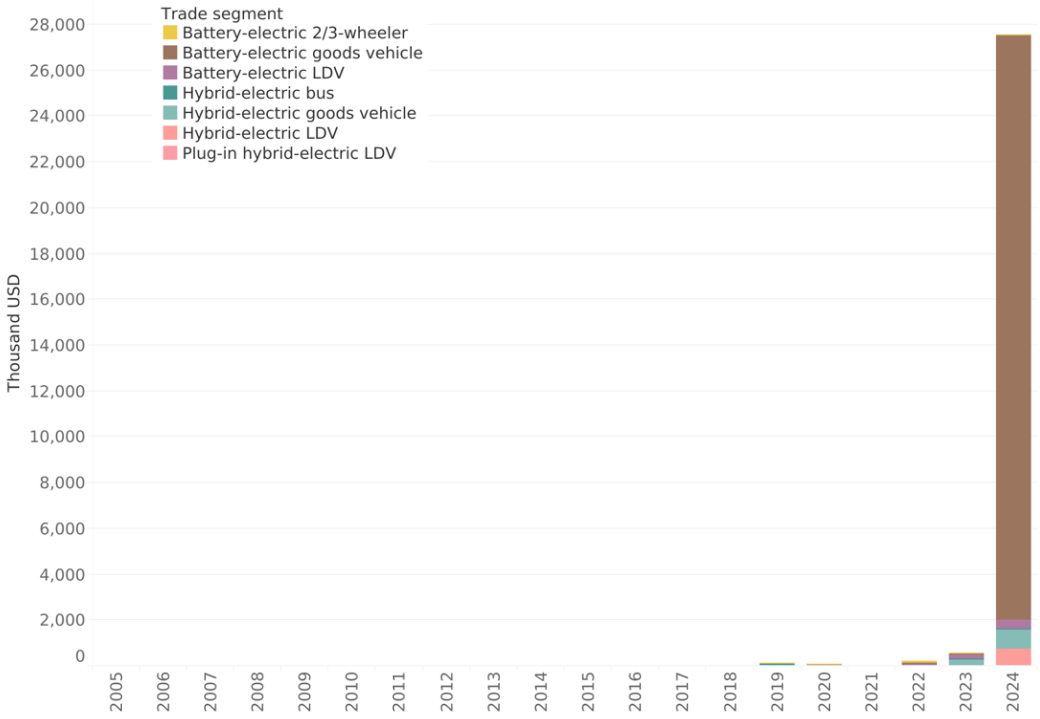

Figure 41. Distribution of EV Imports
Source: Visualization based on Trademap (2025)

The most recent data shows a notable increase in terms of the electric vehicle-related trade as shown in Figure 41

Cleaner fuels complement electrification where electrification is slower.

The National Energy Policy (Government of Papua New Guinea 2022c) promotes biofuels, including pilot E10 ethanol blends and biodiesel in government and public transport fleets. The National Transport Strategy (Government of Papua New Guinea 2013) reinforces this approach by encouraging sustainable substitution of fossil fuels, particularly for freight and remote operations.

Several proposed standards and regulations are intended to ensure progress. The Climate Change (Management) Act 2015 (Government of Papua New Guinea 2015) mandates the Fuel Standards Regulation to prescribe maximum permissible levels of sulphur and greenhouse gas pollutants in transport fuels. Efficiency is also driven by land-use patterns. The National Climate Compatible Development Management Policy (Government of Papua New Guinea 2014) supports reducing vehicle-miles travelled through compact development. It further encourages a fee-and-incentive system that favors fuel-efficient vehicles over inefficient ones.

Data and institutions are critical for delivery. The EV Policy Draft for PNG (Government of Papua New Guinea 2022a) requires the collection of vehicle and charging data to track emissions outcomes. The National Transport Strategy (Government of Papua New Guinea 2013) strengthens licensing, inspection, and monitoring systems. Capacity building for mechanics, drivers, and charging operators is embedded to ensure long-term system readiness.

The policy framework acknowledges that decarbonization involves a transition in labor and skills. The Draft EV Policy for PNG (Government of Papua New Guinea 2022a) emphasizes the creation of "new jobs for all genders" in charging operations, maintenance, and related services, positioning Port Moresby as a regional training center for the EV ecosystem. It proposes dedicated courses for EV drivers, mechanics, and charging station staff through existing institutions, along with short re-training programs for internal combustion engine mechanics transitioning to EV servicing. The Department of Transport and a proposed National EV Unit will spearhead public outreach and communication efforts under this Draft EV Policy (Government of Papua New Guinea 2022a), promoting awareness of EV benefits and policy initiatives while collaborating with private OEMs and retail partners on workforce development. These initiatives aim to translate PNG's commitments in the Updated NDC (Government of Papua New Guinea 2020d) and Vision 2050 (Government of Papua New Guinea 2009) into a cohesive, people-focused transition to a low-carbon transportation system.

Transport decarbonization requires clear institutional roles. The Department of Transport acts as the lead policy agency. It formulates the transport strategy across three modes: land, air, and maritime. It plans infrastructure investments. It administers transport legislation. It ensures safety, security, and environmental compliance. These core functions underpin low-carbon transport transitions. The Road Traffic Authority delivers land transport regulation. Established in 2014, it develops and enforces standards for vehicle emissions, fuel efficiency, and road safety. The Climate Change and Development Authority (CCDA) coordinates national climate action. It was mandated under the Climate Change Act 2015 (Government of Papua New Guinea 2015). Its responsibility is clear: contribute to global mitigation through low-carbon development that drives economic growth and social welfare. CCDA is PNG's focal point to the United Nations Framework Convention on Climate Change (UNFCCC) and the Paris Agreement (CCDA, n.d.). It serves as the National Designated Authority to the Green Climate Fund and the Designated Authority to the Adaptation Fund.

Transport GHG Emissions Outlook

Papua New Guinea's Vision 2050 (Government of Papua New Guinea 2009) demands a 7% annual economic growth rate to reach a GDP per capita of USD 3,000 by 2030. The official Business as Usual (BAU) scenario reflects this ambition by blending mid-range and high-growth projections validated by the Department of National Planning and Monitoring. The outlook excludes international shipping, aviation, and fuel exports to focus on domestic impacts. The total national GHGs are projected to increase by 11% to 32% by 2030. Increasing wealth, a growing population, and expanded road networks will push the vehicle fleet from 155,000 units in 2005 to over 600,000 by 2030. Consequently, fuel demand will triple or quadruple, driving transport emissions from a baseline of 1.6–2.4 MtCO2e to as high as 4.5 MtCO2e between 2015 to 2030 as depicted in Figure 42 (Government of Papua New Guinea 2010a).

In terms of official mitigation scenarios, PNG's transport sector (Government of Papua New Guinea 2010a) relies on two pillars: vehicle efficiency and sustainable biofuels. Gradual improvements to internal combustion engines are estimated to save nearly 0.6 Mt MtCO2e at a negative cost, delivering immediate economic and environmental gains. Advanced technologies, including hybrids and electric vehicles, offer an additional 0.3 MtCO2e in savings, though at a higher investment cost. Biofuels present a transformative opportunity, with the potential to exceed 1 MtCO2e in total abatement if fully scaled. Potential feedstocks range from coastal coconut oil to highland bioethanol derived from cassava and sweet potato. However, realizing this potential requires feasibility studies to assess resource availability and protect food security. Prioritizing these assessments will turn bioenergy from a theoretical option into a practical climate solution.

Climate resilience and disaster preparedness in transport

Papua New Guinea is the most disaster-prone country among the 14 Pacific SIDS (EM-DAT 2025). It is a frontline state for climate change. The landscape is rugged and the weather is extreme. PNG's average monthly rainfall ranges between 250mm – 350mm (Government of Papua New Guinea 2020d). Nearly 18% of the land is permanently or regularly flooded (World Bank 2021b). For transport, this is a crisis in connectivity.

Climate change turns existing hazards into systemic threats. Sea levels are rising. This will inundate ports and coastal roadways. Heavier rainfall accelerates erosion and triggers landslides. Inland, high winds cause frequent washouts. PNG sits in the "Ring of Fire". Its transport sector bears the heaviest burden of this geography. Without rapid adaptation, interruptions will become the norm.

Infrastructure damage does more than just disrupt movement; it isolates rural communities, cuts off supply chains, and increases costs that heavily impact those with the fewest alternatives.

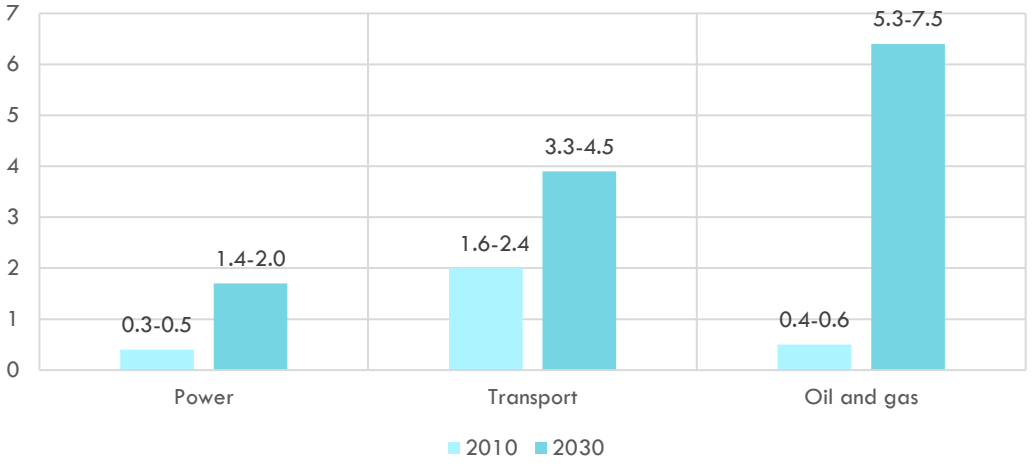

Figure 42. GHG Emissions by Sector
Source: (Government of Papua New Guinea 2010a)

The vulnerability is high, but readiness remains low. PNG scores poorly at 7.1 out of 10 on the INFORM Risk — a global, open-source risk assessment tool used to assess the risk of humanitarian crises and disasters and support decisions on prevention, preparedness, and response — particularly in the dimension on "lack of coping capacity" (EC 2022). This measures the ability of a country to cope with disasters in terms of formal, organized activities and the ef

fort of the country's government as well as the existing infrastructure which contribute to the reduction of disaster risk. Infrastructure design is only beginning to account for climate risks. Resilient engineering entails a higher cost. Funding for these increased investment costs is not yet secured.

PNG is estimated to face a potential average annual loss of 4-46 million USD to its transport infrastructure due to hazards, representing 0.01% of its GDP as shown in Figure 43. (CDRI n.d.; E. E. Koks et al. 2019; Verschuur et al. 2023). These losses are distributed across transport modes: 86% on roads, 12% at ports, and 2% at airports. In addition, approximately USD 22 million in trade is at risk due to potential disruptions from climate hazards. Bridges carry significant potential for damage, with just 0.1% of transport infrastructure facing a potential share of 1.2% average annual loss in transport infrastructure (BU 2026).

PNG's 207th ranking out of 208 countries in 2023 for road network vulnerability highlights its susceptibility to disruptions (E. Koks et al. 2023). With <1% of the population living in low-lying coastal areas, sea-level rise and increased storm surges exacerbate the need for resilient infrastructure to protect communities and maintain connectivity (UN, n.d.). Looking forward, a 4.5-degree temperature increase scenario would expose more than 29% of PNG's road and rail assets to extreme precipitation.

Risk and damage estimates vary greatly depending on the assumptions made. Verschuur et al (2023) estimated that in PNG, the annual risk per port is approximately $5 million, accounting for physical damages to port infrastructure, critical infrastructure nearby—such as electricity, roads, rail, and power plants within a 1 km radius—and the logistical losses incurred by port operators, carriers, and shippers due to operational downtime.

Despite these challenges, the government is making progress. The 2023 National Adaptation Plan (NAP) (Government of Papua New Guinea 2023c) aims to develop transport infrastructure to resilient standards. Reforms are in progress to revise building codes and bridge manuals. Additionally, the World Bank has launched a project to fund the rehabilitation of up to 40 km of the Ramu Highways, along with extended performance-based maintenance for 113 km of these highways (World Bank 2022b).

The government targets USD 1.3 billion in climate-resilient infrastructure across air, sea, and land (Government of Papua New Guinea 2022d). This investment ensures assets can withstand a changing environment. The National Transport Strategy requires agencies to review and adjust design code provisions for climate change adaptation, including sea-level rise and increased rainfall intensity and duration, and to coordinate standards for environmental assessment and coastal engineering works.

The National Adaptation Plan (Government of Papua New Guinea 2023c) calls for a transport asset-at-risk inventory and management plans, as well as rigorous risk and vulnerability assessments of inland road networks, coastal roads, bridges, ports, and buildings. The National Disaster Risk Reduction Framework 2017-2030 (Government

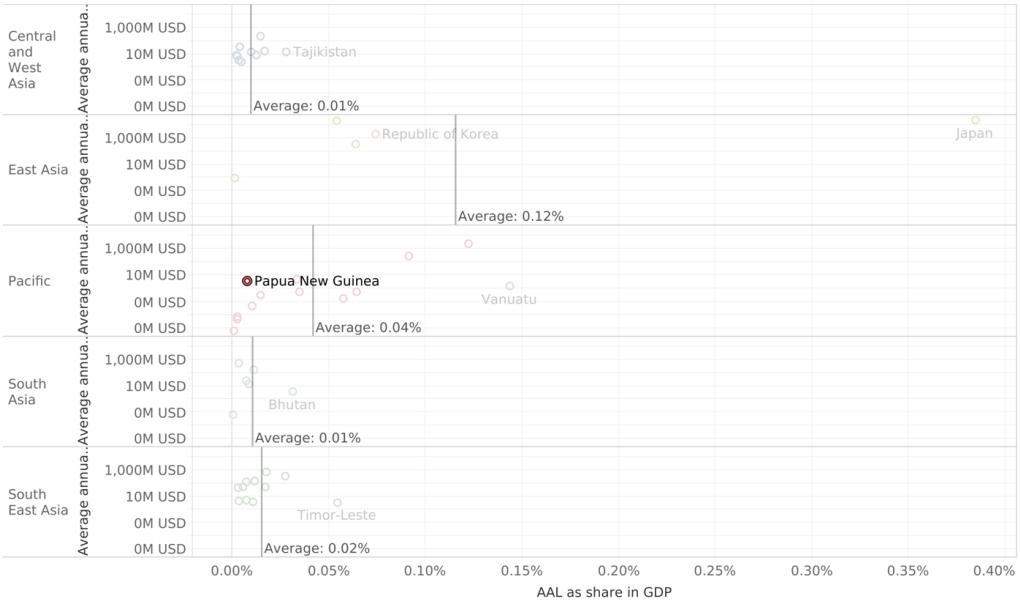

Figure 43. Average Annual Losses to Transport Infrastructure as share of GDP
Source: Own analysis and visualization based on CDRI (n.d.)

of Papua New Guinea 2017a) requires the preparation and periodic updating of disaster preparedness and contingency policies, plans, and programs, in consultation with all relevant institutions. It also mandates strengthening multi-hazard, multi-sectoral forecasting and early warning systems tailored to user needs.

Disaster preparedness requires better data and coordination. The government is investing in the National Weather Service Support Program (SPREP 2024), a priority in the Medium-Term Development Plan IV (2023-2027) (Government of Papua New Guinea 2023b). The Updated NDC (Government of Papua New Guinea 2020d) and the Medium-Term Development Plan IV 2023-2027 (Government of Papua New Guinea 2023b) highlight integrated early warning systems and improved monitoring and evaluation mechanisms to predict geophysical threats, aiming to provide timely information on extreme climate events to around 70 percent of the population.

Transport Air Pollution

The transport sector is a significant source of air pollutant emissions. From 2015 to 2022, PNG achieved reductions in air pollution from the transport sector (Figure 44). Annually, emissions of harmful pollutants such as PM2.5 and black carbon fell by approximately 3%, respectively with decreases also noted in NOx and SOx emissions. Remarkably, these enhancements occurred alongside GDP growth of around 5%. Compared to the Asia-Pacific region, PNG's reductions in PM2.5 and black carbon were particularly significant, surpassing the regional average of a 1% annual decrease. By 2022, road transport was responsible for only a small portion of PNG's total air pollution, contributing about 24% of PM2.5 emissions, 68% of NOx, 0.3% of SOx, and 44% of black carbon. In contrast, maritime transport accounted for 75%, 28%, 98%, and 55%, respectively (Figure 45) (European Commission 2024)

In 2021, air pollution resulted in 8.1 million deaths worldwide (State of Global Air 2024), making it the second leading cause of death, especially impacting children under five. The same source estimates that 1,100 premature deaths in 2021 in PNG are attributable to PM2.5. Nearly 90 percent of these fatalities are associated with noncommunicable diseases like heart disease, stroke, diabetes, lung cancer, and COPD—all linked to poor air quality. The transport sector significantly contributes to serious health problems, including respiratory and cardiovascular diseases, cancer, and negative birth outcomes.

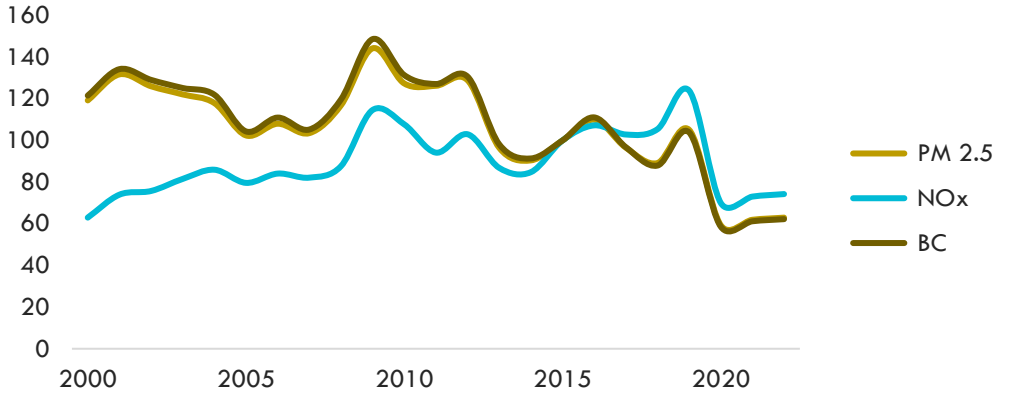

Figure 44. Change in transport air pollutant loading (2015= 100)
Source: Own analysis and visualization based on European Commission (2024)

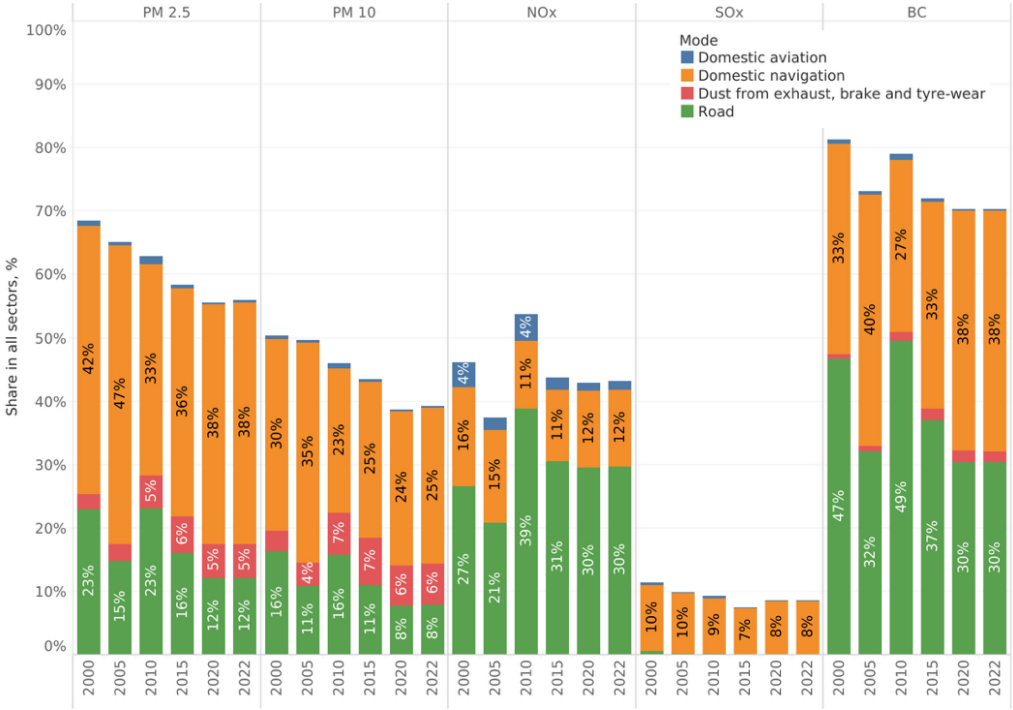

Figure 45: Share of Domestic Transport in Total Economy-wide Emissions, by Mode and Substance
Source: Own analysis and visualization based on European Commission (2024)

Research (McDuffie et al. 2021) indicates that in 2019, air pollution from transport caused approximately 250,000 premature deaths annually across Asia, of which about 53 occurred in PNG. In total, combining all sources, the total health damages due to ambient and household PM 2.5 exposure amounts to about $4.8 billion of health damages from PM2.5 exposure in 2019 (World Bank, 2022) (Figure 46).

The PNG policy framework focuses on shifting how people move and what fuels they use. The government recommends providing safe walkways in metropolitan areas to encourage walking. It also promotes the use of bicycles, scooters, and other energy-efficient designs to reduce local emissions. These measures aim to shift demand toward non-motorized transport. These goals are central to the National Energy Policy (Government of Papua New Guinea 2022c). The policy suggests a 10% ethanol-gasoline blend for government and public transport vehicles. It is also testing biodiesel blends to replace traditional fossil fuels. These initiatives are guided by the National Energy Policy and the Development Strategic Plan 2010-2030 (Government of Papua New Guinea 2010b). The EV Policy Draft for PNG (Government of Papua New Guinea 2022a) promotes several fiscal measures to promote electric vehicles.

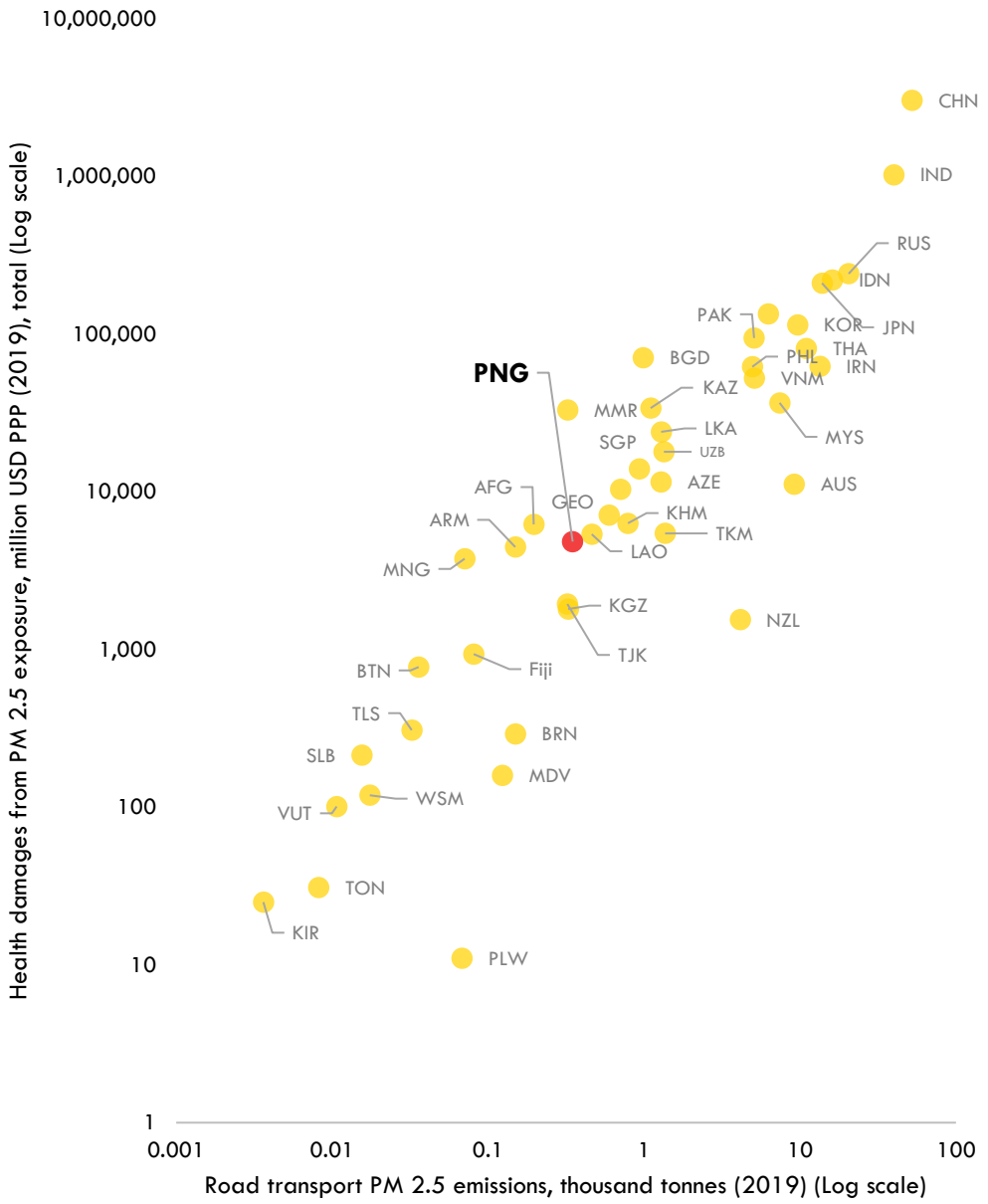

Figure 46. Health Damages from PM 2.5 Exposure (2019)
Source: Own analysis and visualization based on World Bank (2022)

Leverage Science, Technology, and Innovation for Sustainable Transport

Leverage Science, Technology, and Innovation for Sustainable Transport

Papua New Guinea has experienced modest growth in internet penetration over the past two decades, rising from 2% in 2005 to 24% in 2023 (Figure 47) (ITU 2025). Compared to other Pacific Small Island Developing States (SIDS), PNG consistently lags regional peers. Fiji, for instance, achieved 79% penetration by 2023, having grown from 43% in 2015. Similarly, Samoa reached 58% (from 25% in 2015), Tonga 58% (from 39% in 2015), and Vanuatu 46% (from 22% in 2015) (ITU 2025). Even Kiribati, despite its remote geography, achieved 88% penetration by 2023 (ITU 2025). PNG's lower digital connectivity reflects persistent challenges, including vast rural populations (87% as of 2020 (UN 2025b)), difficult terrain, and limited infrastructure.

To enhance digital connectivity, PNG has developed comprehensive policy architecture. The government's Digital Transformation Policy (2020) (Government of Papua New Guinea 2020a), Digital Government Plan 2023-2027 (Government of Papua New Guinea 2023a), and Universal Access and Service (UAS) Policy (Government of Papua New Guinea 2022b) set ambitious targets, including 100% broadband connections for all local government units by 2027. These policies are anchored in PNG's Vision 2050 (Government of Papua New Guinea 2009) and aligned with the Digital Government Plan (Government of Papua New Guinea 2023a), which provides the legal framework for digital service delivery (Government of Papua New Guinea 2025b). The Department of Information and Communications Technology (DICT) oversees implementation through programs targeting both supply-side infrastructure development and demand-side digital literacy initiatives, with particular emphasis on reducing gender disparities and ensuring accessibility for persons with disabilities (International Trade Administration 2024).

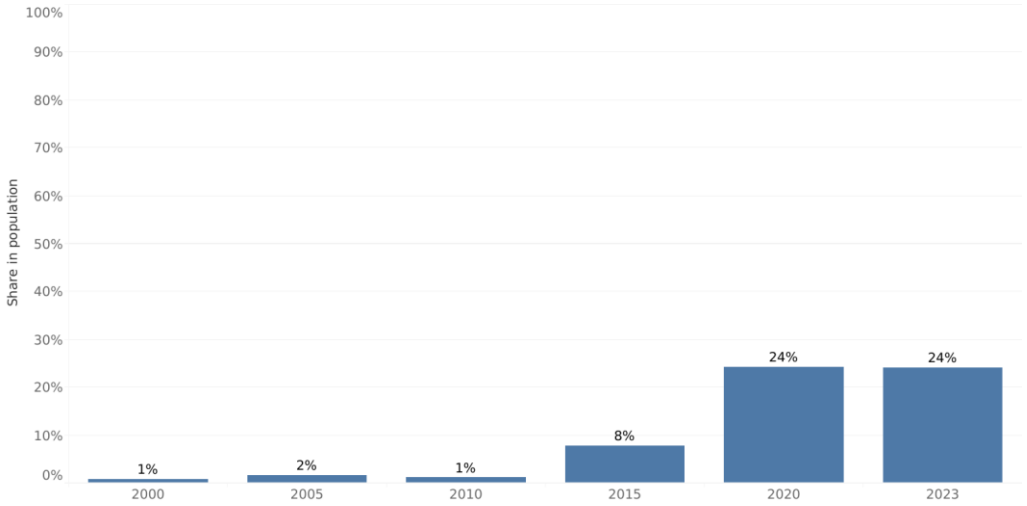

Figure 47. Share of Population using the Internet in Papua New Guinea
Source: Own analysis and visualization based on ITU (2025)

Internet access is increasingly central to PNG's transport and climate resilience. Connectivity enables early warning dissemination, disaster coordination, and access to climate and weather information for remote and vulnerable communities, strengthening preparedness and response to extreme events. It also supports continuity of essential services, climate-responsive planning, and livelihood diversification during climate shocks. In PNG's high-risk, geographically fragmented context, expanding affordable and reliable internet access is not only a digital development priority but also a critical enabler of resilience.

PNG has integrated science, technology, and innovation into its transport policies to foster sustainable mobility. These policies emphasize digitalizing transport management using Road Asset Management Systems (RAMS) and Bridge Asset Management Systems (BAMS) for systematic network monitoring and performance assessment (Government of Papua New Guinea 2024b). This digital approach facilitates routine data collection, inventory updates, and condition surveys, aiding in identifying suitable funding sources and interventions for different road types (Government of Papua New Guinea 2021a). Additionally, tools like HDM-4 software are planned for strategic planning and analysis (DOWH 2024). ICT strategies, including digitizing business processes, automation initiatives, and modern software systems, are also part of the plan to enhance service delivery (Government of Papua New Guinea 2021a).

Advanced pavement assessment technologies that enable thorough measurement of riding quality, surface roughness, and pavement conditions are being utilized (e.g. TotalPave, RoadRoid, Roughometer, and Light/Heavy Weight Deflectometers) (Government of Papua New Guinea 2024b). Additional technology measures include full upgrade of Air Traffic Control Systems across 22 national airports to modern facilities (Government of Papua New Guinea 2023b), research and adoption of best engineering practices for road construction methods and materials, and purchase of updated road, bridge, and architecture engineering design software with comprehensive user training (Government of Papua New Guinea 2021a). These technology-driven approaches are complemented by Asset Management Business Plans, enabling asset valuation and strategic funding allocation to maintain infrastructure in optimal condition (Government of Papua New Guinea 2024b).

Papua New Guinea has experienced modest growth in internet penetration over the past two decades, rising from 2% in 2005 to 24% in 2023, compared to other Pacific Small Island Developing States (SIDS).

Crosscutting

Transport Sector's Economic Contribution and Employment

Since 2000, PNG's GDP has grown at an average annual rate of approximately 6%, nearly twice the population growth rate (UNStats, n.d.). This consistent economic growth has put additional strain on the transport system as the country pursues broader urbanization and development goals. The transport sector's contribution is growing slowly, accounting for roughly 5.1 percent of total gross value added in 2023 (UNStats, n.d.) (Figure 48). In 2000, it was estimated at around 4.9 percent, indicating that the transport sector had significantly lagged other sectors. It is also significantly lower than in some other Pacific SIDs: Fiji at 13% in 2023, 10% in the Marshall Islands, and 8% in Palau, and below the Asia-Pacific average of 9%. (UNStats, n.d.). The National Statistical Office (NSO) records (NSO, n.d.) indicate a significantly lower share. According to NSO, the transport and storage sector's share in total industrial output stayed relatively minor from 4% in 2019 to 3% in 2024 (NSO, n.d.).

The transport sector in PNG experienced modest employment growth, rising from 74,000 jobs in 2015 to 92,000 in 2023, with an average yearly increase of 3%, which is slightly higher than the Asia-Pacific average of 2%. As of 2023, the industry accounts for 3% of the country's total employment, half the regional average of 6%. Female participation in the industry has slightly declined from 12% in 2015 to 11% in 2022. Since 2015, average transport sector labor productivity levels in PNG have increased by about 2% per year (Figure 49).

PNG has proposed comprehensive capacity-building and workforce-development measures across its transport sector to ensure sustainable service delivery and create new employment opportunities. The Department of Works has established structured training programs that address immediate skill and knowledge needs, including upgrading at least five staff members' formal qualifications annually to degree or master's level (DOW 2015). All staff training across transport agencies is mandatory to strengthen institutional capacity (RTA 2017b).

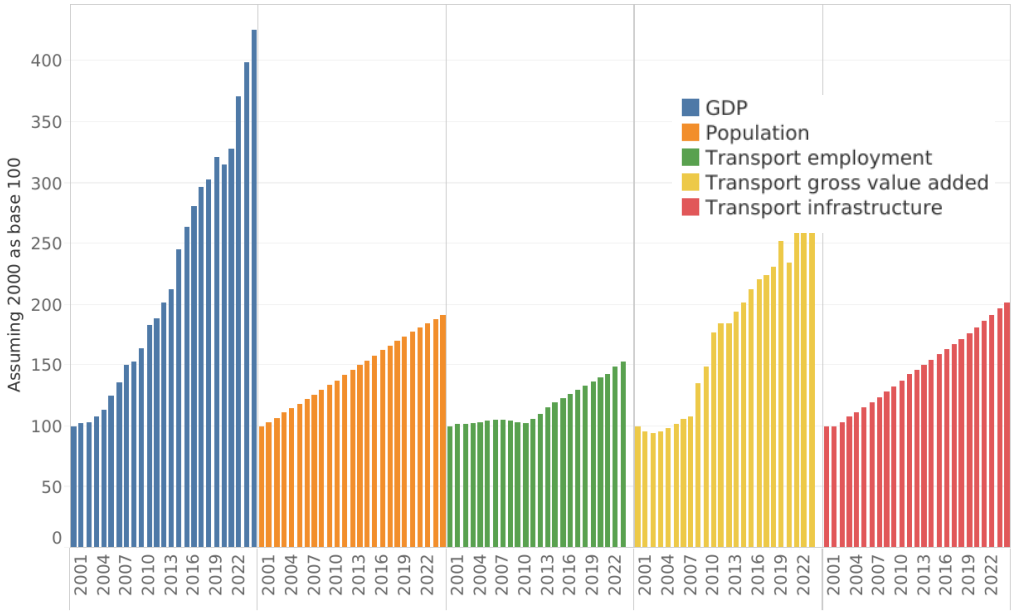

Figure 48. Transport and Economics Indicator Indexes (2000 as 100)
Source: (ATO 2025b; ILO 2026; UNDESA - Population Division 2022; UNStats, n.d.; World Bank 2023)

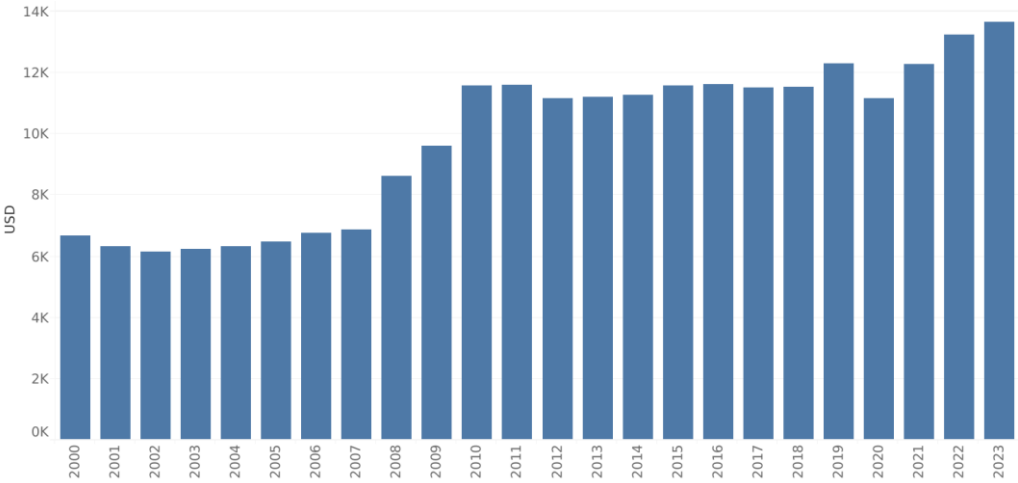

Figure 49. Gross Value Added per Employee in Papua New Guinea
Source: Own analysis and visualization based on ILO (2025); UNStats (n.d.)

Technical capacity efforts focus on sustainable road and bridge management through workforce development strategies, competency frameworks, and leadership programs, as well as the certification of internal auditors, technical auditors, accountants, and engineers (DOWH 2024; Government of Papua New Guinea 2021a). Training emphasizes inspections and surveys with significant legal and financial implications, ensuring that personnel understand their legal obligations in road maintenance (Government of Papua New Guinea 2024b).

Provincial capacity building supports the formulation, implementation, and monitoring of road network maintenance and investment plans through on-site coaching and capacity programs for local engineers and planners (DOW 2018), aided by initiatives like the Transport Sector Support Program in partnership with Australia (Government of Papua New Guinea 2020c). For emerging technologies, employment opportunities in electric vehicle adoption are expanding through training at skill centers, including short re-training courses for ICE vehicle mechanics transitioning to EV servicing, with Port Moresby aiming to become a regional EV training hub (Government of Papua New Guinea 2022a).

Motorization

PNG reportedly does not maintain a centralized database of registered vehicles, resulting in significant gaps in official vehicle statistics. In addition, a substantial number of vehicles are believed to be operating without registration (van Dissel and Anyala 2024).

The World Health Organization estimated that PNG had 100,993 registered vehicles in 2016, with two- and three-wheelers accounting for only about 1% of the total. More recently, MVIL has indicated that the number of registered vehicles is around 120,000, although this figure excludes several thousand unregistered vehicles. CTNC, on the other hand, estimates that by 2030, there would be 600 thousand vehicles in PNG(CTNC 2022). Detailed and verified registration data are not publicly available, and even the Road Transport Authority does not hold a complete record. van Dissel and Anyala (2024) indicates that based on an assumed annual growth rate of about 3%, derived from vehicle sales equivalent to roughly 5–6% of the registered fleet, the total number of vehicles would reach around 124,000 by the end of 2023, broadly consistent with MVIL's estimates (Figure 50) (van Dissel and Anyala 2024).

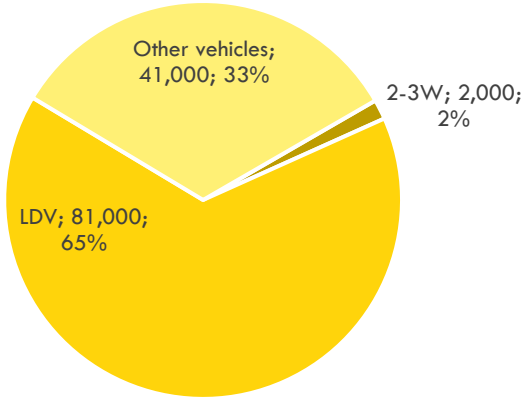

Figure 50. Estimated Road Vehicle Fleet by Vehicle Type (2023)
Source: (van Dissel and Anyala 2024)

The Government's socio-demographic and economic survey report (Government of Papua New Guinea 2022e) indicates a gradual shift in patterns of personal transport ownership over time. Bicycles remain one of the most owned forms of personal transport, but their ownership declined from 10% in the 2016–18 DHS to 8% in the 2022 SDES. In contrast, ownership of motorized modes increased over the same period. Car and truck ownership rose from 5% to 6%, while boat ownership with motors increased from 2% to 3%. Overall, the trend suggests a slow move away from non-motorized transport towards greater reliance on motorized personal vehicles. The road transport-related trade values (Figure 51) show a broadly rising profile over the long term. (Trademap, 2025)

PNG's policy measures address the challenges of increasing motorization through regulatory controls and fleet improvement strategies rather than imposing ownership restrictions. The National Transport Strategy (Government of Papua New Guinea 2013) has proposed import approval requirements to ensure transport equipment is fit for PNG's roads. The proposed import approval requirements relate to: mass and dimensions, vehicle construction standards, age and history of pre-use, and emission control equipment, with provisions to review import controls to eliminate high emission vehicles (Government of Papua New Guinea 2013).

Vehicle registration, licensing and inspection systems are proposed to be centralized through database systems covering vehicle registration, driver licensing, passenger and goods transport licensing, driver training and testing, and automated vehicle inspection, supported by formal legislation that establishes obligations and responsibilities between national and provincial governments (RTA 2017b; Government of Papua New Guinea 2013). These regulatory frameworks are complemented by fiscal incentives promoting cleaner vehicles, including tax incentives for the importation of alternative fuel vehicles and the acquisition of fuel-efficient technologies (Government of Papua New Guinea 2022c).

Several policy measures explicitly connect the growth of motorization to climate and sustainability issues. These include establishing monitoring systems for vehicle fleet-weighted fuel and CO2 efficiency (Government of Papua New Guinea 2022d, 2020d), proposing limits on carbon emissions through the sustainable replacement of fossil fuels with biofuels (Government of Papua New Guinea 2013), and implementing higher fuel efficiency standards via new national and international regulations (Government of Papua New Guinea 2014). Moreover, efforts to promote low-emissions mobility involve removing incentives for older internal combustion engine vehicles to speed up fleet renewal (Government of Papua New Guinea 2022a).

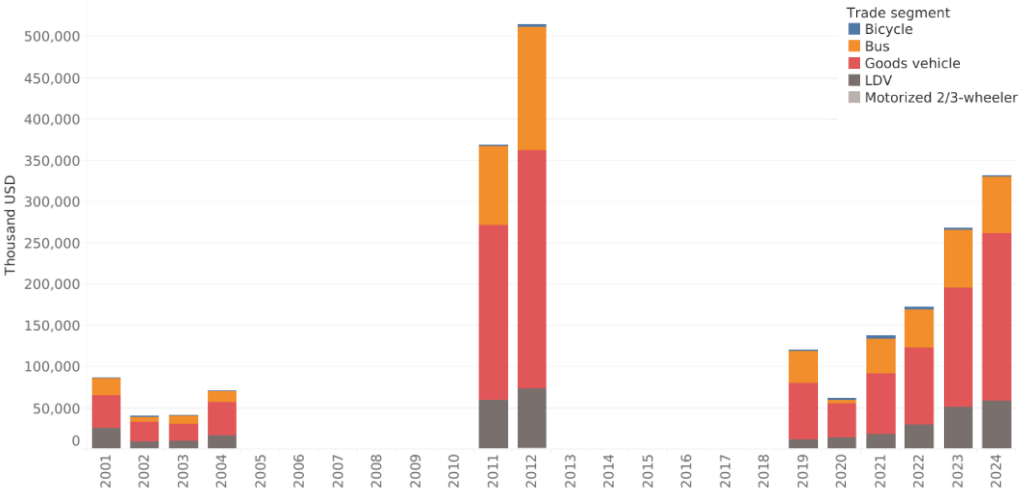

Figure 51. Road Vehicle Imports Value (thousand USD)
Source: (Trademap 2025)

The transport sector's contribution is growing slowly, accounting for roughly 5.1% of total gross value added in 2023.

Gender in the Transport Sector: Addressing Disparities

Female participation in PNG's transport sector has declined both in total numbers and as a share of employment. Male employment increased significantly by 103%, from 43,700 in 1995 to 88,800 in 2025. In contrast, female employment grew only slightly—by 5.5%, from 11,300 to 12,000 during the same period (see Figure 50). The share of women in total transport jobs fell from 21% in 1995 to 12% in 2025. From 2010 to 2023, the sector generated 15,000 new jobs, but women's participation decreased by over 2,000 workers. These patterns suggest that the sector is not equitably integrating women into its workforce.

Papua New Guinea has incorporated gender considerations into its transport policies, focusing on women's safety, economic empowerment, and inclusive participation. The National Transport Strategy commits to promoting women's involvement across the transport sector through skills development programs, targets, and monitoring (Government of Papua New Guinea 2013) . This commitment is implemented via institutional mechanisms such as the Department of Works' Organisation and Workforce Transformation Strategy, which explicitly promotes equitable opportunities for women's career growth within the transport sector (Government of Papua New Guinea 2021a). The growing EV industry offers new opportunities for gender-inclusive employment, with policies requiring that Gender Equity and Social Inclusion principles be adopted and a gender perspective integrated into all EV development processes, acknowledging the gender equality implications of electric mobility. All genders are encouraged to participate in EV policy planning, design, and evaluation (Government of Papua New Guinea 2022a). Additionally, EV-related job roles like charging station operators, mechanics, and drivers are proposed to be made accessible to all genders through training at dedicated centers (Government of Papua New Guinea 2022a).

PNG has proposed developing innovative, gender-responsive public transport solutions to enhance safety and accessibility. As part of the Safe City program, Port Moresby tested 'Meri Saif' women-only buses, which operated successfully and addressed key safety issues for female passengers, though this service has not yet become a permanent part of regular transit options (Government of Papua New Guinea 2020c). These proposed gender-oriented initiatives support sustainable development goals by boosting women's economic participation through better access to jobs and education, decreasing mobility poverty among women, and advancing broader inclusion objectives within PNG's transportation development strategy.

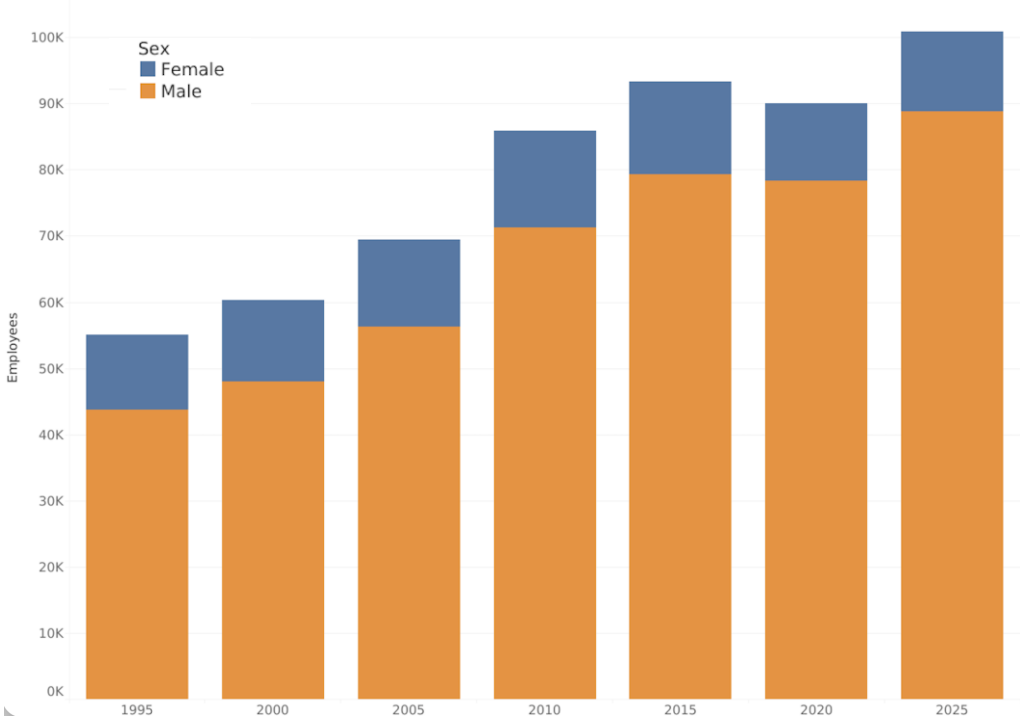

Figure 52. Employment in the Transport, Storage, and Communication Sector in Papua New Guinea
Source: Own analysis and visualization based on ILO (2025)
Note: Numbers are for Operations and Services; ISIC category H and J

Transport Investments - ODA and PPP

From 2002 to 2023, PNG received a total of USD 1,553 million in Official Development Assistance (ODA) for the transport sector (Figure 53). Much of this funding went to road transport, making up 66%, while air transport received 22%, and water transport accounted for 12%. Over these twenty years, ODA flows increased considerably, with annual commitments rising from an average of USD 57 million during 2002-2012 to USD 98 million in 2013-2023—a growth of about 70% increase.

In 2023, total transport ODA reached USD 126 million, with road transport support increasing to USD 81 million, nearing the sector's previous peak of USD 82 million in 2008. Air transport ODA peaked at USD 88 million in 2020. Water transport showed the most volatility, peaking at USD 76 million in 2022. This overall growth and diversification across all three modes highlight international backing for PNG's multimodal transport development and infrastructure connectivity, with road transport providing steady support and air and water transport gaining importance 2019. OECD (2025)

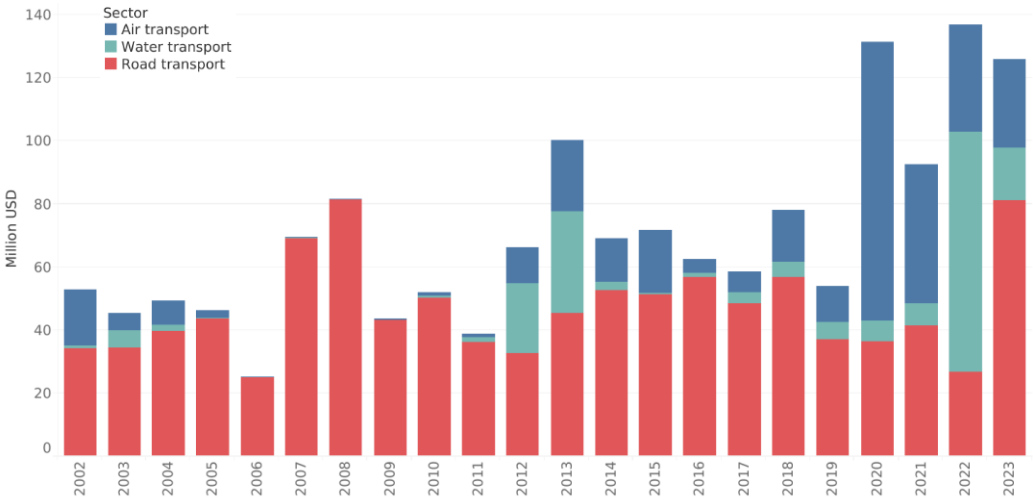

Figure 53. Official Development Assistance to the Transport Sector in Papua New Guinea
Source: Own analysis and visualization based on OECD (2025)

However, there is a significant lack of private sector participation, as PNG's transport sector has received no Public-Private Partnership (PPP) investments from 2011 to 2022. This represents a potential opportunity for future growth and investment diversification.

Papua New Guinea has proposed significant funds for transport infrastructure, supporting sustainable development goals. The government plans to invest K7.2 billion by 2027 to enhance road networks, including the Connect PNG Missing Link Roads, National Highways, Provincial Roads, and District Commodity Roads (Government of Papua New Guinea 2023b). An additional K2.2 billion is earmarked for maritime infrastructure, with K714 million dedicated to constructing five national wharves and upgrading coastal shipping facilities (Government of Papua New Guinea 2023b). The Connect PNG Program (Government of Papua New Guinea 2021a) allocates at least 5.6% of the national budget annually for both capital and maintenance, with a total cap of K20 billion over its lifecycle (Government of Papua New Guinea 2021a). Investments in aviation focus on the National Airport Infrastructure Development Program, upgrades to international airport security systems, and the development of five regional airports at Nadzab, Tokua, Gurney, Kagamuga, and Wewak to support increasing international and domestic traffic (Government of Papua New Guinea 2023b).

Climate-resilient infrastructure investment forms a critical component of PNG's sustainable transport development strategy. The National Adaptation Plan commits US$1.2 billion (PGK 4.2 billion) to building and rehabilitating transport infrastructure—including air, sea, and land assets—according to climate-resilient codes and standards (Government of Papua New Guinea 2023c, 2022d).

The Road (Management and Fund) Act 2020 (Government of Papua New Guinea 2020b) establishes the PNG Road Fund as a sustainable source of funding, generating revenue from fuel levies, toll fees, overload penalty charges, and vehicle registration. This partly caters to the annual budget independent of general government finances (Government of Papua New Guinea 2024b). The government has identified a maintenance backlog estimated between K213 million and K4 billion, with ongoing annual costs of approximately K300 million required to keep the current network in good condition (DOW 2015; Government of Papua New Guinea 2024b). Additionally, policies indicate efforts to involve the private sector through public-private partnerships to finance the expansion and maintenance of the nationwide road network (Government of Papua New Guinea 2010b; DOW 2015).

Summary

Papua New Guinea's transport sector sits at a structural crossroads. The country relies on transport for development, including gaining market access, providing services, and facilitating economic integration across its highly fragmented geography. The transport sector accounts for roughly 5.1% of GDP, supporting the non-resource economy. However, it faces ongoing structural challenges such as limited infrastructure coverage, inadequate maintenance capacity, and increasing vulnerability to climate risks..

The road network remains the backbone of connectivity, but its condition reflects long-standing underinvestment. Only 32% of roads are in good condition, while 35% are in poor condition, and a quarter of the network remains unsurveyed. With just 11% of roads paved, reliability is low, particularly in rural and mountainous areas where access is already constrained. Infrastructure gaps extend beyond roads: bridge availability is limited at 5.3 meters per 1,000 people, significantly below regional comparators, further weakening network resilience and continuity.

Funding allocated for annual road maintenance covers only a small share of actual maintenance needs. The shift toward asset-based maintenance frameworks, including the Road Maintenance and Management Program, signals progress, but implementation remains constrained by institutional capacity and funding limitations.

At the same time, Papua New Guinea is pursuing an ambitious expansion agenda. The Connect PNG Program aims to extend and integrate national corridors, missing links, and regional connections, with a long-term objective of achieving nationwide connectivity by 2040. However, the scale of planned expansion underscores a central tension: expanding infrastructure without securing sustainable maintenance risks compounding existing vulnerabilities.

Access remains uneven across the country. Geographic isolation and infrastructure gaps limit connectivity to markets, education, and health services, particularly in rural areas. Urban systems face a different set of pressures. In Port Moresby, fragmented transport networks, reliance on informal services, and increasing spatial expansion reduce efficiency and accessibility. Street network disconnectedness and limited public transport integration contribute to longer travel times and reduced productivity.

Road safety continues to impose a significant social and economic burden. Fatalities and crash-related losses reflect systemic challenges in infrastructure quality, enforcement, and vehicle standards. Addressing these issues requires a shift toward Safe System approaches, alongside improved data, enforcement, and infrastructure design.

Climate and environmental risks further intensify these challenges. Transport infrastructure is highly exposed to extreme weather, flooding, and other natural hazards. Annual losses to infrastructure already represent measurable economic costs, and these risks are expected to increase. At the same time, transport emissions continue to grow alongside economic activity, with energy use still dominated by fossil fuels. Efforts to transition toward low-carbon systems remain at an early stage, constrained by limited electrification and supporting infrastructure.

The key issue is implementation. While PNG's policy frameworks are generally solid, the difference between commitment and actual results lies in maintenance funding, regulatory enforcement, and institutional capacity. Success depends on ongoing political focus on maintenance rather than just construction, stable funding, consistent enforcement, and investment in institutional capacity to handle complex systems over the long term.

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Annex 1. Economy ISO Codes

ISO CODE	ECONOMY NAME	REGION	INCOME GROUP
AFG	Afghanistan	Asia	Low income
ARM	Armenia	Asia	Upper middle income
AUS	Australia	Oceania	High income
AZE	Azerbaijan	Asia	Upper middle income
BGD	Bangladesh	Asia	Lower middle income
BTN	Bhutan	Asia	Lower middle income
BRN	Brunei Darussalam	Asia	High income
KHM	Cambodia	Asia	Lower middle income
CHN	People's Republic of China	Asia	Upper middle income
COK	Cook Islands	Oceania	Upper middle income
FJI	Fiji	Oceania	Upper middle income
GEO	Georgia	Asia	Upper middle income
IND	India	Asia	Lower middle income
IDN	Indonesia	Asia	Upper middle income
JPN	Japan	Asia	High income
KAZ	Kazakhstan	Asia	Upper middle income
KIR	Kiribati	Oceania	Lower middle income
KGZ	Kyrgyz Republic	Asia	Lower middle income
LAO	Lao People's Democratic Republic	Asia	Lower middle income
MYS	Malaysia	Asia	Upper middle income
MDV	Maldives	Asia	Upper middle income
MHL	Marshall Islands	Oceania	Upper middle income
FSM	Micronesia (Federated States of)	Oceania	Lower middle income
MNG	Mongolia	Asia	Upper middle income
MMR	Myanmar	Asia	Lower middle income
NIU	Niue	Oceania	Upper middle income
NRU	Nauru	Oceania	High income
NPL	Nepal	Asia	Lower middle income
NZL	New Zealand	Oceania	High income
PAK	Pakistan	Asia	Lower middle income
PLW	Palau	Oceania	High income
PNG	Papua New Guinea	Oceania	Lower middle income
PHL	Philippines	Asia	Lower middle income
KOR	Republic of Korea	Asia	High income
WSM	Samoa	Oceania	Lower middle income
SGP	Singapore	Asia	High income
SLB	Solomon Islands	Oceania	Lower middle income
LKA	Sri Lanka	Asia	Lower middle income
TJK	Tajikistan	Asia	Lower middle income
THA	Thailand	Asia	Upper middle income
TLS	Timor-Leste	Asia	Lower middle income
TON	Tonga	Oceania	Upper middle income
TKM	Turkmenistan	Asia	Upper middle income
TUV	Tuvalu	Oceania	Upper middle income
UZB	Uzbekistan	Asia	Lower middle income
VUT	Vanuatu	Oceania	Lower middle income
VNM	Viet Nam	Asia	Lower middle income
HKG	Hong Kong, China	Asia	High income
TWN	Taipei,China	Asia	High income
IRN	Iran (Islamic Republic of)	Asia	Upper middle income
RUS	Russian Federation	Asia	High income
TUR	Türkiye	Asia	Upper middle income

Annex 2. List of transport policy and related documents

DOCUMENT NAME	YEAR PUBLISHED	WEBLINK
PNG Vision 2050	2009	https://sustainabledevelopment.un.org/content/documents/1496png.pdf
Development Strategic Plan 2010-2030	2010	https://cdn.climatepolicyradar.org/navigator/PNG/2010/development-strategic-plan-2010-2030_973921af493b01bdd5b387fa83df05a2.pdf
National Transport Strategy	2013	http://www.transport.gov.pg/downloads/category/2-transport?download=4:national-transport-strategy-summary
Transport Sector Support Program (Phase 2) - Design and Implementation Framework	2013	https://www.dfat.gov.au/sites/default/files/png-transport-sector-design-and-implementation-framework.pdf?
Second National Communication - PNG	2014	https://cdn.climatepolicyradar.org/navigator/PNG/1900/papua-new-guinea-national-communication-nc-nc-2_efecd7c4fe780afc9d0ae3c1be1a2ba9.pdf
National Climate Compatible Development Management Policy	2014	https://policy.asiapacificenergy.org/sites/default/files/National%20Climate%20Compatible%20Development%20Management%20Policy.pdf
Road Traffic Act 2014	2014	https://rta.gov.pg/pdfs/resources/legislation/acts-of-parliament/RoadTrafficAct2014.pdf
National Strategy for Responsible Sustainable Development	2014	https://cdn.climatepolicyradar.org/navigator/PNG/2014/national-strategy-for-responsible-sustainable-development_989aa5cbb51825a0b9706e31a67dbe49.pdf
Climate Change (Management) Act 2015 (No. 19 of 2015)	2015	https://cdn.climatepolicyradar.org/navigator/PNG/2015/climate-change-management-act-2015-no-19-of-2015_fe8ab85191fa5555c610004b02a80e61.pdf
Department of Works Corporate Strategic Plan	2015	https://www.works.gov.pg/files/DoW_CSP_2015-2019.pdf
PNG National Disability Policy	2015	https://www.un.org/development/desa/disabilities/wp-content/uploads/sites/15/2020/02/PNG_National_Disability_Policy.pdf
Papua New Guinea First NDC (Archived)	2016	https://cdn.climatepolicyradar.org/navigator/PNG/1900/papua-new-guinea-first-ndc-archived_432760ec35a0b919d94e724a079d4d9e.pdf
National disaster risk reduction framework 2017-2030	2017	https://cdn.climatepolicyradar.org/navigator/PNG/2017/national-disaster-risk-reduction-framework-2017-2030_bfd5db269f67efc413a1e2e3ec6b8cac.pdf
Road Traffic Authority Corporate Plan 2017-2019	2017	https://rta.gov.pg/pdfs/publications/rta/corporate-plan-2017-2019/RTACorpPlan2017-19.pdf
ROAD TRAFFIC RULES – ROAD USER RULES 2017	2017	https://rta.gov.pg/pdfs/licences&approvals/RTR_RoadUserRules2017.pdf
National Roads Network Strategy 2036	2018	https://www.works.gov.pg/files/DoW_NRNS.pdf
Updated NDC - PNG	2020	https://unfccc.int/sites/default/files/NDC/2022-06/PNG%20Second%20NDC.pdf
Voluntary National Review 2020 - PNG	2020	https://hlpf.un.org/countries/papua-new-guinea/voluntary-national-review-2020
Road (Management and Fund) Act of 2020	2020	https://www.parliament.gov.pg/uploads/acts/20A_41.pdf
Connect PNG (Implementation and Funding Arrangements Act 2021)	2021	https://www.parliament.gov.pg/uploads/acts/21A_18.pdf

DOCUMENT NAME	YEAR PUBLISHED	WEBLINK
EV Policy Draft for PNG	2022	https://www.ctc-n.org/system/files/dossier/3b/CTCN%20PNG%20e-mobility_EV%20policy%20draft__HEAT%26SDS%20%281%29.pdf
Second Biennial Update Report	2022	https://cdn.climatepolicyradar.org/navigator/PNG/1900/papua-new-guinea-biennial-update-report-bur-bur2_8cf2b8680605b5c5cfeb1ce99c497865.pdf
Papua New Guinea State Action Plan	2023	https://www.icao.int/environmental-protection/Documents/ActionPlan/PNG%20State%20Action%20Plan%20Final.pdf
National Adaptation Plan	2023	https://unfccc.int/sites/default/files/resource/NAP-PNG-Finale-2023.pdf
Medium Term Development Plan IV 2023-2027	2023	https://reliefweb.int/report/papua-new-guinea/papua-new-guinea-medium-term-development-plan-iv-2023-2027-national-prosperity-through-growing-economy#:~:text=The%20Medium%2DTerm%20Development%20Plan,national%20growth%2C%20transformation%20and%20prosperity.
Road Management and Maintenance Plan (RMMP) 2025–2040	2024	https://storage.works.gov.pg/prod/articles/Road%20Management%20&%20Maintenance%20Plan%202025-2040.pdf
DOWH - Corporate Plan 2025 - 2029	2024	https://works.gov.pg/pages/138
Papua New Guinea State Action Plan 2025	2025	https://www.icao.int/sites/default/files/environmental-protection/State_Action_Plans/Papua-New-Guineau-State-Action-Plan-2025.pdf
Papua New Guinea National Energy Policy 2017-2027	2022	https://www.pcreee.org/list/publications?keys=transport&field_publication_category_tid_selective%5B%5D=107&created=All#:~:text=Papua%20New%20Guinea%20National%20Energy%20Policy%202017%2D2027

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