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

Indonesia

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Indonesia

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

2024

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Indonesia, a country in the South East Asia region, having Low and lower middle income status, was recorded to have a national population of about 280 million in the year 2024.

The urban population share in total is about 59%. The age wise distribution of the national population accounts for 31% and 12% of <18 years old (minors) and >60 years old (seniors) population, respectively. The GDP per capita (PPP) for the year 2022 was 14,658 USD.

The motorisation rate of the road transport vehicles for the year 2022, for all vehicles combined, stood at 566 vehicles per thousand population. Similarly, the rate for 2&3 wheelers, LDV, freight vehicles and buses were 456, 62, 20, and 7 respectively.

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

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

Contents:

Goal 1a – Low-Carbon (climate change mitigation):
By 2030, aim to peak transport CO2 emissions and initiate reductions in transport related CO2 emissions with the intention to move towards decarbonization of the transport sector by 2050, or shortly thereafter (Based on SDG 7.2, 9.1, 13.2, Paris Agreement)

Transport CO2 emissions (fossil)

Growth of transport fossil CO2 emissions, total fossil CO2 emissions, population and GDP (PPP) (1990 - 2022)
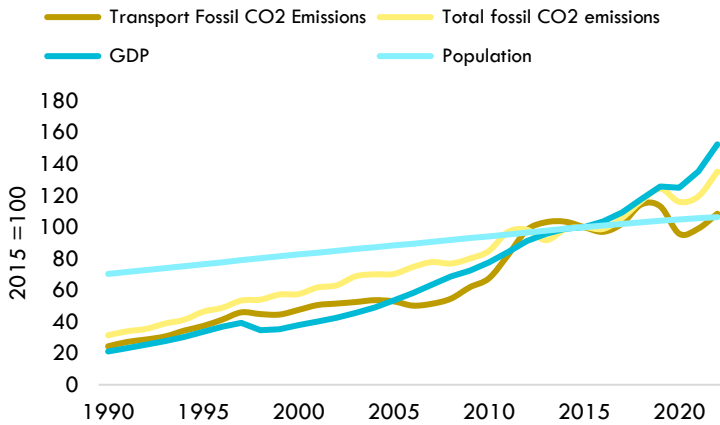
(EDGAR, 2023)

Transport fossil CO2 emissions per capita (2022)

(EDGAR, 2023)

• Motorization: High motorization rate of 566 vehicles per 1,000 people, primarily driven by 2&3 wheelers.

• Emissions: Transport fossil CO2 emissions grew at 1% annually between 2015 and 2022, exceeding the Asia-Pacific average. Per capita emissions are 0.5 tonnes, at par with the regional average. Transport's share in total CO2 emissions decreased from 26% to 21%.

• Energy consumption: Transport energy consumption is 1 EJ.

• Road transport: Road transport dominates CO2 emissions (90%). LDVs contribute 53% to road transport emissions. Average annual change in road transport emissions was -1% between 2015 and 2022.

Transport CO2 emissions per unit of GDP (2022)

(EDGAR, 2023)

Transport energy consumption

Transport CO2 emissions per unit of energy consumption and GDP per capita (2021)
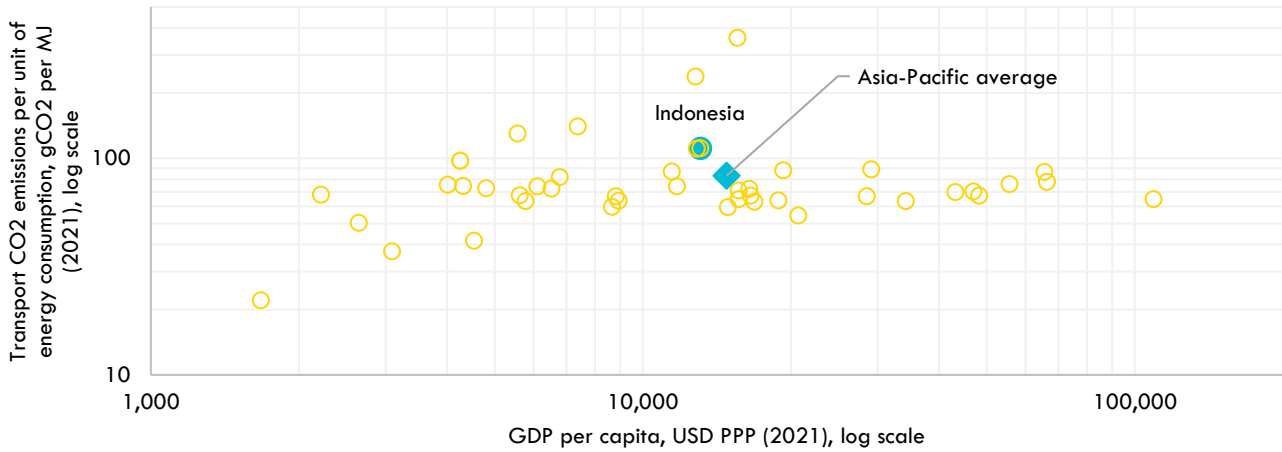
(EDGAR, 2023)

Transport CO2 emissions (fossil) and energy consumption modeshare

Growth of transport CO$_2$ emissions by mode
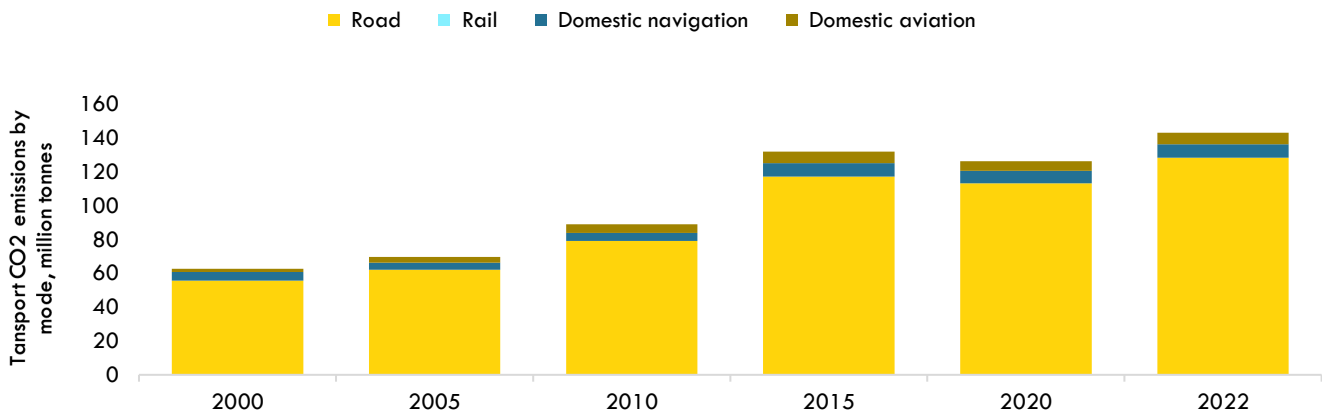
(EDGAR, 2023)

Share of transport energy consumption by mode and by source (2021)
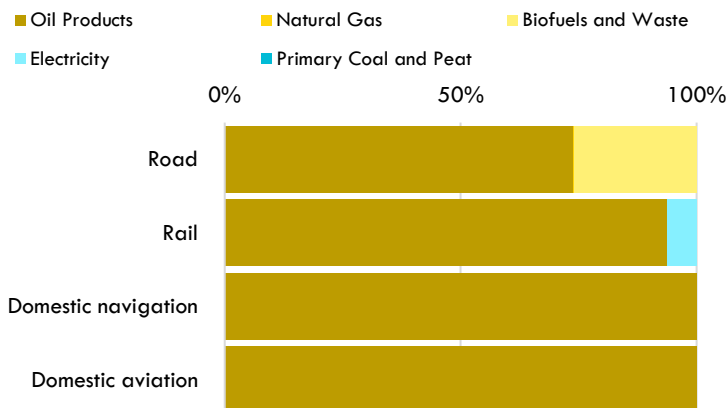
(EDGAR, 2023)

Share of transport in renewable energy consumption:
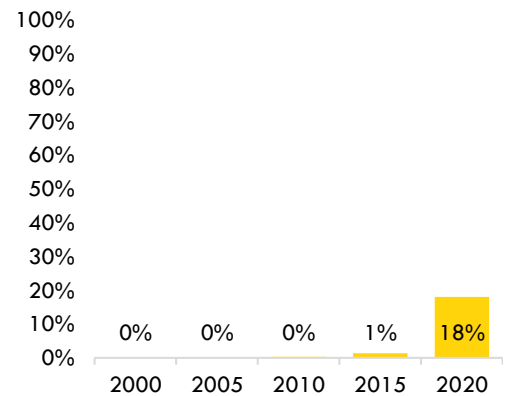
(Tracking SDG 7, 2024)

Estimated average annual losses to transport infrastructure due to hazards

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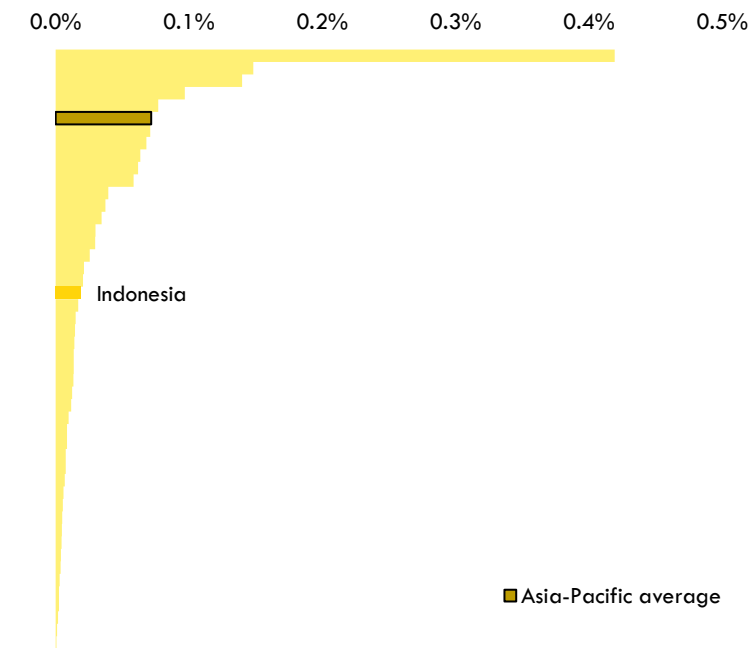
(CDRI, 2023)

• Vulnerability: Road infrastructure is highly vulnerable to hazards (95% of losses). 7% of the population lives in low-elevated coastal zones.

• Network redundancy: Ranks 102nd globally in National Road Vulnerability Index, indicating moderate network redundancy.

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

Climate change vulnerability

National road vulnerability index (NRVI) ranking (2023)
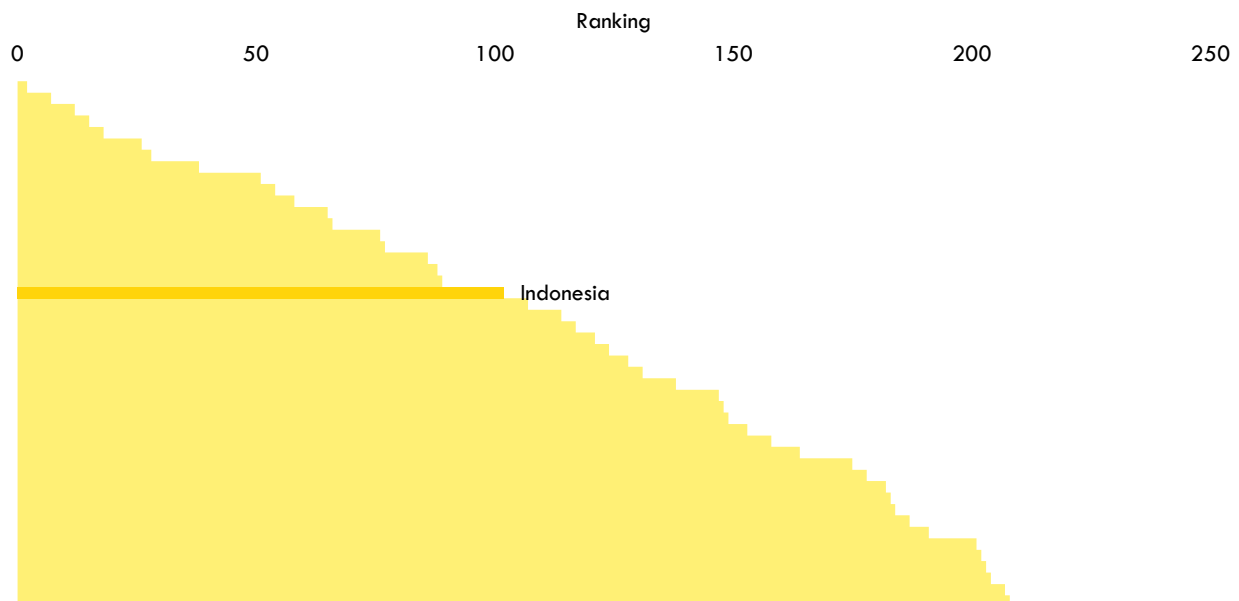
(Koks, et al., 2023)

<div style="background:#fdf1c4">

Goal 1c – Air pollution:

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

</div>

Transport air pollution health impact

Transport air pollution health impact (PM 2.5)

Legend: ■ Non-road transport ■ Road transport ■ International shipping
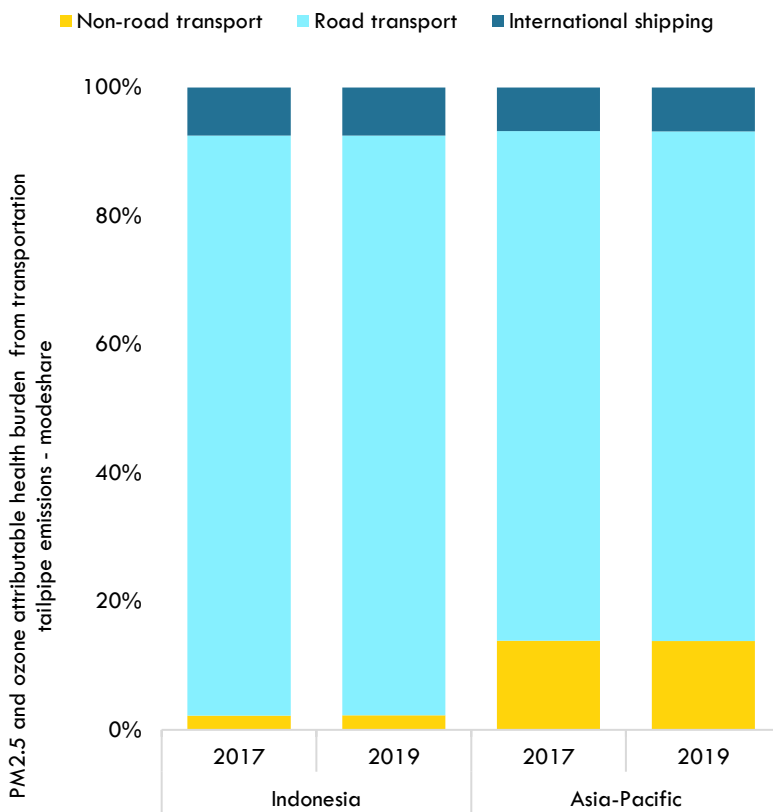
- Emissions: Mixed progress in reducing air pollutant emissions. PM2.5 decreased, but NOx increased, contrasting with regional trends. Road transport contributes significantly to NOx and BC emissions.

- Health impacts: Estimated deaths from transport-related PM2.5 and ozone pollution increased by 5% annually between 2017 and 2019, reaching 13,989. Non-road transport is the primary contributor.

- In Indonesia, the total attributable deaths due to the PM2.5 and ozone air pollution from the transport sector changed from 12,570 to 13,989 between 2017 to 2019.
- The numbers for Asia-Pacific were about 236 thousand and 253 thousand, respectively, for the same time period.

(McDuffie et al., 2021)

Transport air pollutant emissions

Growth of road transport air pollutant emissions

Legend: ━ PM 2.5 ━ NOx ━ BC
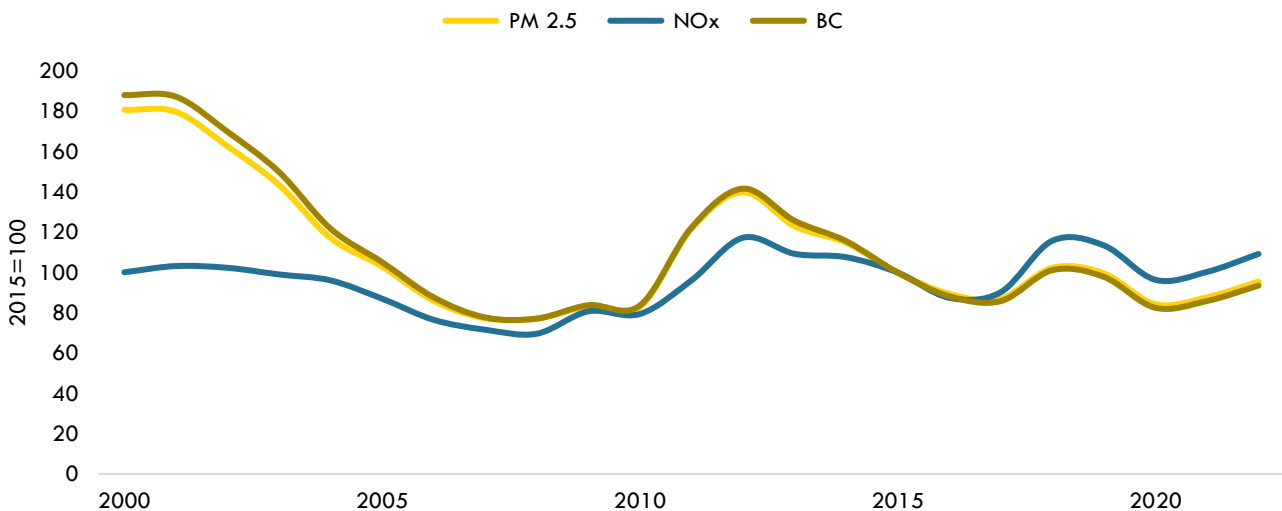
(EDGAR, 2023)

> **Goal 2 – Road safety:**
> By 2030, halve the number of deaths and injuries from road traffic accidents in Asia compared to 2020, with specific attention to vulnerable road users. (Based on SDG 3.6 and second UN Decade of Action on Road Safety 2021 – 2030, Stockholm Declaration on Road Safety)

Road traffic crash fatalities

Road traffic crash fatality rate
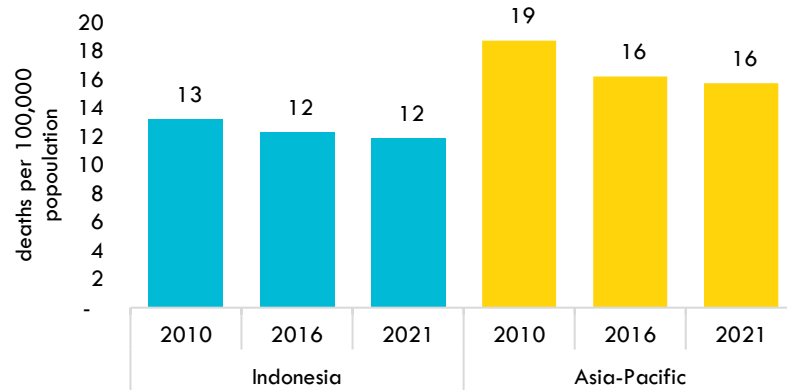
(WHO, 2023)

Road traffic crash fatalities (absolute values)

(Country official statistics)

- Fatalities: Estimated road traffic fatalities vary between 28,000 and 43,000 depending on the source. Fatality rate is 11.9 per 100,000, below the regional average.

- Economic cost: Fatalities and serious injuries cost 3% of GDP.

- Vulnerable groups: Share of minors and seniors in fatalities increased slightly. Female share remained stable.

- Pedestrian and cyclist safety: Data on pedestrian and cyclist fatalities is lacking. Infrastructure for these groups is below the regional average.

Share of vulnerable groups

Share of road crash fatalities by age
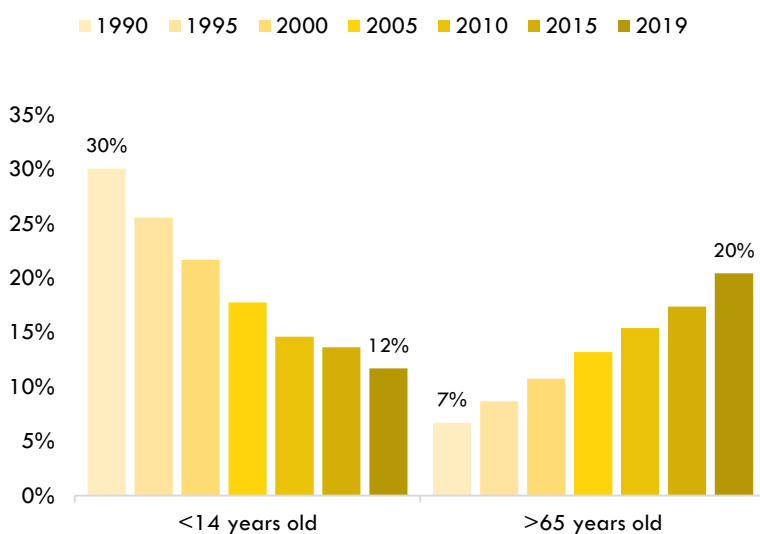
(GBD, 2021)

Share of road crash fatalities by mode

(WHO, 2023)

Goal 3 - Economic sustainability:

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

Transport sector and GDP

Transport as a share of GDP

(UN, 2023)
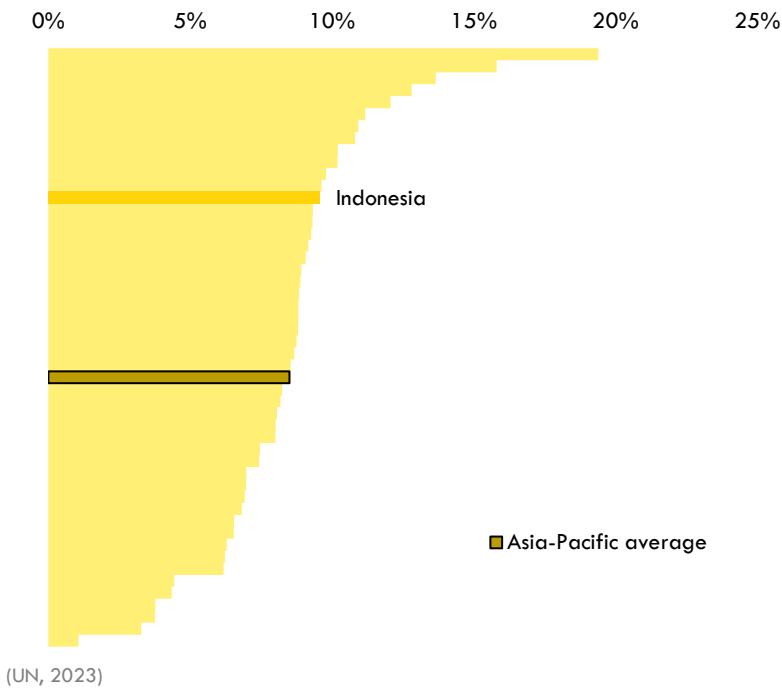
- Economic contribution: Transport sector's GVA share increased to 10% of GDP.

- Employment: Transport sector employment grew at 3% annually, reaching 6.4 million. Female employment also grew at 4%.

- Logistics performance: Ranking in logistics performance declined.

Transport employment

Growth of transport sector employment

(ILO, 2024)
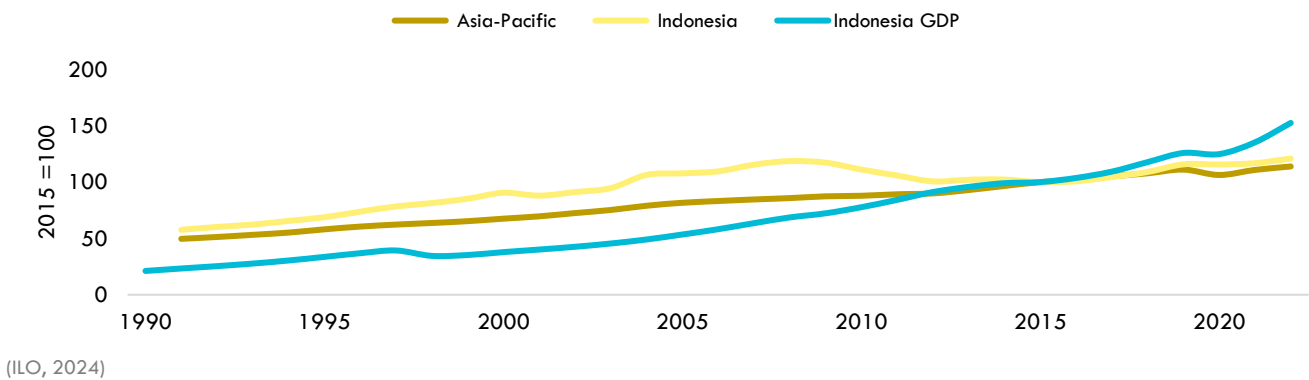
Female share in the transport employment

Estimated using (ILO, 2024)
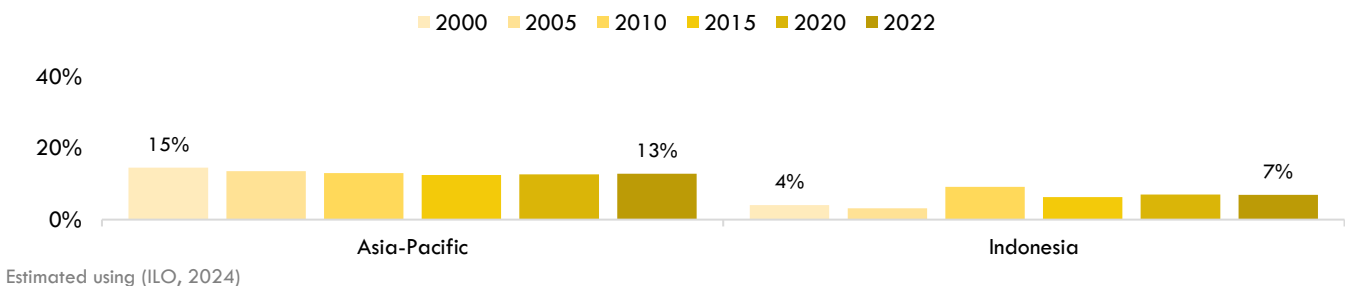
Transport investments

Official development assistance for Transport

Road transport | Rail transport | Waterborne transport | Air transport
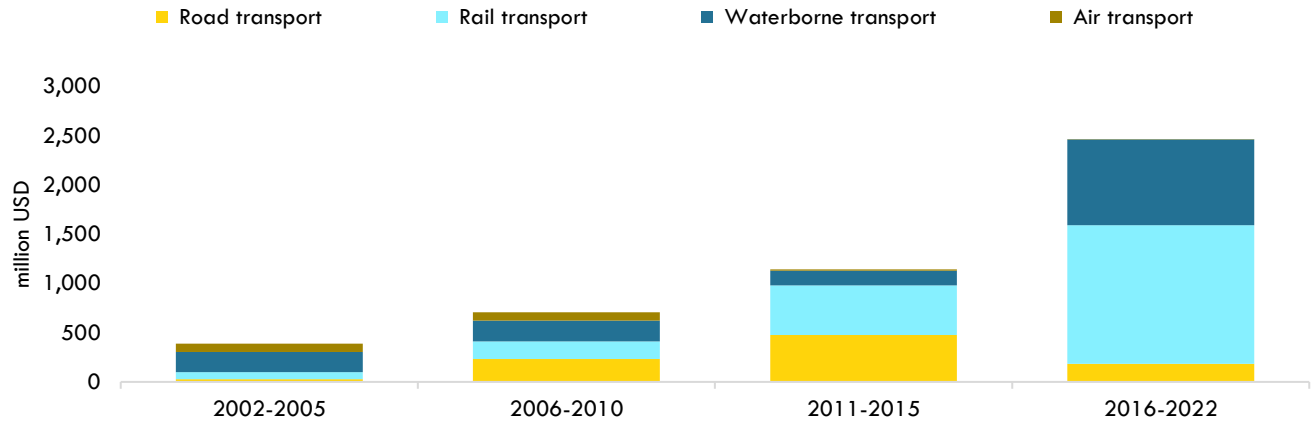
(OECD, 2022)

Public Private Partnership in Transport

Road transport | Rail transport | Waterborne transport | Air transport
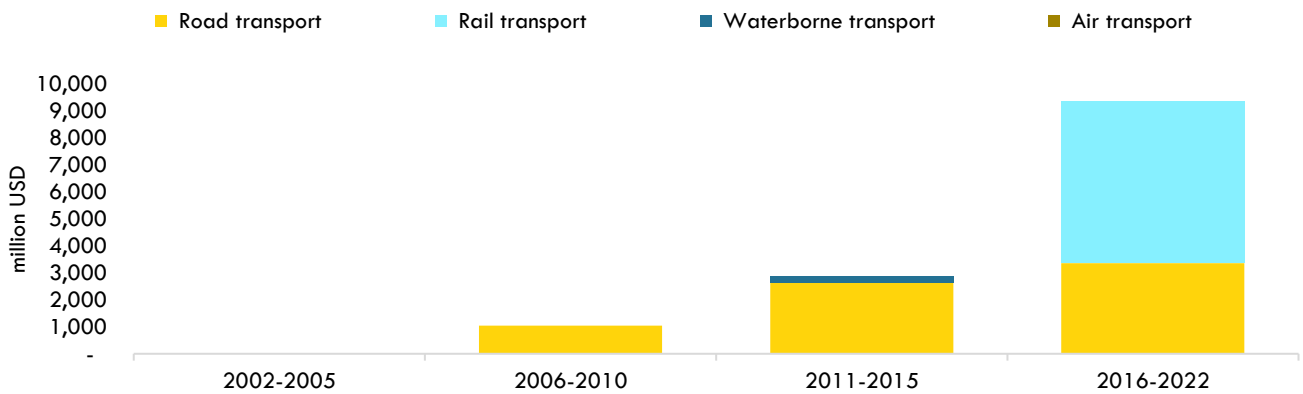
(WB, 2023)

Freight sector

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

GDP per capita, USD PPP (2022), log scale

Rank improved
Rank worsened
Rank stayed same

Indonesia
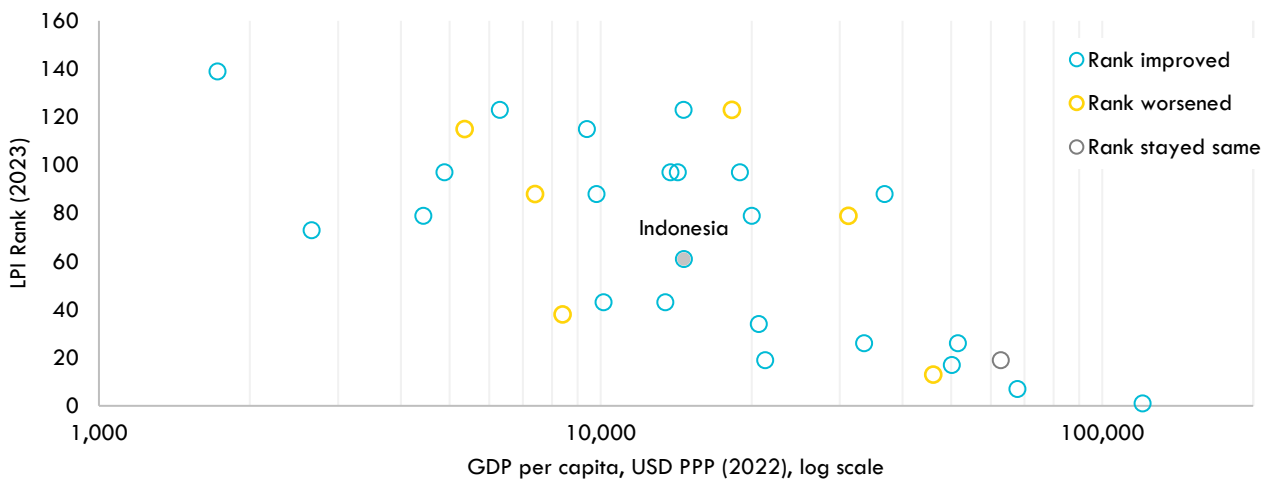
(WB, 2022)

Goal 4 - Rural access:
By 2030, realize accessible, inclusive, safe, affordable, and resilient rural transport infrastructure and services, thus facilitating improved access to markets, basic utilities and services including health and education by the farming community, and other rural population including physically disabled and vulnerable groups (Based on SDG 2 and SDG 9.1)

Rural access

Rural access index
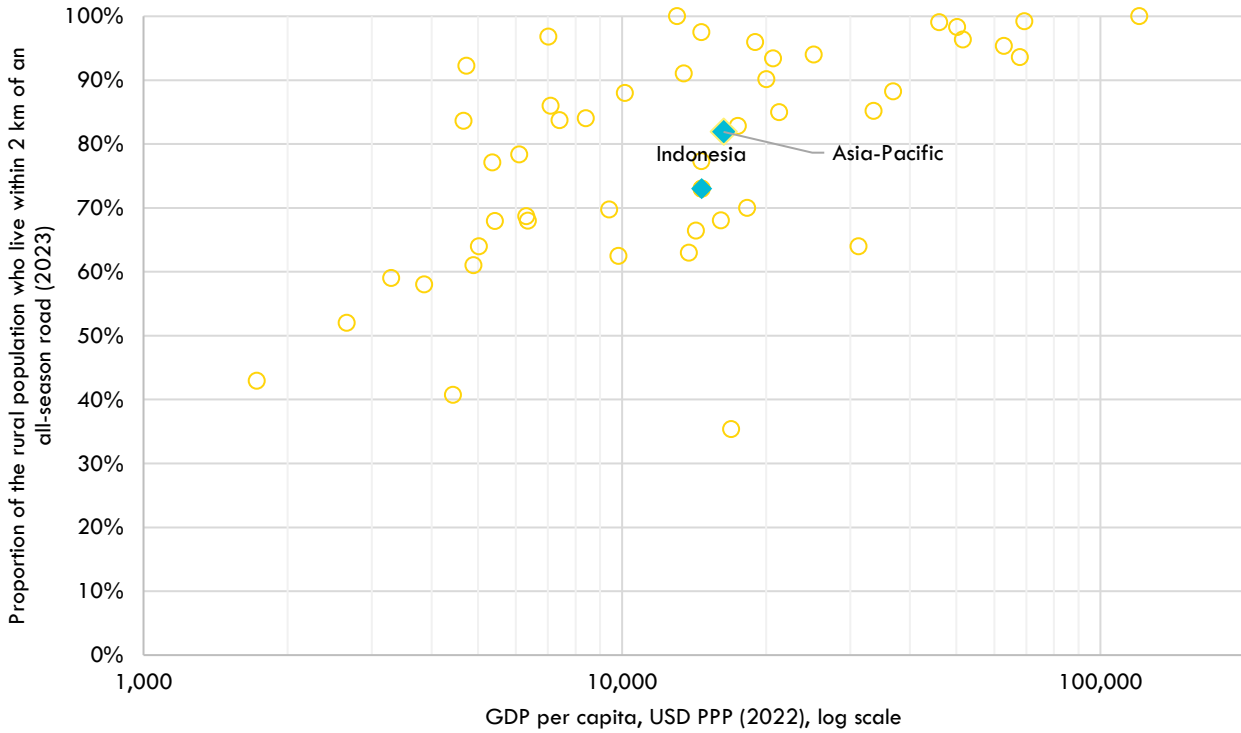
(CIESIN-rural, 2023)

Share of Secondary and Tertiary roads in Total road network
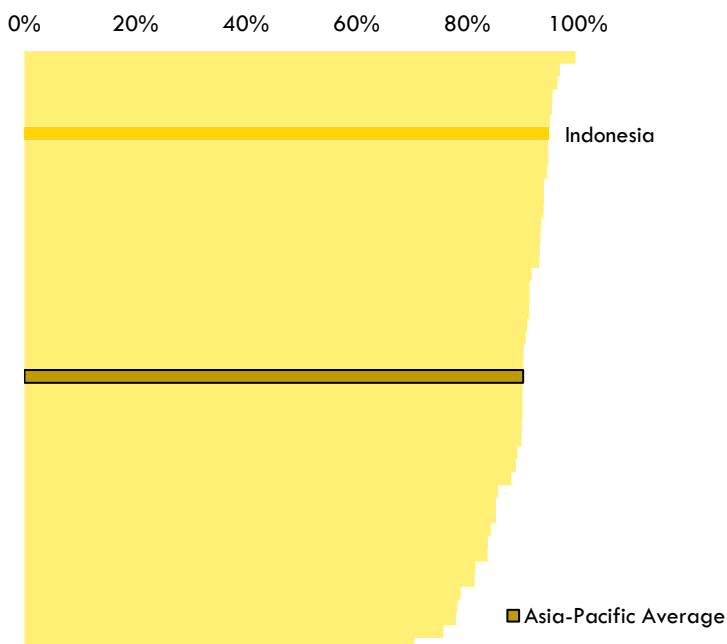
(ATO and Country estimates)

• Accessibility: 73% of the rural population lives within 2km of an all-weather road, below regional and global averages. 32 million people lack decent rural access.

Urban rapid transit infrastructure

Rapid transit infrastructure to resident ratio (RTR)
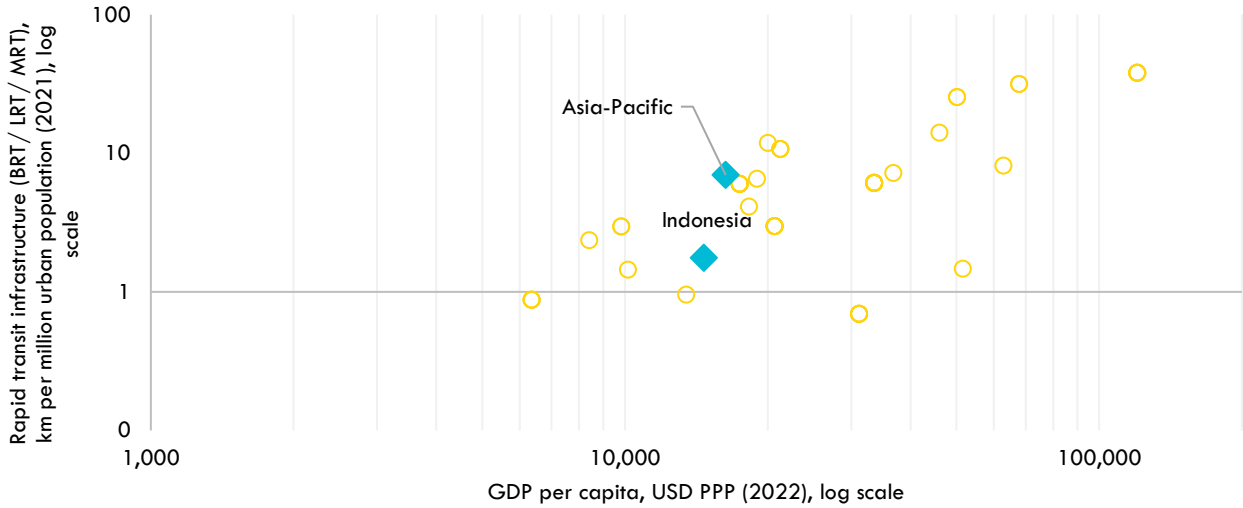
(ITDP, 2022)

Urban rapid transit infrastructure length
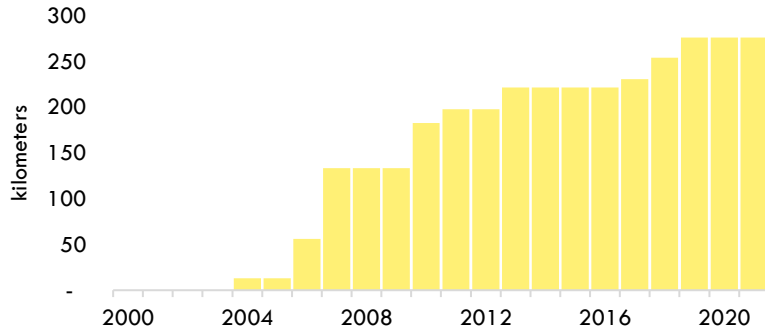
(ITDP, 2022)

Urban access

Share of cities by level of urban access (out of 104 cities)
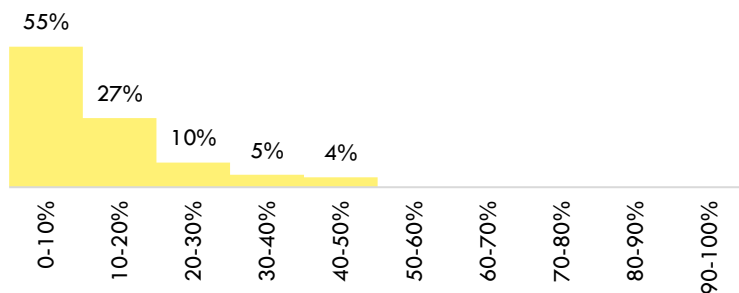
(CIESIN-urban, 2023)

• Rapid transit: Urban rapid transit infrastructure expanded, but the ratio to urban population remains low compared to the regional average. Few cities have rapid transit. The urban rapid transit infrastructure to resident ratio (RTR), in terms of km per million urban population changed from 1.6 to 1.8 between 2015 to 2021. The Asia-Pacific average for the same time period were 4.6 and 7.0, respectively.

• Public transport access: Data on urban access to public transport is limited.

Goal 6 - National access and connectivity:

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

Transport infrastructure

Growth of transport infrastructure
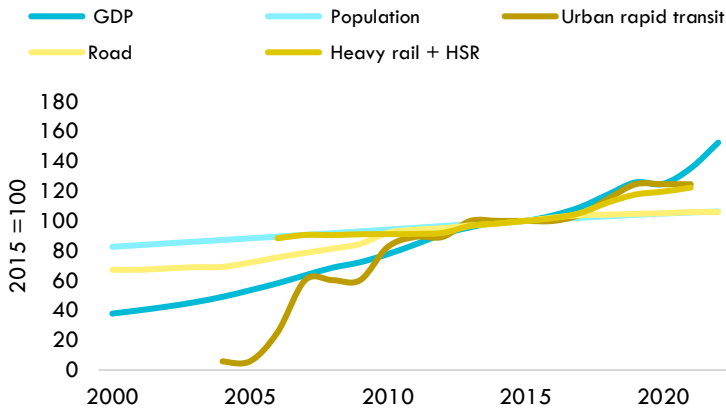
(IRF, 2024) (UIC, 2024) (ITDP, 2022) (ATO and Country estimates)

Road transport infrastructure availability (2022)
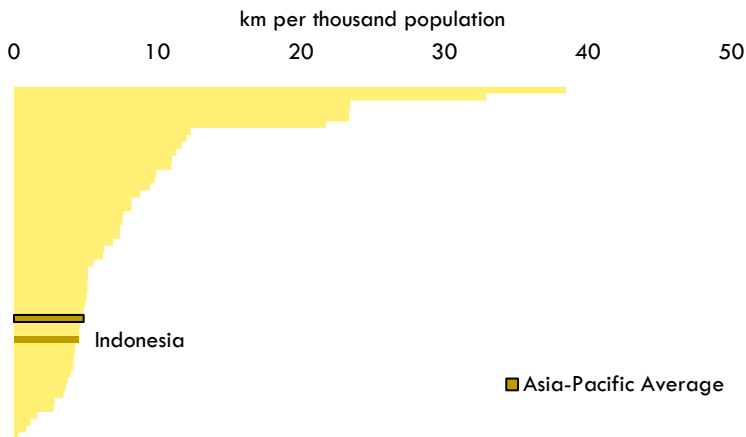
(IRF, 2024) (ATO and Country estimates)

Rail transport infrastructure (including HSR) availability (2021)
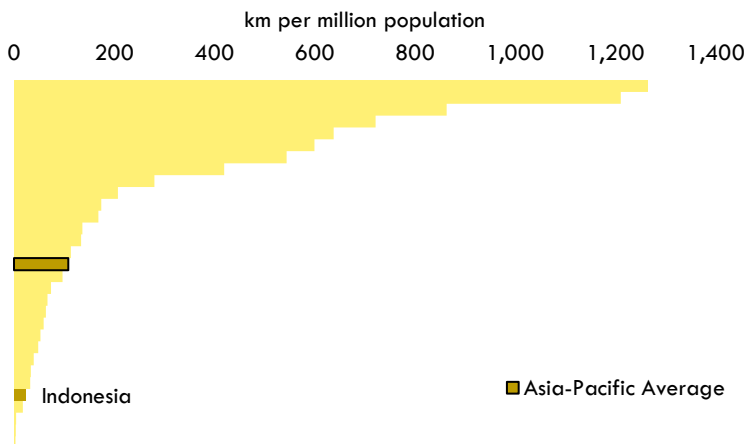
(UIC, 2024)

• Infrastructure: Road and heavy rail infrastructure expanded. Bus motorization index decreased slightly.

• Connectivity: Maintains high airport connectivity. Liner shipping connectivity improved. Container port traffic is significant regionally.

• Telecommunications: Good mobile network coverage. Internet usage increased significantly.

Transport connectivity

Transport connectivity

(WEF, 2018) (UNCTAD, 2024)

ICT
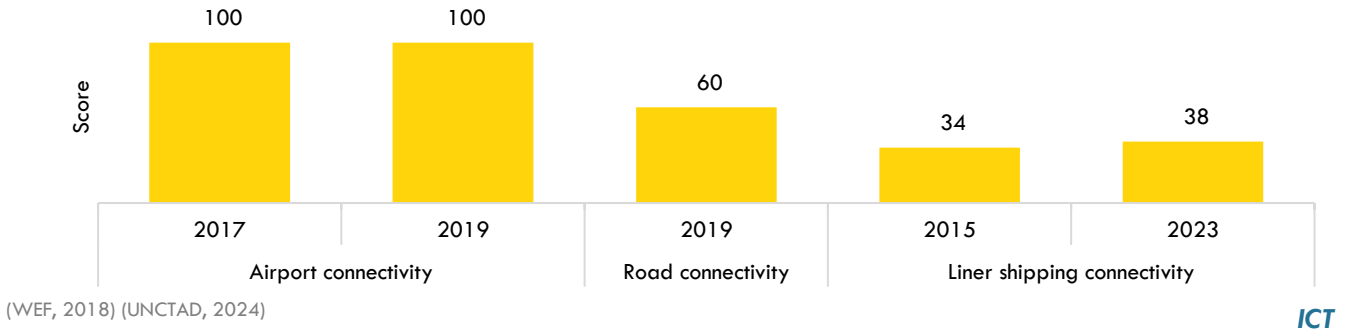
Container port traffic (TEU)

(UNCTAD, 2024)
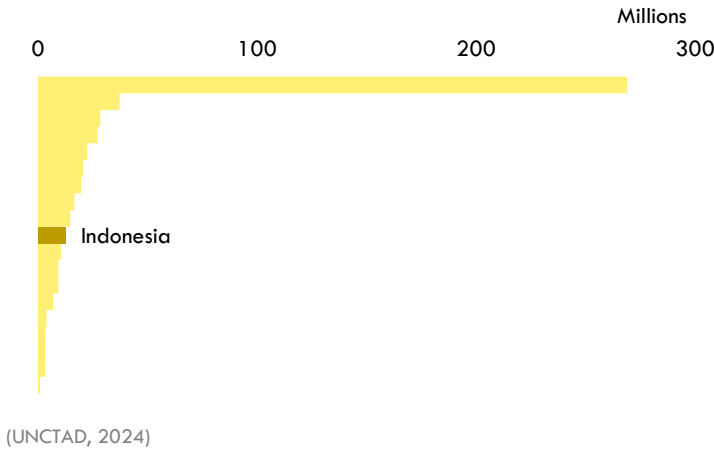
Percentage of individuals using the internet (2022)

(ITU, 2023)
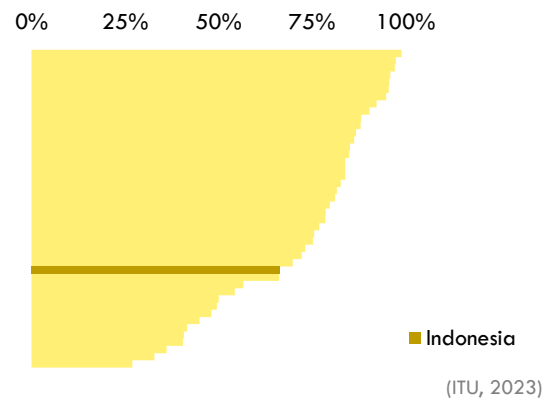
Transport Policy insights:
The insights are based on the transport policy trackers developed by the ATO. Trackers include analysis of policy measures and targets from all the transport relevant policy documents for a country published after the adoption of the Aichi 2030 Declaration, i.e. 2021.

• Policy activity: 19 policy documents adopted since 2015, with a focus on low-carbon transport and air pollution. Limited coverage of other goals, particularly economic sustainability, rural and urban access.

Transport relevant policy documents

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

Doc. No.	Document Name	Year	Goal 1a	Goal 1b	Goal 1c	Goal 2	Goal 3	Goal 4	Goal 5	Goal 6
1	Intended Nationally Determined Contribution - IDN	2016	Orange	Orange	Orange	Red	Red	Red	Red	Orange
2	Indonesia's Low Carbon Development	2017	Green	Red	Green	Red	Red	Red	Orange	Red
3	Visi Indonesia 2045	2017	Green	Red	Orange	Red	Red	Red	Red	Green
4	National Railways Master Plan	2018	Green	Orange	Green	Green	Red	Red	Orange	Green
5	Government Policy on Future Automotive Development	2019	Green	Red	Green	Red	Orange	Red	Green	Orange
6	Presidential Regulation No. 55 of 2019 on Acceleration of Battery Electric Vehicles Program for Road Transportation	2019	Green	Green	Green	Orange	Orange	Red	Green	Orange
7	Roadmap of SDGs Indonesia: A Highlight	2019	Green	Red	Orange	Orange	Red	Red	Orange	Orange
8	Strategic Plan for the Railway Sector 2020-2024	2020	Green	Orange	Green	Orange	Red	Red	Orange	Orange
9	National Vision of Non-Motorized Transport Infrastructure	2020	Orange	Red	Red	Green	Red	Red	Red	Green
10	National Medium Term Development Plan 2020-2024	2020	Orange	Orange	Orange	Orange	Red	Red	Red	Orange
11	Ministry of National Development Planning Strategic Plan	2020	Green	Green	Green	Orange	Red	Red	Green	Orange
12	Mitigation Action Outline on Truck Fleet Modernization Scheme in Indonesia	2021	Green	Orange	Green	Orange	Orange	Red	Orange	Orange
13	Indonesia Third Biennial Update Report	2021	Green	Red	Green	Green	Red	Red	Green	Orange
14	Updated Nationally Determined Contribution - IDN	2021	Orange	Orange	Orange	Red	Red	Orange	Orange	Orange
15	Presidential Regulation No. 98 of 2021 on the Implementation of Carbon Pricing to Achieve the Nationally Determined Contribution Target and Control over Greenhouse Gas Emissions in the National Development	2021	Green	Green	Green	Green	Red	Red	Green	Green
16	Voluntary National Review 2021 - IDN	2021	Green	Orange	Orange	Orange	Orange	Red	Orange	Orange
17	Indonesia Long-Term Strategy for Low Carbon and Climate Resilience 2050	2021	Green	Red	Green	Red	Red	Red	Red	Green
18	Indonesia's Adaptation Communication	2022	Orange	Orange	Orange	Orange	Red	Red	Orange	Orange
19	Indonesia Blue Economy Roadmap	2023	Orange	Orange	Orange	Orange	Red	Red	Red	Orange

(ATO National policy tracker)

Poor coverage (Red)
Moderate coverage (Orange)
Extensive coverage (Green)
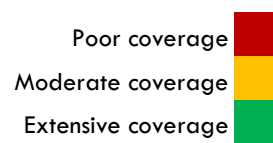
Transport relevant national targets

Doc. No.	Target	Year	Goal 1a	Goal 1b	Goal 1c	Goal 2	Goal 3	Goal 4	Goal 5	Goal 6
1	**Intended Nationally Determined Contribution - IDN**									
	new and renewable energy at least 23% in 2025 and at least 31% in 2050	2025	x		x					
	new and renewable energy at least 23% in 2025 and at least 31% in 2050	2050	x		x					
	Indonesia has committed to reduce unconditionally 29% of its greenhouse gasses emissions against the business as usual scenario by the year of 2030. The BAU scenario is projected approximately 2,869 GtCO2e in 2030 which is updated from the BAU scenario on the INDC due to current condition on energy policy development in particular in coal fired power plant. Indonesia could increase its contribution up to 41% reduction of emissions by 2030, subject to availability of international support for finance, technology transfer and development and capacity building.	2030	x		x					
2	**Indonesia's Low Carbon Development**									
	Increase the amount of biofuel use in Transport	2050	x		x					
	Biodiesel blend = 30% Ethanol blend = 20% (National General En ergy Plan (RUEN))	2050	x		x					
3	**Visi Indonesia 2045**									
	Infrastructure stock increases to 70 percent of GDP by 2045.	2045	x		x	x				x
	Maritime economic contribution to GDP will increase from 6.4 percent in 2015 to 12.5 percent in 2045.	2045	x		x		x			x
	Logistics costs in 2045 will fall to 8 percent of GDP.	2045	x							x
	Emission reduction will continue by 34 - 41 percent from the base scenario in 2045 through developing NRE, protecting forests and peatlands, increasing land productivity, and integrated waste management.	2045	x		x					
4	**National Railways Master Plan**									
	Creating a railway transportation service that has a passenger market share of 7% - 9% and goods 11% - 13% of all national transportation services. "Increasing railway security and safety with indicators of decreasing the ratio of security and safety disturbances by at least 50% in the period 2010 - 2030" Passenger transportation facilities with a total of 2,839 locomotives, 27,949 intercity trains and 6,229 urban trains Goods transportation facilities with a total of 2,475 locomotives and 48,364 wagons.	2030	x		x	x			x	x
	"fulfillment of strong railway funding supported by private investment with an investment target estimated to reach USD 65,063.00 million with funding contributions from the Government and investment from Business Entities	2030	x	x	x	x	x			x

#	Description	Year	1	2	3	4	5	6	7	8
	"The realization of mastery of railway technology by reducing technological dependence on facilities and infrastructure by a maximum of 25%, local content of at least 85% and supplied by a minimum of 90% of domestic industry	2030	x		x					x
	1. The national railway network reaches 10,524 km (spread across the islands of Java-Bali, Sumatra, Kalimantan, Sulawesi and Papua) including the city/ urban railway network of 3,755 km.	2030	x	x	x				x	x
	"The realization of mastery of railway technology by reducing technological dependence on facilities and infrastructure by a maximum of 25%, local content of at least 85% and supplied by a minimum of 90% of domestic industry	2030	x	x	x	x				x
5	**Government Policy on Future Automotive Development**									
	Motor Vehicle: Total (Unit) Production = 3.000.000 Percentage LCEV(%) = 25 Percentage LCGC(%) = 20 Total (Unit) Sales = 2.500.000 Total (Unit) Export = 1.500.000 Motor Cycle: Total (Unit) Production = 12.500.000 Percentage Electric = 25 Total (Unit) Sales = 8.400.000 Total (Unit) Export = 1.400.000	2030	x		x					x
	Motor Vehicle: Total (Unit) Production = 4.000.000 Percentage LCEV(%) = 30 Percentage LCGC(%) = 20 Total (Unit) Sales = 2.100.000 Total (Unit) Export = 900.000 Motor Cycle: Total (Unit) Production = 15.000.000 Percentage Electric = 30 Total (Unit) Sales = 9.000.000 Total (Unit) Export = 1.750.000	2035	x		x					x
10	**National Medium Term Development Plan 2020-2024**									
	Number of newly built airports = 21 (Baseline 2019 = 15) Number of air transport routes = 43 (Baseline = 35)	2024								x
	Number of cities with multi-level transport systems = 6 (Baseline 2019 = 3)	2024	x		x	x			x	
	Number of metropolitan cities with built and developed urban mass transit systems = 6 (Baseline 2019 = 1)	2024	x		x	x			x	
	Connected shipping routes/loops (%) = 27 (Baseline = 2019 = 23) h. Number of main ports that meet standards = 7 (Baseline = 1) Number of subsidized sea toll routes= 25 (Baseline =14)	2024	x		x					x
	Number of newly built ports for water transport = 36 (Baseline 2019 = 24)	2024	x							x
	Length of newly built rail network (cumulative) (in km) = 7451 (Basleine 2019 = 6164)	2024	x	x	x					x
	Length of newly built and/or operational toll roads (in km) = 2500 (Baseline 2019 = 1461) Length of newly built roads (in km) = 3000 (Baseline 2019 = 3387)	2024	x							x
	Reducing road accident fatality ratio per 10,000 vehicles against the 2010 base rate (%) = 65 (Baseline = 53 (2019))	2024				x				
	Percentage of roads in good condition at the national/provincial/regency/city level (%) = 97/75/65 (Baseline 2019 = 92/68/57) Railroad conditions according to the Track Quality Index (TQI) categories 1 and 2 (%) = 94 (Baseline 2019 = 81.5)	2024	x	x	x	x				x
	Travel time on an island's main road network (in hour/100 km) = 1.9 hours/ 100 km (Baseline 2019 = 2.3)	2024	x		x	x				x
8	**Strategic Plan for the Railway Sector 2020-2024**									

	Increased public satisfaction index with public services in the transportation sector by 88.5 On Time Performance (OTP) achievement for transportation services is 82.08%	2024	x		x	x				x
	Increased levels of safety and security as measured by a decrease in the fatality ratio of transportation accidents to 0.826	2024	x		x	x				x
	Creating railway transportation services that have a passenger market share of 7% - 9% and goods of 11% - 13% of all national transportation services." (National Railways 2030)	2030	x		x	x				x
	Increased national connectivity ratio to 0.69 Interregional Connectivity Ratio 0.36 Length of the built railway network (cumulative) (Km's) = 7451 Construction of access roads and railway lines to port nodes, airports and terminals as well as logistics activity centers;	2024	x	x	x					x
	Number of metropolitan cities with urban mass public transport systems built and developed (cities) = 6 Number of cities where non-level crossings (cities) were built = 6	2024	x		x				x	
13	**Indonesia Third Biennial Update Report**									
	New and renewable energy is expected to reach at least 23% in 2025 and 31% in 2050	2050	x		x					
	Indonesia in its NDC commits to reduce the GHG emissions with unconditional target of 29% and conditional target of up to 41% from the BAU emission by 2030.	2030	x		x					
14	**Updated Nationally Determined Contribution - IDN**									
	new and renewable energy at least 23% in 2025 and at least 31% in 2050;	2025	x		x					
	new and renewable energy at least 23% in 2025 and at least 31% in 2050;	2050	x		x					
	Based on the country's emissions level assessment in Third National Communication (TNC), Indonesia has set unconditional reduction target of 29% and conditional reduction target up to 41% of the business as usual scenario by 2030.	2030	x		x					
19	**Indonesia Blue Economy Roadmap**									
	increase renewable energy share from 5 percent in 2015 to 30 percent in 2045	2045	x		x					

(ATO National policy tracker)

Transport relevant projects

Year	Project name	Amount (million USD)	Goal 1a	Goal 1b	Goal 1c	Goal 2	Goal 3	Goal 4	Goal 5	Goal 6
	Indonesia: Trans- Sumatra Toll Road Project – Cinto Kenang to Sentjalang	1200		x		x	x			x
2023	Indonesia Port-Led Development Project	200	x				x			x
	Indonesia: Batam Bintan Bridge Project	300		x			x			
2022	Indonesia Mass Transit Project	224	x						x	

(MDB Projects database)

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