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

Malaysia

Credits: unsplash

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Asian Transport Observatory

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UNCRD

Malaysia

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

2024

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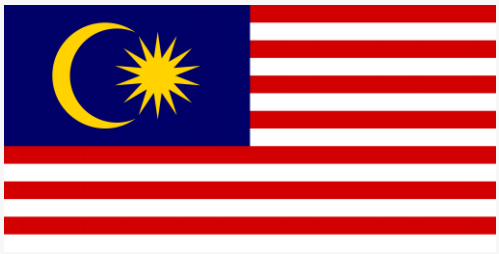


Malaysia, a country in the South East Asia region, having Upper middle income status, was recorded to have a national population of about 35 million in the year 2024.

The urban population share in total is about 79%. The age wise distribution of the national population accounts for 28% and 12% of <18 years old (minors) and >60 years old (seniors) population, respectively. The GDP per capita (PPP) for the year 2022 was 33,525 USD.

The motorisation rate of the road transport vehicles for the year 2022, for all vehicles combined, stood at 1021 vehicles per thousand population. Similarly, the rate for 2&3 wheelers, LDV, freight vehicles and buses were 480, 493, 41, 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.

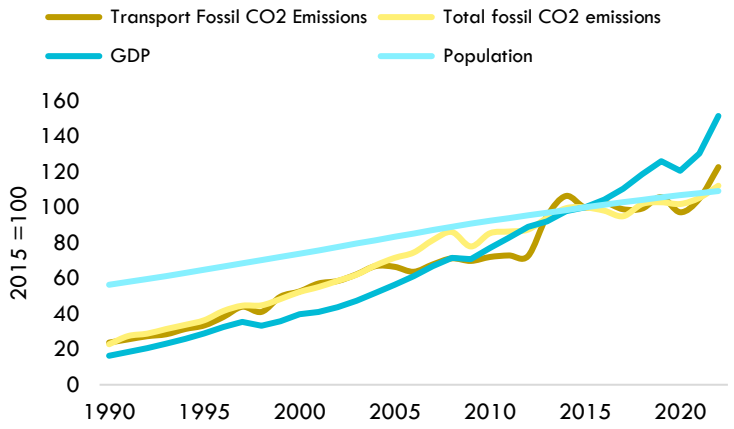
Contents:

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)

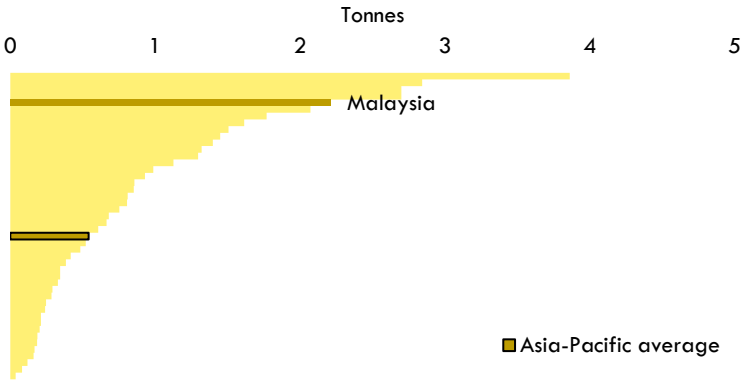
Transport CO2 emissions (fossil)

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)



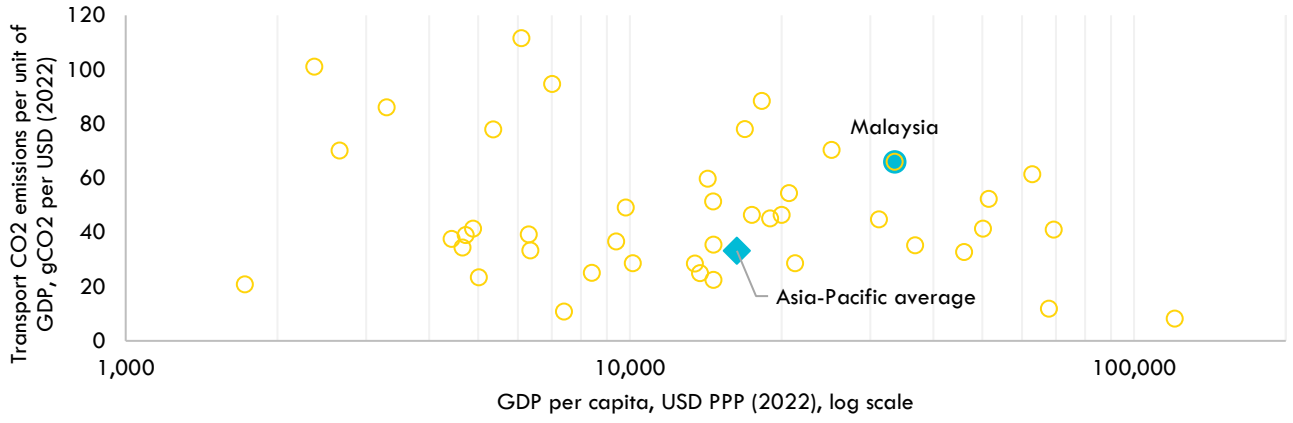
(EDGAR, 2023)

- Motorization: High motorization rate of 1021 vehicles per 1000 people in 2022, primarily driven by 2&3 wheelers and LDVs.

- Emissions: Transport CO2 emissions grew faster than regional averages (3% vs 1%) between 2015 and 2022. Per capita emissions are high at 2.2 tonnes (vs 0.5 regional average), and transport's share in total emissions increased to 27%.

- Energy: Transport energy consumption is low compared to the region, but emissions intensity is high. Road transport dominates emissions (99%).

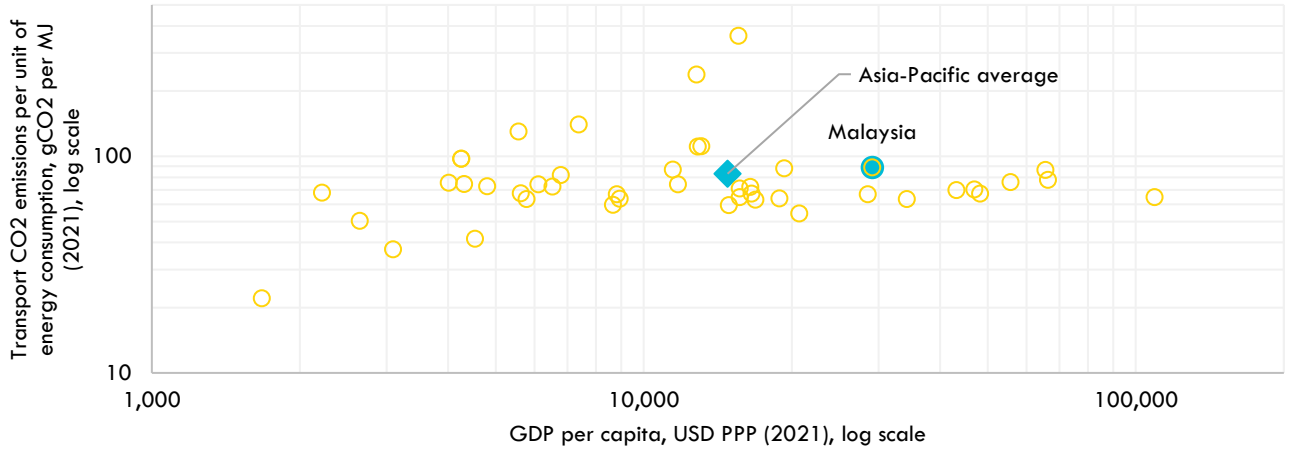
Transport CO2 emissions per unit of GDP (2022)



(EDGAR, 2023)

Transport energy consumption

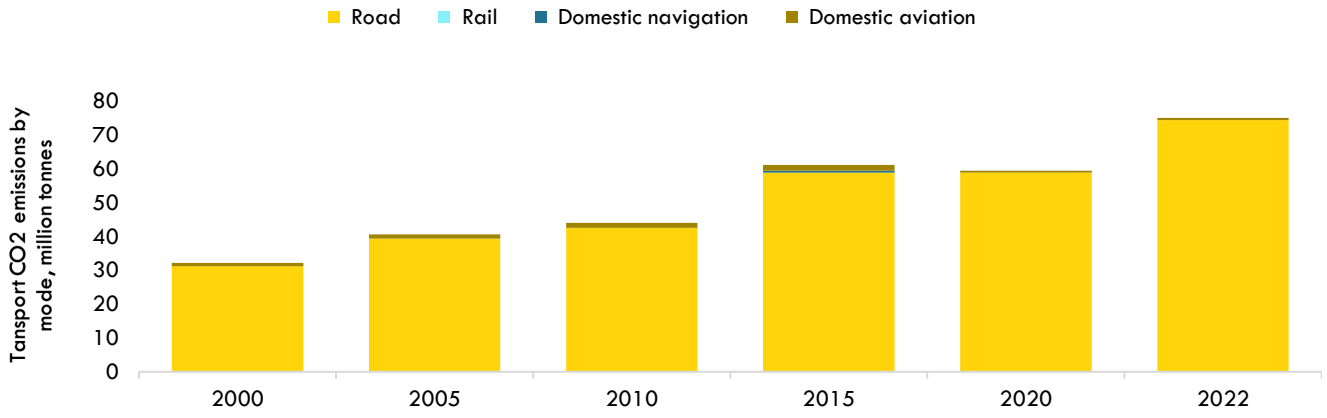
Transport CO2 emissions per unit of energy consumption and GDP per capita (2021)



(EDGAR, 2023)

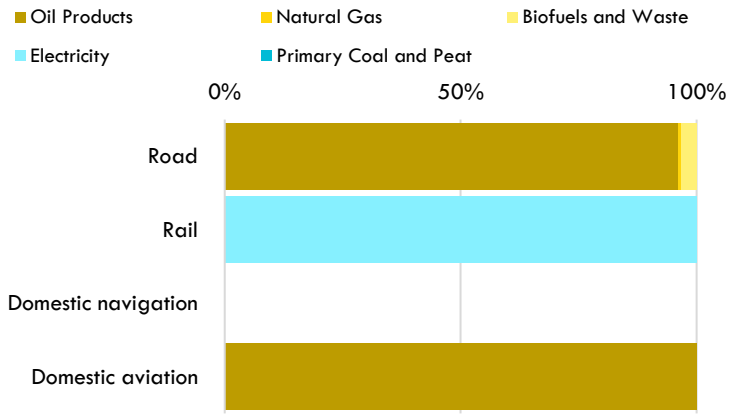
Transport CO2 emissions (fossil) and energy consumption modeshare

Growth of transport CO_2 emissions by mode



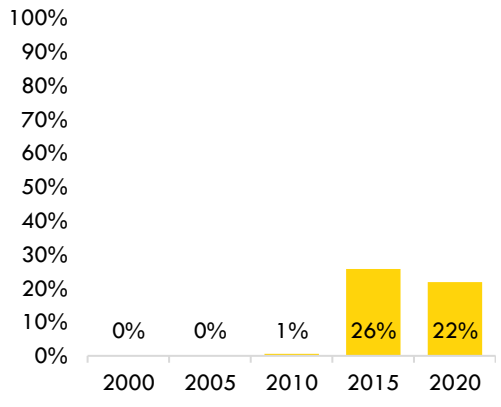
(EDGAR, 2023)

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



(EDGAR, 2023)

Share of transport in renewable energy consumption:



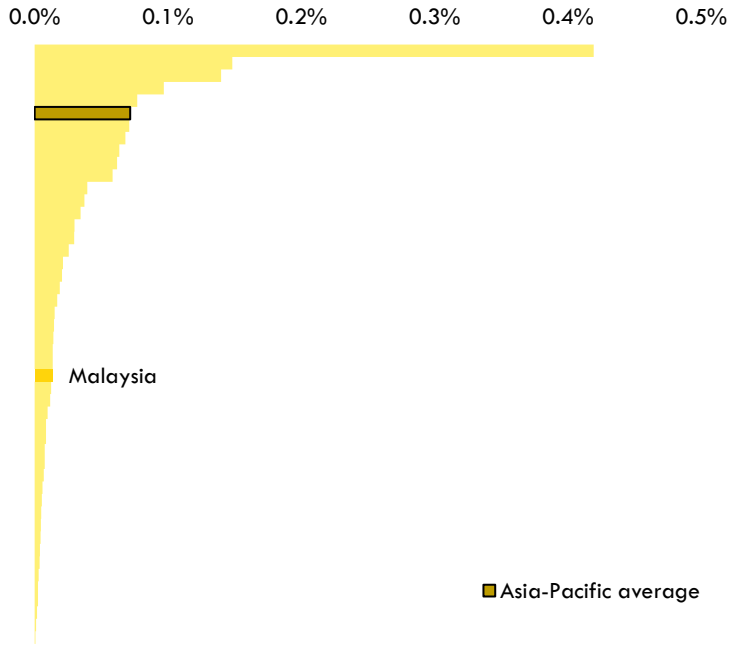
(Tracking SDG 7, 2024)

Goal 1b – Resilience:

By 2030, increase resilience and adaptive capacity of transport system to climate-related hazards and pandemics such as COVID-19. (Based on SDG 13, Paris Agreement and the Sendai Framework for Disaster Risk Reduction 2015-2030)

Estimated average annual losses to transport infrastructure due to hazards

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



(CDRI, 2023)

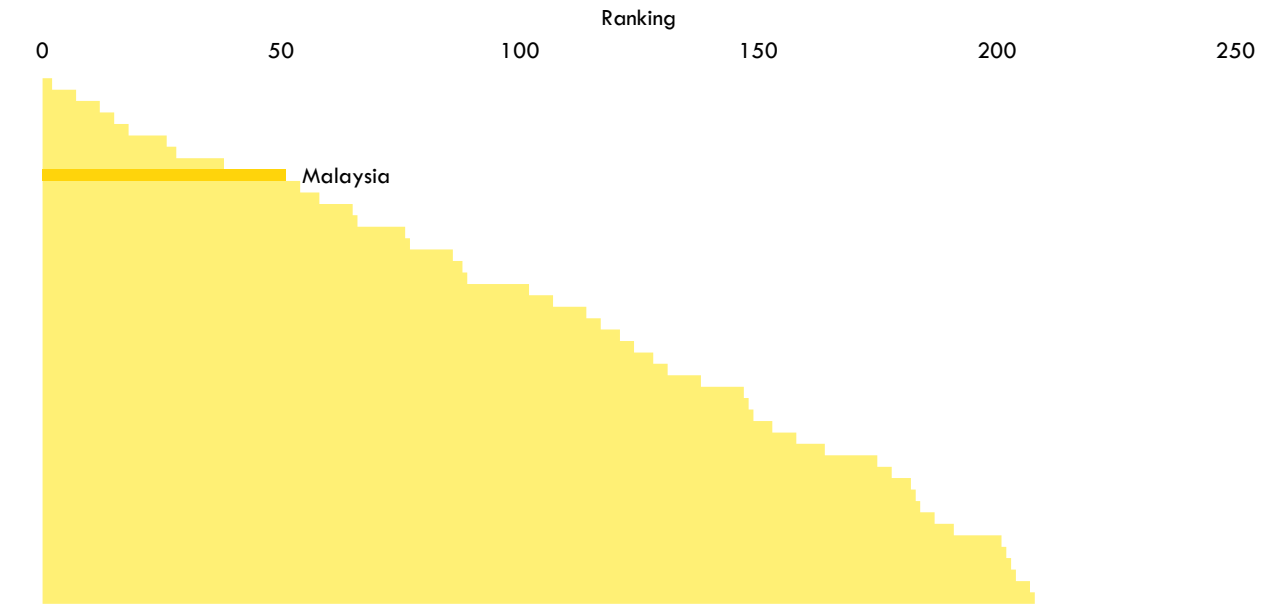
• Vulnerability: 58% of annual losses to transport infrastructure are from road-related hazards. 5% of the population lives in low-elevation coastal zones.

• Network redundancy: Malaysia ranks 51st globally in network redundancy, indicating moderate resilience to disruptions.

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

Climate change vulnerability

National road vulnerability index (NRVI) ranking (2023)



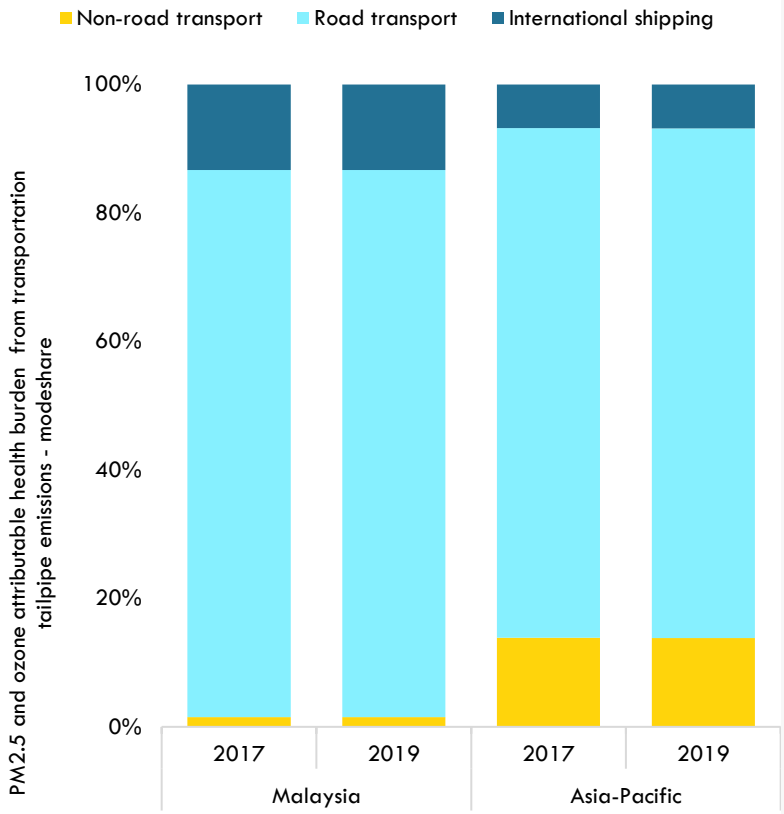
(Koks, et al., 2023)

Goal 1c – Air pollution:

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

Transport air pollution health impact

Transport air pollution health impact (PM 2.5)



(McDuffie et al., 2021)

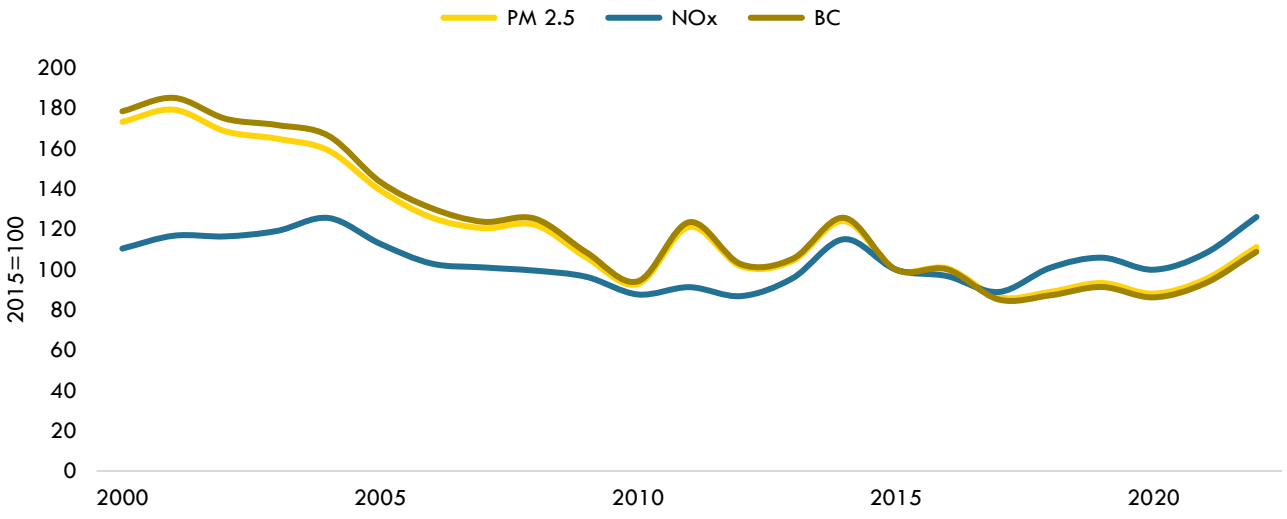
- Emissions: Mixed progress on air pollutant emissions; some decreased (SOx), others increased (NOx) despite GDP growth. Road transport is a major contributor to NOx and BC emissions.

- Health impacts: Estimated deaths from transport-related PM2.5 and ozone pollution increased 5% annually between 2017 and 2019, with most attributed to non-road sources.

- In Malaysia, the total attributable deaths due to the PM2.5 and ozone air pollution from the transport sector changed from 1,876 to 2,059 between 2017 to 2019.
- The numbers for Asia-Pacific were about 236 thousand and 253 thousand, respectively, for the same time period.

Transport air pollutant emissions

Growth of road transport air pollutant emissions



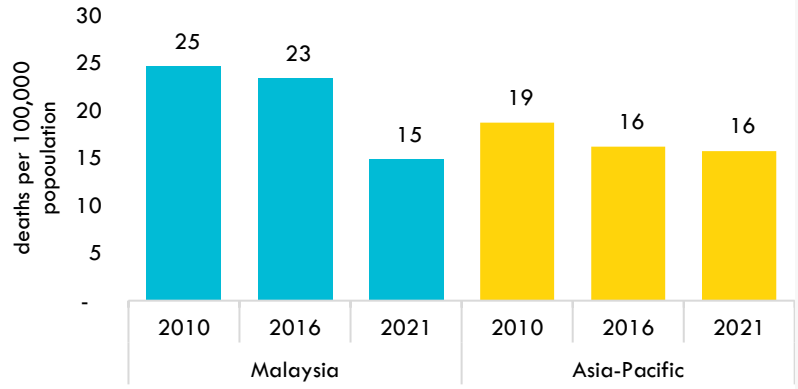
(EDGAR, 2023)

Goal 2 – Road safety:

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

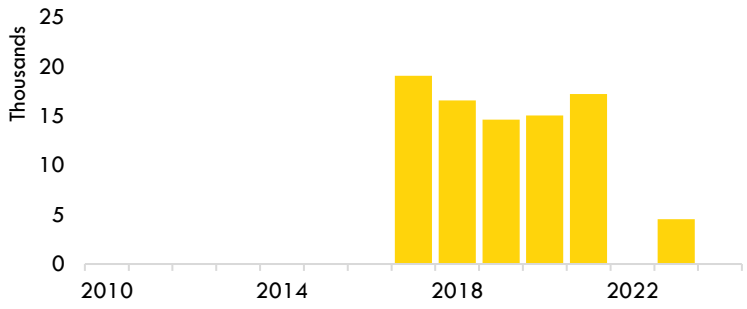
Road traffic crash fatalities

Road traffic crash fatality rate



(WHO, 2023)

Road traffic crash fatalities (absolute values)



(Country official statistics)

• Fatalities: Estimated road traffic fatalities vary depending on the source, but the official rate is 14.8 deaths per 100,000 people. Fatalities cost 4% of GDP.

• Vulnerable groups: The share of fatalities involving minors and seniors slightly increased. The share of female fatalities decreased. Pedestrian and cyclist fatalities are low compared to the regional average.• Fatalities: Estimated road traffic fatalities vary depending on the source, but the official rate is 14.8 deaths per 100,000 people. Fatalities cost 4% of GDP.

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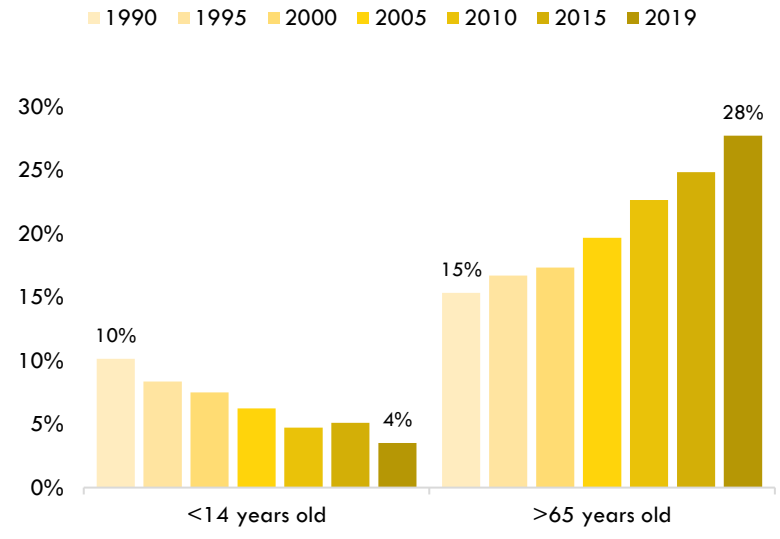
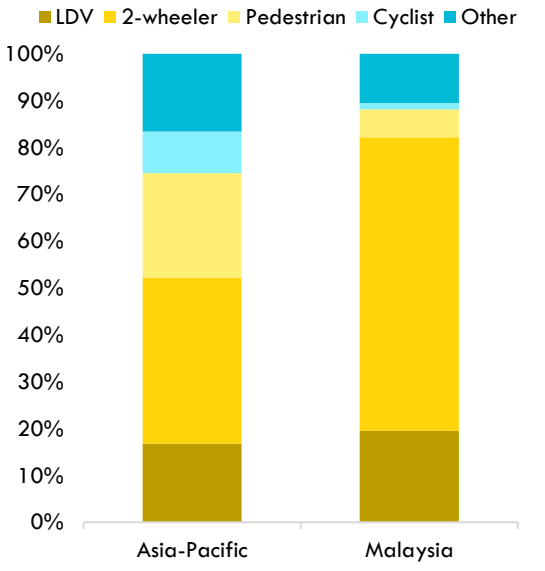
Share of vulnerable groups

Share of road crash fatalities by age



(GBD, 2021)

Share of road crash fatalities by mode



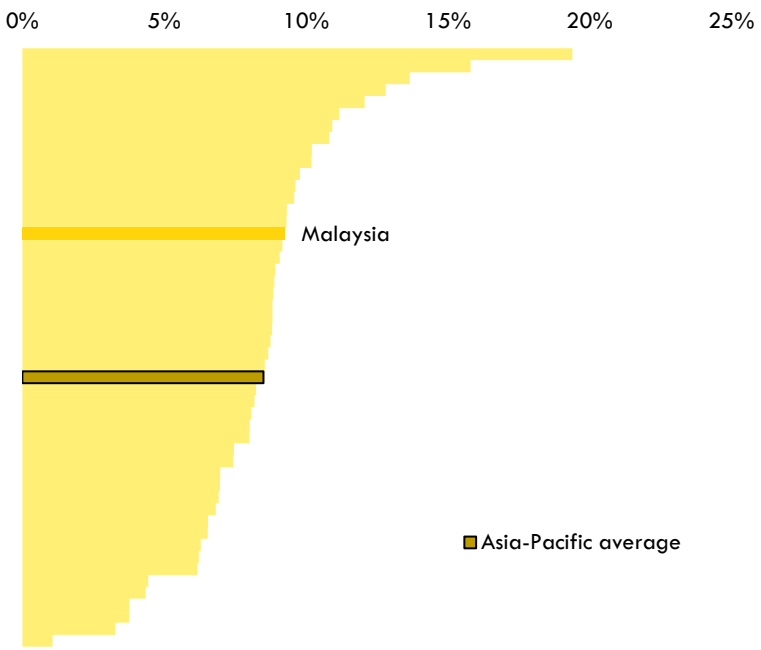
(WHO, 2023)

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 share in GDP and employment remained stable. Growth in transport employment aligns with the regional average.
- Investments: ODA and PPP investments focused on road infrastructure.
- Logistics performance: Improved logistics ranking and sustainable freight index indicate progress in efficiency and sustainability.• Economic Contribution: Transport sector's share in GDP and employment remained stable. Growth in transport employment aligns with the regional average.
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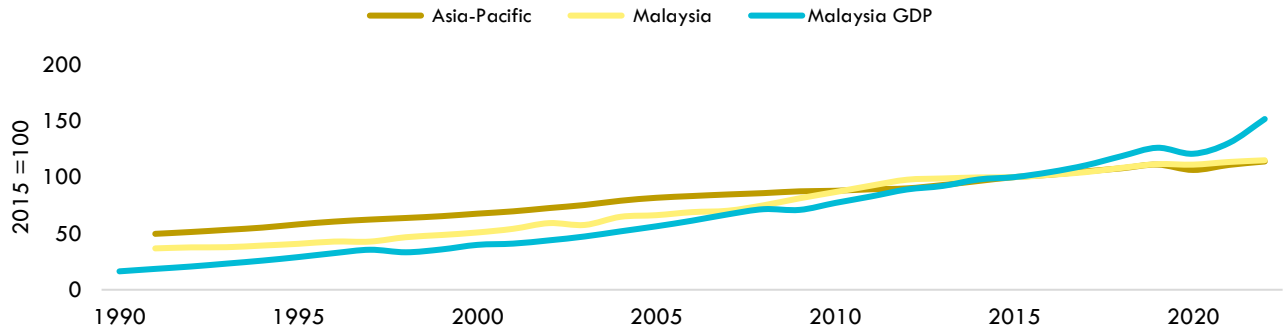
- Logistics Performance: Improved logistics ranking and sustainable freight index indicate progress in efficiency and sustainability.

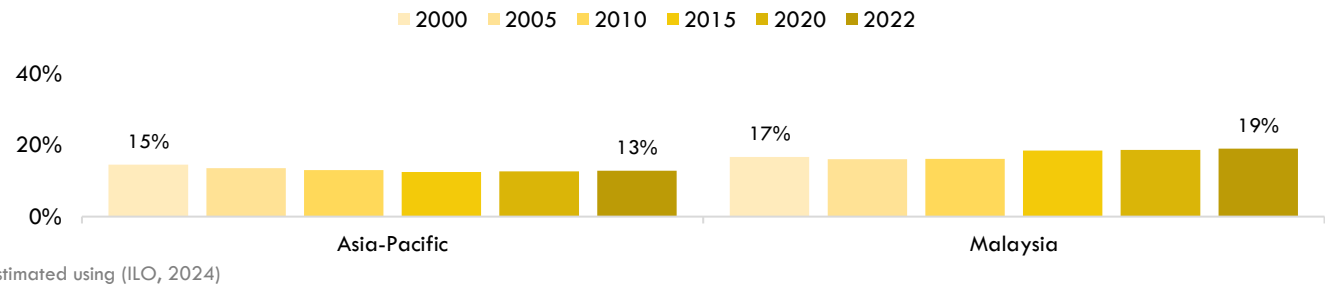
Transport employment

Growth of transport sector employment



(ILO, 2024)

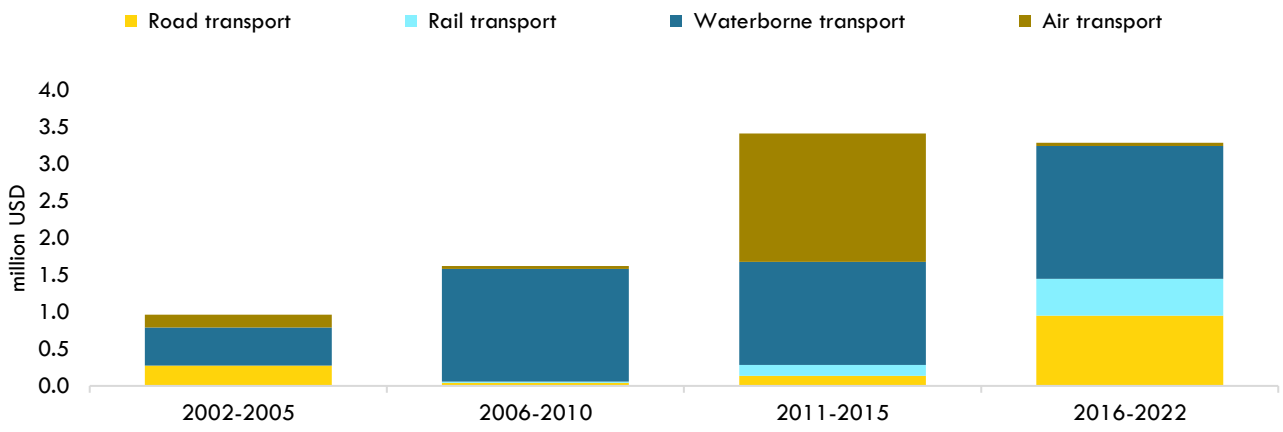
Female share in the transport employment



Estimated using (ILO, 2024)

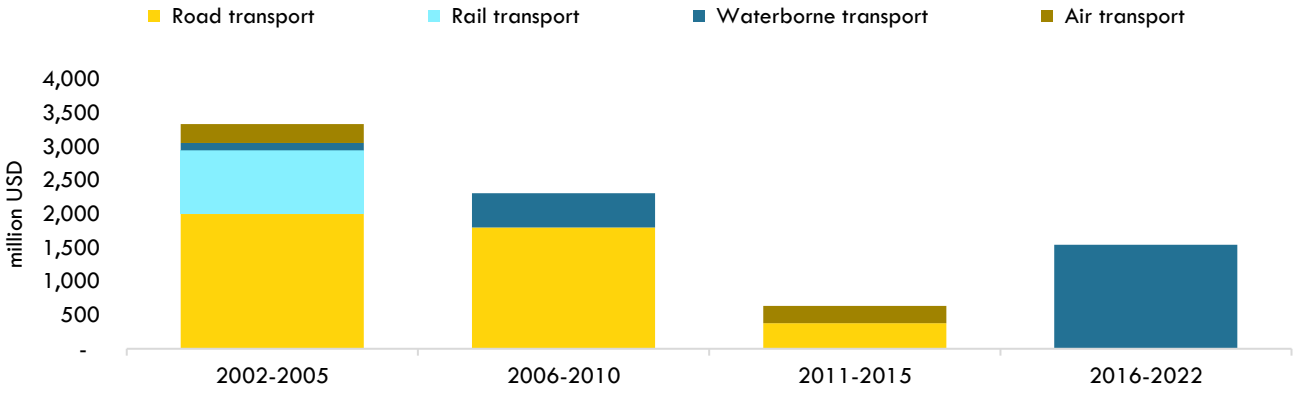
Transport investments

Official development assistance for Transport



(OECD, 2022)

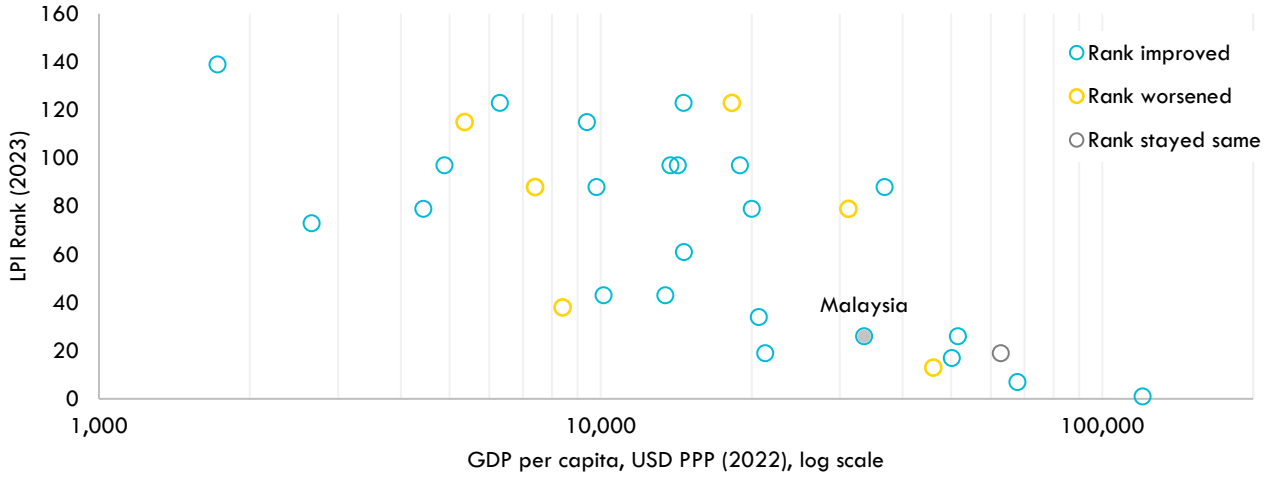
Public Private Partnership in Transport



(WB, 2023)

Freight sector

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



(WB, 2022)

Goal 4 - Rural access:

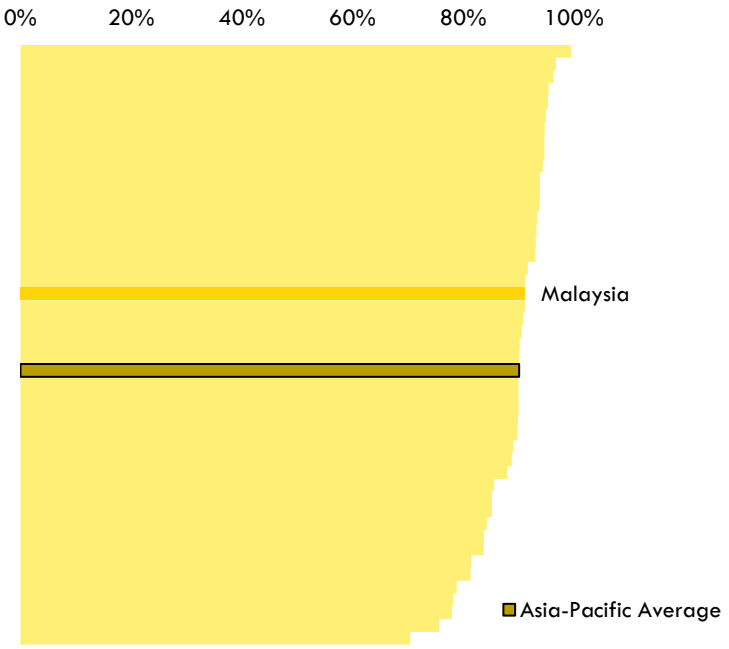
By 2030, realize accessible, inclusive, safe, affordable, and resilient rural transport infrastructure and services, thus facilitating improved access to markets, basic utilities and services including health and education by the farming community, and other rural population including physically disabled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

Rural access

Rural access index

(CIESIN-rural, 2023)

Share of Secondary and Tertiary roads in Total road network



(ATO and Country estimates)

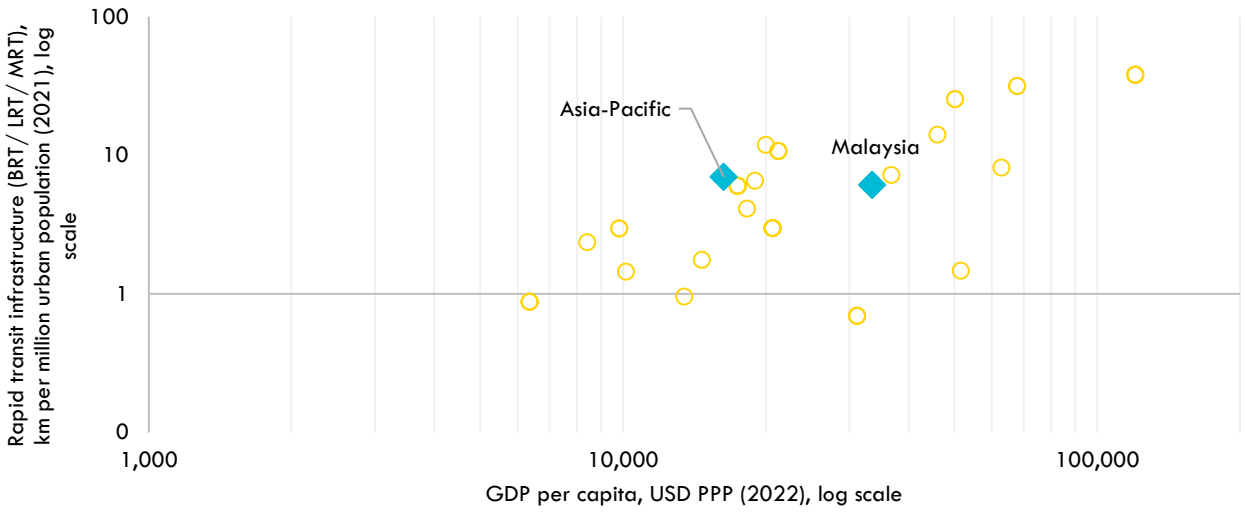
- Access to roads: 85% of the rural population lives within 2km of an all-weather road, exceeding regional and global averages.
- Remaining challenges: An estimated 1 million people still lack decent rural access.

Goal 5 - Urban access:

By 2030, ensure access to accessible, inclusive, safe, efficient, affordable, and sustainable transport facilities, systems and services for urban dwellers, including physically disabled and vulnerable groups through the development of urban transport infrastructure and services (Based on SDG 11.2 and 11.7)

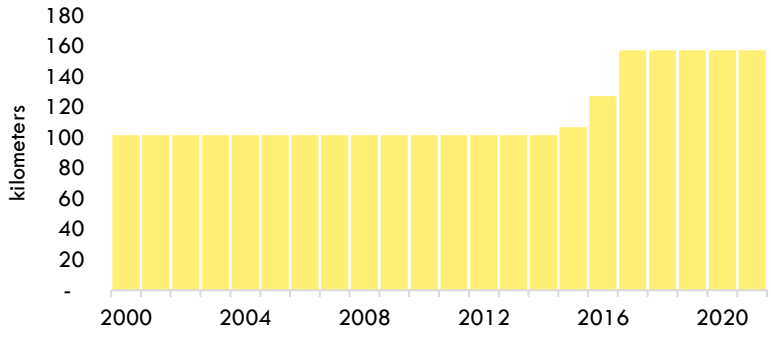
Urban rapid transit infrastructure

Rapid transit infrastructure to resident ratio (RTR)



(ITDP, 2022)

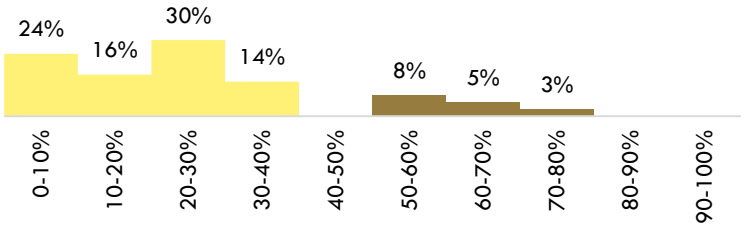
Urban rapid transit infrastructure length



(ITDP, 2022)

Urban access

Share of cities by level of urban access (out of 37 cities)



(CIESIN-urban, 2023)

- Rapid transit: Urban rapid transit infrastructure expanded, but the ratio to urban population remains below the regional average. Only one city has rapid transit.

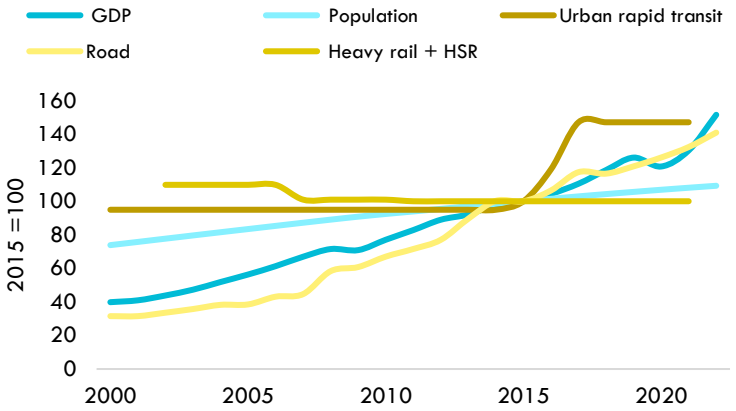
- Public transport access: Data on urban access to public transport is limited, but available information suggests room for improvement.

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)

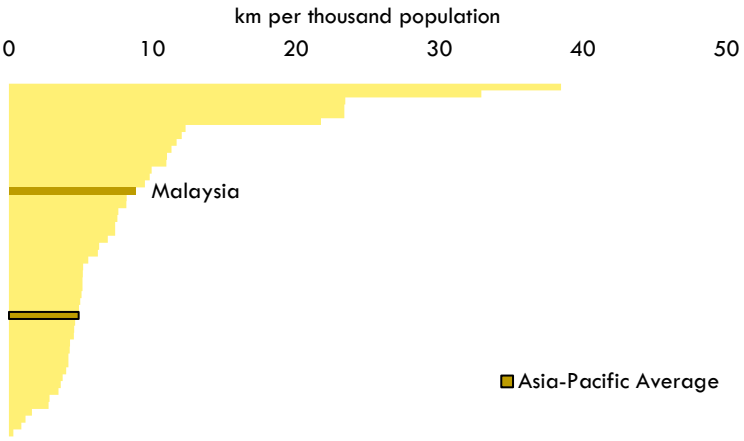
Transport infrastructure

Growth of transport infrastructure



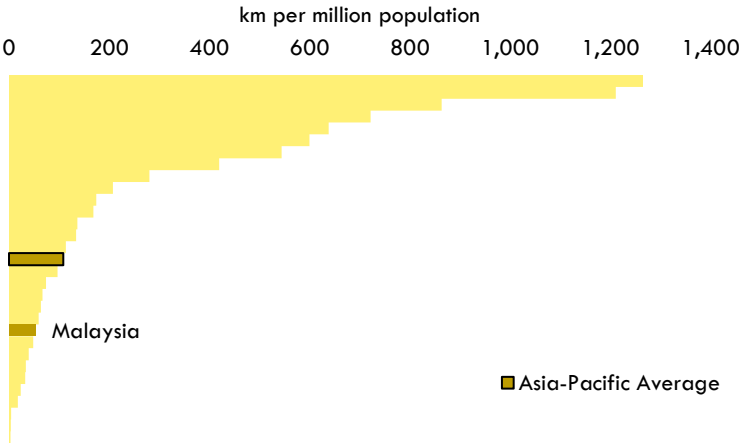
(IRF, 2024) (UIC, 2024) (ITDP, 2022) (ATO and Country estimates)

Road transport infrastructure availability (2022)



(IRF, 2024) (ATO and Country estimates)

Rail transport infrastructure (including HSR) availability (2021)



(UIC, 2024)

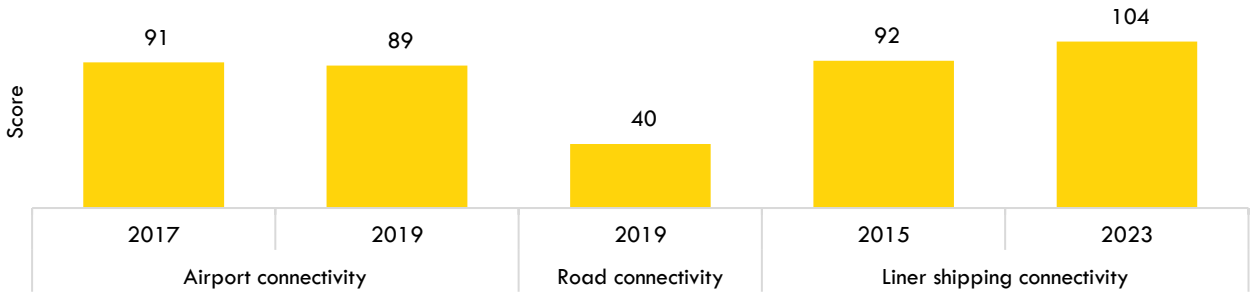
- Infrastructure expansion: Road network expanded significantly, while heavy rail length remained stable. Bus motorization increased.

- Connectivity: Airport connectivity slightly decreased, but liner shipping connectivity improved. Container port traffic is substantial.

- Telecommunications: Extensive mobile network coverage and high internet usage demonstrate strong digital connectivity.

Transport connectivity

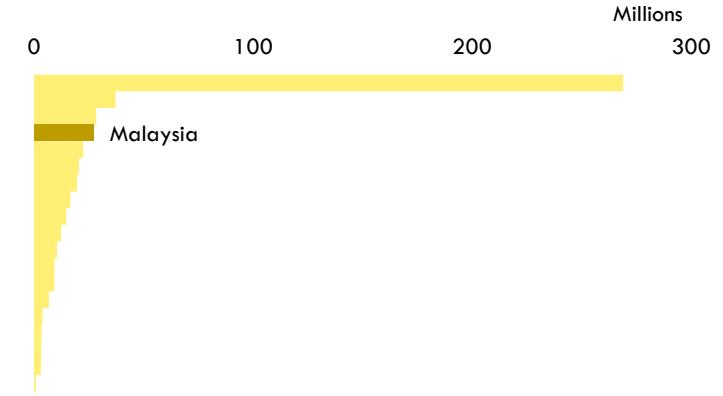
Transport connectivity



(WEF, 2018) (UNCTAD, 2024)

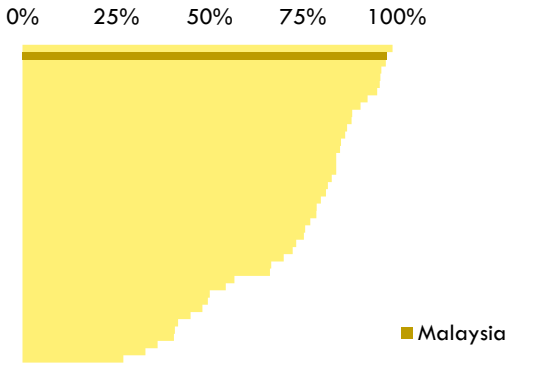
ICT

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: 13 policy documents adopted since 2015, with increased focus after the Aichi 2030 Declaration.

• Policy focus: Most policies address low-carbon transport and air pollution, with some attention to road safety and national connectivity.

• Targets: 63 targets set, primarily related to low-carbon transport and air pollution, with target years extending to 2050.

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	Logistics and Trade Facilitation Master Plan 2015-2020	2015								
2	Intended Nationally Determined Contribution of the Government of Malaysia	2015								
3	Green Technology Master Plan 2017-2030	2017								
4	Malaysia. Biennial update report (BUR). BUR 2. National Communication (NC). NC 3.	2018								
5	National Transport Policy 2019-2030	2019								
6	National Automotive Policy 2020	2020								
7	National Physical Plan_Chapter 7 (Implementation)	2020								
8	National Low Carbon Cities Masterplan	2021								
9	Low Carbon Mobility Blueprint 2021-2030	2021								
10	Twelfth Malaysia Plan 2021-2025	2021								
11	Updated Nationally Determined Contribution - MYS	2021								
12	Malaysia Road Safety Plan 2022-2030	2022								
13	National Energy Policy 2022-2040	2022								

(ATO National policy tracker)

Poor coverage
Moderate coverage
Extensive coverage

Transport relevant national targets

Doc. No.	Target	Year	Goal 1a	Goal 1b	Goal 1c	Goal 2	Goal 3	Goal 4	Goal 5	Goal 6
2	**Intended Nationally Determined Contribution of the Government of Malaysia**									
	Malaysia intends to reduce its greenhouse gas (GHG) emissions intensity of GDP by 45% by 2030 relative to the emissions intensity of GDP in 2005. This consist of 35% on an unconditional basis and a further 10% is condition upon receipt of climate finance, technology transfer and capacity building from developed countries.	2030	x		x					
3	**Green Technology Master Plan 2017-2030**									
	2,000 electric buses are set to be on the road by the year 2030, and this initiative aims to reduce the environmental impact further; Participation from private developers includes private-public engagement to provide targeted support, and facilitate industry growth and possibly demand for exports. Some local industry players have already initiated local GT development in the manufacturing of electric buses and monorail trains. EV introduction via Completely Built Unit (CBU) importation and various application programs shall be pursued to increase the visibility and acceptance of the technology. Concurrently, while the market is being primed, development of EV related technology can be embarked upon. To ride on this tide of EV development, it is crucial for Malaysia to embark on electric vehicle technology development.	2030	x		x		x			x
	% of total industry volume to be Energy Efficient Vehicles (EEV) (fuel efficient vehicles, hybrid and EV) = 100%	2030	x		x					x
	Moving from gasoline and diesel vehicles to alternative fuel vehicles running on biodiesels and CNG can also be fast solutions in improving the energy efficiency of existing vehicles. Nevertheless, this requires significant effort in the development of relevant technology as well as the preparation of supporting infrastructures, particularly in terms of good coverage of refilling stations and service centres for biofuel and CNG vehicles.	2040	x		x					x
	The aspirational targets for installed RE capacity are set at 20% in 2020, 23% by 2025 and 30% by 2030 as compared with 18.9% in 2016.	2025	x		x					
	The aspirational targets for installed RE capacity are set at 20% in 2020, 23% by 2025 and 30% by 2030 as compared with 18.9% in 2016.	2030	x		x					
	Malaysia has pledged to reduce its GHG emissions intensity of GDP by 45% by 2030 relative to the emissions intensity of GDP in 2005. This consists of 35% on an unconditional basis and a further 10% is conditional upon receipt of climate finance, technology transfer and capacity building from developed countries.	2030	x		x					
	40% rail based public transport in all cities	2030	x		x	x			x	
	According to the NLPTMP, it is targeted that modal share for public transport in urban areas will reach 40% by 2030.	2030	x		x	x			x	
	EURO 5 RON 95 & 97	2025	x		x					

6	**National Automotive Policy 2020**									
	EMPLOYMENT OPPORTUNITIES - MANUFACTURING = 128,000 JOBS	2030								x
	EMPLOYMENT OPPORTUNITIES - MaaS = 75,000 JOBS	2030								x
	EMPLOYMENT OPPORTUNITIES - AFTERMARKET = 46,000 JOBS	2030								x
	EMPLOYMENT OPPORTUNITIES - IoT = 44,000 JOBS	2030								x
	EMPLOYMENT OPPORTUNITIES - ROBOTICS = 30,000 JOBS	2030								x
	TOTAL EMPLOYMENT OPPORTUNITIES = 323,000 JOBS	2030								x
	NxGV standards for all vehicles will be developed by year 2021 to ensure NxGV market penetration by year 2025	2025	x		x					x
9	**Low Carbon Mobility Blueprint 2021-2030**									
	a. Establish a national target of 9000 AC charging points and 1000 DC charging points by 2025.	2025	x		x					x
	d. Establish 50% target of new government fleet to be BEV (2023 – 2025).	2025	x		x					x
	b. Establish 20% target of new GLC fleet to be BEV (2023 – 2025).	2025	x		x					x
	c. Establish 50% target of new GLC fleet to be locally manufactured BEV (2026 – 2030).	2030	x		x					x
	Update regulations requiring new vehicles meet Euro 5 requirements for all petrol engine vehicles in 2026.	2026	x		x					
	Update regulations requiring new vehicles meet Euro 5 requirements for all diesel engine vehicles in 2026.	2026	x		x					
	Update Disel Hijau scheme to Euro 6 engine standard (2026).	2026	x		x					
	Update regulations requiring new vehicles meet Euro 5 requirements for all diesel engine HDVs in 2026.	2026	x		x					
	Update HDV Disel Hijau scheme to Euro 6 engine standard (2026).	2026	x		x					
	Update regulations requiring new vehicles meet Euro 6 requirements for all petrol engine vehicles in 2030.	2030	x		x					
	Update regulations requiring new vehicles meet Euro 6 requirements for all diesel engine vehicles in 2030.	2030	x		x					
	Update regulations requiring new vehicles meet Euro 6 requirements for all diesel engine HDVs in 2030.	2030	x		x					
	National target of 144 gCO2/km (equivalent to 6.2 L/100km) for passenger vehicles.	2023	x		x					
	National target of 123 gCO2/km (equivalent to 5.3 L/100km) for passenger vehicles.	2026	x		x					
	National target of 95 gCO2/km (equivalent to 4.1 L/100km) for passenger vehicles.	2030	x		x					
10	**Twelfth Malaysia Plan 2021-2025**									
	Increase in Cargo Volume via Rail, in Northern, Central and Southern Regions = 10%	2025	x		x					
	Increase in Air Transport Passengers = 20% by 2025	2025	x		x					x
	Constructing and Upgrading Rural Paved Roads = 2,800 km	2025						x		
	Up to 45% Reduction in Greenhouse Gas (GHG) Emissions Intensity to GDP by 2030 Based on Emissions Intensity in 2005	2030	x							
11	**Updated Nationally Determined Contribution - MYS**									

	Malaysia intends to reduce its economy-wide carbon intensity1 (against GDP) of 45% in 2030 compared to 2005 level. The updated NDC includes the following increased ambition: (a) The 45% of carbon intensity reduction is unconditional;	2030	x		x					
12	**Malaysia Road Safety Plan 2022-2030**									
	TO ACHIEVE AT LEAST 50% REDUCTION IN THE NUMBER OF DEATHS CAUSED BY ROAD CRASHES IN 2030	2030				x				
13	**National Energy Policy 2022-2040**									
	Alternative fuel standard for heavy transport = B30 from B5 in 2018	2040	x		x					
	Percentage of electric vehicle (EV) share = 38% from <1% in 2018	2040	x		x					x
	Percentage of Liquefied Natural Gas (LNG) as alternative fuel for marine transport = 25% from 0% in 2018	2040	x		x					
	Total installed capacity of RE = 18,431 MW from 7,597 MW in 2018	2040	x		x					
	Percentage of RE in TPES = 17% from 7.2% in 2018	2040	x		x					
	Percentage of urban public transport modal share = 50% from 20% in 2018	2040	x		x	x			x	
	This is also aligned to the target of Long-Term Low Emission Development Strategy (LT-LEDS) to achieve net-zero GHG emissions in 2050.	2050	x							
6	**National Automotive Policy 2020**									
	GDP CONTRIBUTION (MANUFACTURING) = RM 104.2 BIL	2030								x
	TOTAL PRODUCTION VOLUME (TPV) = 1.47 MIL UNITS	2030								x

(ATO National policy tracker)

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