

AUTHOR:

Robert Ambunda, *University of Namibia:
School of Engineering and the Built Environment*

CONTRIBUTORS:

Verena Knoell, *GIZ*; Chris Kost, *ITDP*

Africa Regional Overview

Demographics

Population
size:

**1,409
million**

(2022)

Population
growth:

+35%

(2010-2020)

Urban population
share:

47%

(2022)

Urban population
growth:

+44%

(2010-2022)

GDP
per capita:

**USD
1,956**

(2021)

GDP
growth:

+33%

(2010-2021)

Source: See endnote 1 for this section.



SLOCAT Partnership on Sustainable,
Low Carbon Transport

Transport, Climate and Sustainability
Global Status Report - 3rd edition

Key findings



Demand trends



- The motorisation rate in Africa (covering four-wheeled motorised vehicles) is the lowest globally, at 43 vehicles per 1,000 people during the 2016-2020 period, compared to a global average of 197 vehicles per 1,000 people.
- Africa accounts for less than 1% of global vehicle production and is highly dependent on used vehicles. In most African countries, used light-duty vehicles comprise 85-100% of the total fleet. Between 2015 and 2018, Africa imported the largest share of used light-duty vehicles among world regions, at 40%.
- In 2022, people in Africa spent an average of 56 minutes per day walking or cycling for transport, compared to the global average of 43.9 minutes per day. Low-income households are most dependent on walking and cycling, and their urban transport expenditures represent up to 20% of the household income (10% in smaller cities)
- As many as 95% of Africa's roads fail to provide an acceptable level of service for pedestrians, and 93% fail to provide an acceptable level of service for cyclists. More than half (53%) of the population is considered "vulnerable" road users (pedestrians, bicyclists and motorcyclists), a share that is 1.5 times above the global average of 26%.
- Access to public transport in Africa is limited. In 2020, only 31.7% of the population was able to access either formal or informal public transport within a walking distance of 500-1,000 metres, well below the global average of 56%.
- At least 105 million people in African cities did not have reliable information on their collective transport systems as of 2021. This makes it difficult to achieve target 11.2 of Sustainable Development Goal (SDG) 11, aimed at ensuring that all citizens have access to safe, affordable, accessible and sustainable transport systems by 2030. In various cities across the region, informal transport accounts for between 40% and 98% of trips by public or shared transport.
- Roads are the predominant mode of transport in Africa, carrying at least 80% of goods and around 90% of passengers. Limited rail transport and the high costs of air transport leave road transport as the only practicable alternative for freight in most countries in Sub-Saharan Africa.

Emission trends



- Africa contributed the lowest share of global greenhouse gas emissions (3.9%) among world regions in 2022, despite being home to 18% of the world's population. At the same time, the region is most vulnerable to the effects of climate change and is already experiencing high temperature increases.
- Between 2020 and 2021, due to COVID-19 travel restrictions, Africa's economy-wide carbon dioxide (CO₂) emissions fell 7.4%, and transport CO₂ emissions fell 11%.
- Transport contributed nearly one-quarter (24%) of total CO₂ emissions in Africa in 2021. The region's transport CO₂ emissions increased 34% between 2010 and 2021, the second highest regional growth rate after Asia (36%).
- However, Africa's per capita transport CO₂ emissions are 3.4 times below the global average of 0.85 tonnes.

Policy developments



- The African Road Safety Action Plan, the region's framework to implement the United Nations (UN) Road Safety Decade 2021-2030 and SDGs 3 and 11, recognises the dearth of road safety data in Africa and has requested the UN Economic Commission for Africa, the African Union Commission and the African Development Bank to develop mechanisms to strengthen data collection for effective policy intervention and analysis.
- In African cities, many residents depend on walking and cycling as their primary means of transport. As of 2019, around 59% of people walking and cycling in Africa were supported by a walking and cycling policy, either stand-alone or as part of an integrated transport strategy.
- To address challenges related to safety and the quality of service, initiatives have emerged to consolidate public transport operations.

- Bus rapid transit (BRT) corridors and/or systems have been implemented or are being developed in Addis Ababa (Ethiopia), Cairo (Egypt), Dar es Salaam (Tanzania), Lagos (Nigeria), Nairobi (Kenya) and the cities of Cape Town, George, Johannesburg and Pretoria in South Africa.
- The electric mobility landscape is evolving rapidly, pushed by the need to decarbonise economies by 2050. Several African governments have put in place policies and regulatory measures for the adoption and transition to e-mobility.
- Rapidly rising urbanisation and motorisation rates have prompted an urgent response to Africa's growing transport needs, including through the development of sustainable urban mobility plans (SUMPs) and national urban mobility plans (NUMPs).
- As of the end of 2022, Africa accounted for 43% of the countries that included time-bound targets for reducing transport greenhouse gas emissions in their second-generation Nationally Determined Contributions (NDCs) under the Paris Agreement (10 out of 23 countries).





Overview



The Africa region comprises 54 countries¹ spanning from Northern Africa to Sub-Saharan Africa. Transport is key for promoting sustainable economic growth in the region and for addressing a complex set of challenges related to climate change and the demand for mobility. The United Nations (UN) 2030 Agenda for Sustainable Development recognises the importance of transport in achieving a sustainable future for all regions, through direct, indirect and cross-cutting targets that bear a direct link to green, equitable, healthy, safe and resilient mobility. For Africa specifically, Agenda 2063, released in 2013, is the blueprint to transform the region into a global powerhouse by delivering sustainable and inclusive development.²

The main challenges facing the transport sector in Africa include a lack of integrated planning across various transport modes, insufficient data on public transport systems, poor transport infrastructure and access, and the highest road fatality rates globally. Most African cities rely on some form of informal or semi-formal transport, which is dominated by fragmented, privately operated services.

Transport activity and transport energy demand in Africa are expected to increase significantly, alongside high rates of both urbanisation and motorisation. By 2050, around 60% of the region's population is projected to live in urban areas, with unprecedented numbers also living in peri-urban and rural areas.³ To address the ever-increasing demand for mobility, there is a growing need for greener, more equitable, healthier, safer and more transport systems. This need has been made glaringly clear by the mobility challenges posed by the COVID-19 pandemic and by the Russian Federation's war in Ukraine.⁴

For many decades, transport investments in Africa have been skewed towards motorised transport infrastructure. However, several countries in the region, with the support of development agencies, have committed to improving the landscape of active mobility and formal public transport, through financing and the development and implementation of new and existing policies and strategies.⁵

Demand trends



Transport is essential for addressing the rising demand for mobility in Africa. The region is the world's least urbanised, yet it has the highest rate of urbanisation globally, at 3.5% per year.⁶ The continent's urban population share is projected to grow from 47% in 2022 to 60% in 2050.⁷ By 2050, African cities are projected to be home to an additional 300 million urban residents, of which the vast majority are expected to rely on walking, cycling and public transport for their daily journeys.⁸

The motorisation rate in Africa (covering four-wheeled motorised vehicles) is the lowest globally, at 43 vehicles per 1,000 people during the 2016-2020 period, compared to a global average of 197 vehicles per 1,000 people (see Figure 1).⁹

In addition, 21.3 million motorcycles are in use in Africa.¹⁰ In Burkina Faso and Mauritius, more than 100 motorcycles per 1,000 people were in use in 2020.¹¹

Motorisation rates in Africa increased 32% on average between 2015 and 2020.¹² Rising vehicle ownership reflects the desire of Africa's expanding populations to become mobile and to gain access to more economic activities as levels of real income increase and economies develop.¹³ The continent's electric mobility (e-mobility) ecosystem also has expanded, with South Africa and Uganda providing good examples of the potential of this emerging vehicle industry.¹⁴

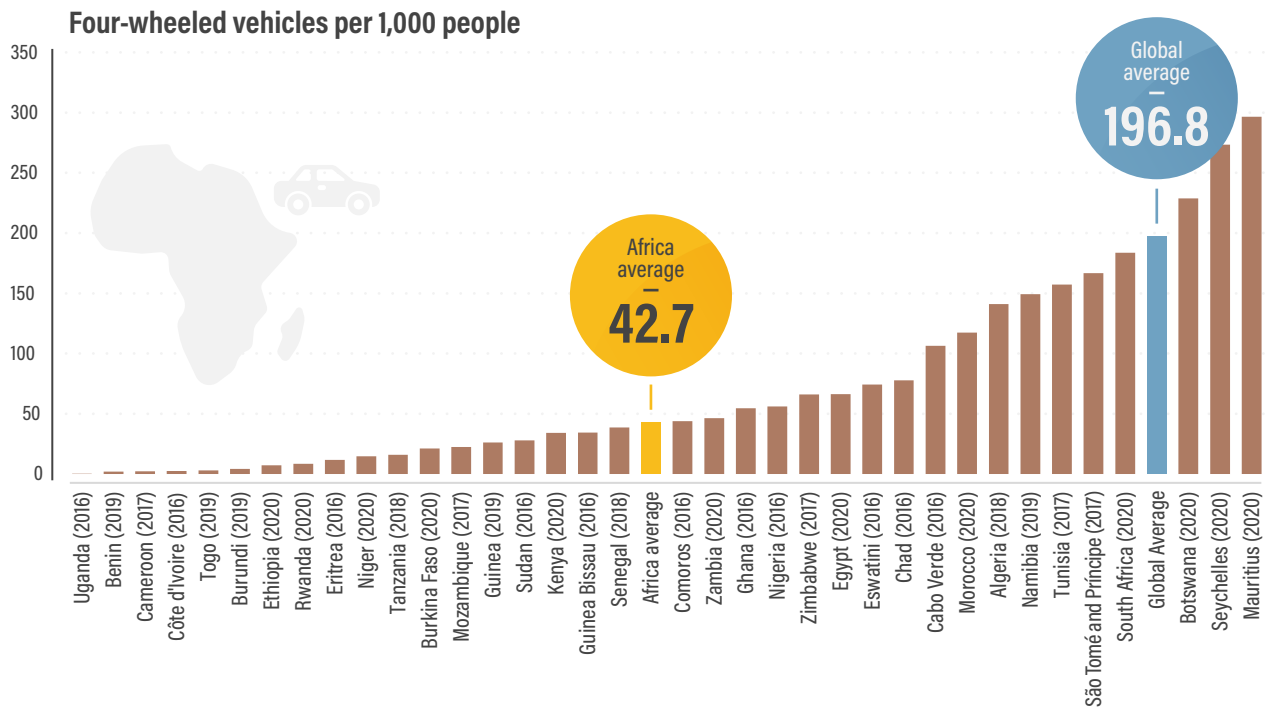
With the onset of the COVID-19 pandemic, most African cities experienced reductions in the supply of both formal and informal transport. In April and May 2020, several cities reduced their public transport passenger capacities by up to half, including Abidjan (Côte d'Ivoire), Accra (Ghana), Addis Ababa (Ethiopia), Cape Town (South Africa), Dakar (Senegal), Douala (Cameroon) and Nairobi (Kenya).¹⁵

Africa is regarded as the final frontier of automotive growth, largely because it is the second most populous continent, has the world's lowest motorisation rate and **accounts for less than 1% of global vehicle production.**¹⁶ Outside of South Africa and Morocco, vehicle manufacturing is minimal.¹⁷ Multinational vehicle manufacturers have begun setting up production plants in Angola, Ethiopia, Ghana, Kenya, Namibia, Nigeria and Rwanda.¹⁸

¹ The countries covered are Algeria, Angola, Benin, Botswana, Burkina Faso, Burundi, Cabo Verde, Cameroon, Central African Republic, Chad, Comoros, Congo, Côte d'Ivoire, Democratic Republic of the Congo, Djibouti, Egypt, Equatorial Guinea, Eritrea, Eswatini, Ethiopia, Gabon, Gambia, Ghana, Guinea, Guinea Bissau, Kenya, Lesotho, Liberia, Libya, Madagascar, Malawi, Mali, Mauritania, Mauritius, Morocco, Mozambique, Namibia, Niger, Nigeria, Rwanda, São Tomé and Príncipe, Senegal, Seychelles, Sierra Leone, Somalia, South Africa, South Sudan, Sudan, Togo, Tunisia, Uganda, United Republic of Tanzania, Zambia and Zimbabwe.

FIGURE 1. Motorisation rates per 1,000 people in Africa, 2016-2020

Source: See endnote 9 for this section.



- ▶ Sales of new light-duty vehicles in Africa have started to recover from the pandemic, with the number of units sold increasing 32% in 2021 (1,131,249 units) compared to 2020 (856,113 units).¹⁹ However, sales of the vehicles in 2021 were still below 2019 levels (1,150,842 units).²⁰
- ▶ In Sub-Saharan Africa, sales of new light-duty vehicles increased 15% in 2021 but were still down 10% compared to 2019 volumes.²¹
- ▶ Egypt, Morocco and Tunisia all increased their sales of new light-duty vehicles in 2021, compared to 2020 and 2019; however, other North African countries showed declines in sales volumes.²²
- ▶ Sales of new commercial vehicles in Africa increased 3% in 2021 to reach 311,990, up from 302,000 vehicles sold in 2019.²³

Africa is highly dependent on used vehicles. In most African countries, used light-duty vehicles comprise 85-100% of the total fleet.²⁴ The three largest exporters of these vehicles – the European Union (EU), Japan and the United States – exported 14 million used light-duty vehicles worldwide **between 2015 and 2018, with Africa importing the largest share among world regions, at 40%.**²⁵

- ▶ On average, 60% of all annual vehicle registrations in Africa are for used light-duty vehicles.²⁶
- ▶ More than 95% of additions to Kenya’s growing fleet of light-duty vehicles are imported used vehicles, mostly from Japan.²⁷
- ▶ In East Africa, fleets of used light-duty vehicles are much older in Rwanda (which has no age limit for used vehicle imports) and in Uganda (which has a 15-year age limit on used vehicles) than in Kenya, which imposed an age limit of 8 years on used vehicle imports.²⁸
- ▶ The Netherlands exported 35,000 light-duty vehicles to West Africa during 2017-2018, most of which (80%) were between 16 and 20 years old and fell below the Euro 4ⁱⁱ vehicle emission standard.²⁹
- ▶ Morocco has implemented Euro 4 emission standards, and Ghana has established age and fiscal policies to ensure that all imported light-duty vehicles meet Euro 4 standards.³⁰
- ▶ In 2021, Mauritius introduced a set of policies and fiscal incentives to improve the quality of used vehicles; these include allowing used vehicles no older than three years, developing a CO₂-based vehicle taxation scheme, and creating an inspection and verification scheme for used vehicles.³¹

ii The Euro 4 emission standard was introduced on all new cars from January 2005 and all newly registered cars from January 2006. To pass the Euro 4 standard, petrol cars had to emit no more than 1.0 grams per kilometre (g/km) of carbon monoxide, no more than 0.10 g/km of total hydrocarbon and no more than 0.08 g/km of nitrogen oxides.

- ▶ In 2022, the East Africa sub-region adopted Euro 4/IV equivalent vehicle emission standards.³²
- ▶ The Economic Community of West African States (ECOWAS) adopted and implemented cleaner fuels and vehicles standards in 2021.³³

In Africa, up to 78% of people walk for transport purposes every day.³⁴ **In 2022, people in Africa spent an average of 56 minutes per day walking or cycling for transport, compared to the global average of 43.9 minutes per day.**³⁵ Low-income households are most dependent on walking and cycling, and their **urban transport expenditures represent up to 20% of the household income (10% in smaller cities).**³⁶ **Improving the mobility options of the urban poor is seen as key to their economic uplifting.**

- ▶ In Kinshasa (Democratic Republic of the Congo) and Dar es Salaam (Tanzania), walking accounts for two-thirds of total trips.³⁷
- ▶ In Kenya's major cities, people use walking and cycling for a high share of daily trips, including 53% in Kisumu, 45% in Mombasa and 40% in Nairobi.³⁸ Across Kenya, an additional 41% of trips by *matatu* (privately owned mini-buses used as shared taxis) start and end with a walking journey.³⁹ In the country's rural areas, more than 90% of trips are by foot and 4% are by bicycle.⁴⁰
- ▶ People in Niger spent on average 141.6 minutes per day walking and cycling for transport in 2022.⁴¹

Africa has the world's highest rate of fatalities related to road traffic, at 26.6 deaths per 100,000 people in 2016, compared to a global average of 17 deaths per 100,000 people.⁴² This is despite having the lowest motorisation rate and being host to only 3% of all registered vehicles globally.⁴³ **As many as 95% of Africa's roads fail to provide an acceptable level of service for pedestrians, and 93% fail to provide an acceptable level of service for cyclists.**⁴⁴ An estimated 260,000 people were killed on African roads in 2019, **with 53% of this population considered "vulnerable" road users (40% pedestrians, 4% cyclists and 9% people using motorised two- and three-wheelers).** This share is 1.5 times above the global average of 26%.⁴⁵

- ▶ On average, 261 pedestrians and 18 cyclists are killed every day in African cities.⁴⁶
- ▶ Road traffic deaths due to drinking and driving account for the majority of road fatalities in Lesotho (60%) and South Africa (58%).⁴⁷
- ▶ In 2016, the total cost of road crash fatalities and serious injuries in Africa was an estimated 9% of the continent's gross domestic product (GDP), the highest share among regions globally.⁴⁸
- ▶ Fewer than 18% of African countries monitor key road safety performance indicators, such as helmet and seatbelt use.⁴⁹

- ▶ Around 40% or more of African countries have not taken significant action to establish road safety data management systems.⁵⁰
- ▶ African countries recorded significant reductions in road fatalities in 2020 due to COVID-19 lockdown measures – including in South Africa (78% fewer deaths), Morocco (65%) and Namibia (60%).⁵¹

Access to public transport in Africa is limited. In 2020, only 31.7% of the population was able to access either formal or informal public transport within a walking distance of 500-1,000 metres, well below the global average of 56%.⁵² Public transport in African cities relies heavily on informal transport and in particular on the "target" system of operating. This involves the use of public transport (buses, mini-buses and ride-hailing services, mostly in Southern Africa) as well as taxi services (motorcycle taxis and tuk-tuks, mostly in East, West and Central Africa) operated by informal businesses.⁵³

At least 105 million people living in African cities did not have reliable information on their collective transport systems as of 2021.⁵⁴ **This makes it difficult to achieve target 11.2 of Sustainable Development Goal 11, aimed at ensuring that all citizens have access to safe, affordable, accessible and sustainable transport systems by 2030.**⁵⁵ **In various cities across the region, informal transport accounts for between 40% and 98% of trips by public or shared transport.**⁵⁶

- ▶ As of 2022, 15 African cities had mapped their public transport and mini-bus taxi networks in a standardised and open format (General Transit Feed Specification, or GTFS).⁵⁷
- ▶ In South Africa's Gauteng Province (covering Ekurhuleni, Johannesburg and Tshwane), 70% of all trips were made using informal transport in 2007.⁵⁸
- ▶ Motorcycle taxis were present in around 60% of cities in Africa as of 2016.⁵⁹
- ▶ As of 2016, the share of cities with motorcycle taxis was 25% in Southern Africa, 46% in East Africa, 69% in West Africa and 74% in Central Africa.⁶⁰
- ▶ In 2016, motorcycles and three-wheelers made up 59% of the total fleet in Uganda, 37% in Kenya, 34% in Tanzania and 23% in Ghana.⁶¹
- ▶ In Addis Ababa (Ethiopia), three-wheeler taxis (*bajaj*) transported an estimated 635,000 people per day in 2018.⁶²

During the first year of the COVID-19 pandemic (2020), the number of public transport trips taken in African cities fell 40% on average compared to pre-COVID levels in 2019.⁶³ These reductions in public transport contributed to mobility disruptions, a decline in the supply of public transport, and to some extent a shift towards walking and cycling.⁶⁴

- ▶ In Abidjan (Côte d'Ivoire), public transport ridership fell an estimated 50% at the peak of COVID-19 restrictions.⁶⁵
- ▶ In South Africa and Zimbabwe, the number of trips declined 80% in 2020 due to COVID-19 restrictions.⁶⁶
- ▶ Tanzania and Zambia experienced around 20% reductions in all trips during 2020.⁶⁷
- ▶ Most African cities increased public transport fares in response to the pandemic: towns in Namibia increased fares 15%, while some routes in Johannesburg (South Africa) increased fares 10-25% due to reduced capacity (lockdown measures).⁶⁸

Freight transport in Africa faces a multitude of infrastructure and social challenges. The African Continental Free Trade Area (AfCTA) agreement, which came into force in 2019, is projected to increase intra-Africa trade demand 28%, leading to the additional need by 2030 for 2 million trucks, 100,000 rail wagons, 250 aircraft and more than 100 vessels.⁶⁹ The region faces low inter-regional and intra-African trade, poor inland road quality, inadequate port and rail capacity, and slow development in transport technologies – all of which have been exacerbated by the pandemic and by the Russian Federation's war in Ukraine.⁷⁰

- ▶ In 2020, transport costs along the Northern Corridor freight route from Mombasa to Kampala increased 48% due to pandemic-related delays.⁷¹
- ▶ Border-crossing times increased from less than 24 hours in the first quarter of 2020 (pre-pandemic), to more than five or six days during the pandemic.⁷²
- ▶ In 2022, South Africa ranked highest in Africa on the Freight and Logistics Performance Index, due to the country's efficient, well-integrated and intermodal transport system.⁷³
- ▶ The Liner Shipping Connectivity Index value for Africa declined from 18 in 2020 to 17.6 in 2021, as shipping lines and carriers re-assigned ships to Asia and North America due to port congestion and COVID-19 related restrictions on workforces.⁷⁴

Roads are the predominant mode of transport in Africa, carrying at least 80% of goods and around 90% of passengers.⁷⁵ Limited rail transport and the high costs of air transport leave road transport as the only practicable alternative for freight in most countries in Sub-Saharan Africa. The immense pressure on road networks, coupled with poor maintenance cultures, has resulted in sub-standard road conditions across the region.⁷⁶

- ▶ Cameroon has 10 times more unpaved roads (50,000 kilometres total) than paved roads (5,000 kilometres); the country's roads are poorly maintained, with routes unpassable during the rainy season, leading to high transport costs and to long delays of freight goods due to truck diversions.⁷⁷
- ▶ In Ghana, more than 97% of passenger and freight transport is by road.⁷⁸

The Russian Federation's war in Ukraine has had major short- and long-term implications for the transport landscape in Africa.⁷⁹ The conflict occurred at a time when African countries were still struggling to recover from the destabilising effects of the COVID-19 pandemic.⁸⁰

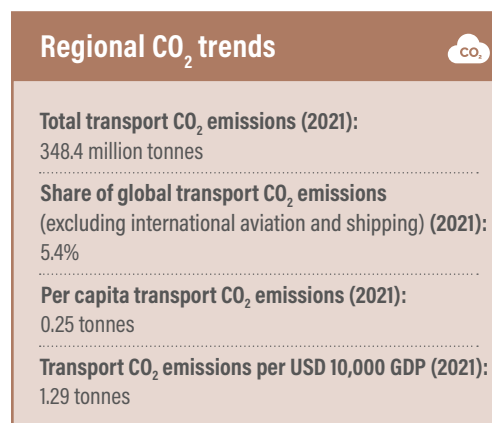
- ▶ In 2022, transport costs doubled in some African countries, such as Namibia, Nigeria and South Africa.⁸¹ This was due to a global mismatch in supply and demand in shipping, port and inland capacity caused by pandemic-related declines and the subsequent rapid recovery in trade volumes.⁸²

Emission trends



Africa contributed the lowest share of global greenhouse gas emissions (3.9%) among world regions in 2021, despite being home to 18% of the world's population.⁸³ At the same time, the region is the most vulnerable to the effects of climate change and is already experiencing high temperature increases.⁸⁴

Although Africa has the world's lowest motorisation rate, the region's emissions of particulate matter 2.5 (released mainly from road transport and power generation) averaged 97.4 micrograms per cubic metre in 2019, above the world average of 82.3 micrograms per cubic metre.⁸⁵ **Between 2020 and 2021, due to COVID-19-related travel restrictions, Africa's economy-wide CO₂ emissions fell 7.4% and transport CO₂ emissions fell 11%.⁸⁶ However, the region's emissions returned to near pre-pandemic levels in 2021.⁸⁷**

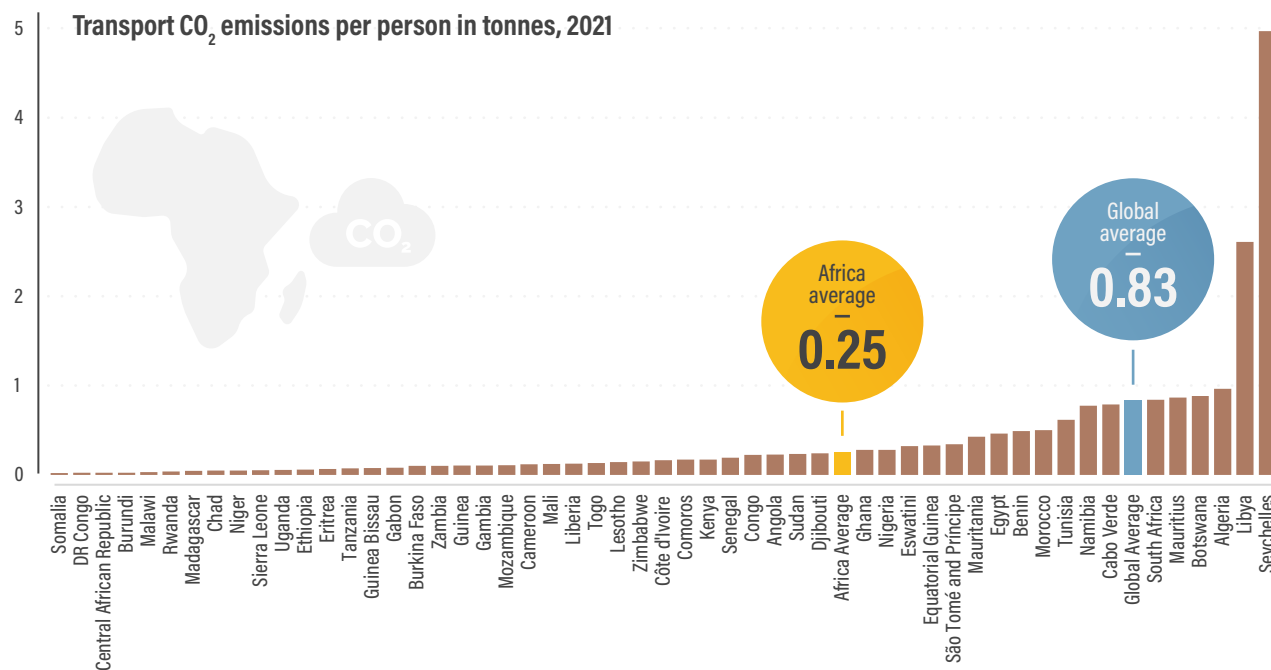


Source: See endnote 88 for this section.

Transport contributed nearly one-quarter (24%) of total CO₂ emissions in Africa in 2021.⁸⁹ The region's transport CO₂ emissions increased 34% between 2010 and 2021, the second highest regional growth rate after Asia (36%).⁹⁰ In 2021, around one-third of African countries reported per capita transport CO₂ emissions that were above the regional average (see Figure 2).⁹¹ However, the region's per capita transport CO₂ emissions overall are 3.4 times below the global average of 0.85 tonnes per capita.⁹² Africa's

FIGURE 2. Per capita transport CO₂ emissions in Africa, 2021

Source: See endnote 91 for this section.



transport emissions relative to economic output were the highest among world regions in 2021, at 1.29 tonnes of CO₂ per USD 10,000.⁹³

- ▶ Nigeria has the highest transport CO₂ emissions in Africa (59.3 million tonnes of CO₂), even though South Africa has a higher motorisation rate and a larger vehicle fleet (12,027,860 units, compared to 11,760,871 units in Nigeria).⁹⁴ This is due mainly to Nigeria's lower-performing vehicle emission technologies.
- ▶ Around 26% of Egypt's vehicle fleet of 10,695,694 units is more than 27 years old, and 25% of the fleet is between 17 and 26 years old, resulting in lower combustion efficiency and high emissions.⁹⁵
- ▶ Chad, Niger and the Central African Republic have some of the lowest CO₂ emissions per capita, measuring one-tenth below the regional average.⁹⁶

Policy developments



Several countries in Africa have recognised that addressing the spiralling epidemic of road fatalities and serious injuries will require implementing effective road safety policies and action plans, with time-bound targets. **The African Road Safety Action Plan, the region's framework to implement the UN Road Safety Decade 2021-2030 and SDGs 3 and 11, recognises**

the dearth of road safety data in Africa and has requested the UN Economic Commission for Africa, the African Union Commission and the African Development Bank to develop mechanisms to strengthen data collection for effective policy intervention and analysis.⁹⁷

- ▶ In 2021, Namibia developed the 2nd Road Safety Decade of Action Strategic Plan for the period 2021-2030, which aims to reduce and eliminate latent gaps in the components of a safe road system.⁹⁸
- ▶ Kampala (Uganda) developed and launched a Road Safety Strategy in 2021, which is aligned with target 3.6 of the SDGs to halve the number of fatalities and injuries from road crashes by 2023.⁹⁹
- ▶ Since 2015, the World Resources Institute has worked with city governments in Accra and Kumasi (Ghana), Addis Ababa (Ethiopia) and Kampala (Uganda) to develop comprehensive speed management plans to reduce traffic speeds through evidence-based policy improvements.¹⁰⁰
- ▶ Addis Ababa (Ethiopia) received the Vision Zero for Youth Award in 2021 for its efforts to prioritise pedestrians and safer speeds and to embrace the Safe System approach.¹⁰¹

Globally, disruptions related to the COVID-19 pandemic altered perceptions on the value of walking and cycling.¹⁰² However, data for 2020 indicate that people in African cities changed



their mobility habits less than in other global regions, in part because walking (and to a much lesser extent cycling) is already the primary and dominant mode of transport across Africa.¹⁰³ Despite this, urban space in Africa is disproportionately allocated to the movement of motorised transport.

The pandemic underscored the need for improved walking and cycling infrastructure across Africa. The region is increasingly developing, adopting and implementing active mobility policies that advocate for safe, comfortable and convenient active transport. Such commitments to walking and cycling are expected to support the SDGs by reducing fatalities and improving well-being (SDG 3), leading to equitable mobility systems (SDG 10), improving infrastructure resilience (SDG 11), and reducing emissions and improving air quality (SDG 13).¹⁰⁴

In African cities, many residents depend on walking and cycling as their primary means of transport. As of 2019, around 59% of people walking and cycling in Africa were supported by an active mobility policy, either stand-alone or as part of an integrated transport strategy.¹⁰⁵

- ▶ Around 35% of countries in the region (19 out of 54) had a walking and cycling policy in 2019.¹⁰⁶

- ▶ Ten African countries (Burundi, Cabo Verde, Ghana, Lesotho, Malawi, Rwanda, Seychelles, Sierra Leone, Tanzania and Togo) made commitments in 2020 to reduce their carbon emissions by encouraging walking and cycling in the wake of the pandemic.¹⁰⁷
- ▶ Kampala (Uganda) and Nairobi (Kenya) – cities where 45% of residents use non-motorised transport as their primary mode – made major improvements to their non-motorised transport infrastructure during the pandemic.¹⁰⁸
- ▶ Windhoek (Namibia) built 8 kilometres of cycling infrastructure along the non-motorised transport route from Khomasdal to Windhoek West, as part of the City of Windhoek’s 2018 non-motorised transport strategy and the Transformative Urban Mobility Initiative (TUMI).¹⁰⁹
- ▶ In 2020, Addis Ababa (Ethiopia) launched a 10-year Non-Motorised Transport (NMT) Strategy aimed at developing a comprehensive network of high-quality walking and cycling facilities to address the growing demand for better access to the city.¹¹⁰ To realise the strategy, in 2021 the Addis Ababa Transport Bureau, supported by the Institute for Transportation and Development Policy (ITDP), developed a three-year



Bus rapid transit (BRT) corridors and/or systems have been implemented or are being developed in Addis Ababa (Ethiopia), Cairo (Egypt), Dar es Salaam (Tanzania), Lagos (Nigeria), Nairobi (Kenya) and the cities of Cape Town, George, Johannesburg and Pretoria in South Africa. BRT is part of transit-oriented development approaches that offer a more equitable approach to land-use planning. In addition, several African cities have emphasised the importance of electric BRT buses in decarbonising their fleets and shifting towards sustainable public transport solutions. However, BRT systems often face financial struggles in Sub-Saharan Africa due to inappropriate regulatory frameworks for system planning, inadequate risk allocation and competition from informal transport operators.¹¹⁵

- ▶ The Kampala Capital City Authority and development partners are creating a BRT implementation road map for Kampala (Uganda), with technical assistance from ITDP.¹¹⁶
- ▶ In Dar es Salaam (Tanzania), the operators of the Dar Rapid Transit (DART) BRT system, along with municipal governments and the Tanzania Ministry of Lands, are developing localised transit-oriented development policies, with ITDP support.¹¹⁷
- ▶ Passenger services on the nearly completed BRT system in Dakar (Senegal) – an 18.3 kilometre corridor with 23 stations – were expected to begin in mid-2023, carrying a projected 300,000 passengers daily.¹¹⁸
- ▶ Ethiopia has highlighted the importance of electric buses in its 10-year (2020-2030) transport policy, with a key goal to introduce 4,850 electric buses to decarbonise the country's fleet.¹¹⁹
- ▶ In 2023, Kenya and the European Commission signed a declaration of intention to finance the construction of an electric bus line in Nairobi, which is expected to be operational by 2030.¹²⁰

NMT Implementation Plan outlining immediate actions, key goals, indicators and targets to improve the active transport environment from 2022 to 2024.¹¹¹

- ▶ Open street events held across Africa – including in Cape Town (South Africa), Kigali (Rwanda) and several Ethiopian cities – provided cities with an opportunity to reflect on and understand the benefits of people-centred development approaches.¹¹²

Public transport services in Africa range from completely unregulated mini-buses to sophisticated public service contracts with international companies. **To address challenges related to safety and the quality of service, initiatives have emerged to consolidate public transport operations.**

- ▶ Kigali (Rwanda) has consolidated operators, shifting from a “target” system to salaried employment and integrated fare collection systems.¹¹³
- ▶ Kenya has consolidated operators and provided regulations for improving operations, but a lack of regulatory compliance remains a challenge.¹¹⁴

The e-mobility landscape is evolving rapidly, pushed by the need to decarbonise economies by 2050.¹²¹

Technological developments are enabling the shift from traditional internal combustion engines towards electric vehicles. **Several African governments have put in place policies and regulatory measures for the adoption and transition to e-mobility.**¹²²

- ▶ In 2021, South Africa published a green paper on the advancement of new vehicles, emphasising the need to gradually convert the country's vehicle sector to battery electric vehicles.¹²³ However, in 2022 only 620 electric cars (battery electric and plug-in hybrid) were sold in South Africa, although this was nearly double the number sold in 2021 (271 units).¹²⁴
- ▶ Rwanda's e-mobility programme plans for the phased adoption of electric buses, passenger vehicles, and motorcycles from 2020 onwards, with several incentives for operators in the sector.¹²⁵

- ▶ In 2020, Egypt issued a decree to encourage local assembly of electric vehicles, with subsidies being considered for the first 100,000 of these locally produced vehicles.¹²⁶
- ▶ Egypt's National Energy Efficiency and Conservation Strategy 2020 envisions meeting a target of a 5% electrified vehicle stock by 2025.¹²⁷
- ▶ In 2023, Uganda began partnering with SPIRO, a vehicle and smart battery design company, to introduce electric motorbikes and charging and swapping stations across the country, with the goal of deploying 140,000 motorbikes and 3,000 recharging and swapping stations over five years.¹²⁸
- ▶ In 2022, Ghana launched the Net Zero Advocacy Platform and tested five different e-cargo bike models for local functionality and real-world user preferences. By the end of 2022, the bikes, made of 100% recycled and local materials, had covered 45,000 kilometres, saving 3.6 tonnes of CO₂ emissions.¹²⁹

Rapidly rising urbanisation and motorisation rates have prompted an urgent response to Africa's growing transport needs, including through the development of sustainable urban mobility plans (SUMPs) and national urban mobility plans (NUMPs). Such policies can unlock the benefits of a well-functioning urban transport sector, including connectivity, inclusion, safety and improved quality of life.¹³⁰

- ▶ In 2021, Kisumu (Kenya) launched the Kisumu Sustainable Mobility Plan, a 10-year roadmap that aims to foster increased access for city residents by prioritising walking, cycling and public transport.¹³¹
- ▶ In Cameroon, MobiliseYourCity supported the cities of Yaounde and Douala in 2020 in preparing and adopting SUMPs.¹³²
- ▶ ITDP, in partnership with the City of Kigali (Rwanda), is developing a Non-Motorised Transport Master Plan, slated for completion in mid-2023, that identifies priority corridors for greenways and active transport in the city.¹³³
- ▶ The World Bank is providing financial and/or technical assistance to bus rapid transit projects in eight African cities as part of their SUMPs: Abidjan, Dakar, Dar es Salaam (phases 3 and 4), Douala, Kampala, Kumasi, Maputo (Mozambique) and Ouagadougou (Burkina Faso).¹³⁴ In Dakar, the introduction of low- or zero-emission vehicles in the BRT corridor could save an estimated 67,700 tonnes of CO₂ annually.¹³⁵

An urgent priority both globally and in Africa is to reduce the impact of transport on climate change. Several African countries have developed policies and strategies with time-bound targets, which are central to achieving both the SDGs and climate ambitions.

- ▶ Ethiopia's Non-Motorised Transport Strategy targets building 430 kilometres of pedestrian infrastructure and more than 300 kilometres of cycling track in secondary cities, as well as 600

kilometres of walkways and 200 kilometres of cycling lanes in Addis Ababa, by the year 2029.¹³⁶

- ▶ In Kenya, the Non Motorized Transport Policy of Nairobi City County allocates 20% of the existing and future transport budget to infrastructure and services for walking and cycling.¹³⁷

As of the end of 2022, Africa accounted for 43% of the countries that included time-bound targets for reducing transport greenhouse gas emissions in their second-generation Nationally Determined Contributions (NDCs) under the Paris Agreement.¹³⁸ The African countries – representing 10 out of the 23 total countries – were Burkina Faso, Egypt, Gambia, Guinea, Liberia, Mauritania, Mauritius, Seychelles, South Sudan and Uganda.¹³⁹ Several African NDCs also included other types of transport targets, such as for vehicle efficiency, zero-emission vehicles, modal share, biofuels and transport infrastructure.

- ▶ Burkina Faso has targets to limit its transport CO₂ emissions to 1,210 gigagrams of CO₂-equivalent (unconditional) and 267 gigagrams of CO₂-equivalent (conditional) by 2025.¹⁴⁰
- ▶ South Sudan targets a 44% reduction in transport emissions below the business-as-usual (BAU) level by 2030.¹⁴¹
- ▶ The Gambia targets reducing transport emissions 22.2% below the BAU level by 2030.¹⁴²
- ▶ Seychelles targets reducing transport emissions 30% below the BAU level (to reach 169.1 kilotonnes of CO₂-equivalent or below) by 2030, with a focus on petrol vehicles.¹⁴³
- ▶ Liberia has committed to reducing transport emissions 15.1% below the BAU level by 2030.¹⁴⁴
- ▶ Among the long-term low greenhouse gas emission development (LTS) strategies under the Paris Agreement, only Gambia and Nigeria included a specific target to reduce transport emissions. Nigeria aims to reduce transport emissions by 4 million tonnes of CO₂-equivalent by 2030, or 14% below 2019 levels.¹⁴⁵
- ▶ The NDCs of Burkina Faso, Morocco, Namibia, South Sudan and Tanzania directly link transport to renewable energy sources.¹⁴⁶ Cabo Verde includes a target to electrify at least 25% of its land transport fleet (new road vehicles) by 2030.¹⁴⁷

The Avoid-Shift-Improve (ASI) framework is crucial to unlocking the benefits of sustainable, low-carbon transport.ⁱⁱⁱ ASI actions provide a balanced approach that is key to providing integrated, inter-modal and equitable transport systems.

- ▶ ASI actions are slightly more balanced in African NDCs compared to other global regions, with 30% representing "Shift" actions (versus 25% at the global level).¹⁴⁸ In contrast, "Improve" actions (vehicle improvements) comprise 53% of ASI actions in Africa, the lowest share among all regions and slightly below the global level (58%).¹⁴⁹

iii From the Avoid-Shift-Improve framework. See <https://slocat.net/asi>.

Partnership in action



SLOCAT partners engaged in dozens of actions during 2020-2022, including:

- ▶ In 2023, the **African Development Bank** and the **International Road Federation** jointly released a new training programme to improve safe and sustainable urban transport planning and project preparation for African cities.¹⁵⁰
- ▶ During 2021-2022, **Changing Transport**, together with the SLOCAT Partnership and the **NDC Transport Initiative for Asia**, developed Climate Strategies for Transport in Africa.¹⁵¹
- ▶ Between 2019 and 2021, the **German Agency for International Cooperation (GIZ)** provided financial and capacity building support to 12 countries in Africa under the Sustainable Mobility 2.0 project, to implement and develop sustainable mobility systems and initiatives.¹⁵²
- ▶ **MobiliseYourCity** has provided various levels of planning and policy support across Africa, including in Côte d'Ivoire, Ethiopia, Ghana, Madagascar, Morocco, Mozambique, Senegal and Tunisia.¹⁵³
- ▶ In 2022, the SLOCAT Partnership, together with the **Volvo Research and Educational Foundations (VREF)**, launched the third round of the Young Leaders in Sustainable Transport programme.¹⁵⁴
- ▶ In 2022, the **SLOCAT African Voices towards COP 27 Series** featured a wide range of African professionals, experts and change makers to elevate voices from the region in tackling transport and mobility challenges.¹⁵⁵
- ▶ The **United Nations Conference on Trade and Development (UNCTAD)** is involved in various transport-focused training and capacity building initiatives towards improving trade in Africa.¹⁵⁶
- ▶ The **VREF's** programme on Mobility and Access in African Cities (MAC) has been operating since 2019, with a second phase starting in 2023. The programme has initiated 30-plus research projects involving more than 100 researchers and doctoral students at universities in Sub-Saharan Africa.¹⁵⁷
- ▶ In 2022, **Walk21**, together with the UN Environment Programme and the UN Human Settlements Programme (UN-Habitat), published the first report to present data on walking and cycling from all 54 African countries.¹⁵⁸



Endnotes

2.1

AFRICA REGIONAL OVERVIEW

- 1 Calculations by the SLOCAT Partnership on Sustainable, Low Carbon Transport based on United Nations (UN), 2022, "World Population Prospects 2022", <https://population.un.org/wpp>, accessed 21 January 2023; UN Stats, 2018, "2018 Revision of World Urbanization Prospects", <https://population.un.org/wup>, accessed 28 December 2022; World Bank, 2023, "GDP (constant 2015 US\$)", <https://data.worldbank.org/indicator/NY.GDP.MKTP.KD>.
- 2 African Union, "Agenda 2063: The Africa We Want", <https://au.int/en/agenda2063/overview>, accessed 10 July 2023.
- 3 J. Teye, 2018, "Urbanisation and Migration in Africa", Centre for Migration Studies, University of Ghana, https://www.un.org/en/development/desa/population/events/pdf/expert/28/EGM_Joseph_Teye_ppt.pdf; African Development Bank (AfDB), 2012, "Urbanisation in Africa", <https://blogs.afdb.org/inclusive-growth/urbanization-africa-191>.
- 4 International Energy Agency (IEA), 2022, "Africa Energy Outlook 2022", <https://iea.blob.core.windows.net/assets/27f568cc-1f9e-4c5b-9b09-b18a55fc850b/AfricaEnergyOutlook2022.pdf>; United Nations Development Programme (UNDP), 2022, "The Impact of the War in Ukraine on Sustainable Development in Africa", https://www.undp.org/sites/g/files/zskgk326/files/2022-05/UNDP%20RBA%20-%20Impact%20of%20the%20war%20in%20Ukraine%20on%20Africa%20-%2024%20May%202022_0.pdf.
- 5 MobiliseYourCity, 2022, "About MobiliseYourCity Africa", <https://www.mobiliseyourcity.net/node/294>.
- 6 African Policy Circle, 2020, "Addressing the Challenges of Urbanization in Africa", <https://www.kas.de/documents/252038/7995358/Addressing+the+Challenges+of+Urbanization+in+Africa.pdf/d4e7f62-c130-e702-9669-0a746596028e>.
- 7 African Transport Policy Program (SSATP), 2022, "Changing the Pace of Urban Mobility in Africa", <https://www.ssatp.org/topics/urban-mobility>.
- 8 Ibid.
- 9 Automotive Industry Export Council (AIEC), 2020, "Automotive Export Manual 2020", <https://www.aiec.co.za/downloads/AutomotiveExportManual2020.pdf>.
- 10 FIA Foundation, 2022, "The Wheels of Change: Safe and Sustainable Motorcycles in Sub-Saharan Africa", <https://www.fiafoundation.org/resources/the-wheels-of-change-safe-and-sustainable-motorcycles-in-sub-saharan-africa>.
- 11 Ibid.
- 12 International Road Federation (IRF), 2022, "World Road Statistics 2022", <https://datawarehouse.worldroadstatistics.org>.
- 13 T. Schiller and K. Pillay, 2016, "Navigating the African Automotive Sector: Ethiopia, Kenya and Nigeria", Deloitte, https://www2.deloitte.com/content/dam/Deloitte/za/Documents/deloitteafrica/ZA_Deloitte-Africa-automotive-insights-Ethiopia-Kenya-Nigeria-Apr16-2017.pdf; T.T. Mtembu, 2020, "Vehicle Ownership for South Africa: Developing a Forecasting Model and Assessing Household Vehicle Ownership", <https://scholar.sun.ac.za/handle/10019.1/108158>.
- 14 H.O. Wamwayi, 2021, "Advancing Electric Mobility in Africa", United Nations Framework Convention on Climate Change, <https://unfccc.int/news/advancing-electric-mobility-in-africa>.
- 15 I. Diouf et al., 2020, "Urban Mobility and Covid-19 in Africa", Transport Global Practice, World Bank Africa Transport Policy Program, <https://www.ssatp.org/sites/ssatp/files/publication/COVID19%20and%20Public%20Transport%20in%20Africa%20-%20FINAL%20-%20Aug2020%20-%20ENGLISH.pdf>.
- 16 J. Harper, 2021, "Africa Emerges as Car Industry Hub", DW, <https://www.dw.com/en/africa-begins-to-emerge-as-car-industry-hub/a-59500532>.
- 17 A. Black, 2022, "Can the African Continental Free Trade Area Drive Africa's Automotive Industry?" Development Matters, <https://oecd-development-matters.org/2022/02/28/can-the-african-continental-free-trade-area-afcta-drive-africas-automotive-industry>.
- 18 Harper, op. cit. note 16.
- 19 African Association of Automotive Manufacturers (AAAM), 2022, "African New Vehicle Sales Increase by 32%", <https://aaamafrica.com/f/african-new-vehicle-sales-increase-by-32%25>, accessed 23 January 2023.
- 20 Ibid
- 21 Ibid.
- 22 Ibid.
- 23 SLOCAT Partnership, 2021, "Transport and Climate Change Global Status Report, 2nd Edition", African Regional Overview, <https://tcc-gsr.com/global-overview/africa>; Statista, 2022, "Commercial Vehicle Sales in Africa", <https://www.statista.com/statistics/473661/commercial-vehicle-sales-in-africa>.
- 24 G.K. Ayetor et al., 2021, "Vehicle Regulations in Africa: Impact on Used Vehicle Import and New Vehicle Sales", *Transportation Research Interdisciplinary Perspectives*, Vol. 10 (June), p. 100384, <https://doi.org/10.1016/j.trip.2021.100384>.
- 25 AAAM, 2020, "Africa Automotive Forum: Summary Report", https://www2.deloitte.com/content/dam/Deloitte/za/Documents/AAAM_Africa_Automotive_Forum_2020_Summary.pdf; United Nations Environment Programme (UNEP), 2019, "Addressing the Used Vehicles Market: Potential Strategies for Importing and Exporting Countries to Improve Safety, Fuel Economy and Emissions Impact", https://wedocs.unep.org/bitstream/handle/20.500.11822/27789/used_vehicles.pdf.
- 26 UNEP, 2020, "Used Vehicles and the Environment: A Global Overview of Used Light Duty Vehicles: Flow, Scale and Regulation", <https://wedocs.unep.org/handle/20.500.11822/34175>.
- 27 United Nations Economic Commission for Europe (UNECE), 2022, "Safer and Cleaner Used Vehicles for Africa", <https://unece.org/sites/default/files/2022-06/WP.29-187-17e.pdf>
- 28 UNEP, op. cit. note 26
- 29 UNECE, op. cit. note 27.
- 30 Ibid.
- 31 Ibid.
- 32 East African Community, 2022, "EAS 1047:2022 Standards on Air Quality – Vehicular Exhaust Emission Limits", <https://www.tbs.go.tz/uploads/publications/en-1658900195-EAC%20GAZETTE%20No.%2015%20of%201st%20July%202022.pdf>.
- 33 B. Fabian, 2020, "New UNEP Report Highlights Importance of Used Vehicle Flows for Fuel Economy, Emissions, and Vehicle Safety in Developing Countries", Global Fuel Economy Initiative, <https://www.globalfuelconomy.org/blog/2020/november/new-unep-report-highlights-importance-of-used-vehicle-flows-for-fuel-economy-emissions-and-vehicle-safety-in-developing-countries>.
- 34 UN-Habitat et al., 2022, "Walking and Cycling in Africa: Evidence and Good Practice to Inspire Action", https://unhabitat.org/sites/default/files/2022/07/executive_summary.pdf.
- 35 Ibid.
- 36 M. Vanderschuren, 2012, "Non Motorised Transport in Africa", https://www.researchgate.net/publication/282764517_Non_Motorised_Transport_in_Africa.
- 37 C.S. Okoro and K. Lawani, 2022, "Optimising Sustainable Mobility: A Performance Assessment of Non-motorised Transport Infrastructure in Johannesburg, South Africa", *Journal of the South African Institution of Civil Engineering*, Vol. 64, No. 2 (June), pp. 67-76, <http://www.scielo.org.za/pdf/jsaice/v64n2/06.pdf>.
- 38 Climate and Development Knowledge Network, 2021, "Non-Motorized Transport Peer Learning Nairobi-Kisumu and Mombasa Reports", www.cdkn.org/nmt.
- 39 C. Koinange, 2004, "NMT Strategy for Kenya", http://airqualityandmobility.org/STR/NMTStrategy_Kenya_200402.pdf.
- 40 Ibid.
- 41 Ibid.
- 42 M. Segui-Gomez et al., 2021, "Road Safety Data in Africa: A Proposed Minimum Set of Road Safety Indicators for Data Collection, Analysis and Reporting", SSATP, <https://www.ssatp.org/publication/road-safety-data-africa-proposed-minimum-set-road-safety-indicators-data-collection>.
- 43 World Health Organization (WHO), 2018, "Global Status Report on Road Safety", <https://www.who.int/publications-detail-redirect/9789241565684>.
- 44 Ibid.
- 45 Ibid.; UN-Habitat et al., op. cit. note 34; Segui-Gomez et al., op. cit. note 42.
- 46 UN-Habitat et al., op. cit. note 34.
- 47 WHO, op. cit. note 43.
- 48 World Bank, 2019, "Guide for Road Safety Opportunities and Challenges: Low- and Middle-Income Countries Country Profiles", <https://elibrary.worldbank.org/doi/pdf/10.1596/33363>.
- 49 Segui-Gomez et al., op. cit. note 42.
- 50 Ibid.
- 51 International Transport Forum (ITF), 2020, "Road Safety Annual Report 2020", https://www.itf-oecd.org/sites/default/files/docs/irtad-road-safety-annual-report-2020_0.pdf; M. Rasmien, 2020, "Average Road Crashes, Fatalities Decline Due to Covid-19 Restrictions – MVA", *The Namibia Economist*, <https://economist.com.na/55137/extra/average-road-crashes-fatalities-drop-due-to-covid-19-restrictions-mva>.
- 52 UN-Habitat, 2021, "11 2 1 Percentage Access to Public Transport", <https://data.unhabitat.org/datasets/GUO-UN-Habitat:11-2-1-percentage-access-to-public-transport/about>; UN-Habitat et al., op. cit. note 34.
- 53 R. Behrens, D. Mfinanga and D. McCormick, eds., 2016, "Paratransit in African Cities: Operations, Regulation and Reform", <https://www.routledge.com/Paratransit-in-African-Cities-Operations-Regulation-and-Reform/Behrens-McCormick-Mfinanga/p/book/9780415870337>; C. Venter, 2013, "The Lurch Towards Formalisation: Lessons from the Implementation of BRT in Johannesburg, South Africa", *Journal of Transport Geography*, Vol. 88, p. 102476, <https://doi.org/10.1016/j.jretrec.2012.06.003>.
- 54 Digital Transport for Africa, 2021, "DT4A Innovation Challenge", <https://digitaltransport4africa.org/innovation-challenge>.

- 55 UN-Habitat and International Association of Public Transport (UITP), 2021, "A Progress Report on SDG 11.2", https://unhabitat.org/sites/default/files/2021/10/a_progress_report_on_sdg_11.2.pdf.
- 56 AfDB, 2022, "Transport: Toward a More Inclusive, Safer and Cleaner Mobility in African Cities", https://www.afdb.org/sites/default/files/2023/01/18/transport-toward-a-more-inclusive-safer-and-cleaner-mobility-in-african-cities_-_sudap-paper_-_addb_umd_f_-_2022.pdf.
- 57 Ibid.
- 58 S. Woolf and J.W. Joubert, 2013, "A People-centred View on Paratransit in South Africa", *Cities*, Vol. 35 (December), pp. 284-293, <https://doi.org/10.1016/j.cities.2013.04.005>.
- 59 FIA Foundation, op. cit. note 10.
- 60 L. Diaz Olvera, D. Plat and P. Pochet, 2020, "Looking for the Obvious: Motorcycle Taxi Services in Sub-Saharan African Cities", *Journal of Transport Geography*, Vol. 88, p. 102476, <https://doi.org/10.1016/j.jtrangeo.2019.102476>.
- 61 WHO, op. cit. note 43.
- 62 M. Kiruga, 2019, "African Cities Grapple with Two-wheeled Transport Conundrum", *The Africa Report*, <https://www.theafricareport.com/15049/african-cities-grapple-with-two-wheeled-transport-conundrum>.
- 63 Diouf et al., op. cit. note 15.
- 64 Ibid.
- 65 Ibid.
- 66 R. Behrens and A. Newlands, 2022, "Revealed and Future Travel Impacts of COVID-19 in Sub-Saharan Africa: Results of Big Data Analysis and a Delphi Panel Survey", *Journal of Transport and Supply Chain Management*, Vol. 16, <https://doi.org/10.4102/jtscm.v16i0.758>.
- 67 J. Rosenberg, I. Strauss and G. Isaacs, 2021, "COVID-19 Impact on SADC Labour Markets: Evidence from High Frequency Data and Other Sources", *African Development Review*, Vol. 33, Supplement 1, pp. S177-S193, <https://doi.org/10.1111/1467-8268.12528>.
- 68 The Namibia Economist, 2020, "Public Transport Operators Feel Lockdown Damage, Temporarily Increase Fares by 15%", <https://economist.com.na/52811/retail/public-transport-operators-feel-covid-19-pinch-temporarily-increases-fares-by-15>; M. Bruwer, S.J. Andersen and M. Mokonyama, 2021, Chapter 6.4. Transport, "South Africa Covid-19 Country Report", Department of Planning, Monitoring and Evaluation, Government Technical Advisory Centre and National Research Foundation, https://www.gov.za/sites/default/files/gcis_document/202206/sa-covid-19-reporta.pdf; Diouf et al., op. cit. note 15; R. Luke, 2020, "The Impact of COVID-2019 on Transport in South Africa", *Journal of Transport and Supply Chain Management*, Vol. 14, <https://doi.org/10.4102/jtscm.v14i0.545>; Namibia Broadcasting Cooperation, 2020, "Government Approves 15 % Bus and Taxi Fare Increase", <https://nbcnews.na/news/government-approves-15-bus-and-taxi-fare-increase.30871>.
- 69 World Economic Forum, 2023, "AfCFTA: A New Era for Global Business and Investment in Africa", https://www3.weforum.org/docs/WEF_Friends_of_the_Africa_Continental_Free_Trade_Area_2023.pdf.
- 70 D. Kuteyi and H. Winkler, 2022, "Logistics Challenges in Sub-Saharan Africa and Opportunities for Digitization", *Sustainability*, Vol. 14, No. 4, p. 2399, <https://doi.org/10.3390/su14042399>.
- 71 FEAFFA and Shippers Council of East Africa, 2021, "Impact of COVID-19 on Transport and Logistics Sector in East Africa", African Economic Research Consortium, https://africaportal.org/wp-content/uploads/2023/06/AERC-Policy-Brief-COVID-19_015.pdf.
- 72 Ibid.
- 73 World Bank, 2018, "International LPI Global Rankings", <https://lpi.worldbank.org/international/global>, accessed 25 January 2023.
- 74 SLOCAT analysis based on United Nations Conference on Trade and Development (UNCTAD) and World Bank, 2023, "Liner Shipping Connectivity Index (Maximum Value in 2004 = 100)", <https://data.worldbank.org/indicator/IS.SHP.GCNW.XQ>.
- 75 AfDB, 2020, "Infrastructure Development", https://www.afdb.org/fileadmin/uploads/afdb/Documents/Publications/Tracking_Africa%E2%80%99s_Progress_in_Figures_-_Infrastructure_Development.pdf.
- 76 A. Faajir and Z.H. Zidan, 2016, "An Analysis of the Issues and Challenges of Transportation in Nigeria and Egypt". *The Business and Management Review*, Vol. 7, No. 5, https://cberuk.com/cdn/conference_proceedings/conference_35916.pdf.
- 77 World Bank, op. cit. note 73; AfDB, op. cit. note 75.
- 78 A.A. Obiri-Yeboah, J.F.X. Ribeiro and B. Pappoe, 2020, "Travel Time Variability Analysis: The Case of Kumasi, Ghana", http://ijtte.com/study/409/download/TRAVEL_TIME_VARIABILITY_ANALYSIS__THE_CASE_OF_KUMASI_GHANA.html.
- 79 A. Ait Ali et al., 2022, "The Economic Implications of the War in Ukraine for Africa and Morocco", Policy Center for the New South, <https://www.policycenter.ma/publications/economic-implications-war-ukraine-africa-and-morocco>.
- 80 E. Mwepeya Shitima, 2022, "Towards COP27: Views from Africa's Chief Climate Negotiator", United Nations, <https://www.un.org/osaa/news/towards-cop27-views-africa%E2%80%99s-chief-climate-negotiator>; C. Heitzig, A. Ordu and L. Senbet, 2021, "Sub-Saharan Africa's Debt Problem: Mapping the Pandemic's Effect and the Way Forward", Africa Growth Initiative, Brookings Institution, <https://www.brookings.edu/research/sub-saharan-africas-debt-problem-mapping-the-pandemics-effect-and-the-way-forward>.
- 81 UNCTAD, 2022, "UNCTAD's Review of Maritime Transport 2022: Facts and Figures on Africa", <https://unctad.org/press-material/unctads-review-maritime-transport-2022-facts-and-figures-africa>.
- 82 IEA, 2022, "Africa Energy Outlook 2022", <https://iea.blob.core.windows.net/assets/27f568cc-1f9e-4c5b-9b09-b18a55fc850b/AfricaEnergyOutlook2022.pdf>; J. Kefas Sheehama, 2022, "Catastrophic Increase in Oil Prices Pushes Up Namibian Inflation", *The Namibia Economist*, <https://economist.com.na/68642/columns/catastrophic-increase-in-oil-prices-pushes-up-namibian-inflation>; South African Government, 2022, "Mineral Resources and Energy Announces Adjustment of Fuel Prices", <https://www.gov.za/speeches/mineral-resources-and-energy-announces-adjustment-fuel-prices-6-dec-2022-0000>.
- 83 SLOCAT calculations based on M. Crippa et al., 2022, "CO2 Emissions of All World Countries - 2022 Report", https://edgar.jrc.ec.europa.eu/report_2022.
- 84 CDP, 2020, "CDP Africa Report: Benchmarking Progress Towards Climate Safe Cities, States and Regions", https://cdn.cdp.net/cdp-production/cms/reports/documents/000/005/023/original/CDP_Africa_Report_2020.pdf?1583855467.
- 85 G.K. Ayeter et al., 2021, "Investigating the State of Road Vehicle Emissions in Africa: A Case Study of Ghana and Rwanda", *Transportation Research Interdisciplinary Perspectives*, Vol. 11 (September), p. 100409, <https://doi.org/10.1016/j.trip.2021.100409>.
- 86 SLOCAT calculations based on M. Crippa et al., op. cit. note 83.
- 87 Ibid.
- 88 Ibid.
- 89 Ibid.
- 90 Ibid.
- 91 **Figure 2** from SLOCAT calculations based on M. Crippa et al., op. cit. note 83.
- 92 **Figure 3** and **Figure 4** from SLOCAT calculations based on M. Crippa et al., op. cit. note 83.
- 93 Ibid.
- 94 ENATIS, 2020, "Electronic National Traffic Information System", South Africa National Department of Transport, <https://online.natis.gov.za>; National Bureau of Statistics, 2019, "Nigeria Road Transport Data", Federal Road Safety Corps, <https://nigerianstat.gov.ng/elibrary>; F. Atsu, S. Adams and J. Adjei, 2021, "ICT, Energy Consumption, Financial Development, and Environmental Degradation in South Africa", *Journal of Computer Information Systems*, Vol. 63, No. 3, pp. 1-14, <http://dx.doi.org/10.1080/08874417.2022.2049017>.
- 95 H. Orkor, 2015, "Policy Reforms to Promote Energy Efficiency in the Transportation Sector", Economic and Social Commission for Western Asia, <https://www.unecce.org/fileadmin/DAM/energy/se/pdfs/gee21/projects/others/Egypt.pdf>; A. El-Dorghamy, 2018, "Mainstreaming Electric Mobility in Egypt: Policy Brief", Friedrich Ebert Stiftung Egypt Office, <https://books.google.com.gh/books?id=wGLyX-QEACAAJ>.
- 96 H. Ritchie, 2019, "Where in the World Do People Emit the Most CO2", *Our World in Data*, <https://ourworldindata.org/per-capita-co2>.
- 97 African Union, 2019, "Road Safety: African Action Plan for the Global Decade of Action for Road Safety", https://au.int/sites/default/files/documents/32186-doc-road_safety_african_action_plan_for_the_global_decade_of_action_for_road_safety-e.pdf.
- 98 A. Olivier, 2020, "Decade of Action Strategy for Road Safety, 2021-2030", Windhoek, Namibia; M. Peden et al., eds., 2017, "World Report on Road Traffic Injury Prevention", WHO, <https://apps.who.int/iris/bitstream/handle/10665/42871/9241562609.pdf>.
- 99 Kampala Capital City Authority, 2021, "Kampala Capital City Road Safety Strategy, 2021-2030", <https://www.kcca.go.ug/media/docs/Kampala%20Road%20Safety%20Strategy%202021-2030.pdf>.
- 100 C. Tolga Imamoglu et al., 2021, "African Cities Taking on Road Safety", *The City Fix*, <https://thecityfix.com/blog/african-cities-taking-on-road-safety>.
- 101 Vision Zero for Youth, 2021, "Addis Ababa, Ethiopia, and Bogotá, Colombia, Receive 2021 Vision Zero for Youth Leadership Awards", https://www.vision-zeroforyouth.org/wp-content/uploads/2021/05/Intl-VZY-Award-Announcement_2021_final.pdf.
- 102 UN-Habitat et al., op. cit. note 34; J. Okaima Piette and Y. Lee, 2021, "In the Wake of COVID, Rebuilding Transport Is Not Good Enough. We Must Bounce Forward", World Bank, <https://blogs.worldbank.org/transport/wake-covid-rebuilding-transport-not-good-enough-we-must-bounce-forward>.
- 103 UN-Habitat et al., op. cit. note 34.
- 104 Ibid.
- 105 UN-Habitat et al., op. cit. note 34.
- 106 Ibid.
- 107 Ibid.
- 108 World Economic Forum, op. cit. note 69.
- 109 City of Windhoek, 2018, "Non-Motorised Transport Strategy - Final Report", <https://www.windhoekcc.org.na/documents/3857%20NMT%20Windhoek-Strategy%20Report%20FINAL-1p-20180719.pdf>; Transformative Urban Mobility Initiative (TUMI), 2022, *Ebikes4Windhoek*, <https://transformative-mobility.org/focus-area/tumi-challenges/tumi-challenge-windhoek-namibia/>.
- 110 Institute for Transportation and Development Policy (ITDP), 2020, "Ethiopia Non-Motorised Transport Strategy 2020-2029", <https://africa.itdp.org/publication/ethiopia-non-motorized-strategy-2020-2029>; World Economic Forum, op. cit. note 69; International Climate Initiative, 2021, "Growing Smarter - Sustainable Mobility in East Africa", <https://www.international-climate-initiative.com/en/project/growing-smarter-sustainable-mobility-in-east-africa-18-i-356-africa-a-sustainable-mobility-in-east-africa>.
- 111 ITDP, 2020, op. cit. note 110.

- 112 N. Medimorec et al., 2022, "Sustainable Transport in African Cities: Challenges and Opportunities Through the 15-minute City Planning Approach", SLOCAT, <https://slocat.net/15-minute-city-planning-african-cities>.
- 113 ITDP, 2020, "Quick Guide to Bus Sector Modernisation", <https://africa.itdp.org/publication/quick-guide-to-bus-sector-modernisation>.
- 114 W.V. Mitullah and S. Siro Onsafe, 2013, "Formalising the Matatu Industry in Kenya: Policy Twists and Turns" Institute of Development Studies, University of Nairobi, http://erepository.uonbi.ac.ke/bitstream/handle/11295/98621/Winnie_Formalising%20the%20Matatu%20Industry%20in%20Kenya%2C%20Policy%20Twists%20and%20Turns.pdf; C.G. Macharia, 2017, "Regulation in the Transport Industry: A Case of Matatu Sector in Kenya", United States International University - Africa, <https://erepo.usiu.ac.ke/bitstream/handle/11732/3539/CAROL%20G.%20MACHARIA%20MBA%202017.pdf>; R. Behrens et al., 2017, "Improving Paratransit Service: Lessons from Inter-city Matatu Cooperatives in Kenya", *Transport Policy*, Vol. 53 (January), pp. 79-88, <https://doi.org/10.1016/j.tranpol.2016.09.003>.
- 115 H. Fan, E. Beukes and X. Sheng, 2021, "Improving the Viability of Bus Rapid Transit Systems: Nine Factors for Sub-Saharan Africa", World Bank, <https://blogs.worldbank.org/transport/improving-viability-bus-rapid-transit-systems-nine-factors-sub-saharan-africa>.
- 116 ITDP, 2022, "Uganda", <https://www.itdp.org/where-we-work/africa/uganda>, accessed 31 January 2023; International Climate Initiative, op. cit. note 110.
- 117 C. Mimano, M. Kinyua and C. Kost, 2022, "Transit-Oriented Development as an Anchor to Compact, Equitable, and Accessible African Cities", SLOCAT Partnership, <https://slocat.net/transit-oriented-development-as-an-anchor-to-compact-equitable-and-accessible-african-cities>.
- 118 World Bank, 2022, "With Bus Rapid Transit, African Cities Are Riding Toward a Better Future", <https://www.worldbank.org/en/news/feature/2022/11/28/with-bus-rapid-transit-african-cities-are-riding-toward-a-better-future>.
- 119 Ethiopia Ministry of Transport, 2020, "National Transport Policy", http://ethiotransport.gov.et/T2/National_Transport%20Policy_EN.pdf.
- 120 European Commission, 2023, "Global Gateway: Team Europe Invests in Transformative Green Mobility in Nairobi", https://ec.europa.eu/commission/presscorner/detail/en/IP_23_1928; ESI Africa, 2023, "Electric Bus Line to Be Built in Nairobi Through EU, Kenya Partnership", <https://www.esi-africa.com/industry-sectors/smart-technologies/electric-bus-line-to-be-built-in-nairobi-through-eu-kenya-partnership>.
- 121 Cliffe Dekker Hofmeyr (CDH), 2022, "E-Mobility in Africa: Critical for Africa's Industrialisation", <https://www.cliffedekkerhofmeyr.com/export/sites/cdh/en/sectors/downloads/eMobility-in-Africa-Guide.pdf>
- 122 Wamwayi, op. cit. note 14.
- 123 CDH, op. cit. note 121.
- 124 IEA, 2023, "Global EV Outlook 2023", <https://www.iea.org/reports/global-ev-outlook-2023>.
- 125 Ibid
- 126 Ibid.
- 127 Ibid.
- 128 ESI Africa, 2023, "Uganda and Vehicle Company Partner to Introduce Electric Motorbikes", <https://smartermobility-africa.com/uganda-and-vehicle-company-partner-to-introduce-electric-motor-bikes>.
- 129 International Climate Initiative, 2023, "Electric Cargo Bike 'Made in Ghana' - Contributing to the Transformation of Ghana's Transportation", <https://www.international-climate-initiative.com/en/project/electric-cargo-bikes-made-in-ghana-contributing-to-the-transformation-of-ghanas-transportation-img2020-i-005-gha-cargo-e-bikes-made-in-ghana>.
- 130 UN-Habitat, 2022, "Walking and Cycling in Africa - Evidence and Good Practice to Inspire Action", https://unhabitat.org/sites/default/files/2022/07/walking_and_cycling_in_africa.pdf.
- 131 ITDP, 2020, "Kisumu Sustainable Mobility Plan", <https://www.kisumu.go.ke/wp-content/uploads/2020/12/Kisumu-Sustainable-Mobility-Plan-200716.pdf>.
- 132 MobiliseYourCity, 2022, "Factsheet Douala", https://www.mobiliseyourcity.net/sites/default/files/2022-05/Douala%2C%20Cameroon_2.pdf; MobiliseYourCity, 2022, "Yaounde SUMP Summary", https://www.mobiliseyourcity.net/sites/default/files/2021-03/Yaounde%20SUMP%20Summary_final.pdf.
- 133 ITDP, 2021, "Rwanda", <https://africa.itdp.org/where-we-work/rwanda>; C. Mimano, M. Kinyua and C. Kost, 2022, "Transit-Oriented Development as an Anchor to Compact, Equitable, and Accessible African Cities", SLOCAT Partnership, <https://slocat.net/transit-oriented-development-as-an-anchor-to-compact-equitable-and-accessible-african-cities>.
- 134 World Bank, 2022, "With Bus Rapid Transit, African Cities Are Riding Toward a Better Future", <https://www.worldbank.org/en/news/feature/2022/11/28/with-bus-rapid-transit-african-cities-are-riding-toward-a-better-future>.
- 135 Green Climate Fund, 2021, "Dakar Bus Rapid Transit Pilot Project", <https://www.greenclimate.fund/sites/default/files/document/14160-dakar-bus-rapid-transit-pilot-project.pdf>.
- 136 ITDP, op. cit. note 133.
- 137 Nairobi City County Government, 2015, "Non Motorized Transport Policy", <https://www.kar.or.ke/Nairobi%20City%20County%20Non%20Motorized%20Transport%20Policy.pdf>.
- 138 SLOCAT Partnership and German Agency for International Cooperation (GIZ) (2022), "Climate Strategies for Transport in Africa", <http://slocat.net/wp-content/uploads/2022/05/Africa-NDC-LTS-transport-infographic.pdf>.
- 139 Ibid.
- 140 Ibid.
- 141 Ibid.
- 142 Ibid.
- 143 Ibid.
- 144 Ibid.
- 145 Ibid.
- 146 Ibid.
- 147 Ibid.
- 148 Ibid.
- 149 Ibid.
- 150 AfDB and IRF, 2023, "Safe and Efficient Urban Mobility for Africa", <https://www.irf.global/safe-efficient-urban-mobility-for-africa>.
- 151 Changing Transport, 2022, "Climate Strategies for Transport in Africa", <https://changing-transport.org/publications/ndc-lts-transport-africa>.
- 152 GIZ, 2022, "Develop Sustainable Transport Systems", <https://www.giz.de/en/worldwide/82039.html>; <https://www.giz.de/expertise/downloads/Slides%20DigiWorkshop.pdf>.
- 153 MobiliseYourCity, op. cit. note 5.
- 154 SLOCAT Partnership, 2022, "SLOCAT-VREF Young Leaders in Sustainable Transport", <https://slocat.net/youngleaders>.
- 155 SLOCAT Partnership, 2022, "African Voices Towards COP27", <https://slocat.net/blog>.
- 156 UNCTAD, 2023, "UNCTAD Training Bolsters Trade Facilitation in Southern Africa", <https://unctad.org/news/unctad-training-bolsters-trade-facilitation-southern-africa>; UNCTAD, 2022, "Boosting Trade Facilitation in West Africa", <https://unctad.org/news/boosting-trade-facilitation-west-africa>; UNCTAD, 2022, "UNCTAD Tool Accelerates Trade Facilitation Reforms in Developing Countries", <https://unctad.org/news/unctad-tool-accelerates-trade-facilitation-reforms-developing-countries>.
- 157 Volvo Research and Educational Foundation, 2023, "Mobility and Access in African Cities (MAC)", <https://vref.se/mac>.
- 158 UN-Habitat et al., op. cit. note 34.

This report should be cited as:

SLOCAT (2023), Global Status Report on Transport, Climate and Sustainability - 3rd edition, www.tcc-gsr.com.

Data access and licensing:

Attribution 4.0 International (CC BY 4.0) Share — copy and redistribute the material in any medium or format. Adapt — remix, transform and build upon the material for any purpose. Attribution — you must give appropriate credit, provide a link to the licence and indicate if changes were made.



The development of this report was led by Maruxa Cardama, Angel Cortez, Emily Hosek, Agustina Krapp, Nikola Medimorec, and Alice Yiu from the SLOCAT secretariat. Our warm thanks to the many SLOCAT partners and experts from the wider transport community who have shaped this report. A significant share of the research for this report was conducted on a voluntary basis.

For a full list of acknowledgements, please visit the the online page [here](#).

www.tcc-gsr.com | #TransportClimateStatus



Transport, Climate and Sustainability
Global Status Report - 3rd edition

