



TAKEAWAYS FOR DECISION MAKERS

Transport in a Crisis Era: Seizing Opportunities for a Just, Sustainable Transformation

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This publication complements the SLOCAT Transport, Climate and Sustainability Global Status Report – 4th edition (GSR4), available at slocat.net. It provides a critical overview of GSR4 findings and presents actionable insights at the crossroads of transport, climate, sustainability and social justice – supporting decision-makers in accelerating a just transition towards sustainable, low-carbon transport systemsⁱ.

Between 2023 and 2025, some progress has been made on the push for sustainable transport across all modes and at all levels, from global commitments to national and sub-national action. Yet today's transport systems still leave behind billions of people, restrict opportunities for marginalised communities, perpetuate inequalities among countries, and drive emissions, air pollution and fossil fuel dependency.

Moreover, **the overall trajectory of transport transformations remains off track for achieving a sustainable transport future.** Key sectors are not transforming fast enough, and clear headwinds are emerging, including political shifts and backsliding on climate commitments in some countries, growing scepticism of science, and mounting scrutiny of public spending on climate and sustainability. Challenges are compounded by rising geopolitical tensions that are

shaking the foundations of multilateralism and international co-operation, as well as global shocks that have led to a state of crisis that is a “new normal”.

Ten years after the Paris Agreement, and just five years from the implementation deadline for the 2030 Sustainable Development Goals (SDGs), 2025 is a critical moment to course correct. Countries are called on to strengthen their Nationally Determined Contributions (NDCs) towards reducing emissions, and 2025 marks the five-year countdown to the Intergovernmental Panel on Climate Change's (IPCC) target to reduce global emissions 43% in order to limit warming to 1.5 degrees Celsius (°C). The year is also the lead-up to the first-ever United Nations (UN) Decade of Sustainable Transport (2026-2035).

These milestones bring into sharp focus both the risks of inaction and the opportunities for bold transformations of transport systems. Harnessing such opportunities requires urgent, inclusive and co-ordinated action to ensure that transport systems contribute to social inclusion, shared prosperity, decarbonisation, and resilience over the long term, particularly in the face of global crises. **Despite multiple priorities and persistent challenges, the urgency to act is now greater than ever.**

ⁱ All sources and references for the information here presented can be found in the various chapters and spotlights of the SLOCAT Transport, Climate and Sustainability Global Status Report – 4th edition (GSR4), available at slocat.net

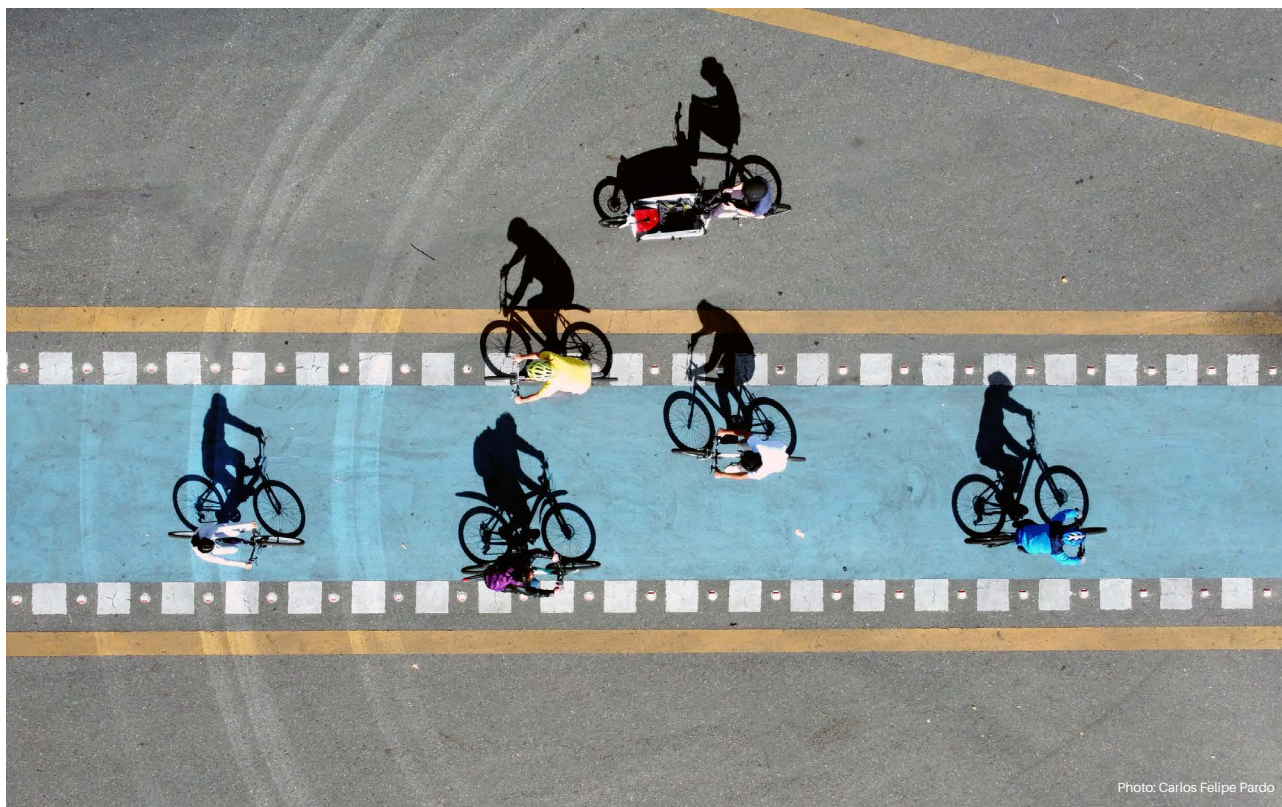


Photo: Carlos Felipe Pardo

Progress over the past two years sets the stage for further sustainable transport action

There has been some progress towards sustainable transport at all levels – from global to national to local – and spanned all transport modes, providing a foundation to now build upon. Notable advancements in **global frameworks and commitments** included the **first Global Stocktake of the Paris Agreement in 2023**, which resulted in a **call** at the UN Climate Change Conference (COP 28) **to reduce emissions in road transport and transition away from fossil fuels**. This was the first global agreement to transition from all fossil fuels, triple renewable energy capacity and double energy efficiency. At COP 29 in 2024, countries agreed to allocate USD 300 billion per year in climate finance from high-income countries to support low- and middle-income countries (LMICs), although this was far less than is required. In 2025, the Brazilian Presidency of COP 30 emphasised the need to accelerate implementation of the Global Stocktake outcomes and proposed a new framework for the Global Climate Action Agenda to act as a blueprint for collective global efforts.

Across all transport modes, *Avoid* and *Shift* strategies offer tremendous transformative potential yet remain underemphasised compared to *Improve* measures (see Box). Recognising this and building on previous multi-stakeholder efforts, the UN Climate High-Level Champions launched the **Transport Avoid & Shift Breakthrough** at COP 29 and

established a 2030 target to double the share of energy-efficient, fossil-free transport for both people and goods, through shifts to public transport, walking, cycling and rail freight.



Avoid-Shift-Improve:

A framework of strategies to deliver a holistic, systemic transformation of transport systems

An approach to deliver bold transport transformations is through the Avoid-Shift-Improve (A-S-I) framework for sustainable transport. A-S-I enables the expansion of access to sustainable transport through *avoiding* unnecessary motorised trips with better transport and land planning, *shifting* travel to more sustainable and shared modes such as public transport, cycling, walking, and rail freight and *improving* vehicles and fuels to make them cleaner and more efficient.

Policymakers who take this broader approach can reduce transport emissions aligned with net zero pathways by 2050, accelerate the transformations towards energy-efficient and fossil-free transport, and build resilience and adaptation in transport – while catalysing finance and investment in clean, resilient solutions for passenger and freight transport.



Multilateral negotiations have led to progress on decarbonising shipping in recent years (despite significant delays) and have begun to advance efforts on aviation. The 2023 International Maritime Organization (IMO) Strategy on Reduction of GHG Emissions from Ships sets indicative checkpoints outlining a clear trajectory for cutting the annual greenhouse gas **emissions from international shipping** 20-30% by 2030 and 70-80% by 2040 (compared to 2008 levels), on a path to net-zero emissions by or close to 2050. The Strategy is designed to align with scenarios that keep global temperature rise well below 2°C, although it falls short of scenarios that keep warming below 1.5°C. In April 2025, after extensive negotiations and external geopolitical pressures, the IMO agreed to its Net-Zero Framework, a landmark regulatory package of mid-term measures that, if approved, would become the first legally binding carbon price across an entire industry sector. However, the extraordinary meeting of the Marine Environment Protection Committee in October 2025 - convened to approve the regulatory package and adopt it for entry into force in 2027 - ended in an anticlimax. An alliance led by the US and Saudi Arabia secured a slim majority in favour of adjourning the proceedings for one year, putting IMO's climate work in limbo. While country delegates have a chance to continue talks about the Net-Zero Framework during IMO's intersessional meeting on greenhouse gas emissions in late October 2025, the delay puts the business case for green shipping investments in doubt, prolonging uncertainty for shipowners with fleets to renew.



Photo: Claudio Olivares Medina

In 2022, the International Civil Aviation Organization (ICAO) adopted a Long-Term Aspirational Goal to achieve net zero carbon **emissions from international aviation** by 2050. This global goal signals a collective ambition to align the sector with the global warming targets of the Paris Agreement, although it is not binding on individual ICAO member states. To support achievement of the goal, in 2023 the ICAO and its members set a collective global aspirational vision to reduce carbon dioxide (CO₂) emissions in international aviation 5% by 2030 through the use of cleaner fuels such as sustainable aviation fuels (SAF), compared to a baseline that assumes zero use of cleaner energy. At the 42nd ICAO Assembly in 2025, member states reinforced net zero emission and sustainability commitments related to the Long-Term Aspirational Goal; SAF (including accelerating investment); the Carbon Offsetting and Reduction Scheme for International Aviation (CORSIA); adaptation and resilience; and other issues (aircraft noise, air pollution, single-use plastics and non-CO₂ climate effects).

Some progress was also made on **adaptation and resilience to climate change**. At COP 28, the **Loss and Damage Fund** was operationalised alongside targets for the **global goal on adaptation**. By September 2025, although far from being exhaustive, 78 countries had submitted **National Adaptation Plans** (NAPs), including 61 LMICs - 23 from Africa, 15 from Asia, 13 from Latin America and the Caribbean, and 5 each from Eastern Europe and Oceania. Countries use these plans to integrate climate change adaptation into policies, programmes, and activities across all levels and sectors, including transport. In addition, multilateral development banks provided USD 27.7 billion for **adaptation finance** in 2023, 89% of it for LMICs. Because transport is one of the most climate-vulnerable parts of infrastructure, particularly in LMICs, a large share of this finance would be dedicated to improving the resilience of transport systems.

Beyond climate action, transport progress at the global level has been shaped by broader **sustainable development frameworks**. No stand-alone SDG is focused on transport. However, the successful implementation of efficient, accessible, affordable, safe, sustainable, and resilient passenger and freight **transport supports the achievement of almost every SDG**, helping to address poverty eradication, health, education, equity, energy, trade, global supply chains, food security, and sustainable cities, among others. In 2023, the UN General Assembly proclaimed the years 2026 to 2035 as the **first-ever UN Decade of Sustainable Transport**, representing a significant global commitment to advancing sustainable transport systems and underscoring transport's critical role in achieving both the SDGs and climate ambitions.

At the **national and sub-national levels**, some governments have taken varied steps towards more sustainable transport systems, including through policy reforms, infrastructure investment, emission standards and land-use planning. For **land transport**, national governments have increasingly recognised **rail's** potential in decarbonisation strategies and national economic recovery plans, with some countries launching plans in 2023 and 2024 to upgrade and develop rail lines. By 2023, at least 20 LMICs had strengthened **urban-rural connectivity** through improved road and rail infrastructure. Even so, in most regions the share of public spending for road infrastructure remains much higher than for rail. Several governments also implemented stricter **emission standards for road vehicles**, and many continued to **electrify road transport**.

For **maritime transport**, under the **European Union's (EU) Emissions Trading System**, all ships above 5,000 gigatonnes arriving at EU ports are subject to carbon prices as of January 2024. In January 2025, the **FuelEU Maritime regulation** set maximum limits on the annual average greenhouse gas intensity of the energy used by ships calling at EU ports.

Individual government actions in shipping included the UK Emissions Trading Scheme (which applies to domestic shipping emissions starting in 2026) and Australia's Maritime Emissions Reduction National Action Plan, under development in 2025. As of October 2025, countries had submitted a total of 67 third-generation NDCs under the Paris Agreement; of these, only 20 included actions towards reducing shipping emissions.

For **aviation**, the United Kingdom, the United States, and the EU, among others, have facilitated greater market pull for **sustainable aviation fuels (SAF)**. Some countries have also applied the "polluter pays" principle - through **aviation fuel taxes, national ticket taxes, frequent flyer levies and international solidarity levies** - to internalise the environmental costs of flying, moderate demand, and generate funding for climate mitigation, SAF and other clean technologies. However, the diversity of national policy approaches underscores the need for greater international harmonisation on aviation action.

Sub-national government action on sustainable transport was also notable during 2023-2025. A growing number of cities deployed **congestion pricing** and various forms of **emission zones** (including low-emission zones, ultra-low-emission zones, zero-emission zones and freight zero-emission zones). By late 2024, more than 35 cities (mostly in the Netherlands) were planning freight zero-emission zones. Yet pushback on such policies has occurred in New York City (United States) and Seoul (Republic of Korea).

A few jurisdictions adopted targets to **reduce motorised vehicle travel**, including Glasgow (United Kingdom) and the US states of California, Colorado and Maryland. **Transit-oriented development strategies** continued to grow in some cities, including Melbourne (Australia) and Stockholm (Sweden). Some trailblazing cities - such as Bordeaux, Lyon, and Paris (France), Bath and some London boroughs (United Kingdom) and San Francisco (United States) - enacted **parking policy** reforms to counter larger vehicles such as sport-utility vehicles (SUVs) and pick-up trucks, and to prioritise public space for people.

Sustainable urban mobility plans (SUMP) spread to more locations, with a focus on compact, walkable urban planning. In Latin America, many cities have adopted SUMP since 2022 - including Arequipa (Peru) and Baixada Santista (Brazil) - even as national transport policy lags in the region due to resource and other constraints. **Mobility as a service** (MaaS) also gained in popularity in many cities due in part to digital payment support and shifts resulting from the COVID-19 pandemic.

Many cities are professionalising **informal transport** (popular transport) as part of broader sustainable mobility planning; they include Antofagasta (Chile), Bouaké (Côte d'Ivoire), Dire Dawa



(Tanzania), Havana (Cuba), Medan (Indonesia) and Trujillo (Peru). Informal services continue to operate at the fringes of the wider transport system in much of the world, but there is growing acknowledgement that they are essential to meeting mobility demands, and that support is needed towards their **professionalisation and integration**. There is also increased understanding that, with adequate support, the sector can address environmental, safety, and social concerns. Mexico City has been a frontrunner in such reforms, and other places

have implemented limited but successful reforms, as well as vehicle scrappage and modernisation schemes to substitute old, polluting and unsafe informal transport vehicles.

Sustainability advances have occurred **across all transport modes** globally. Several governments – including Brazil, India, Morocco, Thailand and the EU – implemented stricter **emission standards or scrappage schemes across different road vehicle segments**. Electrification of road transport continued its record growth, with electric car sales up 25% in 2024 to reach 17 million units sold – although growth was slower than in previous years, and most countries were not on track to meet ambitious targets. By 2024, the share of electric vehicles in the total passenger car stock was still less than 5% globally. As of 2024, 68 countries and 26 states/provinces had targets for electric vehicles, including 49 countries with targets for 100% electric vehicle sales or bans on internal combustion engine vehicles.

Electric two- and three-wheelers dwarf numbers of other electric vehicles, with close to 400 million units globally by 2024 and estimated annual sales of 35-50 million units. These are also the most rapidly electrifying modes of informal transport, with most of this activity in Asia. Electrification of buses for public transport continued to increase, with sales growing 30% in 2024 to 70,000 units sold, although e-bus sales represented only around 3% of total bus sales worldwide. The global electric light-commercial vehicle stock (such as vans) more than doubled between 2022 and 2024, reaching a 1.3% global share in 2024 with 1.9 million units. Electric vehicle charging infrastructure also expanded – with public charging

points growing 40% in 2023 – and fast charger installations continued to grow more rapidly than slow chargers.

Advancements in the **heavy-duty vehicles** segment picked up pace during 2023-2025. At the regional level, the EU approved a target in 2024 to reduce CO₂ emissions from new heavy-duty vehicles 90% by 2040. Some countries have also taken measures individually. Electrification of heavy-duty vehicles has been slow despite some technological developments. As of 2025, 40 countries had committed to a global memorandum of understanding on zero-emission medium- and heavy-duty vehicles (launched at COP 26 in 2021), with the aim of achieving 100% new electric truck and bus sales by 2040, with an interim 2030 target of 30%. Manufacturers of heavy-duty vehicles have begun to address direct vehicle emissions, including setting aligned targets to reduce emissions around 50% by 2030. Targets for indirect emissions tend to be less ambitious, and companies often fail to provide consistent data on fleet efficiency or their use of carbon offsets, making it difficult to accurately assess the true level of ambition.

With emission levels still rising in many regions, **rail** continues to offer a compelling solution for decarbonising the transport sector. Electrification and energy efficiency remain the backbone of the strategy to decarbonise rail transport, which is already the most electrified motorised transport mode and had the highest share of renewable energy use as of 2024. Groundbreaking rail developments have occurred in several African and Asian countries since 2023, with the aim of connecting people and goods. The Asia-Pacific region has the fastest growing rate of rail electrification, with Indian Railways reaching 98% electrification on the broad-gauge network in 2025.

Renewable electricity plays a growing role in the rail transition, with more than 15% of the sector's energy sourced from renewables as of 2022, the highest share among transport modes. Globally, rail freight has shown strong resistance to shocks and continued to grow to nearly 12 trillion tonne-kilometers in 2022; in contrast, passenger rail demand has had a slow recovery from the COVID-19 pandemic. Passenger rail activity reached an estimated 2.5 trillion passenger-kilometres in 2022; this was up 16% from the 2021 low of around 2.1 trillion passenger-kilometres, but still well below the peak of around 4.1 trillion passenger-kilometres in 2019. In 2022, rail accounted for around 12% of global passenger transport.

For **walking and cycling** and other forms of active transport, 117 countries reported having a national road safety strategy as of 2023, although only 16 of these were fully funded. Such policies aim mainly to increase physical activity (36%), improve road safety (32%), and reduce contributions to climate change (28%). Bicycle sales have increased dramatically since 2020, especially for e-bikes (electric power-assisted two- and three-

wheeled cycles), although the trend is mainly in cities in high-income countries. Many governments, including nearly 300 jurisdictions in Europe, offer support policies for e-bike purchases.

A quick, affordable and reliable way to reduce transport emissions 20-50% is to provide safe walking and cycling infrastructure. As of 2023, a growing number of countries had integrated walking into their national transport and climate strategies, with 63% of countries specifically addressing walking in their climate policies or NDCs (across all submission cycles). However, 41% of countries addressed walking in national policies but not in their NDCs. Among the 67 third-generation NDC submissions as of October 2025, just 14 included walking measures to mitigate emissions. Despite progress, significant work remains to improve walking and cycling infrastructure and safety: pedestrians and cyclists account for the vast majority of road fatalities, and major infrastructure gaps remain for most of the world's population, particularly in LMICs.

Demand for alternative fuels in **shipping** has increased, with half of new **ship tonnage orders** in 2024 **capable of using alternative fuels** such as ammonia, methanol or hydrogen. In addition to the shift to alternative fuels, 37% of the vessel tonnage as of 2024 was fitted with **energy-saving technologies** to improve the carbon intensity performance of ships. A total of 62 **green shipping corridor initiatives** had been announced as of November 2024, 40% more than in 2023. One-third of this activity was in Europe, with a further one-fifth each in the Asia Pacific and North Pacific regions. However, only six initiatives were preparing for implementation, due in part to a lack of national policy incentives to bridge fuel costs.

In **aviation**, **record passenger load factors** reflected strong demand during 2023-2025, with airlines using capacity more efficiently than ever, reaching 84.0% in December 2024 and 83.5% for the year. However, **rising air passenger transport demand** risks outweighing these gains in operational efficiency, highlighting the core challenge of reducing absolute aviation emissions in a growing market. **Global SAF production** more than doubled in 2024 to 1 million tonnes (1.3 billion litres) – up from around 0.5 million tonnes (600 million litres) in 2023 – and is projected to double again to 2.1 million tonnes (2.7 billion litres) in 2025 (starting from a low base). Despite rapid growth, SAF accounted only for around 0.15% of total aviation fuel use in 2023, rising to 0.3% in 2024 and a projected 0.7% in 2025. Meeting SAF production targets for 2050 will require a monumental undertaking, estimated at USD 1.5 trillion in capital investment over 30 years.



Photo: Caribb

Persistent transport inequality remains a barrier to shared prosperity

Transport systems allow people, goods and services to move from one location to another and connect individuals, communities and institutions. **Mobility is a fundamental human right.** The ability of people to move freely and to access opportunities such as jobs, education or healthcare is essential for both personal and collective well-being, but **most transport systems are not fully inclusive.** The right to mobility remains unmet for many, and elderly, disabled, marginalised and rural users remain poorly served by transport.

Similarly, **the movement of goods is an essential precondition for almost any contemporary economic activity, whether on a local, national or global scale.** Freight transport is a key enabler of prosperity, economic growth, employment, connectivity and regional integration. However, **high costs of moving goods in many LMICs and rural areas hinder trade volumes, limit the availability of goods and increase their final price.** This points to the importance of resilience and efficiency in logistics. In Africa, where trade costs are five times the global average, studies show that a 10% drop in transport costs could increase the region's trade volumes by 20%.

Challenges in transport access and affordability are compounded by **limited application of universal design and planning** to accommodate diverse users. Around 15% of the world's population – more than 1 billion people – live with a **disability**, most of them in LMICs and often also experiencing **transport poverty**, marginalisation and social exclusion. Some jurisdictions might have directives or guidelines for buildings to accommodate people with special needs, but they may lack similar directives or guidelines for road infrastructure and transport services. Transport costs often comprise a large share of **household budgets** and place a particular burden on low-income people. Shares of household spending on transport vary greatly by country and region: as of 2023, the highest shares among member countries of the Organisation for Economic Co-operation and Development (OECD) were in Mexico (20.5%) and Türkiye (19.7%).

LMICs also continued to face serious impacts from **inadequate roads** that restrict the safe and efficient movement of people and goods, including a lack of paved and weather-proof roads, pedestrian and cycling infrastructure, and measures to reduce road fatalities. In Africa, where road transport remains the primary transport mode – accounting for 90% of passenger travel and 80% of freight transport as of 2014 – only around half of all roads have been paved in the same year. In 2021, LMICs were home to 60% of the world's vehicle fleet yet suffered 90% of the road fatalities.

Rural access challenges affect both passenger and freight transport, as many rural areas remain underserved by public transport, and many global supply chains start in remote rural areas. With 85% of the world's lower-income population living in rural areas, governments have increasingly recognised the importance of improving rural transport and creating rural-urban connections to narrow the development gap. However, as of 2020 only 38% of the global rural population had access to all-weather roads, with the lowest regional shares in Africa (31.3%), Latin America and the Caribbean (35.4%), Asia (40.8%), and small island developing states (42.2%).

Convenient **access to public transport** varies widely by region, with the lowest access levels (0-40% of the population) in much of Africa, South Asia, and Central America, and the highest access levels (80-100%) in many places in Europe, Australia and New Zealand in 2022. In the wake of the COVID-19 pandemic, public transport services in most markets have continued to face **challenges in maintaining operations**. More than half of operators reported that ridership in 2024 was still below 2019 levels. However, some locations have focused on improving the reliability of public transport to increase ridership: in 2024, the largest ridership growth was in the Middle East and North Africa, followed by Asia-Pacific, whereas ridership was still below 2019 levels in North America and in Latin America and the Caribbean. Since 2023, governments have launched various plans to revive economies through upgrades and development of new rail lines, although public spending still remains higher for roads.

Data on **informal transport** for different cities in LMICs show that the share of trips using these modes remains significant, with two- and three-wheelers being extremely common and often also the backbone of rural mobility. Despite advances, significant gaps remain in formal **recognition, integration and support for informal transport providers**. Informal workers are typically the first to expose themselves to higher risks to ensure income, often due to their economic situation. Informal transport systems are also heavily affected by extreme weather events and natural disasters, yet the sector remains overlooked in climate resilience, adaptation and action plans.

Due to the nature of the informal sector, updated and consistent data are lacking on fundamental aspects such as the size and characteristics of vehicle fleets, the scale of operations and the number of workers. However, **data issues persist across all transport modes** – both formal and informal – and hinder monitoring and evaluation as well as crucial decision-making on policy and investment (see Box).

Evidence in action:

Reliable, open-access data, knowledge and monitoring for informed decision making

Monitoring progress will be essential to ensure that the UN Decade of Sustainable Transport (2026-2035) becomes a compass for the positive transformation of transport systems and remains focused, responsive and accountable. A robust monitoring framework can support evidence-based decision making, guide investment priorities and help identify areas where additional multi-stakeholder co-operation or corrective action may be needed. It enables stakeholders to assess the effectiveness of policies and interventions and to share lessons learned across regions and sectors.

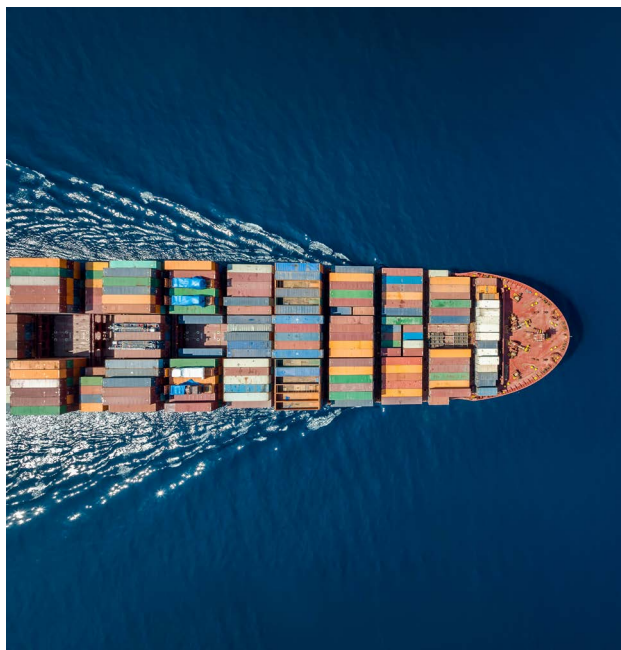
Strengthening reliable and open-access data systems and institutional capacities, particularly in countries with limited resources, is critical. Existing initiatives such as the [Transport Data Commons](#) offer an example and basis for further multi-stakeholder collaboration towards reliable, open-access data.

Additional resources that could be harnessed to increase impact include the vast data, training and other programmes available from specialised transport organisations.

Since 2018, the [SLOCAT Global Status Report on Transport, Climate and Sustainability](#) has grown into a powerful collective effort, with over 300 experts from more than 200 organisations from across the globe working together across editions. This collaborative, open-knowledge effort is not only a repository of evidence but also a platform for dialogue, co-creation and collective visioning. It testifies to the power of collective action, knowledge sharing and partnership in driving sustainable transport outcomes.

The UN Decade of Sustainable Transport provides an opportunity to collaborate on shared goals for more inclusive, prosperous, sustainable, and resilient societies and economies based on modern models of transport and mobility.

Gender equity remains absent in much of the world, and transport is no exception. Across genders, people often have different needs, concerns, and constraints around mobility and transport. Due to **accessibility and affordability** limitations, women's primary travel mode in many countries is walking, followed by cycling, animal-drawn carriages and shared modes. Even in urban areas, women's access to different modes may be limited due to cost or inconvenient locations. Women's travel patterns are often far more complex than men's, and women and girls (as well as transgender and non-binary people) face increased risk of **harassment or personal safety concerns** in public transport or when cycling or walking.



These challenges are compounded by the lack of **gender-disaggregated data** and the under-representation of **women in transport leadership roles** and the sector in general, perpetuating policies and systems that fail to serve half the population. The share of **women employed in transport** globally in 2023 was 15.6%, but this varied regionally from only 6.5% in Africa, to 13.3% in Asia and 14.2% in Latin America and the Caribbean, to more than 24% in Oceania, Europe and North America.

Achieving a **just transition** to sustainable, low-carbon transport depends on securing the future and livelihoods of **transport workers** in the shift to a low-carbon economy. This requires co-creation of **just transition plans, rights of freedom of association and collective bargaining, social dialogue with workers and their unions, and consultation with wider communities**. It also requires financial flows to align with just transition objectives; guarantees for intra- and inter-generational and gender equity; racial justice; respect for the rights of Indigenous peoples, impacted communities and migrants; and the protection and promotion of **human rights and fundamental labour rights**.

As of 2020, close to 23 million occupational injuries and nearly 19,000 deaths annually were attributable to excessive heat around the world, with transport and tourism workers among the hardest hit. The risks associated with extreme heat are increasing with climate change and are not evenly distributed. Informal workers, who are often already on an economic precipice, are particularly exposed when climate disasters hit. In Pakistan, informal workers at rail stations lost their livelihoods overnight in 2022 following the devastating impacts of floods, with no social protections to provide a safety net.



Transport remains a major source of emissions and is increasingly vulnerable

Transport is a significant contributor to greenhouse gas and CO₂ emissions. In 2023, the sector remained the **second largest and fastest growing emission sector, responsible for 15.9% of global greenhouse gas emissions and for 21.9% of global CO₂ emissions**. Transport also remained the fastest growing energy-consuming sector, consuming a third (27%) of the global energy for end-uses in 2023. The sector represents a disproportionate share of global emissions and energy consumption, considering that transport accounted for only 7% of the global gross domestic product (GDP) in 2021. Despite these significant impacts, **most NDCs submitted by countries to reduce emissions under the Paris Agreement still fail to include specific, actionable decarbonisation pathways for the transport sector**. Many NDCs focus on targets for 2035, often sidelining the urgent steps needed before 2030.

Important discrepancies exist among countries for both historical and current transport emissions, as well as the impacts of climate change. A handful of mostly high-income countries continue to contribute the highest **absolute and per capita emissions**, while LMICs bear the brunt of impacts and have not received sufficient financing for a just transition in transport. Europe, North America and Oceania continued to contribute the highest per capita transport greenhouse gas emissions in 2023, with the United States remaining the highest transport emitter globally in absolute emissions and the fifth highest in per capita emissions.

Despite urgent calls for action and advances in renewable energy and clean vehicle regulations, as well as recent rapid increases in electric vehicles, **fossil fuel dependence** remains entrenched across all transport sectors worldwide. Fossil fuels accounted for 95.4% of transport energy consumption in 2023, a share that has remained virtually unchanged for *five decades* and that is directly linked to the high emissions and air pollution caused by transport activity. **Fossil fuel subsidies** offered by governments around the world – while intended to shelter citizens from higher energy costs – impose a fiscal burden on countries, create inefficiencies and hamper efforts to reduce overall fossil fuel use. In 2023, implicit and explicit subsidies for fossil fuels totalled around USD 7 trillion, equal to 7.2% of global GDP.

Car-centric systems exacerbate fossil fuel dependence and resulting emissions, air and noise pollution, and road crashes. As of 2025, the planet was home to more than 8 billion people that have everyday mobility requirements – and only around 1.6 billion light-duty vehicles (cars, trucks and vans). Resource limitations, space limitations (particularly in urban environments), and climate and sustainability goals preclude the option of making private car use the main daily mobility choice for all people. Most private car ownership and use is in higher-income countries, which also face significant challenges associated with larger vehicles and energy consumption. Thus, the status quo of transport systems is leaving most of the world behind. More sustainable mobility models – based on access-centric transport systems that are equity- and environmentally-focused – already exist in some places and could be implemented in many others, given sufficient motivation of stakeholders, political will and financing.

The car-centric paradigm has significant negative impacts on public health, inclusion and the environment. This model remains deeply entrenched – reinforcing fossil fuel dependency – and **ever-larger vehicles** have exacerbated the problem. As of 2023, SUV sales accounted for nearly half of all car sales globally. The growth in SUVs and pick-up trucks is often supported by government subsidies that help sustain low fuel prices, as well as by distorted tax laws that incentivise heavy-vehicle purchases (such as in the United States). As

larger passenger vehicle sizes become more popular, their rising energy use poses a significant and growing risk to decarbonisation, leading the International Energy Agency to recommend that the auto industry decrease vehicle size. Although electrification provides part of the answer for decarbonising road transport, it is not a solution to overcome car-centric systems and should not supersede increases in active travel (walking and cycling) and shared and public transport. Larger vehicle sizes also reduce the public space available for people and increase the risk of death and injury in road incidents.

Traffic congestion had already returned to pre-pandemic levels by 2021, and most cities have experienced worsening traffic since 2022. Congestion has persistent **negative effects on health and well-being**, contributing to air and noise pollution, community severance, and increasingly sedentary lifestyles. Road safety remains a major global issue. Road traffic injuries were the leading cause of death for children and young adults aged 5-29 years in 2021. **Traffic-related fatalities** totalled 1.19 million that year, and when all kind of injuries are included, the toll exceeds 50 million annually, at an economic cost of USD 3.6 trillion (roughly 3.7% of global GDP in 2021). One of the most beneficial aspects of the second UN Decade of Action for Road Safety (2021-2030) is the increased global awareness and political commitment to reducing these impacts. This has led to the inclusion of road safety on the global health and development agendas as part of SDG goal 3.6, although many countries are far from achieving the target of halving fatalities by 2030.

A clear connection exists between **transport resilience (or lack thereof)** and broader issues of connectivity, economic growth and development. As of 2022, natural hazards **cost** global transport systems an estimated USD 15 billion annually. Around 27% of global road and rail infrastructure is exposed to such hazards, with flooding alone responsible for 73% of all damages. **LMICs are disproportionately affected**: small island developing states face annual damage costs from natural disasters of between 1% and 8% of their GDP, and Asia alone bears 60% of the total costs from damage to transport infrastructure.

Countries have made some progress in how they reflect transport action in **National Adaptation Plans (NAPs)** submitted under the Paris Agreement; however, there remains a lack of guidance and systematic assessment of transport adaptation efforts. Research suggests that LMICs in Africa and South Asia should increase resilience considerations in their NAPs, considering their level of vulnerability. Despite the growing risks, only 3.4% of the USD 1.9 trillion in **climate finance** in 2023 was directed towards adaptation (USD 65 billion), and out of this only 2.7% (USD 1.8 billion) went to transport adaptation and resilience.



Climate and sustainability challenges also create risks for supply chains, freight transport, shipping and aviation. Global supply chains are nearly fully **dependent on fossil fuels**, and **climate-related disruptions** – such as the recent droughts in the Panama Canal region – have continued to affect global maritime trade. Both air freight and air passenger transport, as well as maritime transport, are projected to increase, yet **alternative fuels** remain costly and under-deployed. **Aviation CO₂ emissions** were expected to surpass their 2019 level in 2025 and are the fastest growing source of emissions in some regions. If **shipping emissions** were measured alongside countries, the sector would rank as the ninth-largest contributor of greenhouse gas emissions worldwide in 2023, comparable to major industrialised countries. In a single year, the emissions from shipping were nearly equivalent to the total transport emissions from all countries in Africa and Latin America and the Caribbean combined.

In 2023, **freight transport and logistics** was responsible for around 12% of energy-related global CO₂ emissions. Freight transport accounted for 43% of global CO₂ emissions from the transport sector (including international aviation and shipping) in 2023, and this share is expected to reach 57% by 2050. Among freight modes, **road freight** showed the greatest increase in emissions during the three decades from 1990 to 2023. For inland freight, the high and growing dependency on road vehicles is similar to that for passenger transport. The share of **rail freight** has declined in countries with growing market economies, such as China and India. Because rail transport is much less energy intensive than road transport, shifting goods

from road to rail has been high on sustainability agendas for decades, but public policies and investments have had limited success so far, as the share of rail globally has dropped sharply.

As warning signs increase, headwinds are pushing back on progress

There are several clear warning signs and headwinds that risk slowing or reversing progress towards sustainable, low-carbon transport systems. Although the willingness to collaborate remains, the **erosion of multilateralism and international co-operation**, including **reductions in official development assistance**, are major concerns. Aid cuts from countries such as the United States, United Kingdom, France, Germany, and the Netherlands are having significant impacts, compounded by shifting government priorities towards defence spending.

Reform of the UN system could offer an opportunity to improve efficiency in multilateral decision making in transport-related areas, especially given the sector's complexity. The **UN** remains the only global multilateral body that includes all countries, yet it continues to face existential risk from **underfunding** and from threats to multilateralism and international trust. This poses a barrier to key efforts to advance more ambitious policy at the UN and through other regional integration organisations and processes. Although some progress and momentum continue, **polarisation, fragmentation, and politicisation**

have emerged, including in transport. More recently, some governments have used **trade disputes and tariffs** that block clean tech and other movement of goods as a threat to advance purely political goals.

Public and political backlash is also a growing concern. Opposition to sustainable transport policies has emerged, particularly when measures are perceived to restrict driving behaviour, alter the built environment or place undue burdens on specific groups. These perceptions have created enforcement challenges, such as in defining vehicle eligibility for low-emission zones. In 2024, a record number of national elections (more than 60) were held worldwide, with several resulting in the rise of right-wing populist movements that have backtracked on climate and sustainability action in transport.

In some cases, political shifts have resulted in previously progressive countries **reversing key policy support** for sustainable, low-carbon transport systems. In 2023, Sweden reversed many climate policies, including pausing its electric road project and cutting biofuel requirements, jeopardising its 2030 climate goals. The Netherlands eliminated electric vehicle subsidies and reintroduced higher speed limits in 2024, and the Czech Republic and the Austrian state of Styria similarly increased speed limits despite measurable gains in air quality. Since 2023, cycling infrastructure, pedestrianisation efforts, and public transport projects have slowed in Berlin (Germany), while the city of Seoul (Republic of Korea) removed part of

its congestion charging scheme after 27 years, despite data showing a more than 5% increase in traffic when the charge was temporarily lifted. In 2025, the US Trump administration reversed emission regulations and many decarbonisation steps taken in previous years, affecting all levels of government. New York City became the first US city to implement a congestion pricing policy in January 2025, which had strong initial results in reducing congestion, but it has faced challenges from the federal government.

These political shifts often have been accompanied by an **erosion of public trust in science**. This scepticism is fuelled by misinformation, political polarisation and heightened resistance to transformative policy changes. Under growing ideological polarisation, **scientific evidence has been increasingly framed as a political stance rather than as an objective foundation for policy** – particularly when it comes to evidence of climate change, climate justice and transport poverty. This mistrust undermines progress in the just transition towards an inclusive sustainable, low-carbon transport future, despite clear, data-driven evidence of the need for urgent transformation and the socio-economic opportunities associated with cleaner, more inclusive and resilient futures.



Crisis is the new normal: leaders must act now

Ten years after the Paris Agreement and the launch of the 2030 Agenda for Sustainable Development, 2025 is a crucial year for action – a turning point as the global community passes the halfway mark to the SDGs and prepares for the UN Decade of Sustainable Transport. This moment also marks the implementation phase, requiring long-term vision and difficult decision-making. The early post-Paris Agreement enthusiasm has faded amid constrained public resources and rising systemic shocks and challenges. **Governments appear to lack the motivation to act quickly, with priorities shifting away from climate and sustainability despite increasing urgency.**

The year 2025 is also a **critical climate deadline**. The IPCC calls for 43% emission cuts by 2030 – less than five years away – yet global emissions are likely to peak too late to keep the Earth's average temperature from rising past the 1.5°C goal. Total global CO₂ emissions have continued to inch up, rising another estimated 0.8% in 2024. Despite these trends, **it is never too late to reduce the impacts of climate change, as it remains within our grasp to shift the trajectory downwards** – towards 2°C of warming rather than the 2.7°C or higher warming that is predicted by the end of the century.

Despite missing the 1.5°C degree target, **the Paris Agreement and countries' NDCs – although not perfect – have nevertheless helped to lower long-term projections for global warming**. Before the Paris Agreement, the world was heading towards 4-5°C of warming by the end of this century. The commitments expressed in the first generation of NDCs submitted by countries in 2015/2016 would have resulted in around 3.7°C warming by century's end (assuming they were delivered). Ambitions in the second-generation NDCs of 2020 lowered these projections to 2.1-2.8°C of warming by century's end – although the carbon budget to keep global warming within 1.5°C by 2050 would still be used up by 2032.

The Paris Agreement has also had a tangible impact on national climate policy-making and governance, and long-term climate action. Planning based on the Paris goals has become a mainstream characteristic of national climate policy and governance approaches.

The 2025 round of NDCs (so-called NDCs 3.0 or third-generation NDCs) is intended to reflect the lessons of the first Global Stocktake under the Paris Agreement (in 2023) and to embody higher ambition. The credibility of countries' climate action hinges on whether they will follow through with what they agreed in 2023. A staggering 95% of countries missed the initial deadline of 10 February 2025 for submitting third-generation NDCs to the United Nations, resulting in a decision to postpone the submission deadline. As of October 2025, 67 third-generation NDCs had been submitted.

The 2025 NDCs are a major opportunity for countries to implement – through robust transport targets – their agreements under the first Global Stocktake. This includes efforts to reduce road transport emissions through a range of pathways, transition away from fossil fuels, triple renewable energy capacity, and double the rate of energy efficiency. Integrating strong transport actions into NDCs offers multi-faceted benefits that extend beyond emission reductions. Countries can boost prosperity, attract investment, and create jobs. Cities can become cleaner (through reduced emissions and improved air quality) and more inclusive, with diversified transport infrastructure and options that enhance access to basic services and better opportunities for all. Greater efficiency in transport systems saves energy, land and public funds. Shifting from fossil fuels enhances energy security and resilience to global shocks and reduces costs from fuel imports and volatile energy markets. Inclusive and collaborative approaches to transforming transport – involving sub-national and non-governmental actors – ensure more integrated and unified strategies.

The 2025 UN Climate Change Conference in Belém, Brazil (COP 30) is a pivotal opportunity to accelerate the transport sector's role in advancing climate and sustainability goals, and to drive co-ordinated action for lasting impact that meets the scale of the challenges. The time has come to set a global goal for transport. At COP 30, leaders have the chance to kick-off a structured process for setting a quantified global goal for transport decarbonisation: expanding inclusive access to low-carbon transport, phasing out fossil fuels by scaling up renewable and zero-emission energy sources in transport, and reducing the sector's overall energy use. Although countries may start from different contexts, a global goal will bring clarity and shared direction for expanding inclusive, climate-compatible, and resilient transport systems and services. It

will drive implementation, guide more ambitious NDCs, send a clear signal to industry, enhance international co-operation, and reinforce accountability to effectively accelerate sector-wide transformations.

Starting in 2026, the UN Decade of Sustainable Transport will be a critical tool to foster inclusive, co-ordinated and transformative progress to strengthen transport systems and services that are socially inclusive, economically viable, environmentally responsible, and resilient.

There are countless compelling reasons to scale up and accelerate action now towards the just transformation of transport systems. Transport is not an end in itself but a vital enabler of access to opportunities and full participation

in society, across all socio-economic groups; it is also a driver of economic growth, employment, connectivity and regional integration. **A just transformation of transport systems is a fundamental investment in future-proofing societies and economies, enhancing social and economic stability, and increasing our collective ability to absorb shocks and adapt.**

The world is waiting for greater leadership, political will, investment, and enabling frameworks to accelerate transport transformations worldwide, to ensure that transport systems serve both people and the planet, and to seize the unprecedented opportunities of this decisive moment.



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