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

Emissions and inequities in transport are worsening amid pandemic hangovers, slowing economies, disrupted supply chains and energy crisis: *What are we waiting for to transform our transport and mobility systems?*

28 June 2023 – The SLOCAT Partnership has released the first module of the ***Transport, Climate and Sustainability Global Status Report (GSR) – 3rd Edition*** *(www.tcc-gsr.com)*. The GSR is a one-stop shop for the latest available data, trends, targets and developments on transport demand, emissions and policies. It aims to equip decision makers towards knowledge-based action and to raise ambition in transport policy and investment for people and the planet.

This **first module on "Transport Pathways to Reach Global Climate and Sustainability Goals"** highlights trends in emissions, adaptation and resilience, and sustainability for both passenger and freight transport, while providing initial insights on the impacts of the COVID-19 pandemic and the Russian invasion of Ukraine. It also outlines the drastic reductions in transport emissions and the deep systemic transformations required to achieve the Paris Agreement targets and the Sustainable Development Goals (SDGs) for transport.

Module 1: Transport Pathways to Reach Global Climate and Sustainability Goals

1.1. Transforming Transport and Mobility to Achieve the Targets of the Paris Agreement and the Sustainable Development Goals
1.2. Transport Adaptation and Resilience
Spotlight 1. Transport-Health Nexus
Spotlight 2. Transport Adaptation and Decarbonisation in Small Island Developing States
1.3.1. National Climate and Sustainability Strategies to Achieve the Targets of the Paris Agreement and the SDGs on Transport
Spotlight 3. Transport Stakeholders Engagement in the United Nations Framework Convention on Climate Change Process*
1.3.2. Subnational Actions for Sustainable, Low Carbon Transport*
1.3.3. The Role of Business in Decarbonising Transport
Spotlight 4. The Role of Companies in Decarbonising Global Freight and Logistics*
Spotlight 5. Shortening Global Supply Chains as a Key to Decarbonising Transport
** Forthcoming in September*

Global events are having long-lasting implications in the nexus between transport, climate action and socio-economic progress; while transport leads global emissions growth, and is increasingly vulnerable to climate-related hazards

In the decade **from 2010 and 2019, the transport sector had the fastest growth in carbon dioxide (CO_2) emissions among combustion sectors, with emissions rising 2% annually and 18% overall**. While travel restrictions in 2020 related to **the COVID-19 pandemic briefly set back transport emissions to 2012 levels** – the biggest drop among combustion sectors – emissions have **since** rebounded strongly, **returning to or exceeding pre-pandemic levels** among most transport modes as travel demand and commuting picked up.

The transport sector contributed **nearly a quarter (22%) of global fossil CO_2 emissions in 2019, with most of the emissions coming from road transport** (passenger and freight). With the rise in delivery services and in the transport of goods overall, **freight** plays a growing role, representing 42% of transport emissions.

Aviation is responsible for as much as 4% of the human-induced climate change to date, despite contributing only 2.4% of annual global CO_2 emissions. CO_2 emissions from international aviation fell 45% in 2020, but grew 15% in 2021 and have continued to surge. CO_2 emissions from **international shipping** fell just 2% in 2020 and had returned to above pre-pandemic levels by 2021.

Climate change impacts increase the vulnerability of passenger and freight transport systems An estimated 27% of global road and rail assets worldwide are exposed to at least one cyclone, earthquake or flooding hazard per year. Ports are even more exposed, with preliminary estimates indicating that 86% worldwide are exposed to three or more hazards per year. In the aviation sector, extreme weather was responsible for around 7% of flight delays in the USA in 2020.

Natural hazards cause **an estimated 15 billion USD annually in direct damage to transport systems worldwide;** with an **estimated 8 billion USD occurring in low- and middle-income countries**, which experience the highest costs relative to their GDP. Monetary impacts of transport disruptions far exceed physical damages to assets, with business in low- and middle-income countries experiencing USD 107 billion annual losses.

Overall, the pandemic, the Russian Federation's invasion of Ukraine and the resulting spiralling of major **ongoing crises and challenges** – including slowing economies, the disruption of supply chains and the energy crisis – **have induced negative impacts in the nexus between transport and mobility, equitable prosperity, health, energy and land use across countries**, with long-lasting implications for climate action and for socio-economic progress.

"The past couple of years have changed the world. Most transport and mobility systems globally have become more vulnerable to systemic shocks, disproportionately affecting people living in vulnerable situations. One can only ask, what are we waiting for to transform our transport and mobility systems?. Recent crises have led to a greater understanding that equitable, healthy, green and resilient transport and mobility systems are an essential service that can increase the social return on investment, reduce the impacts of shocks and speed recovery", said Maruxa Cardama, Secretary General of the SLOCAT Partnership.

Drastic reductions in transport emissions, adequate investments in transport adaptation and resilience, and the redirection of fossil fuel subsidies are urgently needed

Achieving transport pathways that limit global warming to 1.5 degrees Celsius (°C) will require a **59% reduction in global transport CO_2 emissions by 2050, compared to 2020 levels**. Meanwhile, meeting the International Energy Agency's (IEA) net zero emissions scenario by 2050 will require an ambitious 90% reduction in transport CO_2 emissions from 2020 levels. Overall, **the carbon intensity of the energy used in transport and of the fuels consumed needs to be halved by 2050**. The greatest cuts are needed in road transport, where fossil fuel dependence needs to decline drastically, from 95% in 2020 to 10% by 2050, with electricity becoming the dominant fuel in transport by the early 2040s.

Stronger reductions are required in high-income countries than in low- and middle-income countries. In 2021, more than half (50.7%) of transport CO_2 emissions in 2021 were from high-income countries, whereas **low-income countries contributed less than 1%**. On a per capita basis, transport CO_2 emissions have doubled in middle-income countries since 1980, while barely changing in low-income countries. **However Asia experienced the highest growth in transport CO_2 emissions during 2010-2021 at 36%, followed closely by Africa at 34%**, while emissions continued to fall in Europe, North America and Oceania during 2021.

Transport adaptation and resilience is particularly crucial in low-income countries and Small Island Development States that are especially vulnerable to the impacts of climate change. Governments, businesses and others have begun to nominally address adaptation and resilience for transport, including through National Adaptation Plans and public-private partnerships but **adequate integrated action and investments are still missing.**

In addition, **redirecting fossil fuel subsidies towards sustainable, low-carbon transport modes is a must.** These include investments in safe, reliable and affordable public transport; policies to promote walking and cycling; and efforts to boost accessibility to transport so people can access the services, jobs and socio-economic opportunities they need.

Transport demand management, behavioural change and the shortening of global supply chains are key puzzle pieces in the climate and sustainability challenges the transport sector faces

The needed emission reductions will not be achieved without critical transitions in the modes of transport being used. A 2021 study found that while "Improve" measures (such as advancements in vehicle technologies) can contribute half of the required emission reductions in transport, transport demand management and behavioural actions ("Avoid" and "Shift" measures) are needed to meet the other half. "Avoid" policies also show the biggest potential towards achieving oil independence, followed by "Shift" and "Improve" policies.

The Intergovernmental Panel on Climate Change (IPCC) in their Sixth Assessment Report notes that many strategies for mitigating climate change in the transport sector also have health benefits. **The planning of healthy cities strongly favours public transport and active mobility, and the health benefits from reduced car dependence are increasingly influencing urban planning processes. However, this is still getting less attention than required.**

Traffic crashes are the leading cause of death among people between 5 and 29 years old worldwide, with no reductions in traffic deaths for a decade despite ambitious targets and 93% of the world's road fatalities occurring in low- and middle-income countries. All this leads to the assumption that active transport can increase vulnerability to crashes and to air pollution.

Shortening global supply chains is essential to decarbonise freight and reduce vulnerability. Today, international production operates within global value chains, where the different stages of the production happen across different countries. **As of 2021, about 70% of international trade involved global value chains**. In recent years, multiple global crises and supply shortages demonstrated the fragility of global supply and logistics chains, and their international dependencies.

Governments and businesses must step up their ambition and action towards structural, systemic transformation of transport and mobility systems

Without more ambitious policies towards structural, systemic transformation, transport emissions could grow 16-50% by 2050. Although under the Paris Agreement countries have made progress in setting targets and developing long-term strategies for addressing climate change in transport, current national policies announced or implemented will still contribute to average global temperature rise of 2.8°C by 2100 - far away from the 1.5°C target of the Paris Agreement. Meanwhile, **fossil fuel subsidies have continued to grow**, while strong financial support for sustainable, low-carbon transport and mobility options has been lacking.

Even if all 23 countries that included targets for mitigating transport emissions in their Nationally Determined Contributions under the Paris Agreement as of 2022 **meet them, emissions will still grow, with a projected temperature rise of 2.5°C.** Similarly, although the Voluntary National Reviews (VNRs) of the Sustainable Development Goals in the framework of the UN 2030 Agenda recognise transport as a key to implementing a the SDGs, **few VNRs** present long-term targets or concrete policy measures, or **comprehensively address the urgent systemic transformations needed to enable equitable access to transport and mobility for all.**

Businesses are demonstrating momentum in climate leadership, but collectively this remains insufficient to achieve a 1.5°C pathway. More companies have set emission reduction targets, disclosed climate-relevant information, and developed climate transition plans, yet a study found that up to 74% of the plans of 930 transport service companies worldwide lacked credibility. Companies are inconsistent in their advocacy, at times supporting climate action while in parallel undermining or even opposing ambitious policies. Meanwhile, customers of transport are using their purchasing power to incentivise transport providers and manufacturers to raise their climate ambition.

“We’re in a critical moment to collectively reflect on the future we want and how to achieve it, and sustainable, low-carbon transport is a central strategy. While the decarbonisation of the transport sector by 2050 is possible, it will require an immediate and concerted turnaround of global, national and sub-national policy and investment. Ultimately, we will not be able to achieve socio-economic prosperity for people and the planet without a just transition to equitable, healthy, green and resilient transport and mobility systems”, said Cardama.

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Explore *the module:* *Transport Pathways to Reach Global Climate and Sustainability Goals*

Key Insights | Figures Package | Methodology Note

About the Report

The *SLOCAT Transport, Climate and Sustainability Global Status Report – 3rd Edition* tells the global and regional stories of where we are and where we need to get to urgently on climate and sustainability action for transport and mobility. With contributions from 100 world-class experts and organisations, this flagship report is a one-stop shop for the latest available data, trends, targets and developments on transport demand, emissions and policies. The GSR equips decision makers towards knowledge-based action and aims to raise ambition in transport policy and investment for people and the planet. **Watch video**

Time Period for Data: The GSR strives to use the most recent publicly available data and information just prior to the time of publication (as of 30 May 2023). The figures in the report were developed between August 2022 and June 2023 based on the most recent data available. See Methodology Note.

Modular Release: This third edition of the GSR is being released in a modular approach. **Read more**

About the SLOCAT Partnership

SLOCAT is the international, multi-stakeholder partnership powering systemic transformations and a just transition towards equitable, healthy, green and resilient transport and mobility systems for people and the planet. We deliver on our mission through co-creation, co-leadership and co-delivery across knowledge, advocacy and dialogue activities in the intersection between transport, climate change and sustainability. Our multi-sectoral Partnership engages a vibrant and inclusive ecosystem across transport associations, NGOs, academia, governments, multilateral organisations, philanthropy and business; as well as a large community of world-class experts and change-makers. Going where others do not or cannot go individually, our Partnership is leveraged to set ambitious global agendas and catalyse progressive thinking and solutions for the urgent transformation of transport and mobility systems worldwide. Learn more at www.slocat.net.

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