

Global status report on road safety 2023



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Foreword

*Our transport systems open the world to us,
but they come with a tragic price.*



A handwritten signature in black ink, reading "Tedros Adhanom Ghebreyesus".

Dr Tedros Adhanom Ghebreyesus

Director-General
World Health Organization

By the time you have read this page, at least five people will have died in road traffic crashes.

Road crashes are the leading killer of children and youth, and they typically strike during our most productive years, causing huge health, social and economic harm throughout society.

Yet this report offers hope, and points to a way forward.

Since 2010, deaths from road crashes have fallen slightly to 1.19 million per year. More than half of all UN Member States, including some of the worst-affected countries, report a decline in deaths.

These hard-won gains were made while much of the world was heading in the wrong direction.

As motor vehicles proliferate, countries are doubling down on transport systems built for cars, not people, and not with safety at their core.

This holds back efforts to save lives, protect the vulnerable and secure a sustainable future.

Some of the greatest progress has been made where the safe system approach to road safety has been applied. This holistic approach to mobility puts people and safety front and centre.

With a rapidly growing and increasingly urban population, it calls for a safe, efficient and sustainable mix of transport types, including mass public transport, while ensuring the safety of pedestrians, cyclists and other vulnerable road users, who account for half of all deaths.

Building safe systems also benefits many more areas of health and development. By encouraging walking and cycling for example, we help reduce the burden of noncommunicable diseases, boost physical activity, strengthen access to jobs and education and help fight climate change.

We know what works; political will must match the scale and urgency of this crisis.

The Global Plan for the United Nations Decade of Action for Road Safety charts the way forward, and everyone has a role in making safe, clean, affordable and green mobility a reality.

Governments must lead mobility strategies that are rooted in good data, backed by strong laws and funds, and that include all sectors of society. Businesses must put safety and sustainability at the core of their value chains. Academia and civil society must generate evidence and hold leaders to account. Youth can demand action and help take it.

Safe mobility is a crucial aspect of the universal right to health, a fundamental right of every human. Mobility must not, and need not, come with a tragic cost in human lives.

The decline in deaths shown in this report falls far short of what is needed to halve road traffic fatalities by 2030, which means the need for action is urgent, to realise the promise of safe and sustainable mobility, and a safer, healthier and better future.

Foreword



A handwritten signature in green ink that reads "Michael R. Bloomberg".

Michael R. Bloomberg

Founder, Bloomberg L.P. & Bloomberg Philanthropies
WHO Global Ambassador for Noncommunicable
Diseases and Injuries

It is encouraging to see more countries saving lives through safer street design, police enforcement, and paid media campaigns. Still, the scope of the problem is not receiving enough public attention.

Our mission at Bloomberg Philanthropies is straightforward: to save and improve as many lives as possible. One of the most significant opportunities to do that is making more of the world's roads safer for drivers, passengers, cyclists, and pedestrians alike.

This new report highlights how, over the course of more than a decade, we have made encouraging progress together with the World Health Organization and our road safety partners. Our focus is on low- and middle-income countries and cities, where 90 percent of traffic deaths occur. Since just 2018, 23 national governments have strengthened their laws to align with WHO's best practices.

It is encouraging to see more countries saving lives through safer street design, police enforcement, and paid media campaigns. Still, the scope of the problem is not receiving enough public attention.

Any life lost in a traffic crash is one too many – and, in 2021, more than one million people died on the world's roads. Road crashes are also the leading cause of death for children and young people 5 to 29 years old. As the

world's population grows, and the demand for vehicles grows alongside it, ensuring that our roads are safe for all is becoming even more important.

To meet our goal of cutting road deaths in half by the end of this decade, more governments need to take action. Only six countries have laws that meet WHO best practice criteria for addressing road safety's key risk factors. Fewer than 50 countries have policies that promote walking, cycling, and public transport – a glaring lack of investment in safe, sustainable mobility options. More countries also need to step up regulation of vehicle safety standards, which can protect everyone involved in a collision. Right now, nearly 80 countries have no laws at all on vehicle safety standards.

As this report makes clear, faster progress on road safety requires stronger commitments from governments worldwide. Persuading more leaders of the urgent need for action will continue to be a major priority for us at Bloomberg Philanthropies – and we thank Dr. Tedros, WHO, and our global network of allies for their continued partnership in this lifesaving work.

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collaborators. Country¹ data delivery involved the use of a data entry platform and securing consensus among participants.

Country-level participation was facilitated through the WHO designated Regional Data Focal Points who were responsible for training and supervision of country collaborators, and who also reviewed the report: Eunice Chomi and Idrissa Talla (African Region), Alessandra Senisse (Region of the Americas), Rania Saad (South-East Asia Region and Eastern Mediterranean Region), and Roseanne Vandermeer (Western Pacific Region). Further support at WHO regional level was provided by Binta Sako (African Region), Ricardo Pérez-Núñez (Region of the Americas), Tashi Tobgay (South-East Asia Region), Jonathon Passmore – who also acted as Regional Data Focal Point (European Region), Hala Sakr Ali (Eastern Mediterranean Region), and Fang Dan (Western Pacific Region).

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¹ The terms "country" and "national" as used in the text of this publication should be understood to refer to countries, territories, and areas as well as national and local institutions, data, and information.

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Executive summary

There were an estimated 1.19 million road traffic deaths in 2021 – a 5% drop when compared to the 1.25 million deaths in 2010. More than half of all United Nations Member States reduced road traffic deaths between 2010 and 2021. The slight overall reduction in deaths occurred despite the global motor vehicle fleet more than doubling, road networks significantly expanding, and the global population rising by nearly a billion. This shows that efforts to improve road safety are working but fall far short of what is needed to meet the target of the United Nations Decade of Action for Road Safety 2021–2030 to halve deaths by 2030.

Road traffic deaths and injuries remain a major global health and development challenge. As of 2019, road traffic crashes are the leading killer of children and youth aged 5 to 29 years and are the 12th leading cause of death when all ages are considered. Two-thirds of deaths occur among people of working age (18–59 years), causing huge health, social and economic harm throughout society.

More than half of fatalities are among pedestrians, motorcyclists and cyclists. Occupants of 4-wheel vehicles account for almost one-third of fatalities. Occupants of vehicles carrying more than 10 people, heavy

goods vehicles and “other” users constitute one-fifth of all deaths. Micro-mobility modes such as e-scooters account for 3% of deaths.

Vulnerable road users such as pedestrians, cyclists and motorcyclists remain dangerously exposed. Nearly 80% of all roads assessed do not meet a minimum 3-star rating for pedestrian safety, and as cyclist fatalities increase, just 0.2% of all roads assessed have cycle lanes.

Nine in 10 deaths occur in low- and middle-income countries, while people in low-income countries continue to face the highest risk of death per population. Globally, 28% of all fatalities occur in the WHO South-East Asia Region, 25% in the Western Pacific Region, 19% in the African Region, 12% in the Region of the Americas, 11% in the Eastern Mediterranean Region, and 5% in the European Region.

The European Region reports the largest drop in deaths since 2010 – a 36% decline. The Western Pacific Region reports a 16% decline, the South-East Asia Region a 2% decline and the number of deaths has remained constant in the Region of the Americas. Reductions in the number of deaths were observed in 108 countries, including 10 where the 50% was achieved by 2021. However, in 66 countries

there was a rise; 28 of these countries are in the African Region, which has seen a 17% rise in the number of deaths since 2010.

Measures to mitigate the risk of death and injury, including enacting laws that meet WHO best practices, have advanced modestly. Policy-makers have known of the key risk factors that contribute to road crashes for decades, yet only six countries have reached WHO best practice legislation on five risk factors – speeding, drink driving, motorcycle helmet use, and seat-belts and child restraint systems.

With a growing and increasingly urban global population, the rising demand for mobility is set to overwhelm transport systems, particularly those that rely heavily on private vehicles. Yet many countries continue to design and build their mobility systems for

motor vehicles, not for people, and not with safety as the main concern. This slows efforts to save lives and to protect vulnerable road users.

Some of the greatest gains have been made where the safe system approach to road safety – which puts people and safety at the core of mobility systems – is most widely applied. The European Region has the greatest concentration of countries with policies and legislation that align with this approach and reports the largest drop in deaths. The Western Pacific Region is second, both in the number of countries adopting aspects of the safe system approach and in reducing fatalities. These examples show that fatality reduction targets can be met, given a level of political will, investment and capacity that matches the scale of the road death and injury crisis.

Introduction

This *Global status report on road safety 2023* (the fifth edition since 2009) (1–4) presents findings from a unique vantage point on the road to safe mobility: it provides the first complete overview of progress made during the Decade of Action for Road Safety 2011–2020 (5) and sets a baseline for the Decade of Action for Road Safety 2021–2030 (6). This report looks at how and where the burden is changing and at how we are responding. Its specific objectives are to:

- describe the road safety situation in United Nations (UN) Member States and assess changes since the publication of previous versions of this report, with a particular focus on the evolution of the burden and responses since 2010;
- evaluate gaps in road safety nationally to stimulate action;
- inspire research on road safety implementation decision-making; and
- strengthen the network of individuals working on road safety around the world.

This report addresses the UN General Assembly Resolutions to monitor progress in the reduction of deaths and nonfatal injuries in countries (2, 6). Individual Country or territory profiles for all 194 countries and two territories that volunteered their data are available in a companion report to this publication (7).

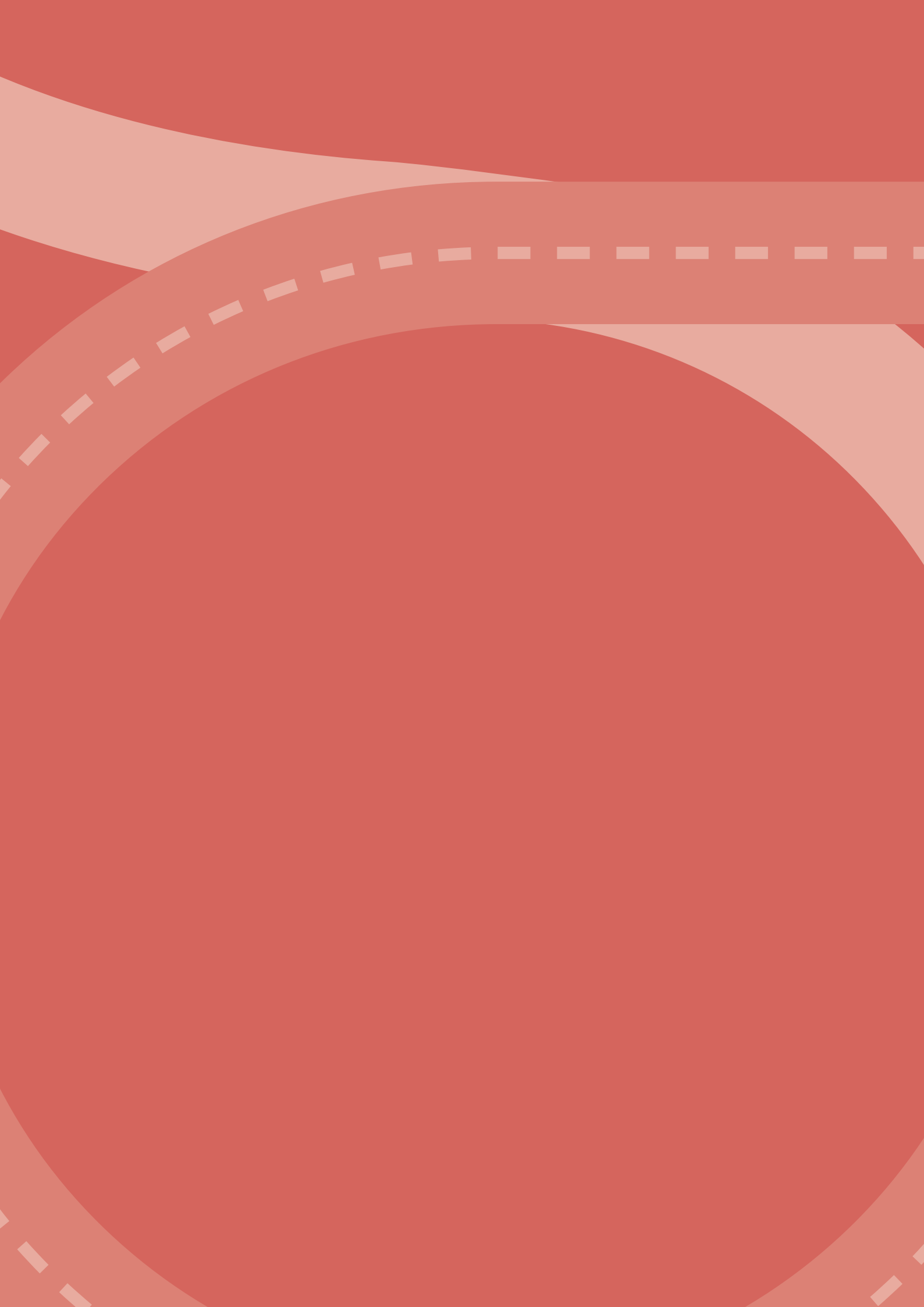
A note on methodology

The findings of this report are based mainly on a survey and review of legislation in which 170 UN Member States and two territories participated. For the 24 Member States not participating in this report, the most recent data from previous surveys are used in their Country Profiles. The methodology used

is described in Annex 1. Progress against the voluntary UN Performance Targets is set out in Annex 2. The percentage of the world population covered by selected road safety laws (in 2022) is set out in Annex 3. The relationship between national legislation and adherence to related UN conventions or regulations is set out in Annex 4. Annex 5 presents the template used in the Country and Territory Profiles and Annex 6 presents the operational definitions used to produce them. This report is accompanied by a summary version (8); a Country and territory profile report; and the World Health Organization (WHO) Road Safety Data mobile application (9). Documents, individual country and territory profiles, and data can be accessed in multiple languages <https://www.who.int/teams/social-determinants-of-health/safety-and-mobility/global-status-report-on-road-safety-2023>.

The report incorporates WHO generated mortality estimates; a legislation review conducted by WHO legal experts based on the survey, augmented by a review of original legislation to assess whether legislation meets WHO best practice criteria.

Mortality estimates for all causes of death are updated periodically by the WHO Division of Data, Analytics and Delivery for Impact (WHO DDI) (10). As more data are submitted by countries and territories to WHO DDI, mortality estimates for all causes are updated retrospectively. Thus, total fatality numbers set out by year in Fig. 5 do not necessarily correspond to the estimates published in previous reports. The revised mortality estimates for the previous years are as follows: 1.21 million for 2016, 1.25 million for 2013, 1.26 million for 2011, and 1.26 million for 2007.



Section 1.

The global burden of road traffic deaths



There were an estimated 1.19 million road traffic deaths in 2021; this corresponds to a rate of 15 road traffic deaths per 100 000 population.



As of 2019, road traffic injury remains the leading cause of death for children and young people aged 5–29 years and is the 12th leading cause of death when all ages are considered.



Globally, 4-wheel vehicle occupants represent 30% of fatalities; followed by pedestrians who make up 23% of fatalities; and powered two- and three-wheeler users who make up 21% of fatalities.



Cyclists account for 6% of fatalities while 3% of deaths are among users of micro-mobility devices such as e-scooters.



92% of deaths occur in low- and middle-income countries.



The risk of death is three times higher in low-income countries than high-income countries despite these countries having less than 1% of all motor vehicles.

There were an estimated
1.19 million road traffic deaths
in 2021; this corresponds to a
rate of 15 road traffic deaths per
100 000 population.

There were an estimated 1.19 million road traffic deaths in 2021; this corresponds to a rate of 15 road traffic deaths per 100 000 population. Based on 2019 data on the age distribution of all-cause mortality, road traffic injury remains the leading cause of death for children and young people aged 5–29 years and is the 12th leading cause of death when all ages are considered (11) (Table 1).

As a leading cause of death and major contributor to disability, road traffic injuries also impose an enormous economic cost on societies. Some estimates put the global macroeconomic cost of road traffic injuries as high as US\$ \$1.8 trillion², roughly equivalent to 10–12% of global gross domestic product (GDP) (12). As such, road traffic injuries are an important health and development challenge.

Table 1. Leading causes of death, all ages, and ages 5–29 years, 2019

Rank	All ages	Ages 5–29 years
1	Ischaemic heart disease	Road Injury
2	Stroke	Tuberculosis
3	Chronic obstructive pulmonary disease	Diarrhoeal diseases
4	Lower respiratory infections	Interpersonal violence
5	Neonatal conditions	Self-harm
6	Trachea, bronchus, lung cancers	HIV/AIDS
7	Alzheimer’s disease and other dementias	Lower respiratory infections
8	Diarrhoeal diseases	Maternal conditions
9	Diabetes mellitus	Drowning
10	Kidney diseases	Cirrhosis of the liver
11	Cirrhosis of the liver	Malaria
12	Road injury	Meningitis

Source: Adapted from: 11)

² For the period 2015–2030 using 2010 constant USD\$

In addition to being the leading killer for children and young adults, road traffic deaths impact people during their most productive years. Approximately 66% of fatalities are among people aged 18–59 years and 19% are aged 60 years or above. Road traffic deaths continue to disproportionately impact men, with an overall female-to-male fatality ratio of 1 to 3.

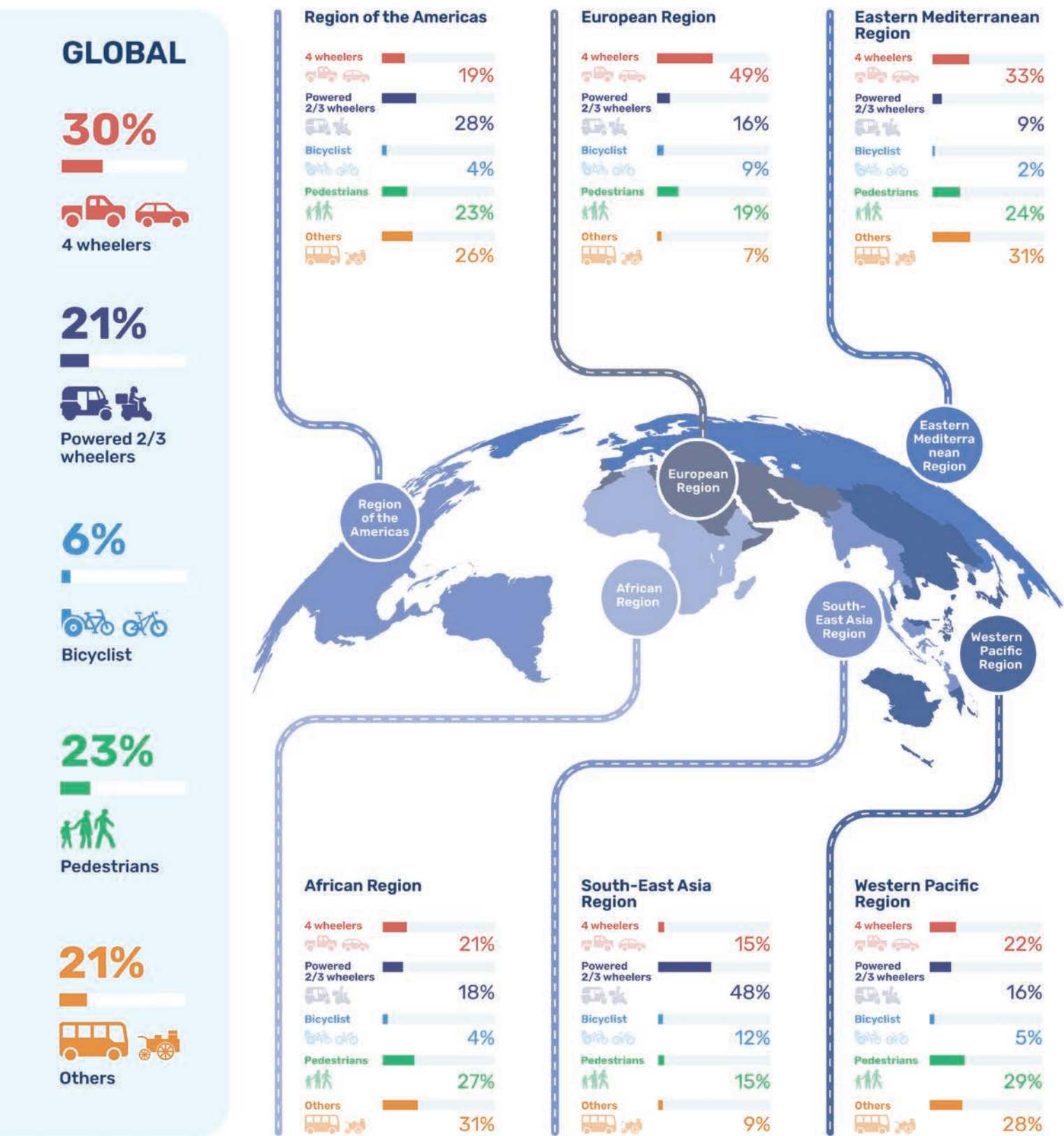
The importance of deaths among people of working ages and the disproportionate impact on males is also reflected in data on work-related driver deaths available from 21 countries. In these countries, approximately 23% of driver deaths relate to trips to or from work (e.g., commuters); 16% of deaths result from work-related driving (e.g., deliveries and appointments); and an additional 12% of deaths are among (disproportionately male) professional drivers “at work” (e.g., bus drivers).

The distribution of deaths among road users changes significantly, however, when data are disaggregated by region. As shown in Fig. 1, except for the European Region and Eastern Mediterranean Region (where occupants of 4-wheel vehicles comprise the largest share of the deaths at 49% and 33% respectively), in most regions, it is pedestrians and powered two- and three-wheelers users that make up the majority of deaths. In the Western Pacific Region, pedestrians comprise the largest share of fatalities while in the South-East Asia Region, cyclists account for 12% of all deaths. This is especially concerning given that pedestrians and cyclists tend to be the most vulnerable road users and, in most countries, represent the economically most disadvantaged (13).

Fatalities by road user type

Globally, occupants of 4-wheel vehicles represent 30% of fatalities; followed by pedestrians who represent 23% of fatalities; and powered two- and three-wheeler users make up 21% of fatalities. Cyclists account for 6% of fatalities. Occupants of vehicles carrying more than 10 people, heavy goods vehicles, “other” users and “unknown” user types comprise the remaining 20% of deaths. Given the rise in powered personal micro-mobility modes such as e-scooters, questions on these modes of transport were newly included in the survey for this report, and reveal that globally, 3% of deaths are among users of these modes (which are included in the “other” road user category).

Fig. 1. Percentage distribution of country-reported deaths by road user type and WHO region, 2021



Fatality counts and rates, by region and country-income level

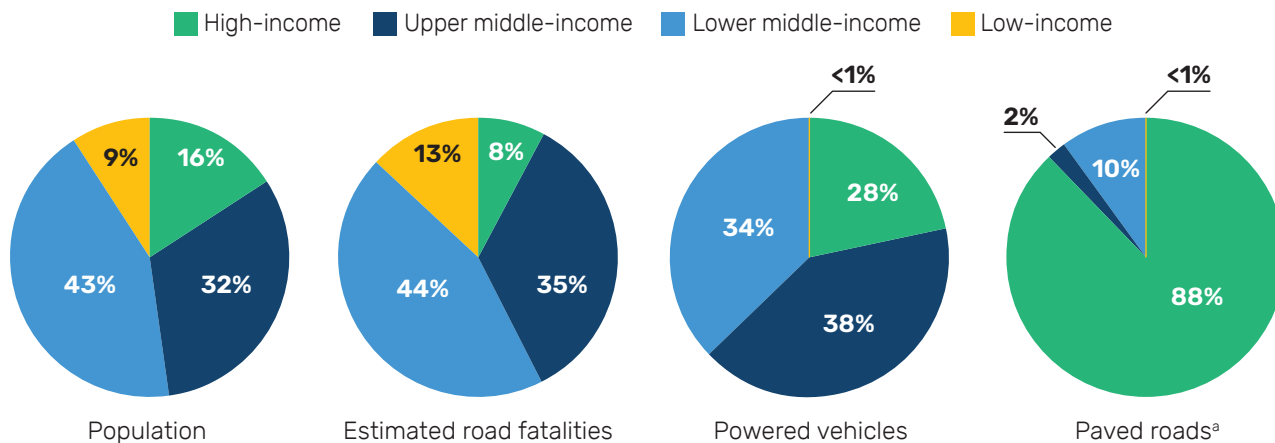
The vast majority of road traffic deaths, 92%, occur in upper-middle, lower-middle, and low-income countries combined. Seventy-nine percent of road traffic deaths occur in lower-middle-income countries and upper-middle-income countries combined (44% and 35% respectively), with low-income countries accounting for 13%, and high-income countries accounting for the remaining 8%.

Relative to the size of countries' motor vehicle fleets and road networks, there is a disproportionately high number of fatalities in low- and middle-income countries compared to high-income countries. For example, high-income countries have 16% of the world's

population, 28% of the world's vehicle fleet, 88% of all paved inter-urban roads, and 8% of fatalities; by contrast, low-income countries have 9% of the world's population, less than 1% of the world's powered vehicle fleet and paved inter-urban roads, yet 13% of fatalities. (Fig. 2).

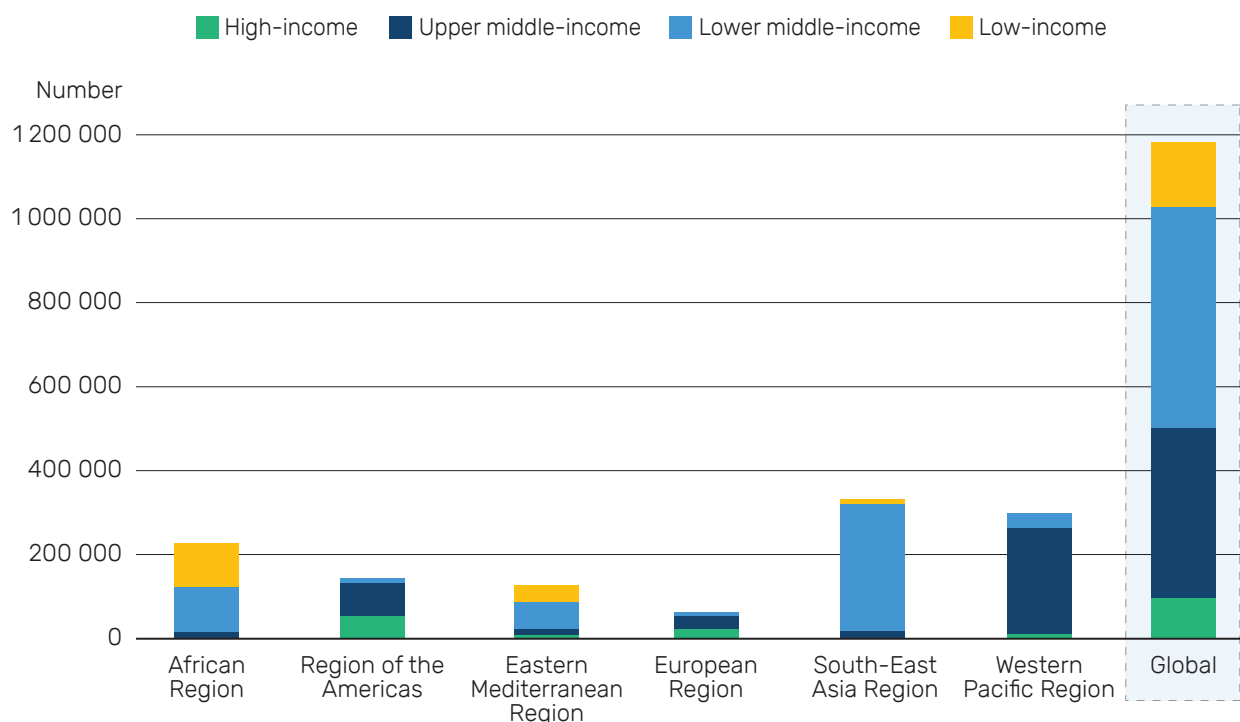
In terms of absolute numbers, the highest number of fatalities occur in the South-East Asia Region (330 222 deaths, or 28% of the global burden), followed by the Western Pacific Region (297 733 deaths, or 25% of the global burden); the African Region (225 482 deaths, or 19% of the global burden); the Region of the Americas (144 090 deaths, or 12% of the global burden); the Eastern Mediterranean Region (125 781 deaths, or 11% of the global burden); and the European Region (62 670 deaths, or 5% of the global burden) (Fig. 3).

Fig. 2. Share of global population, road traffic deaths, paved inter-urban roads, and registered motor vehicles, by country income level, 2021



^a Excludes expressways

Fig. 3. Number of road traffic fatalities by WHO region and country-income level, 2021



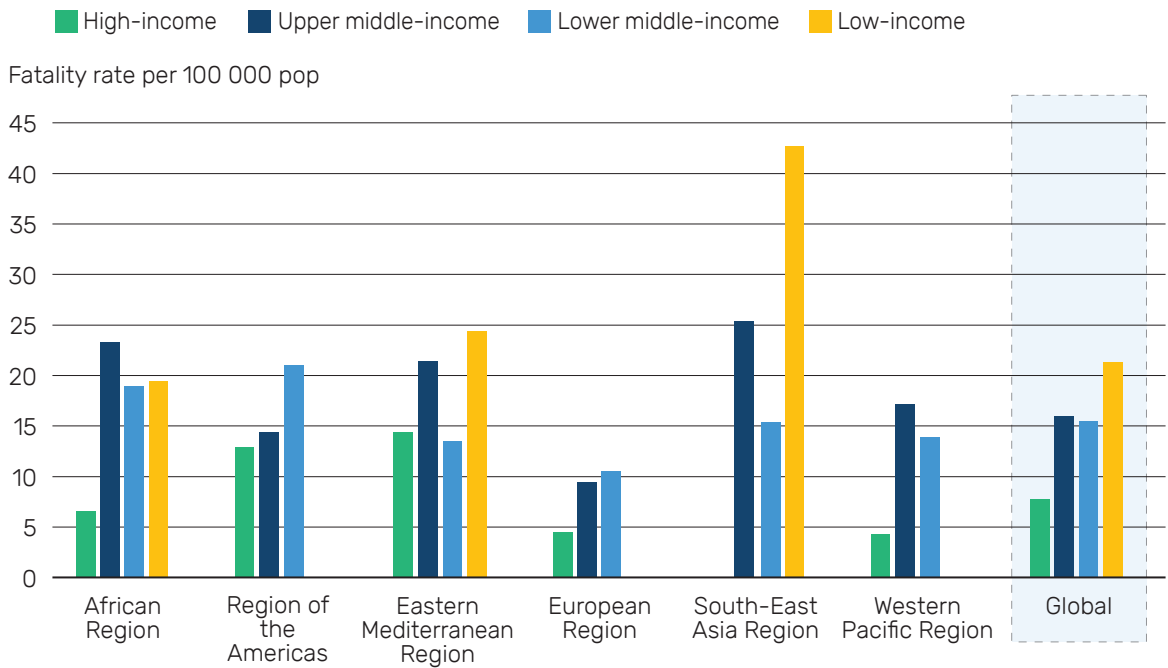
Fatality rates are highest among low-income countries, at 21 deaths per 100 000 population, and lowest in high-income countries, at eight deaths per 100 000 population (Fig. 4). Upper-middle-income and lower-middle-income countries both have fatality rates of 16 per 100 000 population.

The African Region has the highest fatality rate at 19 deaths per 100 000 population, and the European Region has the lowest fatality rate at seven deaths per 100 000 population. For the other WHO regions, fatality rates per 100 000 population are 16 in both the Eastern Mediterranean Region and in the South-East

Asia Region, 15 in the Western Pacific Region, and 14 in the Region of the Americas.

Within regions, the same correlation between income level and fatality rates can be observed, with fatality rates highest in low-income countries and lowest in high-income countries in all regions. In some regions, such as in the Region of the Americas, the differences between the rates are not as significant, but in others, such as the Eastern Mediterranean Region, fatality rates in the region's low-income countries are nearly double those of its high-income countries (Fig. 4).

Fig. 4. Road traffic fatality rate per 100 000 population by WHO region and country income level, 2021





The voice of youth:

**Raquel Barrios, Executive Director,
YOURS – Youth for Road Safety**

Road traffic crashes have been the leading killer of youth for over a decade, and despite being the largest generation of youth in history, young people's voices are rarely heard when it comes to designing road safety policies. So it should be no surprise that many young people do not trust policy-makers.

Meaningful youth participation requires a shift in mindset. Moving beyond the idea that youth are beneficiaries, we need a big change in how we work to ensure that young people's experiences, ideas, expertise and perspectives are fully and systematically integrated into all programmatic, policy-, and decision-making processes.

Here are just some of the ways youth can boost road safety:

As active road users, youth can ensure that their behaviours are supportive of safety as well as bring their needs to the table and support the design of effective policies around urban planning and sustainable cities.

As out-of-the-box thinkers, they bring creativity and innovation to tackle the most pressing issues.

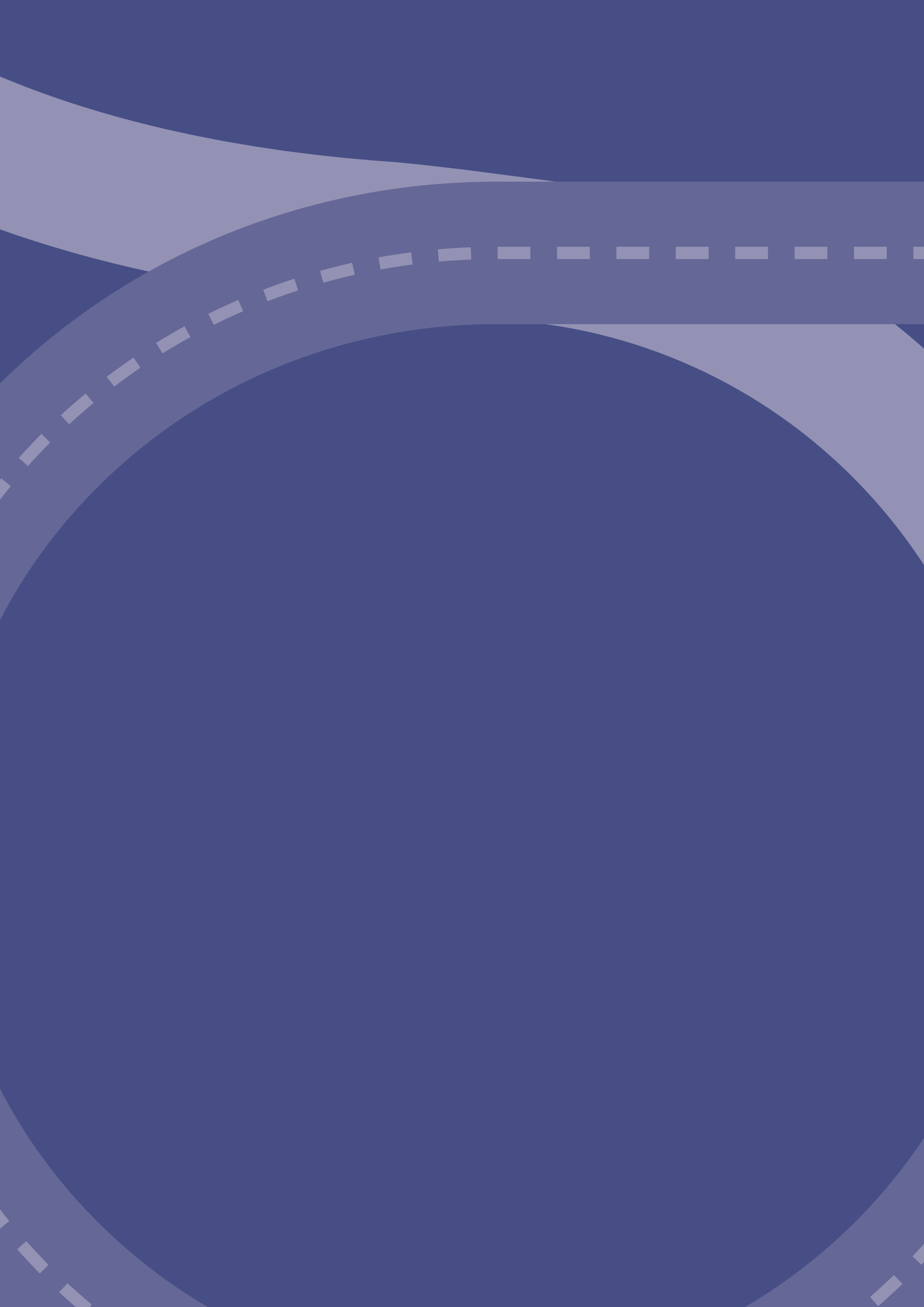
As millennials and centennials, they are leading the digitalization movement and the adoption of technology for greater efficiency.

As change-makers, youth bring energy and flexibility and put their time, skills, and resources into community development initiatives, which could strengthen road safety.

As fearless advocates, youth can push for road safety to find a place on many agendas and be vocal about the crucial role of road safety in achieving all of the Sustainable Development Goals.

Road safety is key to building a healthy, inclusive, sustainable and safe environment for everyone, so we must promote road safety in all areas of development to bring more action, more investment and more resources to help reduce road crash deaths and injuries.

Youth must always be at the table; their involvement in the entire cycle of road safety policies, from design to implementation and monitoring and evaluation is essential. Governments must realize the potential of intergenerational collaboration and its dynamism to save more lives on the roads.



Section 2.

How the burden and context have evolved



Globally, the number of road traffic deaths has fallen 5% since 2010.



The global fatality rate per 100 000 population has fallen 16% since 2010 when set against the 13% rise in global population.



The global fatality rate per 100 000 vehicles has fallen 41% since 2010 when set against the 160% increase in the global motor vehicle fleet.



The global share of fatalities has fallen 1% among 4-wheel vehicle users and 2% among two- and three-wheeler users since 2010 but has risen from 5% to 6% among cyclists.



In 108 countries, reductions in fatality counts between 2010 and 2021 were observed, including, for the first time, low-income countries.



10 countries in four regions achieved the target of a 50% reduction in road traffic deaths between 2010 and 2021.

When compared to the estimated 1.25 million road traffic deaths in 2010, the current figure of 1.19 million for 2021 represents a reduction of 5%.

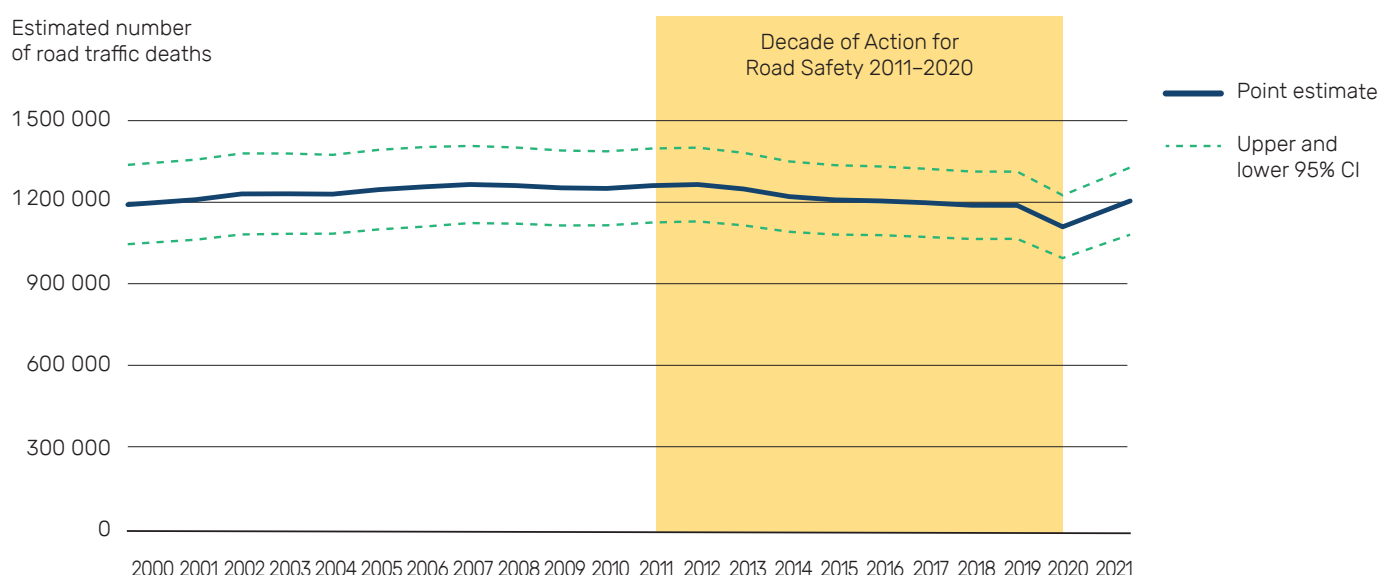
Since the start of the Decade of Action for Road Safety 2011–2020 there have been significant rises in the global population (14), the number of powered vehicles (15), and the size of the world’s road networks (16). Rapidly evolving technology, increasing population density and growth in urban areas, along with the emergence and growing presence of micro-mobility and use of mobility services, are some of the challenges affecting the burden of road traffic injuries in the past decade.

When compared to the estimated 1.25 million road traffic deaths in 2010, the current figure of 1.19 million for 2021 represents a reduction of 5%. After the start of the Decade of Action for

Road Safety 2011–2020, the number of road traffic deaths peaked in 2012 (at 1.26 million). This was followed by a gradual decline that started in 2013 and continues until 2021. The predominantly steady downward trend since 2010 contrasts with the gradual upward trend during the 10-year period prior to the Decade of Action for Road Safety 2011–2020 (Fig. 5). The current estimates are now close to those in 2000, at the start of the upward trend.

The only notable exception to these gradual shifts can be seen in 2020, when the Coronavirus disease of 2019 (COVID-19)-related confinement policies restricted mobility, and fatalities significantly, if temporarily, declined.

Fig. 5. WHO estimated number of road traffic fatalities, 2000–2021



As discussed, the period 2010–2021 saw a 5% reduction in absolute numbers of road traffic fatalities, and it also saw the global population grow by nearly 1 billion (14) or roughly 13%. When this growth in population is considered, the road traffic fatality rate has also declined – from nearly 18 per 100 000 people in 2010 to the current estimate of 15 per 100 000 people in 2021. This represents a 16% fall in the death rate since 2010 (Fig. 6).

Similarly, the period 2011–2020 saw the global motor vehicle fleet burgeon, with countries reporting a 160% increase since 2010. Four wheel vehicles comprise 85% of the world’s motor vehicle fleet, with powered two- and three-wheelers accounting for the next largest share at 12%. Powered two- and three-wheelers have

nearly tripled in number, with a 175% increase since 2011. The global increase is driven by the South-East Asia Region with a 273% increase, the Region of the Americas with a 217% increase, the Western Pacific Region with a 155% increase and the European Region with a 142% increase. This growth corresponds to data from the International Road Federation which shows an increase in road density worldwide, but especially in the African and the Western Pacific Region (17).

Against this backdrop, a substantial decline can be seen in annual fatality rates per 100 000 vehicles, from 79 deaths per 100 000 vehicles in 2010 to 47 deaths per 100 000 vehicles in 2021 – a 41% reduction (Fig. 7).

Fig. 6. WHO estimated global road traffic fatality rates per 100 00 population, 2010–2021

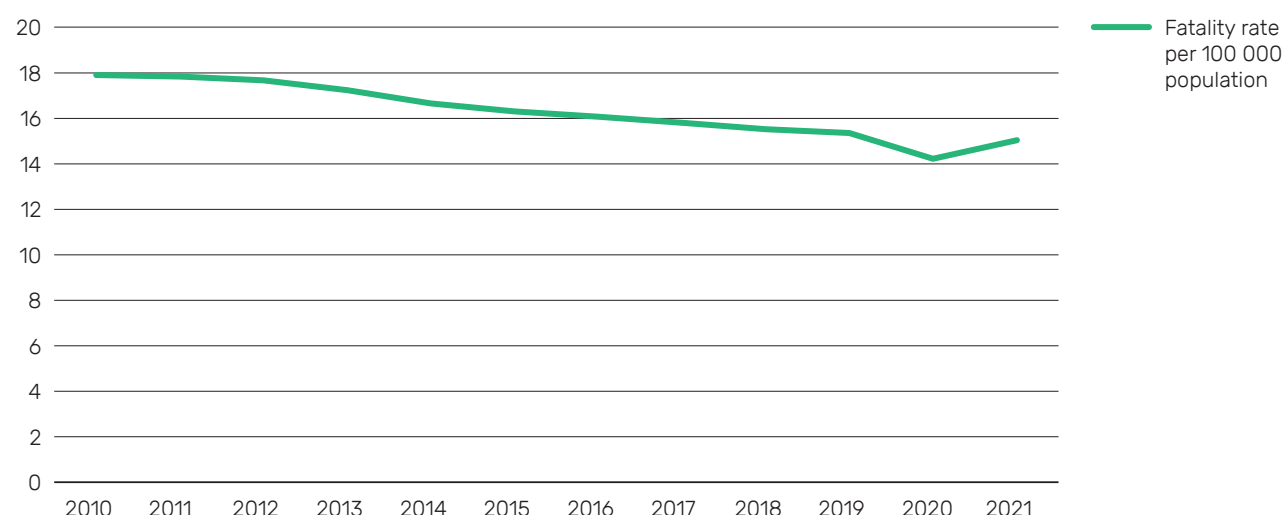
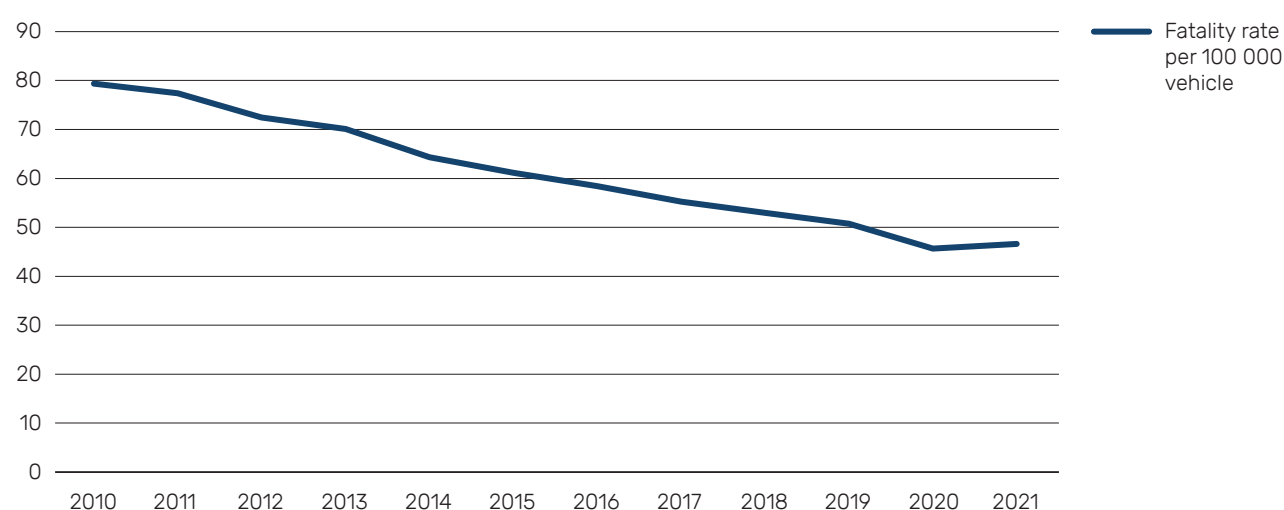


Fig. 7. WHO estimated global road traffic fatality rates per 100 000 vehicles, 2010–2021



The impact of increased levels of motorization are reflected in changes in the relative shares of deaths among user types. Comparisons with the *Global status report on road safety 2013* reveal modest overall changes in the total share of road traffic deaths by user type, with reductions of 1% for 4-wheel vehicle occupants and 2% for users of powered two- and three-wheelers. These overall changes hide more significant changes by WHO region. For example, fatalities among powered two- and three-wheeler users have reduced their share of total deaths by 5% in the Eastern Mediterranean Region and 20% in the Western Pacific Region but have increased their share by 4% in the European Region; 11% in the African Region; 13% in the Region of the Americas; and 15% in the South-East Asia Region.

And compared to the *Global status report on road safety 2013*, the number of cyclist deaths has risen from 5% of all fatalities in 2010 to a current estimate of 6%, representing a 20% rise. This increase is particularly prominent in the South-East Asia Region and the European Region where the proportion of cyclist road traffic deaths rose from a reported 4% in each region in the *Global status report on road safety 2013*, to current shares of 12% and 9% – an increase of 200% and 125% respectively.

Emerging evidence from some countries suggests this increase in cyclist fatalities is due in part to the electrification of bicycles which has resulted in increased ridership in cities that often lack adequate cycling infrastructure. In some countries, there has been an increase in e-bike use among older

populations who are especially vulnerable to serious injury and death in the event of road crashes. These examples illustrate the importance of monitoring and conducting research on how new technological innovations are adopted within the transport system and their impact on safety.

Progress toward the target of a 50% reduction in deaths

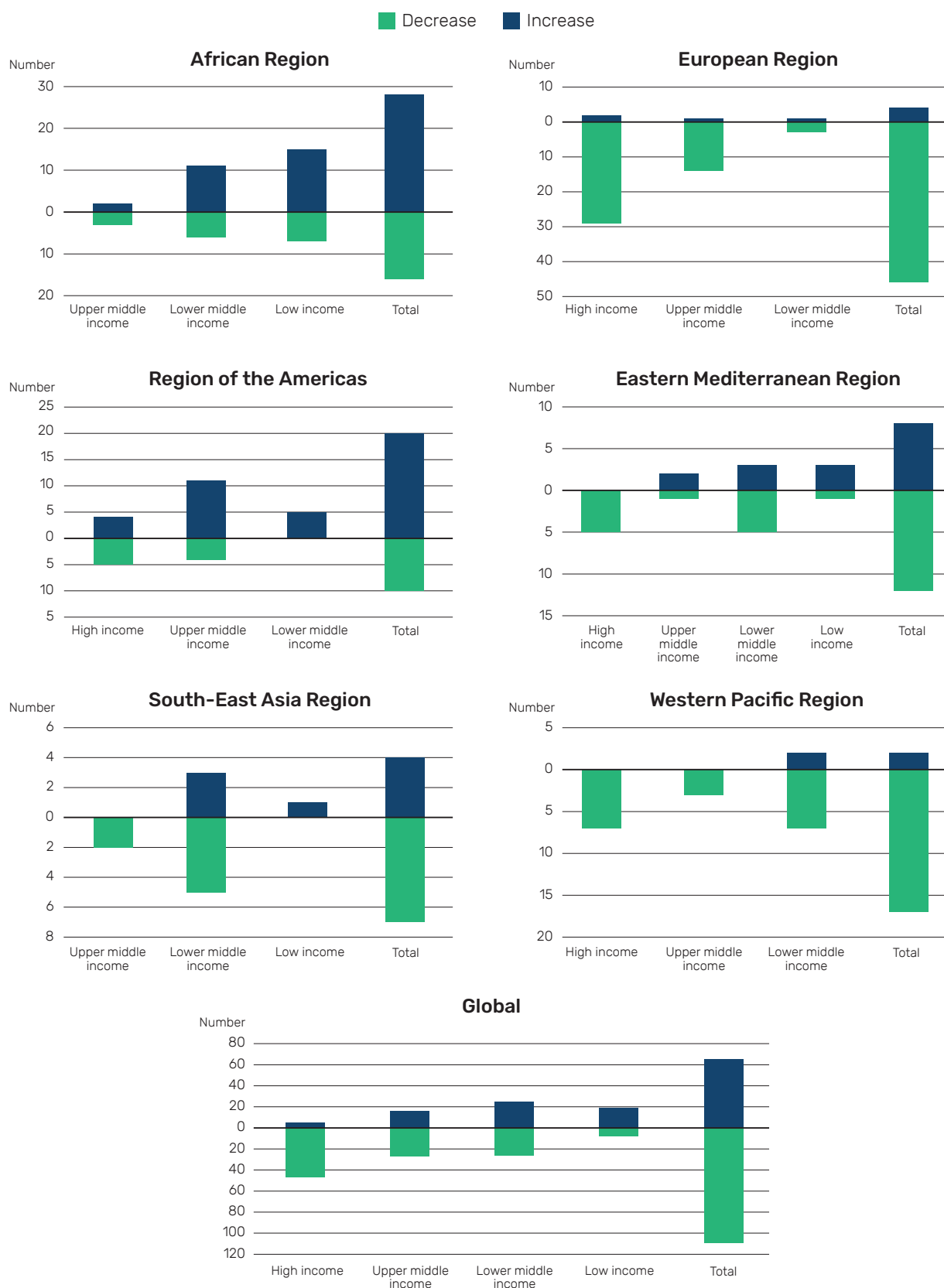
While the global target to halve road traffic deaths from the baseline set by the Decade of Action for Road safety 2011–2020 was not met globally, at the end of 2021,³ 10 countries from four different regions achieved the target reduction of at least 50% in their fatality numbers: Belarus, Brunei Darussalam, Denmark, Japan, Lithuania, Norway, Russian Federation, Trinidad and Tobago, United Arab Emirates, and Venezuela (Bolivarian Republic of) (5). (For more on the impact of the COVID-19 pandemic on fatalities in Europe, see Box 1).

In addition to the 10 countries where the target of a 50% reduction in deaths was met, reductions of 40–49% were observed in 15 countries, of 30–39% in 20 countries, of 20–29% in 33 countries, and of 10–19% in 19 countries. An additional 11 countries achieved reductions of 2–9%.

Overall, during this period, reductions larger than 2% were observed in 108 countries – nearly half of which are high income. Reductions have been observed in eight low-income countries (Fig. 8).

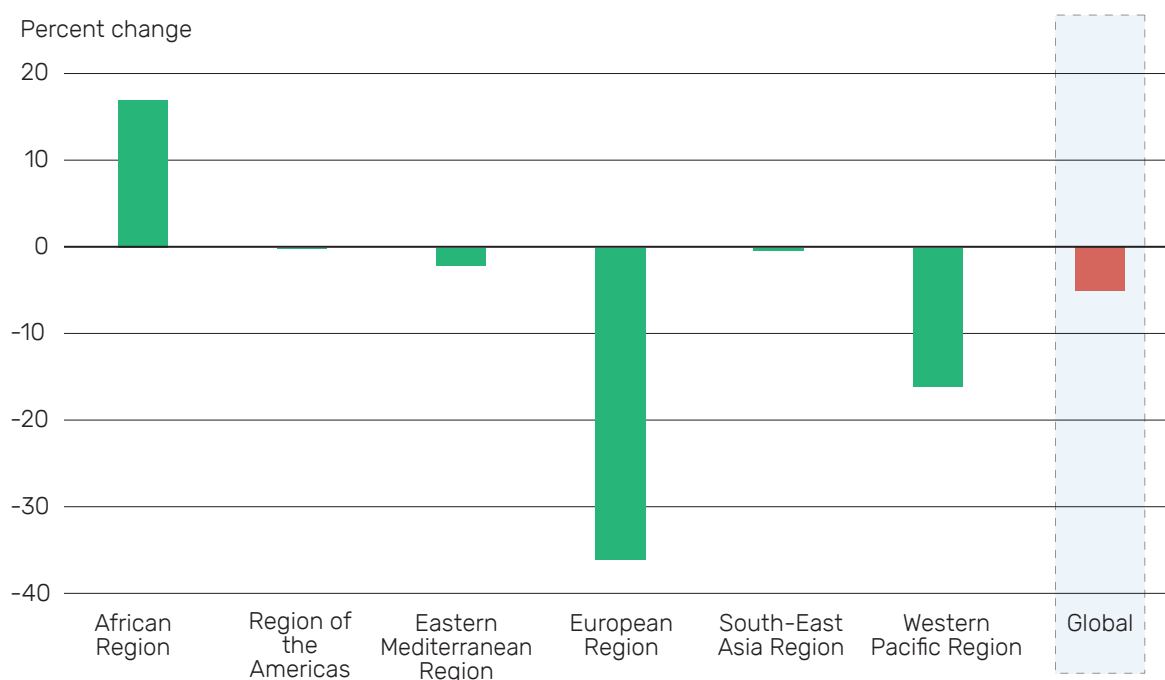
³ Due to the restrictions on mobility as a result of the COVID-19 pandemic, there was a temporary reduction in the number of deaths in 2020; for this reason, 2021 is the year used to assess progress towards the Decade of Action for Road Safety 2011–2020.

Fig. 8. Number of countries where a change in total road traffic deaths has been observed, by region and country income level, 2010–2021⁴



⁴ This excludes small countries with a population of less than 200 000 that have 1–2 deaths annually; this small number makes it impossible to assess meaningful reductions over time.

Fig. 9. Percentage change in estimated road fatalities, by WHO region, 2010–2021



These reductions have been observed across four regions, ranging from a 36% decrease in the European Region to a 0.1% decrease in the Region of the Americas, a 2% reduction in the South-East Asia Region (even though the South-East Asia Region has the highest death rates and numbers overall); and a decrease of 16% in the Western Pacific Region. In contrast, the number of deaths rose in 66 countries, of which 28 are in the African Region (where there was an overall increase of 17% in the number of fatalities); 20 in the Region of the Americas; eight in the Eastern Mediterranean Region (where there was an overall increase of less than 1% in the number of fatalities); four in each of the European Region and the South-East Asia Region; and two in the Western Pacific Region (Fig. 9).

Some of the greatest gains were made where the safe system approach to road safety – which puts people and safety at the core of mobility systems – was most widely applied. The results of this report demonstrate that the European Region saw the greatest concentration of countries with policies and legislation that align with this approach and reported the largest drop in deaths. The Western Pacific Region came second, both in the number of countries adopting aspects of the safe system approach and reducing fatalities. These examples show that fatality-reduction targets can be met, given a level of political will, investment and capacity that matches the scale of the road death and injury crisis.

Box 1: COVID-19, mobility and political decision-making

Road traffic deaths fell 13% in European Region in 2020 as consequence of rapid government COVID-19 restrictions.



Research shows that the COVID-19 pandemic response had a significant impact on mobility (18). Pandemic related restrictions on movement cut exposure to road crash risks, and this was reflected in reduced rates of road trauma. More significantly for policy-making, mobility patterns also responded to restrictions (and to fears of exposure to infection) more flexibly than might have been expected. Active mobility replaced motorized transport, with cycling in particular substituting for public transport and cars. Many local governments were quick to accommodate the change, reallocating road space to accommodate safe cycling. Many of the temporary protected cycle lanes have been retained and the stimulus to investment in infrastructure for active mobility has radically changed mobility patterns in many cities towards more sustainable mobility.

The strictness of COVID-19 restrictions was monitored by the United Kingdom's Oxford University Governmental Response tracker. Its stringency index was highest for most countries near the beginning of the pandemic and fluctuated thereafter according to the number of COVID-19 cases and casualties. All countries saw a fall in traffic volumes from March 2020. In Europe, April saw traffic fall by over a third in countries reporting monthly vehicle-kilometre data.

Overall for the year, the 17 countries⁵ with consistent data recorded a 13% decrease in traffic volume compared to the average for 2017–2019. These countries recorded an overall reduction in road deaths of 16% compared to the 2017–2019 baseline.

Twenty-five members of the WHO European Region also report validated data to the International Transport Forum's International Traffic Safety Data and Analysis (IRTAD) group. For these countries⁶ the number of road deaths decreased by an average of 18% in 2020 compared to the 2017–19 baseline. There are substantial differences between countries, but the majority saw a reduction in fatalities of around 20%.

Young people and older people over the age of 75 years were the two age-groups recording the largest reductions in road deaths, with falls of 25% and 19% respectively, on average (for the 25 countries minus the Netherlands (Kingdom of the)). This relates to the closing of educational institutions for the young and particularly restricted mobility for older people who were among the most vulnerable to COVID-19.

All transport modes saw reduced fatalities, 24% for pedestrians, 16% for powered two-wheelers and 20% for car occupants. The shift to cycling in lockdown periods made the reduction in the number of cyclist fatalities less than for other road users, with a decrease of only 2% for the 25 countries in 2020 compared to baseline years. Changes in fatalities should also be viewed in light of exposure to crash risks, for example in relation to kilometres driven or walked. Available data are insufficiently differentiated between modes to draw conclusions.

⁵ Austria, Czechia, Denmark, Finland, France, Germany, Hungary, Iceland, Ireland, Israel, Netherlands (Kingdom of the), Norway, Poland, Slovenia, Sweden, Switzerland, the United Kingdom.

⁶ Austria, Belgium, Czechia, Denmark, Finland, France, Germany, Greece, Hungary, Iceland, Ireland, Israel, Italy, Lithuania, Luxembourg, Netherlands (Kingdom of the), Norway, Poland, Portugal, Serbia, Slovenia, Spain, Sweden, Switzerland, the United Kingdom.



Section 3.

Measures to mitigate the risk of death and injury



Most people identify as pedestrians and public transport users, yet only 47 countries have policies to promote walking, cycling, and public transport.



Nearly 80% of the roads assessed do not meet a minimum 3-star rating for pedestrian safety and just 0.2% of the roads assessed have cycle lanes.



Only 35 countries have legislation mandating all five core areas of vehicle safety equipment while 79 countries have no legislation on vehicle safety standards.



As of 2022, 140 countries have legislation meeting WHO best practice for at least one of the five key risk factors,⁷ although only six countries have legislation on all five that meet WHO best practice criteria.



Since the *Global status report on road safety 2018*, 23 countries have modified their laws to align with WHO best practice: speeding (8); drink driving (3), motorcycle helmets (5); seat-belts (11); and child restraint systems (4).



131 countries have national legislation mandating third-party liability insurance for vehicles.



Only 25 countries mandate provision of psychological assistance to road traffic crash victims and their families.

⁷ Speeding, drink driving, motorcycle helmet use, seat-belts, and child restraint systems.

Multimodal transport

About 60% of the global population is expected to live in urban settings by 2030 (19), meaning that increased demand for mobility will exceed the capacity of most current systems in these areas. Mobility needs and the systems to fulfil them must continue to evolve in response to opportunities created by technological innovations as well as challenges such as the impact of transport on climate change as well as road traffic death and injury (see Box 2 for an example on mobility as a right in Mexico).

Information on transport mode use in a recent survey of 48 countries (20) shows that most people in these countries see themselves, at one time or another, as pedestrians (with percentages close to 95% in all regions except the Region of the Americas, where 85% of the population recognized themselves as pedestrians). The next most common user category is public transport user (between 68% and 96%, depending on region). Around 93% of people across all regions see themselves, at one time or another, as a car passenger, while identifying as a car driver is reported by between 67% and 81% of individuals, depending on region. Identifying as a motorcycle rider or passenger is reported by between 41% and 72% of people. While these findings underscore the importance of active modes of transport, particularly considering the mental and physical health benefits associated with their use (21), the increasing proportion of deaths among pedestrians and cyclists observed over the past decade is cause for concern.

Despite the potential benefits of multimodal transport and the need to ensure that vulnerable road users are equally protected as other road users (including those in passenger vehicles), few countries to date have systematically assessed multimodal transport planning as part of their road safety strategies. To assess the status of data collection on multimodal transport, countries were asked if they tracked the frequency and distribution of trips by mode of transport. About a quarter of all countries report collecting data on transport modes. Forty-two countries have data on the use of passenger (4-wheel) vehicles; 30 countries report collecting data on walking or cycling, and 10 collect data on the use of powered two- and three-wheelers and other personal mobility devices. Data on publicly operated transport is available in 54 countries.

Legislation, policies, plans and strategies related to multimodal transport use

While no countries report legislation related to multimodal transport use, 87 report national strategies to promote access to, and use of, public transport. Forty-seven countries report national policies and strategies to promote walking and cycling. According to the 2022 WHO *Global status report on physical activity* (21), approximately three quarters of all countries conduct national surveillance of physical activity – including walking and cycling among adults, adolescents and children.

Box 2: Safe mobility as a right, Mexico

In 2020 Mexico established a fundamental constitutional right: the right of everyone to safe, accessible, efficient, sustainable, inclusive and equitable mobility. This marked an important milestone in the country's approach to road safety and sustainable mobility.

The General Law on Mobility and Road Safety, which sets out this new constitutional right, recognizes the need to protect vulnerable road users such as pedestrians, cyclists and motorcyclists, and defines which sectors are involved in the promotion of road safety and sustainable mobility. Reflecting this comprehensive and collaborative approach, in October 2022 the National Mobility and Road Safety System was established to coordinate related activity across Mexico's government and civil society.

And in October 2023 the government published its National Strategy for Mobility and Road Safety 2023–2042, presenting a long-term vision for



the development of mobility and road safety that embraces all of the values enshrined in the law, from accessibility to equity. The new constitutional right was made possible partly by the active and constant participation of civil society, which helped push safe mobility up the political agenda.

However, there are hurdles to realizing the law, such as adequate resource allocation and the inclusion of mandatory vehicle insurance; vehicle safety (an essential aspect that was not comprehensively addressed in the Law), and the need for continuous leadership and accountability. To achieve this, the participation of all sectors and institutions linked to the issue is necessary – especially civil society, which has an essential role in the process.

Finally, there is the challenge of guaranteeing state level regulations and standards, since the General Law covers all recommendations at the federal level. Municipal and state level competencies require special attention to ensure effective and homogeneous implementation of road safety policies.

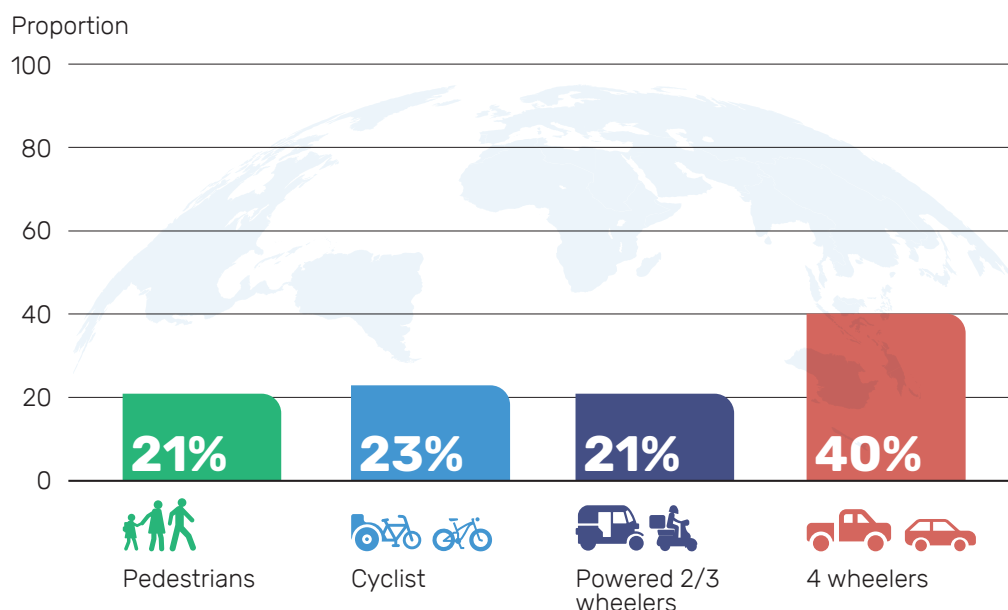
Safe road infrastructure

Safe road infrastructure is key for safety. Road infrastructure should be designed and operated to eliminate or reduce risks for all road users (see Box 3 for an example in Indonesia). In addition to improving safety, road infrastructure can enhance accessibility, including for persons with disabilities, and facilitate transfers from one transport mode to another. Infrastructure safety can be maximized for new roads as well as existing roads.

Despite this, the results of the survey for this report indicate that (where audited) most roads

continue to be built for the growing motor vehicle fleet. Of particular concern, many new roads being built in low- and middle-income countries fail to meet recognized safety standards. In total, reporting countries collectively account for nearly 68 million km of roads, of which 4.5 million km are paved expressway; 47 million km are paved inter-urban roads; and 10 million km are unpaved inter-urban roads. Only 35 countries report on the availability of cycle lanes, which account for a total length of 140 000 km, or roughly 0.2% of the total length of roads reported. This deficit in infrastructure for cyclists provides some insight as to why more cyclists are dying in recent years.

Fig. 10. Proportion of paved roads with a 3-star^a or higher safety rating, by user group (500 000 kms evaluated, globally), 2021



Source: International Road Assessment Programme (22).

^a Out of a possible 5-star rating

Road safety inspections or audits

A non-representative sample of nearly 500 000 km of paved road evaluated in 82 countries across all regions and income levels was conducted using the star-based road safety scoring system developed by the International Road Assessment Programme (iRAP) which rates roads from 0 to 5 (22).

A 3-star rating is widely accepted as the minimum acceptable rating for new and old roads (23).⁸ Using this approach, the results of this assessment reveal that only 21% of roads meet a 3-star or higher rating in relation to pedestrians and powered two- and three-wheelers; 23% for cyclists; and 40% for passenger vehicles (Fig. 10).

Additionally, formal road safety evaluations⁹ are reported by 93 countries in the survey

for this report, of which nearly 50 report the percentage of their national road network evaluated. Of these countries, most declare evaluating 20–50% of their national road network.¹⁰

Legislation, policies, plans and standards related to safe road infrastructure

Ninety-four countries report having national legislation requiring a formal road safety inspection or assessment for existing roads. However, the legal review of documents confirms the presence of this law in only 66 countries. Of these, 55 laws contain a requirement for periodic checks (maintenance or inspection), and 51 require that the needs of all road users considered.

⁸ This includes voluntary UN Performance Target (4b) that calls for 75% of all travel done in roads 3 stars or more for all road users.

⁹ This corresponds to UN Voluntary Performance Target 3.

¹⁰ Most of these evaluations were done using unspecified methods, but six countries reported using the Global Street Design guidelines and 15 other countries used the star-rating system.

Box 3: Inclusive school zones, Indonesia

Many public spaces in Indonesia are inaccessible to vulnerable groups such as children and persons with disabilities, partly due to a lack of infrastructure and limited awareness on the part of citizens and government agencies.

The Inclusive Banjarmasin Initiative, led by the Transformative Urban Mobility Initiative and Kota Kita, with support from the Asian Development Bank, aimed to improve urban mobility and accessibility in Banjarmasin, Indonesia. A central focus of the project was the creation of safe and inclusive school zones to enhance road safety.

The Safe School Zone project was implemented from 2019 to 2021 in two schools in the Gadang neighborhood. The project was inclusive and involved school administrators, teachers, students, parents, and other stakeholders in co-designing and implementing road safety measures. This approach ensured that the improvements are community-driven and cater to local needs. The results of the project related to road safety are significant.



Firstly, the project improved the safety and accessibility of sidewalks, parking areas, and drop-off/pick-up zones for all students. Dedicated sidewalks, crossroads, and curb ramps were constructed to ensure safe and convenient movement for pedestrians, including people with disabilities. Rumble strips and guiding blocks were installed to help people with visual impairments to navigate the sidewalks. These measures created a safer environment for all pedestrians, particularly vulnerable road users.

Secondly, the project focused on traffic management to enhance road safety. Speed limit signs and Safe School Zone signs were installed within a 100-metre radius of the schools to raise awareness and encourage responsible driving. This helped to mitigate speeding issues and improve traffic management around the schools.

The success of the Safe School Zone project in Gadang has inspired the development of five more such zones in Banjarmasin. This success underscores the scalability and replicability of the initiative, offering a model for other urban areas seeking to simultaneously enhance mobility, road safety and accessibility.

One hundred and twenty countries report using technical standards for the development of new roads that account for the safety of all road users,¹¹ and 61 of these countries report using UN or other international conventions to inform these standards.¹² In addition, 92 countries report having a systematic

programme to target investments and upgrade higher-risk locations, identifying road-crash hotspots as their most common mechanism for allocating available funds.

While information was not available in most countries about the investments being made in road infrastructure, according to a report

¹¹ This is the first proposed sub-indicator for UN Voluntary Performance Target 3 (Annex 2).

¹² Sixty-one Member States adhere to at least one of three existing international road conventions. The 1950 Traffic Arteries Convention, 1975 European Agreement on Main International Traffic Arteries, and the 2003 Interstate Asian Highway Convention. We have chosen this as one of two UN voluntary Performance Target 3 indicators (Annex 2). See Annex 4 for more detail on adherence to conventions and existing national legislation.

by the World Bank in 2022, more than US\$ 800 billion is being spent annually on road infrastructure development by public and private investors (24). Similarly, data from the International Transport Forum show that spending by some countries on transport infrastructure ranged between less than 1% to as high as 5% of GDP between 2019 and 2021 (25). These investments represent an enormous opportunity to build infrastructure that supports multimodal transport and ensures the safety of all road users.

Safe vehicles

The world's motor vehicle fleet – currently exceeding one billion vehicles – is likely to double between now and 2030 (26). Despite this growth, many new vehicles are being produced and sold that do not meet minimum safety standards. Where legislation requiring these standards are lacking, manufacturers can “de-specify” life-saving technologies in newer models sold in countries where

regulations are weak or non-existent in order to reduce costs (27).

Legislation, strategies, policies and plans related to safe vehicles

Two types of laws are essential for ensuring vehicle safety: the first is legislation that specifies requirements and standards for equipment; the second is legislation on inspections or assessments.

As summarized in Table 2, legislation specifying requirements and standards for core safety equipment in vehicles is absent in most countries, most notably in low- and middle-income countries. Just over half of countries (88) currently have legislation that specifies the requirements and standards for seat-belts and seat-belt anchorages and only around a third of all countries have legislation on other vehicle core safety elements, including front and side impact protection, electronic stability control, pedestrian protection, and braking systems.¹³

Table 2. Number of countries with legislation on “core” vehicle safety standards, by income, 2022

	Total	Income levels ^a			
		High-income	Upper-middle-income	Lower-middle-income	Low-income
	N=170	N=51	N=43	N=46	N=27
Vehicle safety equipment:					
National law on front and side impact protection	52	39	9	4	0
National law on seat-belt and seat-belt anchorages	88	44	21	16	7
National law on electronic stability control	49	39	8	2	0
National law on pedestrian protection	44	35	7	2	0
National law on braking systems	56	38	11	6	1
National law requiring periodic vehicle inspection/assessment	134	46	30	35	20

^a Not shown by income level counted in totals are the three countries for which there is no information on income level.

¹³ Additionally, 29 countries report legislation mandating the availability of eCall or Accident Emergency Call Systems in all vehicles to trigger an emergency response through a vehicle sensor.

Currently 35 countries have legislation mandating all five core areas of safety equipment; 10 have legislation for four core areas, nine have legislation for three core areas; eight have legislation for two core areas, and 29 countries have legislation for only one of the five core areas. Seventy-nine countries report no legislation on vehicle safety at all (Fig. 11).

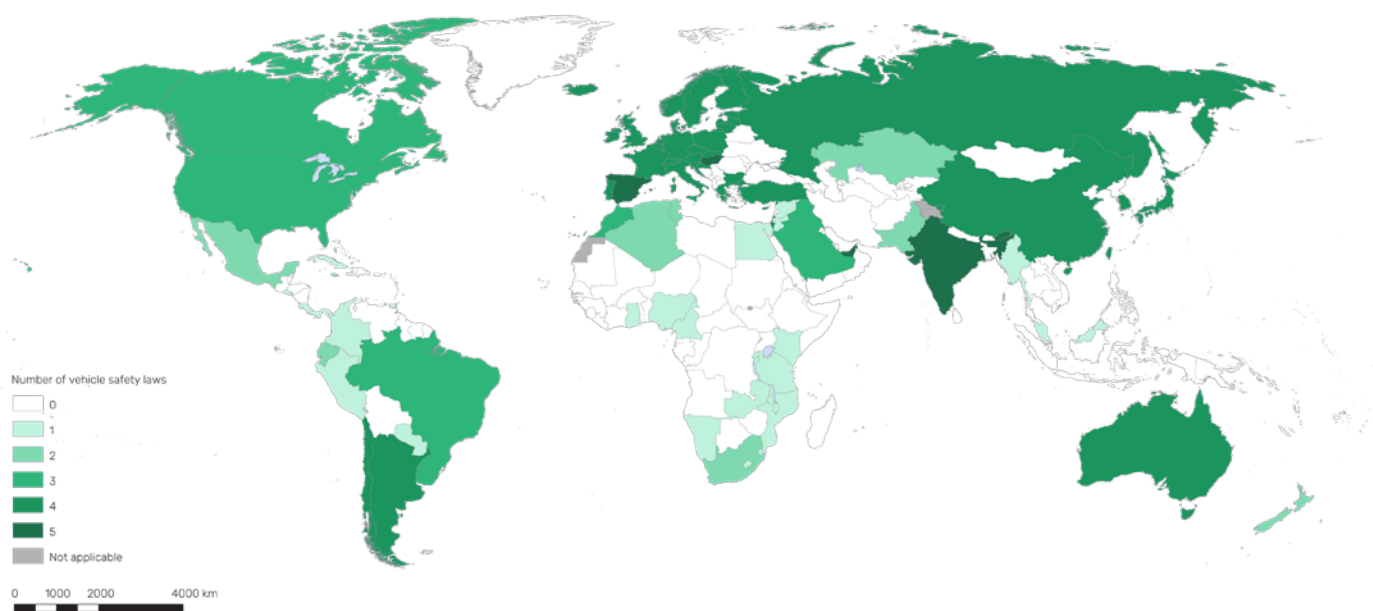
In contrast, the number of countries requiring periodic vehicle inspections is much higher. While the presence of a national law was confirmed, few of these laws specified how the inspections should be done. Only 38 of the 134 countries specify the use of international standards for vehicle inspections, as set out in international conventions (for more on the UN road safety conventions see Box 4 and Annex 4).

As well as legislation on safety standards, vehicle safety can be assured through consumer oriented safety tests. Eighty-seven countries report having consumer oriented crash test programmes, such as the New Car Assessment Programme (NCAP)

tests, but only 25 of these countries report disseminating the safety-rating results. Fewer than 20 countries report having requirements to ensure that customers are informed on whether the vehicles they purchase meet minimum safety standards.

Restrictions on used-vehicle imports are reported by 150 countries.¹⁴ Of these, 61 indicate a vehicle safety inspection criterion with or without an additional vehicle age limit, though age limit alone is also used in several countries. That only a third of countries require vehicle safety inspections for used vehicles is especially of concern considering that the African Region accounts for the largest share of the used-vehicle market – the region where the rates of road traffic deaths are highest. According to a report published by the UN Environment Programme, between 2015 and 2020 roughly 23 million used passenger vehicles were exported, of which 66% went to low- and middle-income countries. Without regulations to ensure the safety of these vehicles, these exports at present pose a significant threat to road safety (28).

Fig. 11. Countries with legislation on “core” vehicle safety standards, 2022



¹⁴ This relates to UN Voluntary Performance Target 5.

Box 4: UN road safety conventions

United Nations (UN) road safety legal instruments provide a strong foundation upon which countries can build domestic legal frameworks and transport systems in order to contribute to road safety and facilitate international road traffic. To fully realize their benefits, countries must not only accede to

the conventions that provide these instruments, but also transpose the conventions into national or regional legislation. In this way they can ensure the effective application of the conventions, and thereafter enforce them through traffic police and inspection bodies.

Number of countries adhering to UN road safety conventions

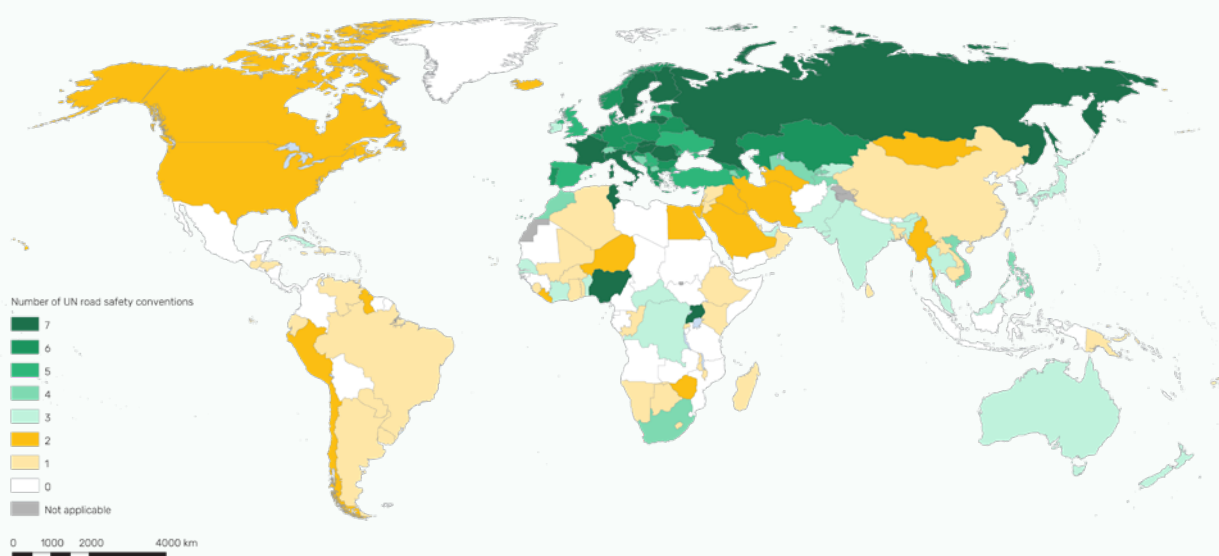
Convention	Countries
1957 Agreement concerning the International Carriage of Dangerous Goods by Road (ADR)	53
1958 Agreement concerning the Adoption of Harmonized Technical United Nations Regulations for Wheeled Vehicles, Equipment and Parts which can be Fitted and/or be Used on Wheeled Vehicles and the Conditions for Reciprocal Recognition of Approvals Granted on the Basis of these United Nations Regulations	56
1968 Convention on Road Traffic	86
1968 Convention on Road Signs and Signals	71
1970 European Agreement concerning the Work of Crews of Vehicles Engage in International Road Transport (AETR)	51
1997 Agreement Concerning the Adoption of Uniform Conditions for Period Technical Inspection of Wheeled Vehicles and Reciprocal Recognition of Such Inspections	38 ^a
1998 Agreement concerning the Establishing of Global Technical Regulations for Wheeled Vehicles, Equipment and Parts	50

^aIncluding EU members mandated by EU Directive 2014/45/EU

To date, 120 countries report accession to one or more of the core road safety-related UN standards (see map), although 16 countries only adhere

to all seven of them (29). See Annex 4 for the relationship between adherence to conventions and national legislation.

Countries adhering to core road safety UN conventions, 2022



Source: (29)

Road user behaviours

While the safe system approach emphasizes the importance of system designs that facilitate safe road use, laws governing road user behaviours are essential to the prevention of crashes, injuries, and deaths.

Data collected for this report indicate that approximately 10% of road traffic deaths are related to drink driving; this corresponds to self-reported rates of 16–21% of people admitting to drink driving in a survey conducted by the European Survey Research Association (ESRA). The same self-reports reveal that nearly 50% of drivers across 48 countries report exceeding the speed limit

outside built-up areas, with the perceived likelihood of being penalized for such violations ranging from 30% to 46%. Non-use of helmets among motorcyclists was reported as 20% for drivers and 30% for passengers; this corresponds to self-reports of 26–47% motorcyclists admitting to not using a helmet despite it being the law.

Similar trends exist for non-use of seat-belts, with countries reporting 20% for drivers while self-reports show between 12–47% of drivers admitting to not using seat-belts. And 11–47% of people report not using a child restraint system while more than half of people surveyed admit to using communication devices while driving (Table 3).

Table 3. Self-reported road user behaviours

	<i>Global status report on road safety 2023 survey</i> (114 countries reporting on at least one)	ESRA Survey (48 countries)
Exceeding speed limit	1–66%	50%
Drink driving	10% of fatalities (77 countries)	16–21%
Non-use of helmet (adult)	20% drivers (out of 44 countries); 30% passengers (out of 39 Member states)	26–47%
Non-use of seat-belts	20% drivers (57 countries); 30% front seat passengers (50 countries); 50% rear seat passengers (42 countries)	12–47% drivers 36–71% passengers
Non-use of child restraint system	Information not included	11–47% ^a
Distracted driving (i.e., mobile phone use)	Information not included	29–52% handheld phone use vs 48–65% hands-free use

Sources: Survey for *Global status report on road safety 2023*; and (20, 30).

^a Transport of children under 150 cm in height without using a child restraint system.

These risks can be mitigated through the adoption and implementation of appropriate legislation. Although many countries have such laws, those laws do not always meet WHO best practice and are not consistently implemented through regulations or enforced. In the subsequent section, existing legislation is assessed

against WHO best practice criteria (Table 4).¹⁵ In the colour-coded maps, those countries with laws that meet all criteria are coloured green; those with laws meeting some but not all are coloured yellow; and those with laws that do not conform with any best practice criteria or without legislation at all are coloured red.

¹⁵ WHO best practice criteria do not exist for laws on drug driving, distracted driving, and professional driver time limits

Speed management

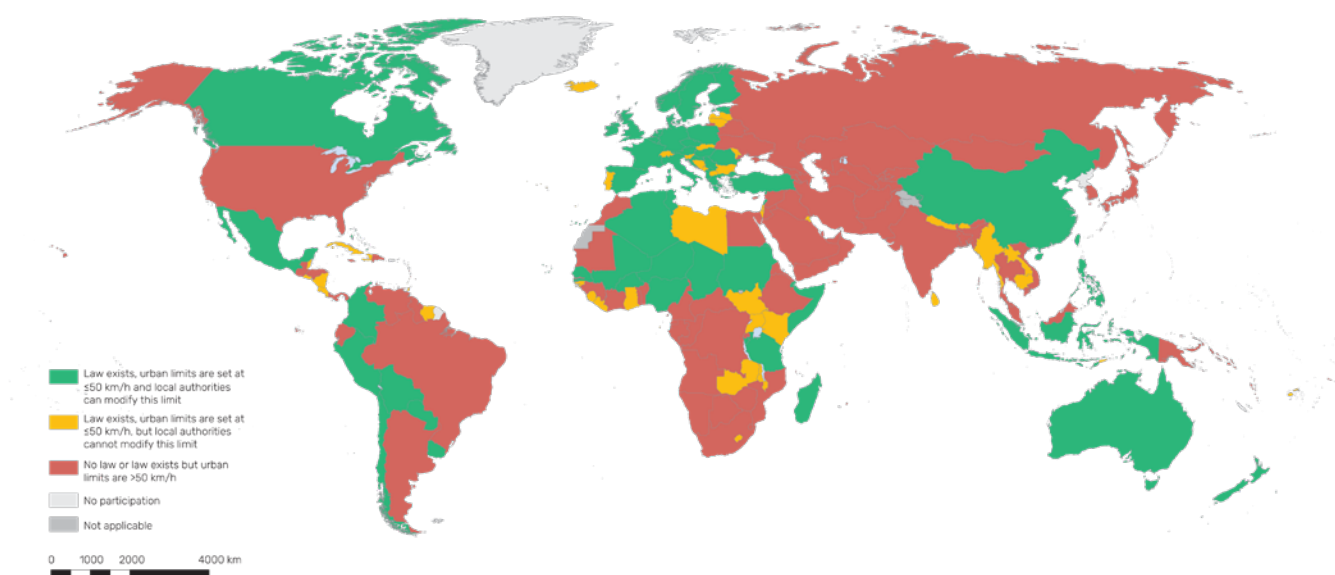
Speed management remains one of the biggest challenges facing road safety practitioners around the world and calls for a concerted, long-term, multidisciplinary response. The speed at which a vehicle travels directly influences the risk of a crash as well as the severity of injuries sustained, and the likelihood of death resulting from that crash. Reducing vehicle speeds in areas where the road user mix includes a high volume of vulnerable road users, such as pedestrians and cyclists, is especially important.

Among countries surveyed for this report, 163 report having laws on speeding, of which 57 meet WHO best practice – meaning they include a national speed limit; an urban speed limit of 50 km/h or lower; and the ability of

local authorities to adapt speed limits to local contexts (31) (Fig. 12).¹⁶ Of these 57 countries, three have laws mandating national speed limits in urban areas of 30 km/h where there is a frequent mix of road users, as recommended in the Global Plan of Action for the Decade for Road Safety (27). This represents an additional 8 countries meeting WHO best practice since the *Global status report on road safety 2018* (4).

Data on enforcement levels were not collected through the survey for this report, but information on self-reported behaviour and “enforcement perception” gathered by ESRA reveals that nearly 50% of drivers (across 48 countries where the survey was implemented) admit to exceeding the speed limit outside built-up areas, with the perceived likelihood of being penalized for violation ranging from 30% to 46% (20).

Fig. 12. Status of speed laws in countries, 2022



¹⁶ This corresponds to UN Voluntary Performance Target 6.

The use of speed cameras is mentioned in the speed laws of 81 countries to help enforce speed limits while penalties in the form of fines are reported as the main means of enforcement in 154 countries. Since 2018, six countries have increased their penalties for speeding.

Impaired and distracted driving

Drinking alcohol significantly increases the risk and severity of a crash and therefore the chance it will result in death and serious injury. In high-income countries it is estimated that about 20% of fatally injured drivers have blood alcohol concentration (BAC) levels above the legal limit. And studies in low- and middle-income countries show that between 33% and 69% of fatally injured drivers and between 8% and 29% of nonfatally injured drivers had consumed alcohol before their crash (32). Drink driving legislation that is evidence-driven, context relevant, consistently enforced

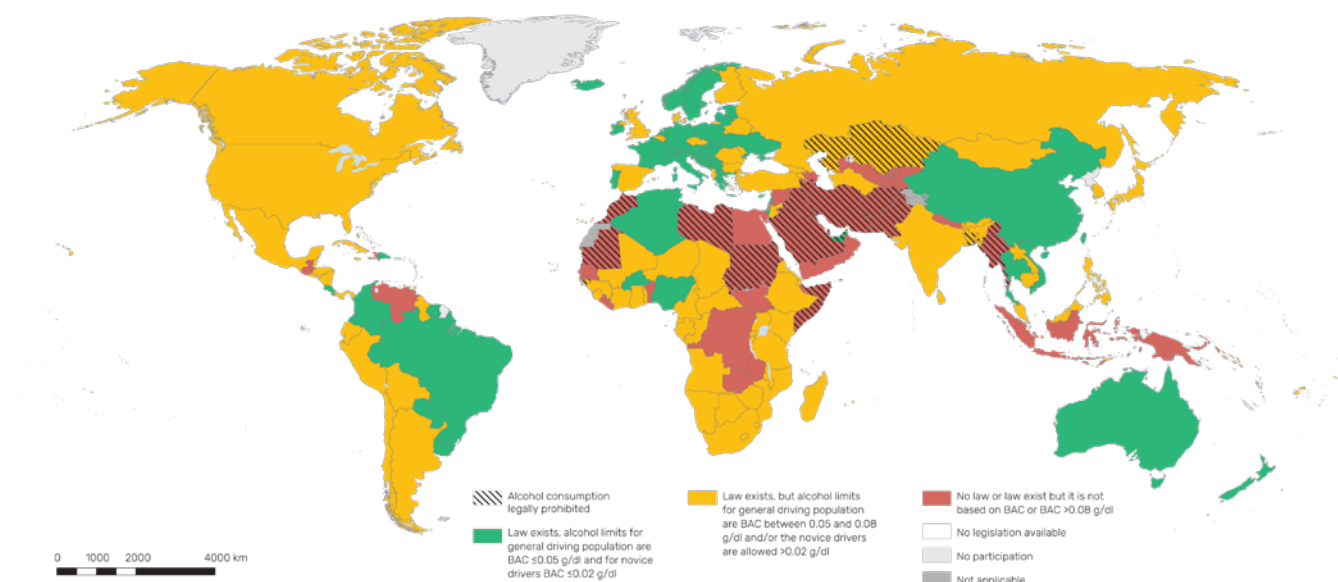
and well understood by enforcement officials and the public has been effective in saving lives in many jurisdictions.

Legislation on drink driving

Among countries surveyed for this report, 18 prohibit alcohol consumption among the general population. Specific legislation on drink driving is reported by 166 countries, of which 48 meet WHO best practice – which means that the law specifies a BAC limit of ≤ 0.05 g/dl for the general driving population and ≤ 0.02 g/dl for novice drivers (32). This represents an increase of three countries meeting WHO best practice since the *Global status report on road safety 2018* (4) (Fig. 13).

Of note, fatally injured drivers are tested for the presence of alcohol routinely in 61 countries, whereas nonfatally injured drivers involved in a fatal road crash are tested for the presence of alcohol in 51 countries.

Fig. 13. Status of drink driving laws in countries, 2022



Legislation on drug driving

Among those surveyed in this report, 167 countries have legislation that prohibits driving under the influence of drugs and other psychoactive substances. There are currently no WHO best practice criteria against which to assess these laws (33).

Legislation on distracted driving

Among those surveyed in this report, 162 countries have legislation that prohibits distracted driving in general, but this mostly relates to mobile phone use – 144 countries prohibit the use of hand-held phones and 35 also prohibit the use of hands-free phones. There are currently no WHO best practice criteria against which to assess these laws (34).

Legislation on professional driving times

Given the high level of exposure to traffic among professional drivers, there is a need to ensure regulation of commercial practices, including regulating driving times and conditions. Eighty-two countries have legislation on rest periods for professional drivers.

Only 30 countries report a maximum number of driving hours (most typically 4–5 hours) while 23 countries report having minimum rest periods, most frequently reported as either a 30 minute rest after maximum driving time or a minimum number of daily hours. Fifty-six of these countries are signatories of the corresponding UN Convention.¹⁷ Whether this legislation matches other international recommendations such as International Labour Organization (ILO) R616 or the EU rules for working in road transport¹⁸ was not assessed at this time.

Motorcycle helmet use

Nearly 21% of all road traffic fatalities reported in the survey involve powered two- and three-wheelers, such as motorcycles, mopeds, or scooters. Yet as the use of powered two- and three-wheelers increases, particularly in developing countries, the use of life-saving helmets often lags far behind. Head injuries are the main cause of death in most motorcycle crashes. Quality helmets reduce the risk of death by over six times and reduce the risk of brain injury by up to 74% (35).

Despite this, several challenges slow the uptake and proper use of quality helmets, particularly in developing countries. These challenges include availability and affordability of quality helmets, improperly fastened helmets, a lack of available helmets for children, hot weather, and even misinformation.

Among countries surveyed for this report, 160 report having legislation on helmet use, of which 54 meet WHO best practice (Fig. 14) – meaning that the law applies to both drivers and passengers; to all roads and all engine types; specifies a particular helmet standard;¹⁹ and requires that the helmet be appropriately fastened (35). This represents an increase of five countries meeting WHO best practice since the *Global status report on road safety 2018* (4).

Official reports by 35 countries indicate a correct helmet use rate of approximately 80% among drivers and riders, while self-reported rates of motorcycle riders correctly using helmets range from 53% to 74% (20).

¹⁷ 1970 European Agreement concerning the Work of Crews of Vehicles Engaged in International Road Transport (AETR).

¹⁸ International Labour Organization R161, 1979 or EU Reg 561/2006.

¹⁹ Whether countries adhere to international helmet standards is shown in Annex 4.

Fig. 14. Status of motorcycle helmet laws in countries, 2022

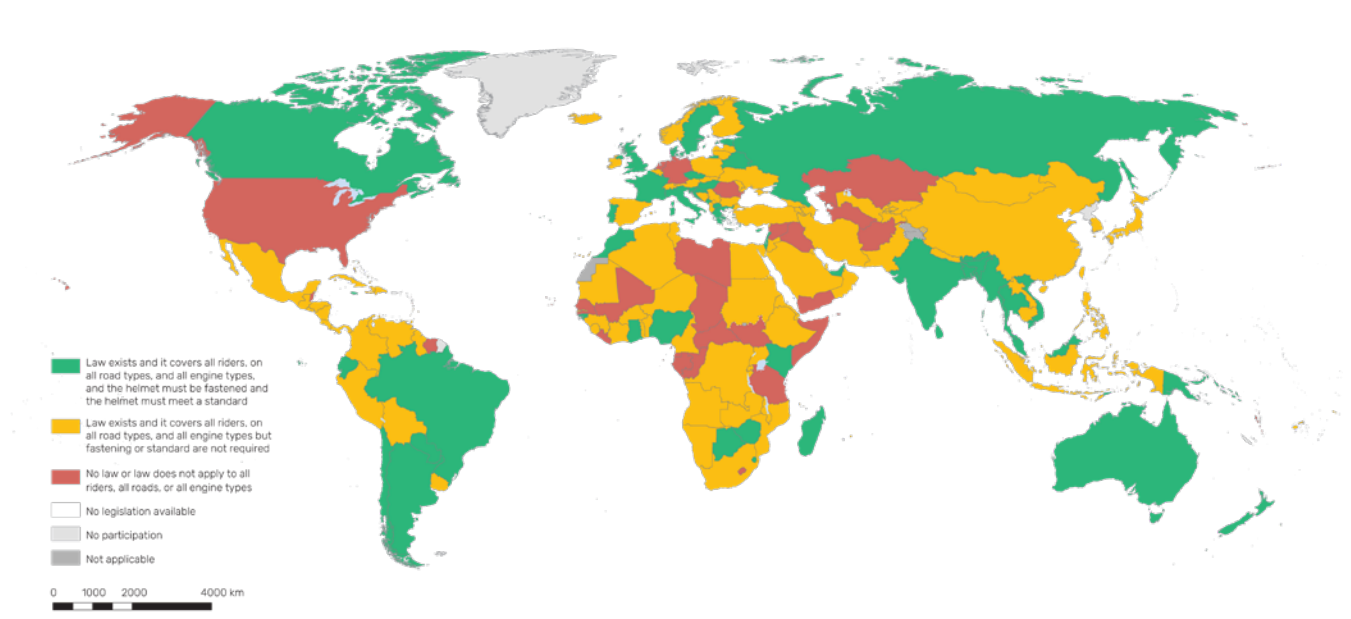


Table 4. WHO best practice criteria for legislation on the five key risk factors

Risk Factor	WHO Best Practice Criteria	
 Speeding	National law exists, urban limits are set at 50 km/h or lower, and local authorities can further modify this limit	
 Drink driving	National law exists, alcohol levels are defined by BAC, alcohol limits per general driving population are ≤ 0.05 g/dl and for novice drivers ≤ 0.02 g/dl	
 Motorcycle helmet use	National law exists and it covers all riders, on all road types, and all engine types, and the helmet must be fastened and meet a standard	
 Seat-belt use	National law exists and it applies to all seating positions in vehicles	
 Child restraint system use	National law exists, children up to the age of 10 years, or 135 cm in height, must use a child restraint system meeting a standard in addition to the prohibition of children of a particular age/height being prohibited from sitting in the front seats	



The voice of civil society:

**Lotte Brondum, Executive Director,
Global Alliance of NGOs for Road Safety**

The *Global status report on road safety 2023* provides new and crucial evidence of the performance and progress of countries in reducing road crash deaths. We, the road safety NGOs, urge all to read and act on it urgently.

We cannot accept the preventable tragedies that are devastating families and communities every day. We cannot accept that our children and youth are dying on the roads. We cannot accept the unfairness – that the majority of all road traffic deaths occur in low- and middle-income countries. We need transformation on our roads and communities to put people and their rights at the centre of our mobility system. We want safe mobility to be our guaranteed right.

Immediate action is required to achieve a 50% reduction in road deaths by 2030 and have a transport system that is safe for people and sustainable for our planet. Civil society is an essential partner in achieving all this, and NGOs represent civil society. We are the voice of our communities. We show the reality of people's everyday journeys; we spotlight the challenges people face to reach work or school and bring them to those who have the power to act; we hold governments to account for the safety and protection of all road users.

We must proceed with evidence-based and accountable measures. NGOs, we ask you to take the lead to collect data at intersections in your cities from the perspective of a

pedestrian; this will provide a reality check from the ground and help to show the experiences of communities. We ask you to obtain public acceptance of the enforcement and promotion of helmet law to reduce deaths and injuries; we ask you to foster the importance of 30 km/h where people walk, bike, live, and play to save lives. We have the knowledge, expertise, and persistence necessary to make a real impact. As politicians come and go, we remain steadfast in our mission.

Governments, we are the people. We urge you to rely on our experiences, take this information, and turn it into targeted interventions to prioritize safe mobility in decision-making. We are the voice of those who use the transport systems. Use this evidence; it will save lives and is a building block to achieve the SDG agenda for peace and prosperity for people and planet. Invest in safety: it has a high return on investment economically and socially. Involve your NGOs to bridge the gap between data and experience, policy and reality.

The evidence for what works to transform our vision into reality is clear and abundant. There are proven actions that can save lives. We cannot afford to wait any longer. We must act now to save lives on the road.

The Decade of Action's goal is to reduce road traffic deaths and injuries by 50%. Use this report to take action with us. Together, we can make a difference, leaving no one behind.

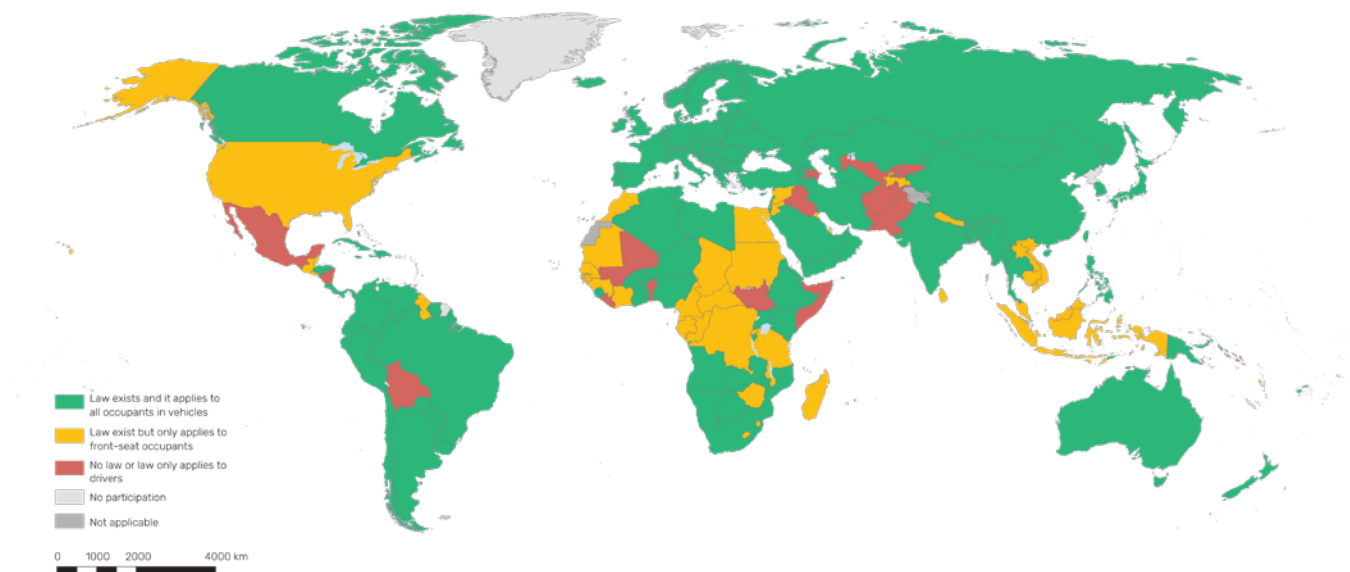
Seat-belt use

Failure to use seat-belts is a major risk factor for road traffic deaths and injuries among vehicle occupants. Passengers not wearing a seat-belt at the time of a collision accounts for most occupant road traffic fatalities. The most frequent and most serious injuries to occupants that occur as a result of frontal impacts are to the head, chest and abdomen. Disabling injuries to the legs and neck also occur. A systematic review and meta-analysis found unequivocally that the risk of major trauma among seat-belt-using passengers was much lower than that among those not using one; facial, abdominal and spinal injuries were significantly reduced among seat-belt-wearing passengers (36).

Among countries surveyed for report, 170 have mandatory seat-belt use laws, of which 117 meet WHO best practice – meaning that they require all front- and rear-seat occupants to use seat-belts. This is an increase of 11 countries meeting WHO best practice since the *Global status report on road safety 2018* (4) (Fig. 15.) Whether countries adhere to seat-belt international standards is described in Annex 4.

Sixty-three countries report having national data systems to measure appropriate use of seat-belts. Among these, 12 report a compliance level of at least 80% for all occupants in both front and rear seating positions. In contrast, self-reported seat-belt use among passenger car occupants ranges from 30% to 60%, with the rate among drivers ranging from 50% to 80% (20).

Fig. 15. Status of seat-belt laws in countries, 2022



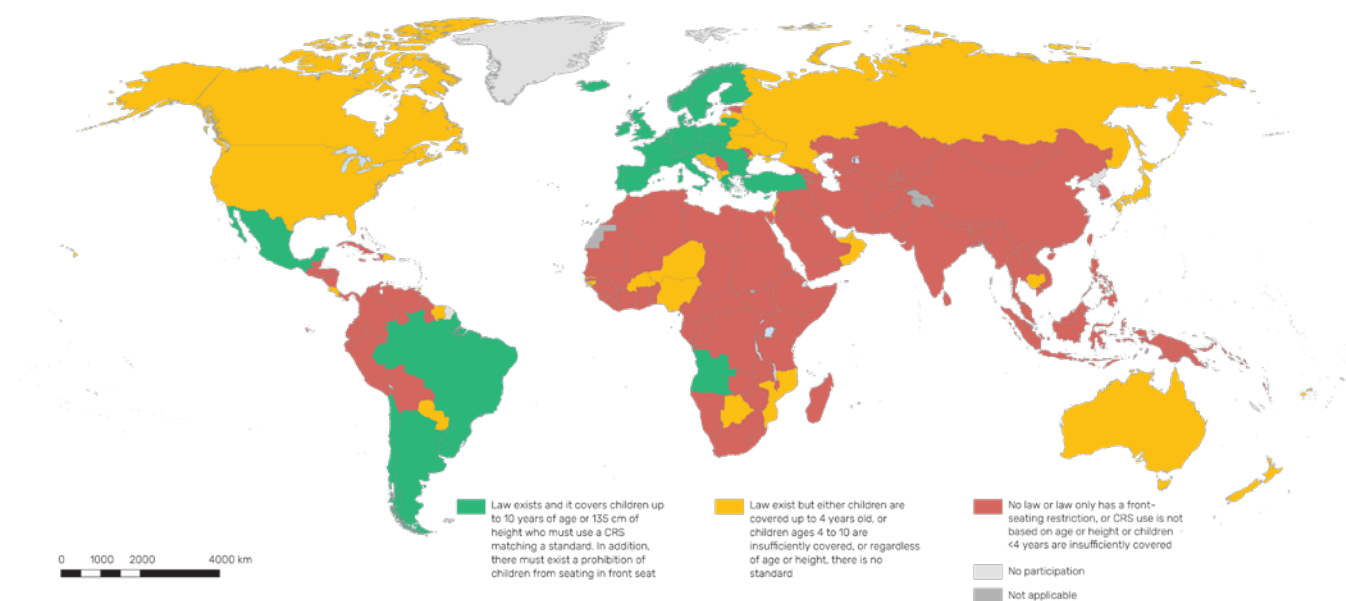
Child restraint systems use

Child restraint systems (CRS) are highly effective in reducing injury and death among child occupants – the use of CRS can lead to at least a 60% reduction in deaths (36). The benefits of child restraints have been shown to be greatest for younger children, particularly those under the age of 4 years. For children aged 8–12 years, booster seats are associated with a 19% reduction in the likelihood of injury compared to solely using a seat-belt. The position of children in either front or rear seats is also important, as a higher risk for injury is associated with sitting in the front (36).

Among countries surveyed for this report, 128 report having laws on the use of CRS, of which 36 meet WHO best practice – meaning that they include provisions for the minimum age and height of the child requiring a CRS (set for children under the age of 11 years and equal to or less than 135 cm tall); the presence of a CRS standard;²⁰ and prohibition on sitting in the front seats (20). This represents an increase of four countries meeting WHO best practice since the *Global status report on road safety 2018* (4) (Fig. 16).

While the survey for this report did not collect data on the use of CRS, self-reported use from the ESRA2 survey indicates that the use of CRS ranges between 11% and 47% (20, 30).

Fig. 16. Status of child restraint system laws in countries, 2022



²⁰ Whether countries adhere to international CRS standards is shown in Annex 4.

Post-crash response

Increasing the likelihood of survival following a crash requires coordination across multiple sectors including police, health, justice and finance (see Box 5 for an example from Thailand). Post-crash care and survival is extremely time sensitive: delays of minutes can make the difference between life and death. Proper and timely rehabilitation service can be critical for mitigating the long-term impact of road traffic injuries and prevent lifelong disability (37). In addition to post-crash care, the justice and legal system also has an important role in ensuring financial and psychosocial protection for victims.

Legislation, policies, plans and strategies related to post-crash care

Ensuring timely access to care is critical following a crash event, and as such, one of the most important elements of the post-crash response is an emergency number that can be used to activate the response, whether it is by an individual or through an automated system like the e-call. Of those surveyed, 97 countries report having single or multiple emergency care service numbers that guarantee total country coverage, while 18 countries have a single number but without national coverage. Additionally, 118 countries report having an agency that effectively coordinates pre-hospital and facility-based emergency medical services (EMS).

In addition to having a means to activate the emergency response, there is often a need for immediate care to be provided by lay bystanders whose interventions can

sometimes be lifesaving. Encouraging them to do so requires protection from civil liability. While 59 countries have national legislation requiring lay bystanders to help anyone involved in a vehicle crash, only eight of them have national laws providing protection from civil liability to these lay bystanders (i.e. Good Samaritan laws).

In relation to actions to ensure the quality of care provided by health facilities, 35 countries have national laws requiring training, licencing, or other certification processes for first health responders, while 104 Member states have these certifications in place for emergency medicine physicians and 95 have them for trauma surgeons. Seventy-six countries report having a trauma registry where facility-based trauma data are aggregated nationally, while 28 countries report these systems at a subnational level and 23 additional countries report trauma registries only in selected facilities.

In terms of access to rehabilitative medical care for all injured persons regardless of their ability to pay, 46 countries report having laws that mandate rehabilitative medical care. While the coverage of rehabilitative care was reported at a level of 75% for road traffic injuries by only 25 countries, the actual availability and coverage of these services is largely unknown in most countries.

In relation to protection and support for victims (including the families of road traffic fatalities), 131 countries have national legislation mandating third-party liability insurance for vehicles. An even lower number – 25 countries – mandate the provision of psychological assistance to road victims and their families regardless their ability to pay.

Box 5: Better post-crash care management, Thailand

In Thailand, road crashes exact a high human and economic toll. In 2022 alone, 17 000 people died as a result of road injury and 15 000 people were left with disabilities. The economic losses totalled around 500 000 million Baht (approximately US\$12.5 million). Against this backdrop, a multidisciplinary coalition including the government, NGOs, the private sector and the media has collaborated to reduce the death toll from road traffic injury. In Khon Kaen, northeast of Bangkok, progress is being made, with the province seeing a 2% decline in preventable road fatalities.

Led by the Ministry of Interior's National Directing Center for Road Safety, alongside the Ministry of Public Health and numerous road safety foundations, the coalition identified and deployed three key activities to reduce the country's fatality burden: leadership and networking; data integration and policy advocacy; and strengthening post-crash response. Consequently, a range of road safety activities, including legislation, policy advocacy, and political negotiations, were conducted nationally and implemented effectively in Khon Kaen.

Khon Kaen hospital is a centre of excellence within Thailand's Emergency Care System (ECS), a system that has been systematically developed to include pre-hospital care, hospital-based emergency care, referral systems, and mass-casualty management. Health care providers have been seamlessly integrated into the ECS – from sub-district primary care clinicians through to emergency physicians in Khon Kaen hospital.

Key to success in Khon Kaen was starting with small-scale implementation and building over the long-term with a consistent and coherent strategic approach to strengthen post-crash care. Khon Kaen



hospital itself now has a robust ambulance system and a strong provincial dispatch centre for the national health emergency number, 1669.

Integrating emergency care has allowed for the successful implementation of EMS medical decision-making to get patients to the right location for care, aeromedical transport, facility-based triage, and telemedicine support for both pre-hospital and referral systems. This, alongside rigorous quality control and improvement processes, has significantly reduced preventable trauma deaths by more than half – from 4% to 1%

In addition to a focus on post-crash care to reduce road traffic deaths, data integration has also been prioritized. Thailand's Injury Surveillance system has been pivotal in monitoring and enhancing trauma care quality but has also been instrumental in injury prevention since 2011. Integration of data from the injury surveillance system with that of the Police and the Road Accident Victims Protection Company provides more accurate insights into mortality and injuries stemming from road traffic crashes. Accurate data has allowed clinicians in Khon Kaen to undertake effective policy advocacy and to gain trust among policy-makers and politicians.

This success has benefited from the continued and concerted efforts of dedicated individuals and organizations who have monitored and championed the cause of road safety in Thailand over recent decades.

Progress towards safe road use: summary

Improvements have been made to legislation in 23 countries to align with existing WHO best practice criteria in relation to the five key risk factors. Since the *Global status report on road safety 2018* (4), 29 laws in 23 countries have been updated to meet WHO best practice. Specific laws improved are described in Figure 17.

As of 2022, only six countries have laws addressing all five key risk factors that meet WHO best practice. Twenty-one countries have laws that meet WHO best practice on four of the five risk factors, 25 have laws on three of the five risk factors; 35 have laws on two of the five risk factors; 53 have laws on one of them, and 54 countries have no laws meeting best practice criteria for any of the key risk factors (Fig. 18).

Fig. 17. Number of countries with laws meeting WHO best practice criteria on the five key risk factors, 2022

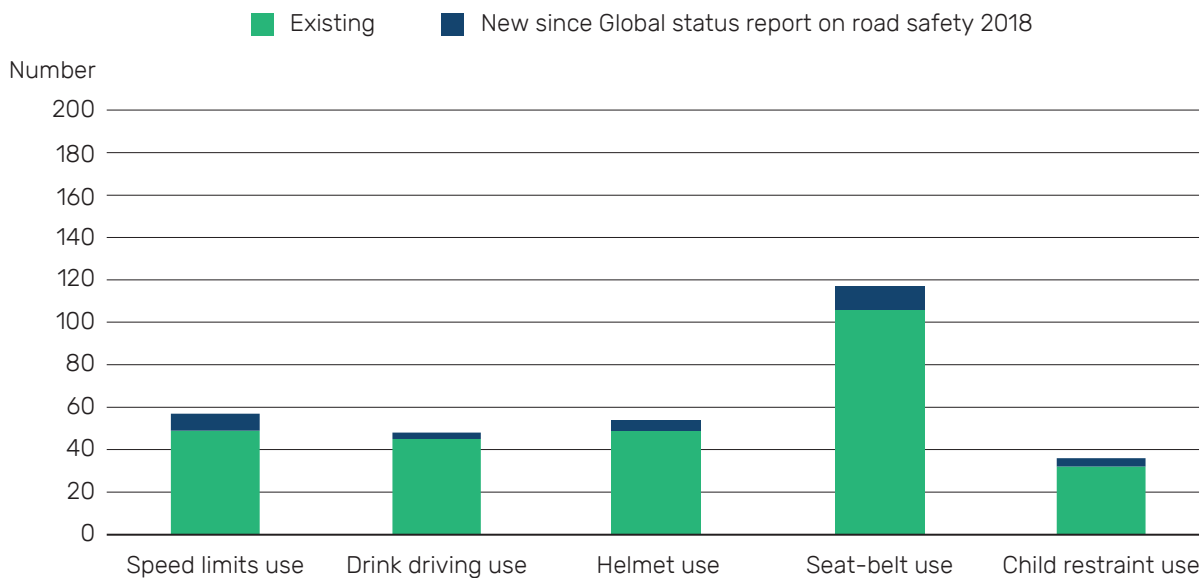
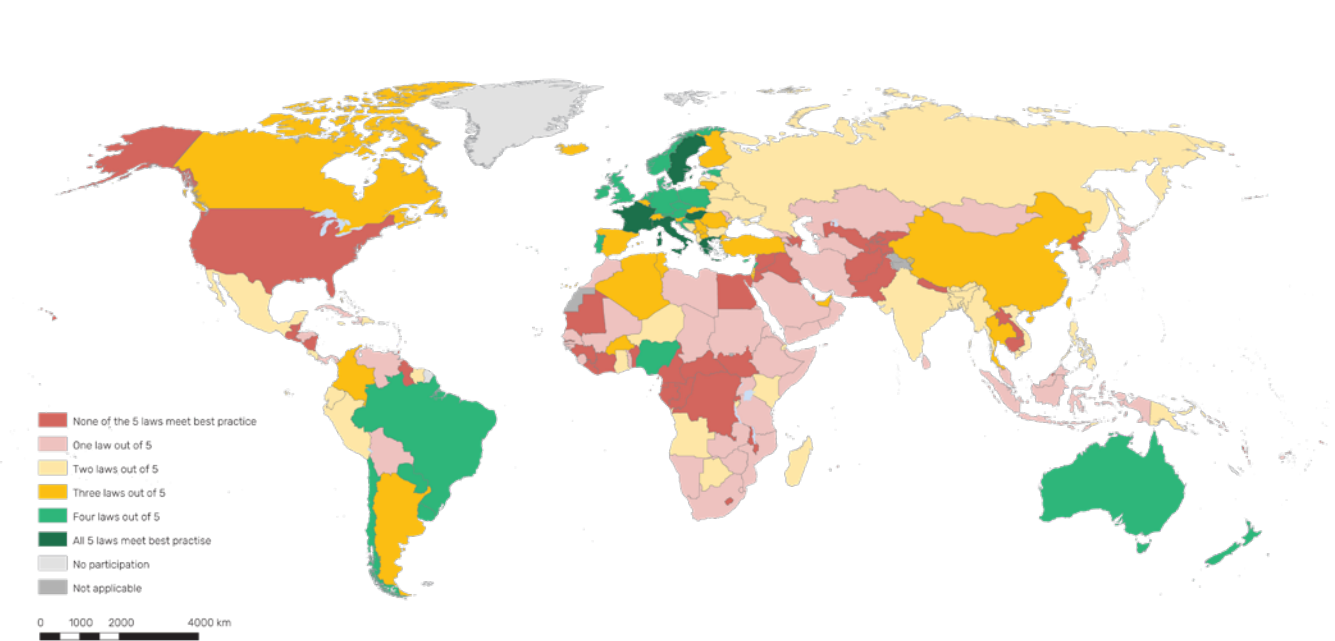


Fig.18. Countries with laws meeting WHO best practice on one or more of the five key risk factors, 2022





Section 4.

Measures to strengthen road safety governance



84 countries have a dedicated road safety agency.



117 countries report having a national road safety strategy, while just 16 of these strategies are fully funded.



More than half of countries use general taxes on vehicle purchases, insurance, fuel and alcoholic beverages among others, to finance road safety activities.



About half of all countries use dedicated taxes and fines from traffic violations to finance road safety activities.



Differences between reported counts of road traffic deaths and WHO estimated counts exist in 120 countries. In some cases the WHO estimates are 10 times higher, and in one case, 49 times higher, than self-reported figures.



Only 114 countries report having a specific definition for injuries that result from a road traffic crash.

Experience from the Decade of Action for Road Safety 2011–2020 highlights the importance of addressing the challenge of implementation – and its complexity – through effective road safety governance. This goes beyond purely managing road safety strategies and actions: it includes coordination across sectors (including health, transport, urban planning and police, etc.), and managing the social and commercial factors that influence sustainable development and other societal practices that ultimately impact road safety.

Institutional management

Management should not be pursued as a standalone goal but as a means to govern – through coordination, legislation, funding and resource allocation, promotion, monitoring and evaluation, research and development, and knowledge transfer. How this function is organized is each country's own decision, but it is necessary to ensure shared multisectoral responsibility for results through an integrated road safety approach.

The existence of a national agency responsible for road safety is reported by 84 countries, of which 81 report that the agency has funding. A national road safety strategy is reported by 117 countries – proof that the presence of a dedicated road safety agency is not essential to the development of a national strategy. However, when assessed if active during 2021, and if the strategies align with the criteria²¹ of having regular updates and time-bound targets for reductions in fatalities and injuries, the actual number of countries with an up-to-date national road safety strategy is 17.

Sixteen countries report having full funding for their plan, while 65 others report partial funding. Most countries could not answer this question. When asked about the source of funding, most countries report not knowing.

In contrast to the smaller number of countries reporting on the origin of road safety funding for their strategies, a much larger number of countries (more than half) report on whether fiscal interventions (such as taxation) are

applied to aspects of road transport. More than half of all countries report having taxes on vehicle purchases, vehicle insurance, fuel, or alcoholic beverages. Similarly, half of all countries report using fines from traffic violations to finance road safety activities.

Monitoring, evaluation, and data management

Achieving the goal of 50% reduction in road traffic deaths and injuries by 2030 requires countries to assess their road safety situations, prepare or revise their road safety action plans and implement the solutions highlighted in this document. It is important to monitor and evaluate, at the global level, the progress and outcomes of country implementation of solutions. This includes monitoring and collecting data to measure impact as well as to assess implementation progress (see Box 6 for an example from Zambia).

Evaluating implementation

In order to assess progress towards the implementation of the recommended safe system approach for road safety, a set of voluntary performance targets and indicators was identified at the request of a World Health Assembly Resolution in 2016 (38). The 12 performance targets were agreed upon by consensus in 2017 and corresponding indicators were agreed upon in 2018 (23). This report is the first time an assessment has been carried out to measure progress towards these performance targets. Annex 2 summarizes progress as reported by countries for these indicators and shows that globally there remain significant gaps in achieving these targets; moreover, there are nine indicators (out of 34) for which data cannot be obtained. Nonetheless, the fact that most countries are able to respond to the majority of the indicators agreed upon is encouraging and an indication of the increased coordination across sectors working to improve road safety.

²¹ As prescribed in UN Voluntary Performance Target 1.

Evaluating impact

While the primary indicator for the Decade of Action for Road Safety 2011–2020 is the number of road traffic deaths, not all countries have this data, and the reported fatality data from different countries are not necessarily comparable, as different definitions and timeframes have been used. For this reason, WHO estimates (both absolute numbers and rates per 100 000 population) allow for comparisons between countries.

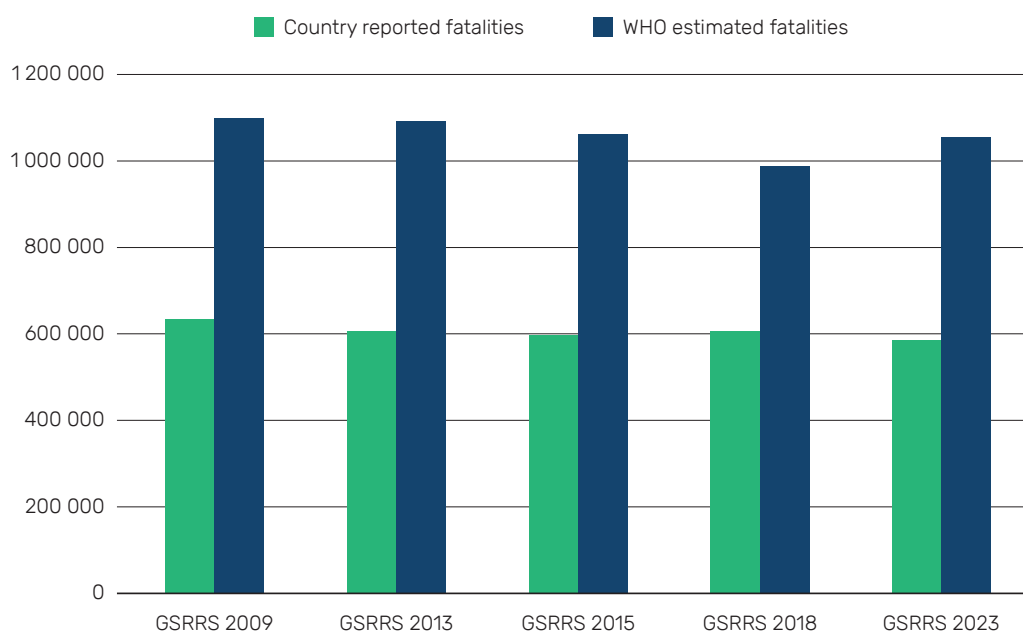
Moreover, there remain significant differences in fatality numbers reported by countries and WHO estimates. Differences between estimated and reported fatalities have been highlighted in all previous editions of the *Global status report on road safety*, with average ratios of 1.8 (2013, 2015 and 2023) and 1.7 (2018) when data for countries participating in all reports to date are evaluated (Fig. 19). For 2021, differences between reported and estimated mortality figures are observed in 120 countries. In some cases, the estimated figures are 10 times higher, and in one case, 49 times higher.

While the causes of these differences vary, major contributing factors are the data sources and definitions used. WHO estimates

are based on civil registration and vital statistics that consolidate data from multiple sources and include all deaths resulting from road traffic crashes in a given year, regardless of the length of time between the crash date and the death (see Annex 1). Many countries report data from only one source and only include deaths that occur at the scene, or within a limited time period from the date of the crash.

Producing a global morbidity figure for road traffic crashes is challenging, because around a third of countries report no measure for nonfatal cases, while the other two thirds report using a variety of operational definitions. Only 114 countries report having a specific definition for injuries that result from a road traffic crash. More than half of these countries (57%) use either the need for hospitalization as the operational definition (or hospitalization plus another condition) or require three or more days of leave from work. The next most common definition used by more than 10% of countries relates to standardized injury definitions such as the Maximum Abbreviated Injury Scale (MAIS) (39), the Revised Trauma Score (RTS) (40), or the Mechanism/Glasgow Coma Score (Age/Pressure (MGAP) (41). The remaining countries report using a variety of definitions.

Fig. 19. Road traffic deaths reported by 146 countries collaborating in all *Global status report on road safety* surveys to date, compared to WHO estimated fatalities



Box 6: Harnessing fatality data through capacity building, Zambia

In Zambia, three key authorities handle road traffic crash fatality data: the police, health care facilities, and the Civil Registration and Vital Statistics (CRVS) system. Together these authorities face challenges around a paper-based data collection system; lack of harmonization; non-standardized coding practices and definitions of road traffic deaths; and low CRVS registration in rural areas. So, while Zambia's official records indicate an average of just under 2000 road traffic deaths annually, WHO's global health estimates suggest that this figure is 3600 – implying an approximate 50% underestimation of road traffic fatalities in official records.

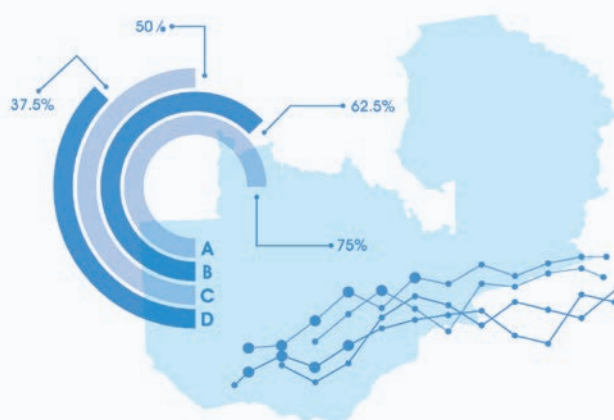
Zambia's approach to improve data collection

Collaboration and partnerships: Zambia established robust partnerships with key stakeholders in road safety including the Zambia Police Service, the Road Transport and Safety Agency, the Department of National Registration, Passports and Citizenship under the Ministry of Home Affairs, University Teaching Hospitals, and the Lusaka Provincial Health Office. In addition, the Bloomberg Data for Health Initiative, various road safety NGOs, and academic institutions were also part of this collaborative effort.

Capacity building: A series of meetings and workshops with key stakeholders served as dynamic platforms for knowledge sharing, skill enhancement, and strategic planning, sparking innovation and paving the way for the development of new policies and intervention strategies.

Business process mapping: A comprehensive review and analysis of the processes and procedures for road traffic crash mortality data collection in Zambia was conducted. A process map was developed that helped identify bottlenecks in data collection which, if adequately addressed, would lead to enhanced efficiency in the system.

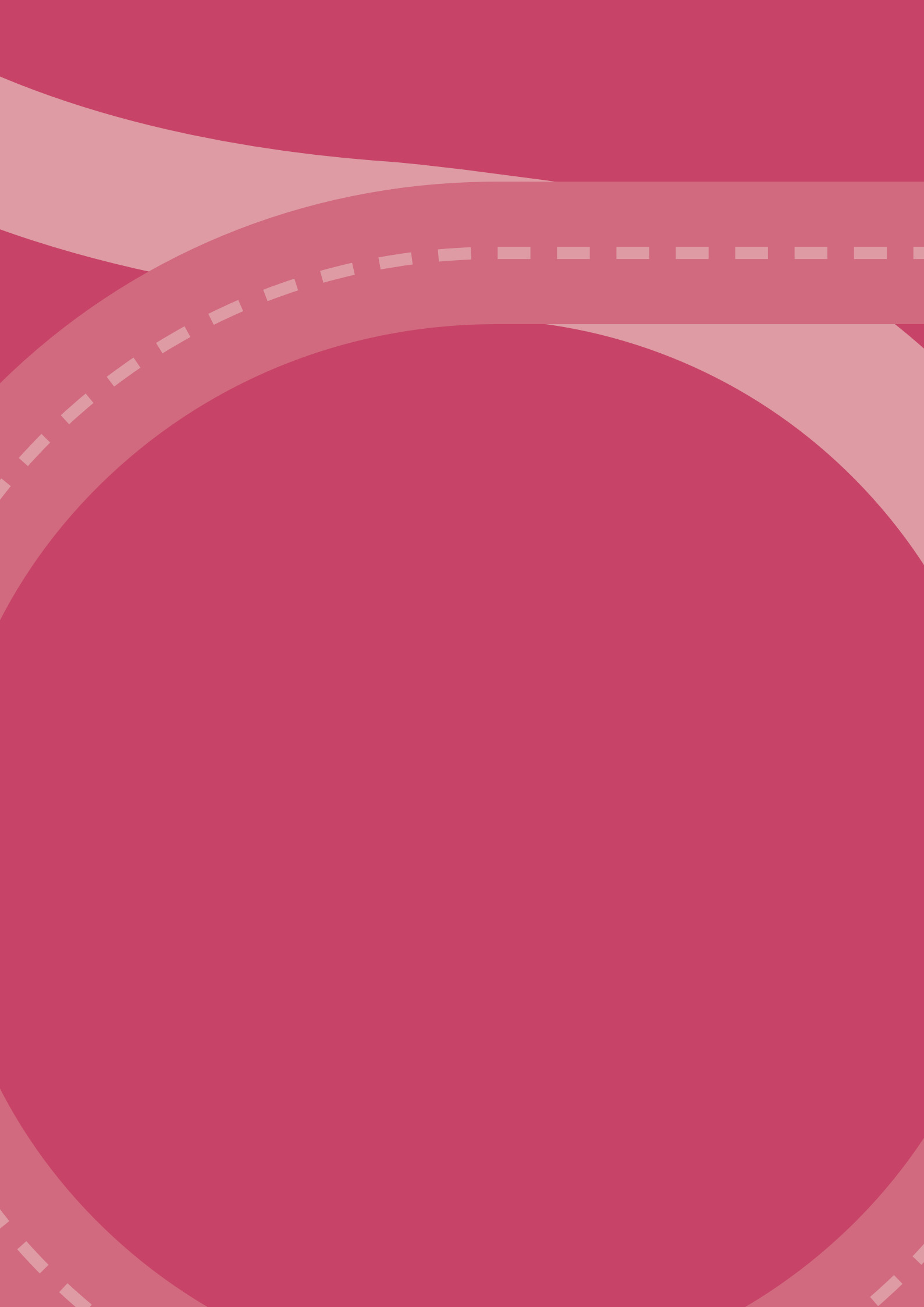
Source: (42)



Data collection, record-linking and estimation of completeness: To estimate the extent of traffic mortality underreporting in Zambia, data were gathered from police records, hospitals, and the civil registration and vital statistics databases for a one-year period from 1 January to December 30, 2020, focusing on crashes in Lusaka Province. A meticulous method was employed to link these records using specific identifiers.

The initiative has led to transformative outcomes. A multidisciplinary team for road crash data analysis and reporting is being set up, and there has been a significant uptick in data sharing and collection, broadening the utility of road traffic crash data for policy formulation.

And statistical methods have been used to estimate how complete data collection was from different sources. Specifically, data from police records were about 19% complete, hospital records were 12% complete, and vital statistics from the CRVS system were estimated to be 14% complete. Importantly, when data from all these sources were combined, completeness improved to 37%. The Zambian experience serves as both a template and a testament to the transformative impact of quality data on public health initiatives.





Section 5.

The way forward

Road traffic deaths fell slightly to 1.19 million in 2021 – a 5% drop since 2010. More than half of all UN Member States, including some of the worst-affected countries, reported a decline in fatalities. The slight reduction in deaths occurred despite the global motor vehicle fleet more than doubling, road networks significantly expanding, and the global population increasing by more than one billion. Though the decline in deaths falls far short of what is needed to meet the UN Decade of Action for Road Safety 2021–2030 target of halving deaths by 2030, it shows how to accelerate progress. Ten countries managed to reduce road deaths by 50% since 2010, showing that such a reduction over a 10-year period is possible.

Some of the greatest gains were made where the safe system approach – which puts people and safety at the core of mobility systems – was applied. The European Region has the greatest concentration of countries with policies and legislation that align with this approach and reported the largest drop in deaths – a 36% drop since 2010. Belarus, Norway, and the United Arab Emirates, for example, adopted elements of the safe system and were among the small number of countries that reduced fatalities by 50% by 2020.

With a rapidly growing and increasingly urban global population, the safe system calls for an efficient and sustainable mix of transport modalities – including mass public transport – while upholding the safety of pedestrians, cyclists and other vulnerable road users, who account for half of all deaths.

Yet as motor vehicle fleets and road networks built for these vehicles expand, vulnerable road users are left dangerously exposed. Just one fifth of the world's roads meet the basic safety requirements needed for cyclists and pedestrians, and just 0.2% of the world's roads have cycle lanes. The 20% increase in deaths among cyclists is worrying.

Political will must match the scale and urgency of this crisis. Road crashes are the leading killer of children and youth aged 5–29 years. There are more than 3 200 road traffic deaths each day, and nine in ten deaths occur in low- and middle-income countries. Two thirds of all deaths occur among people of working age, causing huge health, social and economic harm throughout societies.

Measures to mitigate the risk of death and injury, including enacting laws that meet WHO best practice, have advanced modestly. Policy-makers have known of the key risk factors that contribute to road crashes for decades, yet only six countries have legislation on all five – speeding, drink driving, motorcycle helmet use, and seat-belts and child restraint systems – that meet WHO best practice.

The Global Plan for the United Nations Decade of Action for Road Safety 2021–2030 charts the way forward, and everyone has

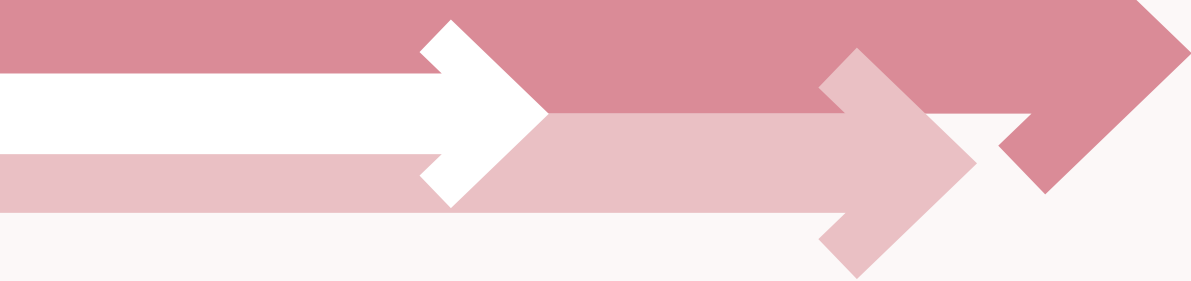
a role to play in making safe, inclusive, and sustainable mobility a reality. Governments must lead strategies that are rooted in good data, backed by strong laws and funds, and involve all relevant sectors. Businesses must put safety and sustainability at the core of their value chains. Academia and civil society must generate evidence and hold leaders to account and young people can demand action and help take it.

This more holistic approach to mobility will bring benefits in tackling many other crucial issues. By encouraging walking and cycling for example, we can reduce the burden of noncommunicable diseases, reduce pollution and combat climate change. By prioritizing the safety of vulnerable road users, we can help reduce poverty and tackle inequalities, including access to jobs and education.

The increase in motor vehicles and motor vehicle based transport systems poses serious questions around sustainability. As the global and increasingly urban population grows, the demand for mobility will outstrip the capacity of systems that rely heavily on private vehicles. With rising greenhouse gas emissions, this also poses a challenge to efforts to meet global climate targets.

Greater coordination with leaders from related fields could help strengthen impact through better coordination, help raise awareness of the road safety crisis among key decision-makers and leverage greater investment into mobility systems that are designed for people, with safety front and centre.

The Global Plan of Action for the United Nations Decade of Road Safety 2021–2030 calls for a holistic, safe system approach to halve road traffic deaths by 2030. This report shows that it is possible if the right decisions are taken and measures are put in place.



The way ahead – reflections from Jean Todt, UN Special Envoy for Road Safety

The latest *Global status report on road safety 2023* tells two competing stories.

One is a tale of hope, where the tragic tally of road crash deaths is finally falling. Where major gains are made in countries that adopt the safe system approach to road safety, and governments, businesses, civil society, citizens, and communities, come together around a crucial global plan to rethink mobility and to halve road crash deaths by 2030.

The other story is a troubling tale of a world barreling towards ‘carmageddon.’ Where the number of motor vehicles expands exponentially and pedestrians, cyclists and other vulnerable road users are left dangerously exposed. In this narrative, more money is invested on roads with all their dangers, rather than in safe public transport or more sustainable means of mobility; and safety is an afterthought, not a goal and guiding light.

The decisions that we make now will determine how many lives are saved and will have an impact on many more areas of our future, including our fragile natural environment.

Motor vehicles are set to double in number by 2030 from our starting point at the first Decade of Action. This could stretch transport systems built for private vehicles to breaking point, especially in low- and middle-income countries. It means more congestion, more pollution, and spiralling health, social and economic costs for us all to bear.

With the rapid expansion of urban populations – 68 percent of humanity is projected to live in cities by 2050, compared to 54 percent in 2016 – and private vehicle-based systems becoming an inefficient waste of space, the safe system approach to road safety calls for a mix of different types of mobility, including efficient and affordable public transport.

And then there is climate change. The transport sector is responsible for about one quarter of the world’s greenhouse gas emissions, even as we strive to reduce these emissions in a final effort to stave off climate catastrophe and protect our planet for future generations.

Electric vehicles and more energy efficient solutions are good, but they are just one part of the answer. Fossil fuelled motor vehicles are also expanding much faster than e-vehicles.

The Global Plan for the second Decade of Action for Road Safety (2021–2030) calls on the world to move from drab, dirty and dangerous streets to safe, green, and vibrant spaces designed for people. With safe mobility touching on many areas of sustainable development, we must work with all relevant sectors to ensure the best possible results. We must all understand that improved sustainability leads to improved safety, while unsafe transport is unsustainable.

As we work towards meeting the goal of halving road crash deaths by 2030, we need a paradigm shift in leadership, commitment, investment, and action from governments everywhere, and including everyone in society, from road users to those who design and build our infrastructure.

The treasure trove of data in this report should help us refine and redouble our efforts. The United Nations is fully committed to accelerating action to save lives on the roads, reflected in the establishment of a UN Road Safety Fund, UN road safety conventions, and a Global Plan of Action for Road Safety.

The future is teetering on the brink, and only we ourselves will determine which of the two stories gets told.

References

1. Global status report on road safety: time for action. Geneva: World Health Organization; 2009 (<https://iris.who.int/handle/10665/70041>, accessed 15 June 2023).
2. Global status report on road safety 2013: supporting a decade of action. Geneva: World Health Organization; 2013 (<https://iris.who.int/handle/10665/78256>, accessed 15 June 2023).
3. Global status report on road safety 2015. Geneva: World Health Organization; 2015 (<https://iris.who.int/handle/10665/189242>, accessed 15 June 2023).
4. Global status report on road safety 2018. Geneva: World Health Organization; 2018 (<https://iris.who.int/handle/10665/276462>, accessed 15 June 2023).
5. UN General Assembly resolution 64/255. Improving global road safety. United Nations: New York (NY): United Nations; 2010 (<https://digitallibrary.un.org/record/677469?ln=en>, accessed 15 June 2023).
6. UN General Assembly resolution 74/299. Improving global road safety. United Nations: New York (NY); 2020 (<https://digitallibrary.un.org/record/3879711>, accessed 15 June 2023).
7. Global status report on road safety 2023: Country and territory profiles. Geneva: World Health Organization; 2023.
8. Global status report on road safety 2023: Summary. Geneva: World Health Organization; 2023. (<https://www.who.int/publications/item/9789240086456>, accessed 13 December 2023).
9. WHO Road Safety Data [Mobile application software]. (2.1). Geneva: World Health Organization; 2023.
10. WHO methods and data sources for country-level causes of death 2000–2019. Geneva: World Health Organization; 2020 (<https://iris.who.int/handle/10665/374896>, accessed 15 June 2023).
11. Preventing injuries and violence: an overview. Geneva: World Health Organization; 2022 (<https://iris.who.int/handle/10665/361331>, accessed 15 June 2023).
12. Chen S, Kuhn M, Prettner K, Bloom D. The global macroeconomic burden of road injuries: estimates and projections for 166 countries. *The Lancet Planetary Health*; 2019;3:e390–98.
13. Badré B. Road safety is an issue of equity for the poor. *World Bank blogs*. 25 November, 2015 (<https://blogs.worldbank.org/voices/road-safety-is-an-issue-of-equity-for-the-poor>, accessed September 2023).
14. UN Population Division [online database]. New York (NY): United Nations; 2022 (<https://population.un.org/wpp/>, accessed 15 June 2023).
15. Implementing clean energy transitions: Focus on road transport in emerging economies. Paris: International Energy Agency; 2023 (www.iea.org, accessed 15 June 2023).
16. Meijer JR, Huijbregts MAJ, Schotten KGJ, Schipper AM. Global patterns of current and future road infrastructure. *Environmental Research Letters* 2018;13:064006 (<https://iopscience.iop.org/article/10.1088/1748-9326/aabd42>, accessed 15 June 2023).
17. World road statistics [online database]. Geneva: International Road Federation; 2023 (www.irfnet.ch and www.worldroadstatistics.org, accessed 28 September 2023).
18. International Transport Forum. Road Safety Annual Report 2021.
19. Population facts. Policies on spatial distribution and urbanization have broad impacts on sustainable development. No. 2020/2. New York (NY): United Nations Department of Economic

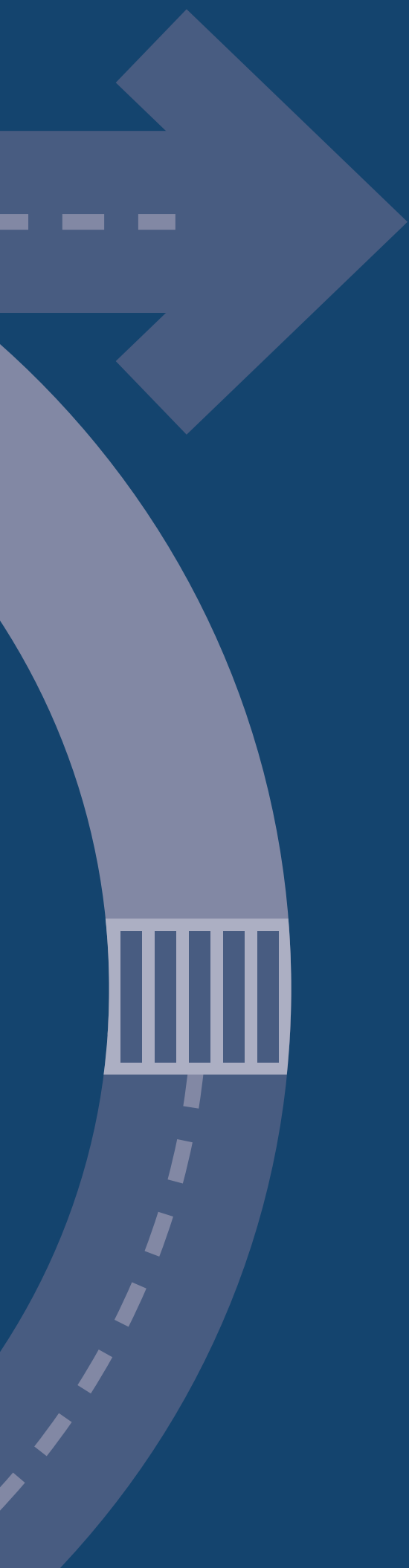
- and Social Affairs; 2020 (https://www.un.org/development/desa/pd/sites/www.un.org/development/desa/pd/files/undes_pd_2020_popfacts_urbanization_policies.pdf, accessed 15 June 2023).
20. Meesmann U, Wardenier N, Torfs K, Pires C, Delannoy S, Van den Berghe W. A global look at road safety. Synthesis from the ESRA2 survey in 48 countries. ESRA project 2022 (E-Survey of Road users' Attitudes). Brussels: Vias institute; 2022 (<https://www.esranet.eu/storage/minisites/esra2-main-report-def.pdf>, accessed 15 June 2023).
 21. Global status report on physical activity. Geneva: World Health Organization; 2022 (<https://iris.who.int/handle/10665/363607>, accessed 15 June 2023).
 22. iRAP Safety Insights Explorer [Internet]. London: iRAP, 2021 (<https://irap.org/safety-insights-explorer/>, accessed 7 November 2023).
 23. Global roadmap of action toward sustainable mobility. Washington (DC): Sustainable mobility for all; 2019 (<http://www.sum4all.org>, accessed 15 June 2023).
 24. Pulido D, Raffo VI. Saving lives through private investment in road safety. Washington (DC): World Bank; 2022 (<https://documents1.worldbank.org/curated/en/099525002222214332/pdf/P1750030e6c58506b08d5b05ccba3311628.pdf>, accessed 15 June 2023).
 25. Comparing transport infrastructure investment policies around the globe. Statistics Brief. Paris: International Transport Forum; 2023 (<https://www.itf-oecd.org/sites/default/files/compare-transport-infrastructure-investment-statistics-brief.pdf>, accessed 15 June 2023).
 26. Market research report: Automotive market size, share, growth, and global industry analysis, by type (passenger vehicle and commercial vehicle), by application (personal use, municipal use, and business use), regional insights and forecast to 2031. Business Research Insights. Maharashtra, India: Business Research Insights; 2023 (<https://www.businessresearchinsights.com/market-reports/automotive-market-102183>, accessed 2 November 2023).
 27. Global Plan. Decade of Action for Road Safety 2021–2030. Geneva: World Health Organization; 2021 (<https://www.who.int/publications/m/item/global-plan-for-the-decade-of-action-for-road-safety-2021-2030>, accessed 15 June 2023).
 28. Used vehicles and the environment: a global overview of used light duty vehicles – flow, scale and regulation. Nairobi, Kenya: United Nations Environment Programme; 2020 (<https://wedocs.unep.org/20.500.11822/34175>, accessed 15 June 2023).
 29. United Nations Economic Commission for Europe. United Nations Road Safety Conventions, Geneva, 2020 (<https://unece.org/transport/publications/united-nations-road-safety-conventions>, accessed 15 June 2023).
 30. Bloomberg Philanthropies Initiative for Global Road Safety and Johns Hopkins International Injury Research Unit. BIGRS observational studies, manuscript under preparation.
 31. Speed management: a road safety manual for decision-makers and practitioners, second edition. Geneva: Global Road Safety Partnership, International Federation of Red Cross and Red Crescent Societies; 2023 (<https://www.grsroadsafety.org/wp-content/uploads/2023/10/Green-Manual-Speed-revised-edition-16Oct23.pdf>, accessed 15 June 2023).
 32. Drink driving: a road safety manual for decision-makers and practitioners. Geneva: Global Road Safety Partnership, International Federation of Red Cross and Red Crescent Societies; 2022 (<https://www.grsroadsafety.org/wp-content/uploads/2023/09/3094-IFRC-Drink-Driving-Management-manual-revision-Sept-2023.pdf>, accessed 15 June 2023).
 33. Drug use and road safety: a policy brief. Geneva: World Health Organization; 2016 (<https://iris.who.int/handle/10665/325957>, accessed 15 June 2023).
 34. Mobile phone use: a growing problem of driver distraction. Geneva: World Health Organization; 2011 (<https://iris.who.int/handle/10665/44494>, accessed 15 June 2023).
 35. Helmets: a road safety manual for decision-makers and practitioners, second edition. Geneva: World Health Organization; 2023 (<https://iris.who>.

int/handle/10665/366578, accessed 15 June 2023).

36. Occupant restraints: a road safety manual for decision-makers and practitioners, second edition. London: FIA Foundation; 2022 (<https://www.who.int/publications/m/item/occupant-restraints--a-road-safety-manual-for-decision-makers-and-practitioners>, accessed 15 June 2023).
37. Global report on health equity for persons with disabilities. Geneva: World Health Organization; 2022 (<https://iris.who.int/handle/10665/364834>, accessed 15 June 2023).
38. Resolution WHA Resolution 69.7. In: Sixty-ninth World Health Assembly, Geneva, 28 May 2016. Geneva: World Health Organization; 2016 (https://apps.who.int/gb/ebwha/pdf_files/WHA69/A69_R7-en.pdf, accessed 2 November 2023).
39. Serious injuries. In: European Commission/ Mobility and transport – road safety [website]. Brussels: European Commission; 2022 (https://road-safety.transport.ec.europa.eu/european-road-safety-observatory/data-and-analysis/serious-injuries_en, accessed 2 November 2023).
40. Champion HR, Sacco WJ, Copes WS. A revision of the trauma score. *Journal of Trauma*. 1989;29(5):623–9 (<https://pubmed.ncbi.nlm.nih.gov/2657085/>, accessed 15 June 2023).
41. Baghi I, Shokrgozar L, Herfatkar MR. Mechanism of injury, Glasgow Coma Scale, age and systolic Blood pressure: A new trauma scoring system to predict mortality in trauma patients. *Trauma Monthly*. 2015;20(3):e24473 (<https://www.ncbi.nlm.nih.gov/pmc/articles/PMC4630599/>, accessed 15 June 2023).
42. Mwale M, Mwangilwa K, Kakoma E, Ilaych K. Estimation of completeness of road traffic mortality data in Zambia using a three source capture recapture method. *Accid Anal & Prev*. 2023(186):107048 (<https://doi.org/10.1016/j.aap.2023.107048>, accessed 2 November 2023).



Annexes



Annex 1. Methodology

Since its inception in 2009, WHO's *Global status report on road safety* series has evolved through an iterative and consultative process with participating countries and other territories, while integrating data from a variety of sources.

For this report, the fifth in the series, a consultative Advisory Board was established to evaluate the structure of the four previous reports (1–4) and outcomes, and to discuss the focus for this report. Following the advice of the Advisory Board, the objectives for this report were broadened to better reflect the Decade of Action for Road Safety 2021–2030 framework.

WHO Regional Advisors established regional networks through their respective WHO Regional Data Focal Points (RDFP) and government-designated National Data Focal Points (NDFP). In turn, NDFPs were invited to seek help from up to 10 National Data Collaborators (NDCs) to foster country-based networks of experts from a variety of backgrounds to arrive at consensual responses to the survey developed for this project and its subsequent legal review. WHO headquarters coordinated the management and data collection processes using online tools, some of which were specifically built for this report. Data validation required frequent consultation with collaborators. For the most part, all processes were handled remotely.

Once the report (including the country and territory profiles) and the summary report were available, feedback was solicited from Advisory Board members, WHO Regional Advisors and Regional Data Focal Points (RDFPs). Estimated mortality figures were shared with countries and territories to enable them to respond to any changes resulting from the verification and validation process. This consultation provided countries with an opportunity to comment on WHO's estimates for road traffic fatalities, which is often much higher than countries' official statistics (see Introduction).

Data sources

This report uses several data sources. These include:

a) WHO latest data on modelled deaths by country.

The statistical models developed were informed by the survey data collected for this report (see point b) below), particularly in relation to the number and distribution of reported fatalities by age and sex, as well as with the vehicle fleet information. However, reported figures are not sufficient, as explained previous reports in this series, and independent publications (5–6). A comprehensive review on mortality estimation methods used by WHO and other institutions is forthcoming.¹ WHO DDI produces updated estimates periodically, the latest of which on road traffic deaths, referring to year 2021, are presented in this report. whereas the latest comprehensive estimates (2019) are accessible on the WHO website Global Health Estimates (who.int).

To estimate road traffic deaths (all ages, both sexes), WHO uses an improved regression model as a function of a set of covariates that include measures of economic development, road transport factors and legislation, road use and safety governance/enforcement, and health system access. In addition, the regression model uses death registration data for the period 2000–2021 that were 80% or more complete for a given year or where the average completeness for last decade was greater or equal to 80%. Death registration cause of death data are submitted to WHO regularly by the national statistics offices or Ministries of Health from around the world, and mostly coded using the 10th revision of the International Classification of Diseases (ICD-10) (<https://www.who.int/data/data-collection-tools/who-mortality-database>). The regression model produces estimates using ICD-10 (7) criteria, which counts all deaths within a calendar year that result from a road traffic crash, regardless of the time period in which they occur (unlike many official road traffic surveillance data sources, where road traffic death data are based on a 30-day definition following a road traffic crash).

¹ An article on the evolution in methods used to produce this series of reports is currently under review for a forthcoming edition of *Injury Prevention*.

b) Data collected for this report via the online survey. Following the advice of the Advisory Board, the survey used for the last report was updated to better reflect the Decade of Action for Road Safety 2021–2030 framework. This required a broadening of the scope of questions which was partly offset by removing redundant questions or questions leading to unreliable answers. The new survey was reviewed by Advisory Board members and WHO Headquarters and Regional Advisors on Injury. The survey was machine-translated into all six official UN languages and distributed by RDFPs to NDFPs (and, where requested, to NDCs). Data collection ran from September 2022 to August 2023. A copy of the original survey in English is available.² Training on the use of the platform was done via online meetings in all six UN official languages during the third quarter of 2022. Data validation involved verifying data against source documents where available and checking for logical inconsistencies. Using an online platform allowed for controls at several levels, from data entry limitations to higher-level approval of submitted data. Discrepancies were referred, where possible, to the NDFPs for resolution. The platform allowed for the uploading of support documents as needed. Data in the survey was requested in relation to 2021 or as close to it as possible.

c) WHO review of legislation and related information collected for the *Global status report on road safety 2023*. The WHO-generated survey included question on several legislation matters encompassing post-crash care, infrastructure, vehicles, and road user behaviour, and totalling 25 specific legislation areas. Using the answers to the survey (see point b) above) and support legislation documentation provided by country contributors or identified in legal libraries and/or via the Internet, a team of experienced and trained lawyers validated the existence of 17 of these 25 legislative areas. In-depth evaluation of five of the 25 was done (Annex 3 lists all 25 and whether they were: only reported, validated, or evaluated). The legal reviewers were native speakers of English, French, Spanish, Arabic and Chinese. They used translations into English of legislation written in other languages. The review lasted from January to September 2023. Legislation had to be active by December 31, 2022, to be included. The legal analysis was then shared with NDFPs, and a validation process was undertaken to resolve any data conflicts through discussion and/or submission of new legal documents. The WHO evaluation process has evolved over time as the review itself has led to refinements to the criteria to better reflect evidence and practice, as well to the review of additional legislation. Table A1.1 presents whether there is comparability of seven legislation areas reviewed with earlier editions of the *Global status report on road safety*.

Table A1.1 Comparability between all editions of the Global status report on road safety for selected legislation best practice

2023	2018	2015	2013	2009
Speed	Yes	Yes	No	No
Seat-belts use	Yes	Yes	No	No
Child restraint systems use	Yes	No	No	No
Helmets use	Yes	Yes	No	No
Drink & drive	Yes	Yes	No	No
Drug & drive	Yes	No	No	No
Distraction	Yes	No	No	No

² For a copy of the survey in English with operational instructions, please contact sam@who.int.

- d) Data from all previous editions of WHO's *Global status report on road safety*** (2009, 2013, 2015 and 2018), including data on participation; gaps between reported and estimated road traffic fatalities; and all variables presented in these reports' statistical annexes. These data were originally gathered by government designated representatives in participating countries or territories and had undergone government clearance prior to publication, as described in original reports. In depth legal reviews for the seven legislation areas described in Table A1.1 were also compiled.
- e)** Data on country populations (including persons under the age of 11 years) as of 1 July 2021 and 2010 were drawn from the UN Population Division (8).
- f)** Data on income level per country clustered into high-, upper-middle, lower-middle, and low- income categories were extracted from the World Bank (9).
- g)** Data on 2010 and 2021 UN or equivalent conventions and regulations on vehicles, roads and drivers, extracted from UN Economic Commission for Europe (UNECE) (10) and the UN Treaty Collection (11).
- h)** Data on mobility patterns, self-reported behaviours, and perceived enforcement on selected behavioural related aspects (speeding, alcohol or drug consumption, mobile phone use, use of seat-belts, child restraint systems or helmets) were drawn from the E-survey of Road users' Attitudes (ESRA) initiative coordinated by Vias institute (12) (these data are available for 48 of countries and territories).
- i)** Data on road density and safety score ratings were obtained from the International Road Federation's World Road Statistics (13) while data on safety scoring or roads by user type were obtained from iRAP (14).
- j)** Case studies and testimonials were collected to address areas of the Global Plan for the Decade of Action for Road Safety 2021–2030 not sufficiently covered in all other data sources. A call for case studies on targeted areas was shared with NDFPs via the Regional Advisers.

Data management

Integrating these data sources allowed the development of a selection of indicators used in the country and territory profiles as well as an update of the mobile application. For a description of indicators used in the text of this report or the Country and territory profiles, please see Annexes 5 and 6. The next paragraphs provide more detailed explanations on the development of two selected data elements: road fatalities and the legal reviews.

Road fatalities. Government reported fatalities and their distribution by sex, age, user type and work connection were collected through the report-specific survey. Some of these values are included in the Country and territory profiles. The reported deaths are also used in the mathematical models to estimate the number of road traffic for the reasons described above. The regression models used to estimate road traffic deaths are the same as those of the previous reports with updated Civil Registration and Vital Statistics (CRVS) data for the period 2000–2021. A time series for each covariate was used for this period for each country.

As in the previous reports, countries are classified based on their CRVS data into: Group 1 (countries with death registration data), Group 2, Group 3 (countries with population less than 150 000 population), and Group 4 (countries without eligible death registration data). The novelty in this report is that former Group 2 has been subdivided into groups 2A and 2b based on the status of their data systems improvements.

Group 2A: Countries that have death registration data shared with WHO but face certain limitations. These limitations could be related to the number of data observations being insufficient (not equal to or less than 5), or the data quality not being high enough to classify them in Group 1, which likely represents countries with the best data quality. In such cases, WHO has supported these countries in improving their data collection and estimation methods. Instead of relying on a single data source for the entire population, these countries have conducted a linkage of data from various stakeholders. The capture-recapture method used to estimate the number of road traffic deaths for a specific year.

Group 2B: Countries that are still in the process of enhancing their systems for recording road traffic deaths. The completeness of death registration data, particularly for the causes of death related to road traffic incidents, is relatively low, at around 30%. These countries conducted a linkage of data from sources other than just police records with the support of WHO. The focus of these efforts is limited to specific geographical areas, such as the capital or a district within the capital. This may be due to resource constraints or a phased approach to improving data collection and reporting.

Whether a Member State belongs to a Group, or another is shown in the Country and territory profile. The specific methodology to derive estimated road fatalities and their 95% Confidence Interval varies by Group, but the methods are those used in the previous report (5). As in previous reports, countries or territories in Group 4 were handled using three separate negative binomial regression models. One of two peculiarities for this report lies on the fact that due to the disruptive impact of the COVID-19 pandemic on typical trends, the estimates derived from the negative binomial regression model for the years 2020 and 2021 were not used. The second peculiarity is that in the case of China and India, the estimated road traffic deaths data from Global Health Estimates (GHE) 2020 were used to account for road traffic deaths from 2000 to 2019. Subsequently, the rate of change between reported deaths in 2020 and 2019 was used as correction coefficient to estimate the deaths for 2020 and using the rate of change between reported deaths in 2021 and 2019 as correction coefficient to estimate the deaths for 2021.

Legislation. This report presents reviewed national legislation on 22 road-related topics. For five of these topics (urban speed control, drinking and driving, motorcycle helmet use, seat-belts and child restraint restraints), equivalent information was gathered in a comparable format in previous reports as shown in Table A1.1, and best criteria are described in corresponding sections of the report and in Annex 6. These criteria are used to qualify the legislation into one of several categories, although we acknowledge that these are, de facto “minimal criteria” for the laws to have a significant safety impact. For two other topics (drugs and driving, and distracted driving), comparable data are available from all reports since the *Global status report on road safety 2015*. However, no evaluation criteria are available for these areas. Seventeen other legislative areas are

evaluated and presented for the first time in this report including professional drivers’ rest periods, vehicle safety (five specific aspects),³ vehicle registration and inspection, third-party vehicle insurance, road and infrastructure, access to emergency assistance, rehabilitation assistance or psychological assistance for road traffic victims, and good Samaritan laws. Three other legislative areas were not validated or evaluated but reported answers by participated countries are presented in the report. Annex 3 presents all legislative areas and the level of validation and evaluation they underwent. There are three countries whose legislation had to be reviewed at subnational level for all or some of these legislation areas because the topics are delegated to and within the jurisdiction of the subnational authorities. These countries are Australia, Canada, and the United States of America. These countries are classified as having a law at national level if 80% of their subnational entities meet the selected criteria for best practise or the existence of legislation on the topic.

The population covered by these legislations is shown in Annex 3. Calculations use general population country figures for all legislative areas except child restraint systems, whose impact is calculated in relation to the population aged below 11 years in each country.

Data analysis

This is a descriptive report and the primary unit of analyses are Member States themselves, which we refer to as “countries” in the text, however, in Annex 3, some indicators are based on population. The analyses are kept at global level and variations by region and income level are presented. Compared with other editions of the *Global status report on road safety*, we present more income-based analyses in following with the Plan of Action recommendation to focus on low- and middle-income countries.

In addition, as part of its evolutionary focus, comparison between the findings of the fifth report and the earliest available data within the Decade of Action for Road Safety 2011–2020 are presented throughout the report and in the Country and territory profiles. This implies using revised WHO mortality estimates since 2010, other 2010 information such as population, income level, adherence to conventions or regulations, etc., and the country-generated data via the *Global status report on road safety 2013*. As stated above, for selected legislative

³ In previous reports, vehicle safety has been addressed through the accession to UN or equivalent safety regulations. On this occasion, national-level legislation was also reviewed.

comparisons we had to rely on the Global status report on road safety 2015 or 2018 for comparability criteria, although changes since the 2018 one prioritized through the report.

Where change can be documented, a quantitative value of the magnitude of change and a qualitative value have been created. Differences larger than 2% are presented as “increases” or “decreases” (depending on direction). Differences of 2% or less are presented as “no change”. In other instances, change is not quantifiable, although it can be a change that implies a step forward towards “better” situations. In those cases, “change” or “advancement” are used to describe the evolution. Changes in fatality counts on rates for countries with populations less than 200 000 population are not reported.

For countries not participating in the *Global status report on road safety 2023*, no evolutionary analyses are shown, and their profiles contain their latest information, including the 2021 mortality estimates.

Participation results

All 194 countries were formally invited to collaborate in this report. In addition, two territories requested to participate.⁴

The 194 WHO countries represent 98% of the world’s population, whereas the 170 countries participating in the survey represent 97% of the world’s population. Participation by WHO region and income level was even, as shown in Table A1.2.

⁴ Participating territories are: British Virgin Islands (high income, Region of the Americas) and occupied Palestinian territory, including east Jerusalem (lower-middle-income, Eastern Mediterranean Region).

Table A1.2 Number of participating countries by WHO region and income level, 2021

Participating / Member states	High-income	Upper-middle income	Lower-middle-income	Low-income	Total
African Region	1/1	5/6	17/18	22/22	45/47
Region of the Americas	8/9	17/19	5/5	0/0	32/35
South-East Asia Region	0/0	2/2	8/8	0/1	10/11
European Region	30/34	14/15	3/4	0/0	47/53
Eastern Mediterranean Region	6/6	3/3	6/7	5/5	20/21
Western Pacific Region	6/8	1/7	7/11	0/0	16/27
Total	51/58	43/52	46/53	27/28	170 ^a /194

^a Cook Islands, Niue and Venezuela (Bolivarian Republic of) are only listed under regional totals as their income level is unknown.

NDFPs and NDCs for the 172 participating states or territories total nearly 1000 individuals. It is worth pointing out that in 50 participating countries there was one collaborator who was also their country representative in a Regional Road Safety Observatory, as suggested in UN GA74/299 (15). Additional 100 professionals have participated in the production of this report, including WHO headquarters staff, regional advisors, RDFPs and consultants participating in data management, communications, and coordination.

Other

Data from their participation in *the Global status report on road safety 2018* was used for 13⁵ of the 24 not participating in *the Global status report on road safety 2023*. Six other non-participating countries had last

contributed to *the Global status report on road safety 2015*.⁶ Among the remaining five non-participating countries, three last did in *the Global status report on road safety 2013*⁷ and only for two did we use *the Global status report on road safety 2009* (which was their first and last participation).⁸ Mortality estimates for 2021 for the 24 non-participating countries are, on average 16 per 100 000 population, a figure very close to the average rate for participating countries (15 per 100 000 population).

Notably, all countries have participated at least once in the *Global status report on road safety* since it was first published. One hundred and forty-six countries (plus one territory) have participated in all five of them (Fig. A1.1).

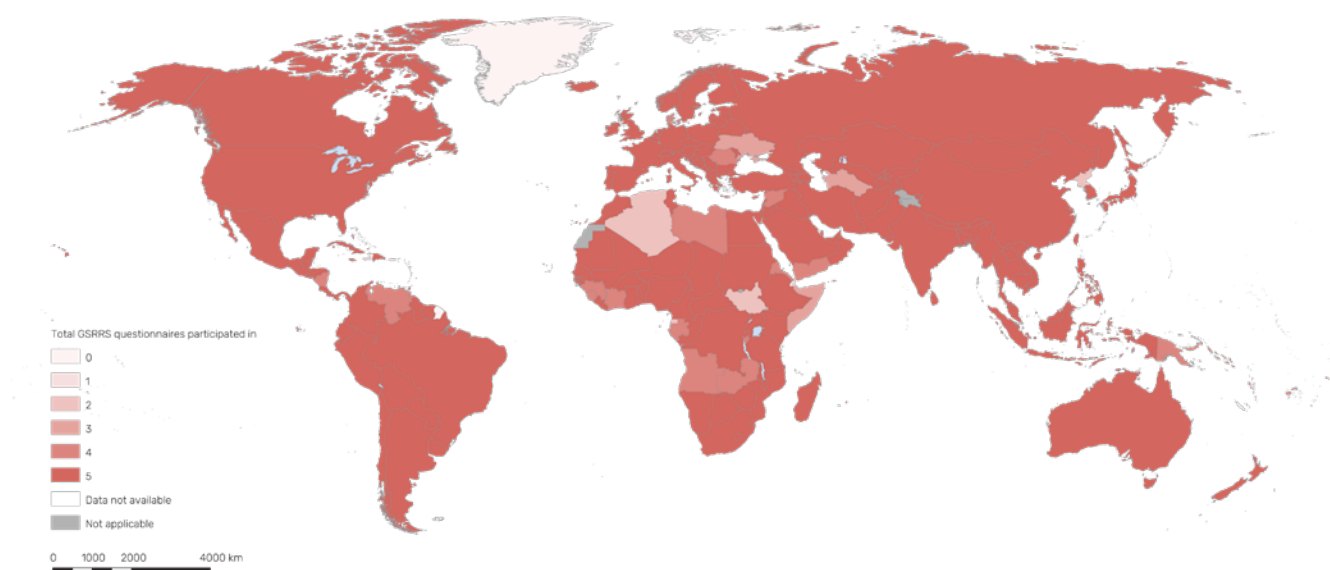
⁵ Angola, Equatorial Guinea, Fiji, Grenada, Micronesia (Federated States of), Papua New Guinea, Romania, San Marino, Solomon Islands, Tonga, Turkmenistan, Ukraine, Vanuatu.

⁶ Andorra, Djibouti, Marshall Islands, Monaco, Palau (Republic of), Saint Vincent and the Grenadines.

⁷ Brunei Darussalam, Democratic People's Republic of Korea, Saint Kitts and Nevis.

⁸ Nauru, Tuvalu.

Fig. A1.1 Number of editions of the Global status report on road safety participated in by countries since 2009



Overall, completion rates for the report survey exceeds 70% of the requested information, with more gaps occurring in the areas of work relationship of the crash, road density and financing arrangements for road safety

Supporting documents, including legal documents, are in custody at WHO headquarters. All data used in the Country and territory profiles are publicly available except those of the International Road Federation.

Annex 1 references

1. Global status report on road safety: time for action. Geneva: World Health Organization; 2009 (https://apps.who.int/iris/handle/10665/44122?search-result=true&query=global+status+report+on+road+safety&scope=&rpp=10&sort_by=score&order=desc&page=1, accessed 15 June 2023).
2. Global status report on road safety 2013: supporting a decade of action. Geneva: World Health Organization; 2013 (https://apps.who.int/iris/handle/10665/78256?search-result=true&query=global+status+report+on+road+safety&scope=&rpp=10&sort_by=score&order=desc&page=1, accessed 15 June 2023).
3. Global status report on road safety 2015. Geneva: World Health Organization; 2015 (https://apps.who.int/iris/handle/10665/189242?search-result=true&query=global+status+report+on+road+safety&scope=&rpp=10&sort_by=score&order=desc&page=1, accessed 15 June 2023).
4. Global status report on road safety 2018. Geneva: World Health Organization; 2018 (https://apps.who.int/iris/handle/10665/276462?search-result=true&query=global+status+report+on+road+safety&scope=&rpp=10&sort_by=score&order=desc&page=1, accessed 15 June 2023).
5. Global status report on road safety 2018, explanatory note 3: Estimation of total road traffic deaths. Geneva: WHO; 2018 https://apps.who.int/iris/handle/10665/276462?search-result=true&query=global+status+report+on+road+safety&scope=&rpp=10&sort_by=score&order=desc&page=1, accessed 15 June 2023).
6. Papadimitriou E, Ilaych K, Adamantiadis M. Understanding and bridging the differences between country-reported and WHO estimated road traffic fatality data. Brussels: WHO and EuroMed TSP; 2019 http://etsp.eu/?page_id=24985&mdocs-cat=mdocs-cat-74&mdocs-att=nul, accessed 15 June 2023).
7. International Classification of Diseases – 10th Revision. Geneva: World Health Organization; 2019 ([https://icd.who.int/browse10/2019/en#/,](https://icd.who.int/browse10/2019/en#/) accessed 15 June 2023).

8. UN Population Division [online database]. New York (NY): United Nations; 2022 (<https://population.un.org/wpp/>, accessed 15 June 2023).
9. World Bank Country and Lending groups [online database]. Washington (DC): World Bank; 2022 (<https://datahelpdesk.worldbank.org/knowledgebase/articles/906519-world-bank-country-and-lending-groups>, accessed 15 June 2023).
10. United Nations Economic Commission for Europe. United Nations Road Safety Conventions, Geneva, 2020 (<https://unece.org/transport/publications/united-nations-road-safety-conventions>, accessed 15 June 2023).
11. United Nations. Treaty Collection [online database]. New York (NY): United Nations; [no date] (https://treaties.un.org/Pages/ViewDetails.aspx?src=TREATY&mtdsg_no=XI-B-34&chapter=11&clang=_en, accessed 15 February 2023).
12. Meesmann U, Wardenier N, Torfs K, Pires C, Delannoy S, Van den Berghe W. A global look at road safety. Synthesis from the ESRA2 survey in 48 countries. ESRA project 2022 (E-Survey of Road users' Attitudes). Brussels: Vias institute; 2022 (<https://www.esranet.eu/storage/minisites/esra2-main-report-def.pdf>, accessed 15 June 2023).
13. World road statistics [online database]. Geneva: International Road Federation; 2023 (www.irfnet.ch and www.worldroadstatistics.org, accessed 28 September 2023).
14. iRAP Safety Insights Explorer [Internet]. London: iRAP, 2021 (<https://irap.org/safety-insights-explorer/>, accessed 7 November 2023).
15. UN General Assembly resolution 74/299. Improving global road safety. United Nations: New York (NY); 2020 (<https://digitallibrary.un.org/record/3879711>, accessed 15 June 2023).

Annex 2. Progress towards the voluntary UN Performance Targets

Twelve Voluntary Performance Targets were set out to help direct efforts to achieve the 50% fatality and non-fatal reduction in road traffic victims worldwide. In addition, a series of indicators totalling 34 were proposed to allow monitoring progress towards the targets. Table A2.1 shows their first global assessment. Performance at country level for several of them are shown in the Country and territory profiles. Adaptation of the proposed indicators to existing data (and results)

resulted in some deviations, for example that instead of counting Member states reaching 100% objectives, we count for countries reaching at least 80% objectives. Similarly, “effective enforcement” was not able to be assessed for several indicators. Albeit imperfect, the emerging picture is that there are big gaps in covering these, even among high-income member states. There nine proposed indicators that could not be assessed at this time.

Table A2.1. Status of UN Voluntary Target Performance indicators, Global and by income level, 2021

Target	Indicators	Number of countries				
		All N=(170)	Income levels ^a			
			High (N=51)	Upper middle (N=43)	Lower middle (N=46)	Low (N=27)
Target 1 By 2020, all countries establish a comprehensive multisectoral national road safety action plan with time-bound targets.	Published national action plan that provides for regularly updated, time-bound targets for reductions in fatalities and injuries	17	9	5	3	0
	Presence of national lead agency to coordinate, monitor, evaluate and implement multisectoral national road safety action plan	84	23	26	24	11
Target 2 By 2030, all countries accede to one or more of the core road safety-related UN legal instruments.	Ratification or accession, and adhesion, to one or more core road safety-related UN legal instruments (out of seven)	128 (only 7 MS have 7)	50	33	31	14

Target	Indicators	Number of countries				
		All N=(170)	Income levels ^a			
			High (N=51)	Upper middle (N=43)	Lower middle (N=46)	Low (N=27)
Target 3 By 2030, all new roads achieve technical standards for all road users that take account of road safety or meet a three-star rating or better.	Presence of technical standards for new roads that take account of all road-user safety, or align with relevant UN Conventions and regulate compliance with them	61	27	16	17	1
	Use of systematic approaches to assess/audit new roads	120	38	31	33	18
Target 4 By 2030, more than 75% of travel on existing roads is on roads that meet technical standards for all road users that take account of road safety.	Plan for improvement of existing roads that take account of the safety of all road users developed and implemented	Cannot be calculated yet				
	Use of systematic approaches to assess/audit existing roads	Cannot be calculated yet				
Target 5 By 2030, 100% of new (defined as produced, sold or imported) and used vehicles meet high quality safety standards, such as the recommended priority UN Regulations, Global Technical Regulations, or equivalent recognized national performance requirements.	Presence of high-quality safety standards for new vehicles	93	38	22	25	8
	Use of systematic approaches for vehicle assessments	134	48	30	36	20
	Presence of high-quality safety standards for used-vehicle exports	113	35	31	32	15
Target 6 By 2030, halve the proportion of vehicles travelling over the posted speed limit and achieve a reduction in speeding-related injuries and fatalities.	Speed-control legislation been strengthened since last reporting	53 (8 of which since <i>Global status report on road safety 2018</i>)	26; 3 since <i>Global status report on road safety 2018</i>	9; 7 since <i>Global status report on road safety 2018</i>	10; 0 since <i>Global status report on road safety 2018</i>	8; 0 since <i>Global status report on road safety 2018</i>
	Proportion of vehicles travelling over the posted speed limit have reduced by half	Cannot be calculated yet				
	Presence of national and, where applicable, subnational data systems on speeding violations and speeding-related injuries and fatalities	154	47	41	42	24
	Reductions in speeding-related injuries and fatalities have been achieved	Cannot be calculated yet				

Target	Indicators	Number of countries				
		All N=(170)	Income levels ^a			
			High (N=51)	Upper middle (N=43)	Lower middle (N=46)	Low (N=27)
Target 7 By 2030, increase the proportion of motorcycle riders correctly using standard helmets to close to 100%.	Presence of legislation requiring ADULT motorcycle riders to wear a helmet properly fastened and meeting appropriate standards ² for protection	49	21	12	14	2
	Effective enforcement ^b of helmet use legislation	85	27	22	23	13
	Regulations on safety for (child and) adult helmets sold	93	37	23	25	8
	Presence of national and, where applicable, subnational data systems on helmet use	105	40	29	23	13
	Proportion of motorcycle riders correctly using helmets is close to 100% ^c	32	20	7	4	1
Target 8 By 2030, increase the proportion of motor vehicle occupants using safety belts or standard child restraint systems to close to 100%.	Legislative improvements made since last reporting towards best practice standards	108 (improvement in 10 Seat-belt and 4 CRS)	46 (2 SB: 0 CRS)	33 (2 SB: 3 CRS)	18 (3 SB: 1 CRS)	11 (3 SB: 0 CRS)
	Presence of effectively enforced ^b legislation requiring the use of child restraint systems that meet appropriate standards	Cannot be calculated yet				
	Proportion of all motor vehicle occupants using safety belts is close to 100% ^c	12	12	0	0	0
	Proportion of all child motor vehicle occupants using standard child restraints systems is close to 100% ^c	Cannot be calculated yet				
	Effective enforcement ^b of safety regulations for child restraint systems sold	cannot be calculated yet				
	Presence of national and, where applicable, subnational data on use of safety belts, as well as the appropriate use of child restraint systems	63	32	16	8	7

Target	Indicators	Number of countries				
		All N=(170)	Income levels ^a			
			High (N=51)	Upper middle (N=43)	Lower middle (N=46)	Low (N=27)
Target 9 By 2030, halve the number of road traffic injuries and fatalities related to drivers using alcohol, and/or achieve a reduction in those related to other psychoactive substances.	Presence of legislation (and effective enforcement) on driving under the influence of alcohol and/or other psychoactive substances (based on alcohol laws)	47	28	12	6	1
	Availability of national and, where applicable, subnational data on driving under the influence of alcohol and/or psychoactive substances and related road traffic-related fatalities and injuries	114	41	32	27	14
	Road traffic injuries and fatalities related to driving under the influence of alcohol and/or other psychoactive substances have reduced by half	Cannot be calculated yet				
Target 10 By 2030, all countries have national laws to restrict or prohibit the use of mobile phones while driving.	Effectively enforced ^b legislation on restricting or prohibiting the use of mobile phones while driving	153 (8 since <i>Global status report on road safety 2018</i>)	50 before 31	41 before 32	41 before 30	21 before 19
	Presence of national and, where applicable, subnational data systems on the use of mobile phones while driving	91	34	24	22	11
Target 11 By 2030, all countries to enact regulation for driving time and rest periods for professional drivers, and/or accede to international/regional regulation in this area.	Presence of international/regional regulation on driving time and rest periods for professional drivers	45	28	14	3	0
	Professional drivers' driving time and rest periods are regulated, effectively enforced, and audited	83	40	20	18	5
Target 12 By 2030, all countries establish and achieve national targets in order to minimize the time interval between road traffic crash and the provision of first professional emergency care.	National target met for time between serious crash-related injury and initial provision of professional emergency care	Cannot be calculated yet				
	Presence of agencies that effectively coordinate pre-hospital and facility-based emergency medical services	118	35	32	33	18

a Total does not add to 170 because of the three Member States with no information on income.

b No assessment on effectivity of enforcement is available.

c Use equal or higher than 80% was considered sufficient.

Annex 2 reference

1. Voluntary global performance targets for road safety risk factors and service delivery mechanisms and corresponding indicators. Geneva: World Health Organization; 2018 (<https://cdn.who.int/media/>

docs/default-source/documents/un-road-safety-collaboration/targets-and-indicators-visual-clean.pdf?sfvrsn=29627bde_5, accessed 15 June 2023).

Annex 3. Population covered by selected road safety-related measures

The report focuses on Member State-based data. Table A3.1 presents the percentage of the world population that is covered by selected road safety interventions.

Table A3.1 Percentage of population living in countries with selected road safety laws, by income level, 2022

	Income level ^a				
	Global	High	Upper middle	Lower middle	Low
Countries	170	51	43	46	27
Population (Million)	7 874	1 233	2 526	3 397	718
Legislation reported, validated and evaluated (thus percentages reflect the percentage of the population whose countries have these laws meeting best practice criteria):					
Legislation setting appropriate urban speed limits for 4-wheel and powered 2/3 wheelers	42	48	69	22	27
Legislation on drink driving	33	34	72	12	3
Legislation requiring adult motorcycle riders to wear a helmet	39	30	22	62	4
Legislation on the use of seat-belts	72	68	89	65	46
Legislation requiring the use of child restraint systems ^b	10	42	21	2	0
Legislation reported and validated, but not evaluated (Thus % reflect population whose countries have these laws regardless of details):					
Legislation on drug driving	94	100	100	92	76
Legislation on distracted driving (mobile phones)	93	100	100	90	75
Legislation on driver licensing requirements	93	85	98	91	96
National law on vehicle registration	91	84	93	91	96
National law requiring a formal road safety inspection/assessment	58	67	66	59	14
National law requiring periodic vehicle inspection/assessment	84	59	92	85	86
National laws on front and side impact protection	60	96	74	50	0
National laws on seat-belt and seat-belt anchorages	74	87	93	68	17
National law on electronic stability control	57	89	79	43	0
National law on pedestrian protection	53	63	77	43	0
National law on braking systems	44	92	78	11	3
National law on universal access to emergency care	76	60	97	77	23
National law guaranteeing free-of-charge access to rehabilitative care for all injured	51	43	77	44	3

	Income level ^a				
	Global	High	Upper middle	Lower middle	Low
National law guaranteeing free-of-charge access to psychological services to road traffic crash victims and their families	29	23	78	2	3
National good Samaritan law	43	46	57	42	0
National legislation mandating third-party liability insurance for powered vehicles	87	95	89	81	92
National law on driving time and rest periods for professional drivers	74	81	89	72	16
Legislation reported but not validated nor evaluated (Thus, % reflects population living in countries that report to have these laws):					
National law on eCall	13	32	13	8	6
Legislation on restrictions to import vehicles	32	32	26	35	40
National prohibition on alcohol consumption	10	4	3	17	15

a Not shown in income categories but counted in Totals are the three Member states with no information on income level

b Population denominator is population less than 11 years old

Annex 4. National vehicle and infrastructure laws and international conventions or regulations

Table A4.1 illustrates the relationship between national legislation and adhesion or related international conventions or regulations. It shows a number of convention- or regulation-signatory countries that do not have national legislation in place on those vehicle topics. In contrast, a number of other countries have national legislation in place, although whether these match international standards is not known as they have not signed the corresponding international standards. This report does not assess whether national legislation matches the specifications of the international regulations.

Table A4.1. Member States' vehicle national laws and/or international regulation and convention adhesion for selected safety laws, 2022

	National legislation				
	Yes		No		Cannot be determined
	Also adheres to regulation	Does not adhere to regulation	Also adheres to regulation	Does not adhere to regulation	
Infrastructure					
Requirement for formal road safety inspection/ assessment and/or any of the 3 road conventions (1950, 1975 or 2003)	30	64	7	62	7
Vehicle					
Periodic vehicle technical inspection and/or 1997 Periodic Inspections Conv.	35	118	0	14	3
Front and side impact protection) and/or 1958 Regs 94 and 1958 Regs95	31	21	6	70	42
Seat-belt and seat-belt anchorages and/or 1958 Reg 14 and 1958 Reg 16	37	51	2	41	39
Electronic stability control and/or 1958 Reg 140, or 1998 Reg 8	38	11	9	71	41
Pedestrian protection and/or 1958 Reg 127 or 1998 Reg 9 Pedestrians	37	7	9	75	42
Braking systems and/or 1958 Reg 13H	35	21	6	69	39
Helmet legislation referring to and/or specifies standard and /or 1958 Reg 22	31	62	15	60	2
Child restraint law specifies standard and/or 1958 Reg 44	32	24	12	102	0

Annex 5. Example Country and territory profile template

Country

Population: | Income group: | WHO Region: | GSRRS participation:

BURDEN

Reported fatalities (year) [Ⓔ]
 Reported fatalities sex distribution (Male; Female)
 Reported fatalities user distribution¹
 WHO estimated road traffic fatalities (95%CI) (year)
 WHO estimated rate per 100 000 population (year)

SAFE ROAD INFRASTRUCTURE

Total paved kilometres (year)
 Presence of technical standards for new roads that take account of all road-user safety, or align with relevant UN Conventions and regulate compliance with them²
 Presence of systematic approaches to assess/audit new roads²
 National law requiring a formal road safety inspection/assessment
 Target for roads to meet technical safety standards for all users (year)
 Investments to upgrade high risk locations

SAFE VEHICLES

Total registered vehicles [rate per 100 000 pop] (year)
 4-wheel vehicles
 Powered 2- and 3-wheelers
 Heavy trucks
 Buses
 Other
 Legislation on periodic vehicle technical inspection²
 National laws on front and side impact protection
 National laws on seat-belt and seat-belt anchorages
 National law on electronic stability control
 National law on pedestrian protection
 National law on anti-lock braking systems
 Government vehicle procurement practices include safety prerequisites
 Presence of high-quality safety standards for used-vehicle imports²

POST-CRASH RESPONSE

National law on universal access to emergency care
 National law guaranteeing free-of-charge access to rehabilitative care for all injured
 National law guaranteeing free-of-charge access to psychological services to road crash victims and their families
 National good Samaritan law
 National emergency care access number
 National target for time between serious crash and initial provision of professional emergency care (year)

INSTITUTIONAL FRAMEWORK

Presence of strategies to promote alternatives to individuals' use of powered vehicles
National road safety strategy²
 Fatality reduction target (year)
 Non fatal reduction target (year)
 Funding to implement strategy
 National law mandating third-party liability insurance for powered vehicles
 National law on driving time and rest periods for professional drivers²
 Adherence to one or more of the 7 UN road safety conventions²
 Presence of national lead agency to implement national road safety strategy²
 Presence of agencies that coordinate pre-hospital and emergency medical services²

ROAD USER BEHAVIOUR

Legislation on urban speed limits for passenger cars and motorcycles²
 National law setting a speed limit
 Maximum urban speed limit
 Maximum rural speed limit
 Maximum motorway speed limit
 Local authorities can modify limits
 Presence of targets to reduce speeds nationally (year)²
 Available types of enforcement
Legislation on drink driving²
 National law on drink driving
 BAC limit – general population
 BAC limit – young or novice drivers
 Random breath testing carried out
 Presence of targets to reduce driving after drinking nationally (year)²
 Testing carried out in case of fatal crash
Legislation on drug driving
Legislation on distracted driving (mobile phones)
 Ban on mobile phone use²
 Presence of targets to reduce distracted driving nationally (year)²
Legislation on helmets for motorcycle riders²
 National motorcycle helmet law
 Legislation requires helmet fastening
 Legislation applies to:
 Legislation applies to all road types
 Legislation applies to all engine types
 Legislation refers to and/or specifies helmet standard²
 Presence of targets to increase helmet use
 Helmet wearing rate² (Driver; Passenger)
 Minimum age/height children are allowed as passengers
Legislation on seat-belts for motor vehicle occupants²
 National seat-belt law
 Legislation applies to front and rear seat occupants
 Presence of targets to increase seat-belt use (year)
 Seat-belt wearing rate² (Driver; Other front seat; Rear seat)
Legislation on child restraint systems²
 National child restraints use law
 Children seated in front seat
 Age or height specified for children requiring child restraint
 Child restraint standard referred to and/or specified
 Presence of targets to increase child restraint use (year)

NATIONAL DATA SYSTEMS ON...

Civil Registration and Vital Statistics 2021
 Frequency and distribution of journeys by modal type
 Speeding violations and speeding-related injuries and fatalities²
 Driving under the influence of alcohol and related road traffic-related fatalities and injuries²
 Seat-belt and child restraint systems use²
 Powered 2- and 3-wheeler helmet use²
 Mobile phone use while driving²

1 4W = 4-wheel vehicles, 2/3W = powered 2/3 wheelers, P = pedestrian, C = cyclist; 0 = other

2 UN voluntary target indicator

* Alcohol consumption prohibited in country

† Country adheres to corresponding UN or equivalent international safety regulation

‡ Corresponding EU regulation mandatory for country

§ Not validated

Legislative review and mortality estimations conducted by WHO. International regulation, population and income level from external sources. All other data collected by WHO via survey and cleared by government-designated National Data Focal Points. See Methods for more detail.

Stronger Moderate Weak /None

↑ Increase ↓ Decrease = No change ↻ Change ➡ Advancement
 - Not provided N/A Not applicable Ⓔ Evolution since 2010 or closest year possible

Annex 6. Guide to Country and territory profiles

This annex explains the terms used through the report and the indicators included in the country and territory⁹ profiles. Wherever relevant, It also connects these terms with the wording of the UN Voluntary Performance Targets indicators (UNVTI).

Concepts presented in the order in which they appear in the country or territory profile (top to bottom, left to right).

Country name, Population: Self explanatory

Income group: The source of this information is the World Bank estimated 2021 Gross Domestic Product and the following are the cut off points: less or equal than US\$1 085 low-income; US\$ 1 086 to US\$ 4 355 lower-middle-income; US\$ 4 256 to US\$ 13 205 upper-middle-income; US\$ 13 205 or more, high-income. More information in https://databankfiles.worldbank.org/public/ddpext_download/GDP.pdf.

WHO Region: WHO clusters countries into six regions: the African Region, the Region of the Americas, the South-East Asia Region, the Eastern Mediterranean Region, the European Region, and the Western Pacific Region. Unless stated otherwise, countries are WHO Member States.

GSRRS participation (*participation in the Global status report on road safety series*): The *Global status report on road safety* has been published in 2009, 2013, 2015, 2018, and 2023¹⁰.

Reported fatalities (year): Country-reported number of road traffic deaths and calendar¹⁰ year to which reported figure belongs.

Reported fatalities by sex distribution (Males; Females): Country-reported data by sex may be from a different source to the reported fatalities (above). The proportion of deaths where sex was unknown are not show. As a result, proportions may not add up to 100. Proportions may also not add up to 100% due to rounding off.

Reported fatalities by user distribution: Country-reported data by user type may be from a different source to those used for the indicators above. User types shown are motorized-4-wheel occupants, powered 2/3 wheel occupants, pedestrians, cyclists, and others. The proportion of deaths where user type was unknown are not show. As a result, proportions may not add up to 100. Proportions may also not add up to 100% due to rounding off.

WHO estimated road traffic fatalities (and 95% Confidence Interval (CI)) (year): The estimated number of road traffic deaths is based on methodology described in Annex 1. Where this number is based on a negative binomial regression model, a 95% CI is also shown. Estimates are all for year 2021.

WHO estimated rate per 100 000 population (year): The estimated rate per 100 000 population is based on the estimated number of road traffic deaths referred to above and the July 1 population in the country as described in UN Population Division.

Total paved kilometres (year): Country-reported number of paved kilometres, and calendar year to which reported figure belongs.

Presence of technical standards for new roads that take account of all road-user safety, or align with relevant UN Conventions and regulate compliance with them: Country-reported information on audits or star rating on new road infrastructure projects is reported as “yes”, “no” or “partial” and contrasted (as indicated by optional footnote) with country adherence to at least one of the following international road conventions: The 1950 Traffic Arteries Convention; 1975 European Agreement on Main International Traffic Arteries; and the 2003 Interstate Asian Highway Convention.

Presence of systematic approaches to assess/audit new roads: Information on inspections/star ratings of existing road infrastructure projects is

⁹ In the two territory profiles the terms national/subnational are not used.

¹⁰ Gregorian calendar year is used through the report. Years reported in other calendars have been translated into the closest full Gregorian calendar year.

reported as “yes” or “no”. “Yes” responses were those where respondents answered “yes” for the existence of formal road safety inspections and/or existence of star rating assessments. Those countries for which respondents answered “yes” only for the existence of maintenance safety inspections are reported as “No”. This information is treated as equivalent to “Use of systematic approaches to assess/audit new roads”, UN Voluntary Global Road Safety Performance Target (UNVTI3b).

National law requiring a formal road safety inspection/assessment: Country-reported. Its WHO validation (not evaluation) is shown in optional footnote.

Target for roads to meet technical safety standards for all users (year): Country-reported.

Investments to upgrade high-risk locations: Country-reported.

Total registered vehicles [rate per 100 000 pop] (year): Country-reported information about the total number of vehicles in the country includes only registered vehicles, and various categories of such vehicles. This is the cumulative number of vehicles in circulation in 2021 (or the most recent year for which data were available). The year is also documented. Note this is not the number of vehicles brought into circulation that year. In a few countries the number of vehicles in subcategories did not add up to the total number provided. Rate is calculated using same denominator as fatality rate described earlier in this Annex.

4-wheel vehicles: Breakdown of total vehicle figure as reported by countries: includes cars and light vehicles (e.g., vans, sport utility vehicles (SUVs), pick-up trucks) carrying no more than nine occupants.

Powered 2- and 3-wheelers: Breakdown of total vehicle figure; includes powered 2-wheel mobility devices.

Heavy trucks: Breakdown of total vehicle figure: ≥3500 kg).

Buses: Breakdown of total vehicle figure: carrying more than nine occupants.

Other: Breakdown of total vehicle figure: excludes unknown.

Legislation on periodic vehicle technical inspection: Country-reported and WHO validated (but not evaluated) legislation. This is contrasted (and indicated with footnote) with the country’s adherence

to international conventions: 1997 Periodic Technical Inspection as described by UNECE or 2014 European Union (EU) Directive 45. This information is treated as equivalent to “Use of systematic approaches for vehicle assessments”, UN Voluntary Global Road Safety Performance Target (UNVTI5b)

National laws on front and side impact protection: Country-reported and WHO validated (but not evaluated) legislation. In addition, the footnote informs on whether the country adheres to international vehicle standards such as Frontal impact standard (UN Regulation 94 and 95 or equivalent).

National laws on seat-belts and seat-belt anchorages: “Seat-belt anchorages” are the parts of the vehicle structure or the seat structure or any other part of the vehicle to which the safety-belt assemblies are to be secured.¹¹ This item corresponds to country-reported and WHO validated (but not evaluated) legislation. In addition, the footnote says whether the country adheres to international vehicle standards such as Frontal impact standard (UN regulation 14 and 16, or equivalent).

National law on electronic stability control: Electronic stability control (ESC) is an active safety system that can be fitted to cars, buses, coaches and trucks. It is an extension of antilock brake technology, which has speed sensors and independent braking for each wheel. It aims to stabilize the vehicle and prevent skidding under all driving conditions and situations, within physical limits. It does so by identifying a critical driving situation and applying specific brake pressure on one or more wheels, as required. This item corresponds to country-reported and WHO validated (but not evaluated) legislation. In addition, the footnote says whether the country adheres to international vehicle standards such as ESC (Regulation 13H or GTR8). More information in <https://road-safety.transport.ec.europa.eu/>.

National law on pedestrian protection: Pedestrian protection systems are in-vehicle technology systems that detect pedestrians and cyclists in close proximity to the vehicle and may give a signal when collision is imminent. For more information, visit <https://unece.org/sustainable-development/press/two-new-un-vehicle-regulations-will-increase-protection-pedestrians>. This item corresponds to country-reported and WHO validated (but not evaluated) legislation. In addition, the footnote says whether the country adheres to international vehicle standards such as Regulation 127 or GTR9.

¹¹ Adapted from the UN regulation on seatbelts and anchorages

National law on braking systems: Anti-lock braking systems aim to prevent the locking of wheels during braking when under emergency conditions, thereby preventing the motorcyclist from falling from their vehicle. For more information, visit <https://road-safety.transport.ec.europa.eu/>. This item corresponds to country-reported and WHO validated (but not evaluated) legislation. In addition, the footnote says whether the country adheres to international vehicle standards such as Regulation 13H (not to be confused with newly proposed Regulation 152).

Government vehicle procurement practices include safety prerequisites: Country-reported policies regarding the purchase of vehicles.

Presence of high-quality safety standards for used-vehicle imports: Country-reported. This information is treated as equivalent to UN Voluntary Global Road Safety Performance Target, "Presence of high-quality safety standards for used-vehicle exports" (UNVTI5c).

National law on universal access to emergency care: Refers to specific legislation to ensure access to care regardless of the ability to pay (i.e., payment cannot be required as a pre-requisite for receiving care). This information is country-reported and WHO validated (but not evaluated).

National law guaranteeing free-of-charge access to rehabilitative care for all injured: Reference to laws that do not require payment as a pre-requisite to accessing rehabilitation care. This information is country-reported and WHO validated (but not evaluated).

National law guaranteeing free-of-charge access to psychological services for road-crash victims and their families: Reference to laws that do not require payment as a pre-requisite to accessing psychological care. This information is country-reported and WHO validated (but not evaluated).

National good Samaritan law: Good Samaritan/bystander protection laws seeks to protect good Samaritans/bystanders from some legal claims when a recipient of the bystander emergency care is harmed in the process. This information is country-reported and WHO validated (but not evaluated).

National emergency care access number: National emergency care access number is reported as "national, single number", "national multiple number" and "partial coverage". Countries with a "national, single number" comprise those that had one single emergency care

services number with total country coverage and also those having additional numbers with partial coverage. Countries with "national, multiple numbers" comprise those that had multiple emergency care services access numbers that, taken together, provide total country coverage. Countries with "partial coverage" comprise those that had one or more emergency care services access numbers with partial country coverage overall with areas of the country remaining uncovered: this information is country-reported.

National target for time between serious crash and initial provision of professional emergency care (year): Country-reported information

Presence of strategies to promote alternatives to individuals' use of powered vehicles: This information is country-reported.

National road safety strategy: Country-reported information that is combined into an indicator to characterize it as "yes" if a published national action plan exists that provides for regularly updated, time bound targets for reductions in fatalities and injuries. In addition, the strategy needs to be active at the calendar year 2021. This indicator is used to inform UN Voluntary Global Road Safety Performance Target (UNVTI1a).

Fatality reduction target (year): Country-reported percentage reduction target (if any) and calendar year in which it is to be secured.

Nonfatal reduction target (year): Country-reported percentage reduction target (if any) and calendar year in which it is to be secured.

Funding to implement strategy: Country-reported.

National legislation mandating third-party liability insurance for powered vehicles: Refers to legislation requiring drivers to carry insurance that covers the driver in the event of a crash for which they are responsible for injury to a person or damage to property. This information is country-reported and WHO validated (but not evaluated).

National law on driving time and rest periods for professional drivers: Country-reported and WHO validated (but not evaluated) legislation. In addition, the footnote says whether the country adheres to international vehicle standards such as the 1979 AETR Convention. This indicator is used to inform whether Professional drivers' driving time and rest periods are regulated, effectively enforced, and audited

– this corresponds to UN Voluntary Global Road Safety Performance Target UNVTI11b.

Adherence to one or more of the seven UN road safety conventions: External sources (see Annex 1) facilitate information on adhesion to any of the following regulations: 1949 Convention on Road Traffic, 1968 Convention on Road Traffic, 1968 Convention on Road Signs and Signals, 1958 Agreement concerning the Adoption of Harmonized Technical United Nations Regulations for Wheeled Vehicles, Equipment and Parts which can be Fitted and/or be Used on Wheeled Vehicles and the Conditions for Reciprocal Recognition of Approvals Granted on the Basis of these United Nations Regulations, 1997 Agreement concerning the Adoption of Uniform Conditions for Periodical Technical Inspections of Wheeled Vehicles, 1998 Agreement concerning the Establishing of Global Technical Regulations for Wheeled Vehicles, Equipment and Parts, or 1957 Agreement concerning the International Carriage of Dangerous Goods by Road (ADR). An indicator summarizing whether a country has adhered to at least one of these seven conventions is the basis for UN Voluntary Global Road Safety Performance Target (UNVTI12).

Presence of national lead agency to implement national road safety strategy: Country-reported information combined into one indicator to summarize “Presence of national lead agency to coordinate, monitor, evaluate and implement multisectoral national road safety action plan”, UN Voluntary Global Road Safety Performance Target (UNVTI11b).

Presence of agencies that coordinate pre hospital and emergency medical services: Country-reported information combined to confirm the “Presence of agencies that effectively coordinate pre hospital and facility based emergency medical services” which doubles as UN Voluntary Global Road Safety Performance Target (UNVTI12b).

Legislation on urban speed limits for passenger cars and motorcycles: Country reported and WHO validated and evaluated information. Evaluation results of below explained items allow characterization of countries into four levels (strongest to weakest): level 3) law exists, urban limits are set at 50 km/h or lower, and local authorities can further modify this limit; level 2) law exists, urban limits are set at 50 km/h or lower but limits cannot be lowered locally; level 1) law exists but urban limits are higher than 50 km/h or no legislation exists; and level 0) legislation was not available for validation.

Whether a country has changed its legislation to meet level 3 defines a country’s “Speed-control legislation been strengthened since last reporting”, UN Voluntary Global Road Safety Performance Target (UNVTI6a).

National law setting a speed limit: Speed limits are the default speed limits on urban roads, rural roads and motorways for private passenger cars. The speed limits have been, where needed, converted in kilometres per hour. “Default speed limit” was interpreted as the maximum speed limit applied in normal circumstances (regardless of weather, roadworks, special events, etc.) on the road type considered. As road classifications vary greatly from country to country, special attention was paid to confirm or correct speed limits reported in the legal analysis for the different types of roads according to the definitions used in the country concerned. In some countries, the legislation does not articulate speed limits by road type but only by vehicle type. In these countries, the speed limits provided for private passenger cars is reported in the country and territory profiles for all road types.

Maximum urban speed limit: See above.

Maximum rural speed limit: See above.

Maximum motorway speed limit: See above.

Local authorities can modify limits: The criterion “local authorities able to modify speed limit” corresponds to country answering “Yes” to whether the speed limit can be altered at a local level in any way (decreased and/or increased). The definition of local authorities is interpreted broadly as any entity that is not from the central system of government (i.e., not from a national ministry) having jurisdiction over a local area whether the local area is a region, a province, a district, a department or a city. This criterion is automatically answered “Yes” for countries in which laws are set at subnational level if at least 80% of subnational entities of the country have set their own speed limits.

Presence of targets to reduce speeds nationally (year): Country-reported information.

Available types of enforcement: Country-reported information.

Legislation on drink driving: Country-reported and WHO validated and evaluated information. Evaluation of results on topics explained items allow characterization of countries into 4 levels (strongest to weakest): level 3) national legislation on drink driving exists, alcohol levels are defined by BAC, alcohol limits per general

driving population are ≤ 0.05 g/dl and for novice drivers ≤ 0.02 g/dl; level 2) national legislation on drink driving exists, alcohol levels are defined by BAC, alcohol limits per general driving population BAC is between 0.05 and 0.08 g/dl or the novice/professional drivers are allowed >0.02 g/dl; level 1) legislation is not based on BAC or legal limits >0.08 g/dl or no legislation exists; and level 0) legislation was not available for validation. Whether a country has changed its legislation to meet level 3 defines a country's "Presence of legislation (and effective enforcement) on driving under the influence of alcohol substances (based on alcohol laws)", UN Voluntary Global Road Safety Performance Target (a modification, as it excludes "psychoactive substance" and "effective enforcement" from the definition of UNVTI9a).

If the country has national legislation to prohibit alcohol in general population, this is noted both in the Country and territory profiles as well as the corresponding map.

National law on drink driving: As explained above.

BAC limit – general population: Blood alcohol concentration (BAC) limits (or breath alcohol limits (BrAC) converted to BAC limits) refer to the maximum amount of alcohol legally acceptable in the blood of a driver on the road (i.e., the blood alcohol level above which a driver may be punished by law). This figure is provided for the general population and for young/novice drivers in grams per decilitre (g/dl). This survey gathered information on drink driving laws regardless of the legal status of alcohol in the country. Where alcohol consumption was legally prohibited in a country, this is indicated by a footnote. BAC limits are reported with a dash "–" for countries that have a drink driving law that is not based on blood (or equivalent breath) alcohol concentration.

BAC limit – young or novice drivers: As explained above.

Random breath testing carried out: The use of random breath testing is indicated based on countries' reports on whether or not such testing is carried out. It refers to the ability or statutory authority of an enforcement officer to stop a vehicle and test the driver at random, without need to establish that the driver committed another offence, or that the driver showed any signs of impairment prior to being stopped. For more information, see <https://www.grsroadsafety.org/wp-content/uploads/2023/09/3094-IFRC-Drink-Driving-Management-manual-revision-Sept-2023.pdf>.

Presence of national targets to reduce drink driving (year): Country-reported information.

Testing carried out in case of fatal crashes: Country-reported information.

Legislation on drug-driving: Country-reported and WHO validated (but not evaluated) legislation. This information is used to define the "Availability of national and, where applicable, subnational data on driving under the influence of [...] psychoactive substances and related road traffic related fatalities and injuries" a modification – as it excludes alcohol of UNVTI9a. This modification we label UNVTI_drug.

Legislation on distracted driving (mobile phones): Country-reported and WHO validated (but not evaluated) legislation. This information is used to define the "Effectively enforced legislation on restricting or prohibiting the use of mobile phones while driving", which doubles as UN Voluntary Global Road Safety Performance Target (UNVTI10a).

Ban on mobile phone use: Self explanatory.

Presence of national targets to reduce distracted driving nationally (year): Country-reported information.

Legislation on helmets for motorcycle riders: Country-reported and WHO validated and evaluated information. Evaluation results of below explained items allow characterization of countries into four levels (strongest to weakest): level 3) law exists and it covers all riders, on all road types, and all engine types, and the helmet must be fastened and the helmet must meet a standard; level 2) law exists and it covers all riders, on all road types, and all engines types but fastening or standard are not required; level 1) law applies only to certain types of riders, roads or engine types or no legislation exists; and level 0) legislation was not available for validation. Meeting the level 3 definition is used to define the presence of legislation requiring adult motorcycle riders "to wear a helmet properly fastened and meeting appropriate standards for protection" which doubles as UN Voluntary Global Road Safety Performance Target (UNVTI7a).

National motorcycle helmet law: Self explanatory.

Legislation requires helmet fastening: Self explanatory.

Legislation applies to drivers and passengers: A reference to "riders" in the law is understood to include both drivers and adult passengers.

Legislation applies to all road types: Self explanatory.

Legislation applies to all engine types: All powered 2- and 3-wheelers are covered by the law, regardless of engine power.

Legislation refers to and/or specifies helmet standard: The criteria “law refers to and/or specifies a helmet standard” is answered “Yes” if the law refers to a specific standard (such as ECE 22 or a national standard) or an authority in charge of setting such a standard, or regulations or rules to specify or develop a standard. Information on the actual adoption of the regulations prescribing a helmet standard was not always available. Whether the country has adhered to the international standard itself is in an optional footnote.

Presence of targets to increase helmet use (year): Country-reported information.

Helmet wearing rate (driver; passenger): Country-reported information. The most disaggregated data are represented here (i.e., separate figures for drivers and passengers). Note the information for drivers and passengers does not necessarily represent the same year, nor come from the same source. The data on passenger rates refer to adult passengers unless otherwise indicated. Whether rates for helmet use for drivers and passengers are above 80% is used as indicative of the “Proportion of motorcycle riders correctly using helmets close to 100%, which corresponds to UN Voluntary Global Road Safety Performance Target (UNVTI7e).

Minimum age/height children are allowed as passengers: Country-reported and WHO validated information on whether the country restricts children as passengers on motorcycles and if “yes”, for what age group.

Legislation on seat-belts for motor vehicle occupants: Country-reported and WHO validated and evaluated information. Evaluation results of the topics explained below allow characterization of countries into four levels (strongest to weakest): level 3) law exists and it applies to all seating positions in vehicles always; level 2) law only applies to front-seat occupants; level 1) law only applies to the driver or no legislation exist; and level 0) legislation was not available for validation. Reaching the level 3 definition is used to define “Legislative improvements made since last reporting towards best practice standards” which corresponds to UN Voluntary Global Road Safety Performance Target (UNVTI8a).

National seat-belt law: Law applies to all roads and at all times.

Legislation applies to front and rear-seat occupants: Self explanatory.

Presence of targets to increase seat-belt use (year): Country-reported information.

Seat-belt wearing rate (drivers; front seat occupants; rear seat occupants): Country-reported information. Where available, information on wearing rates disaggregated by driver, front- and rear-seat occupants were used. Note that the information provided for front-seat and rear-seat occupants does not necessarily represent the same year, nor come from the same source. Whether rates for driver, front-seat occupant and rear-seat occupants are above 80% is used as indicative of the “Proportion of all motor vehicle occupants using safety belt close to 100%, which corresponds to UN Voluntary Global Road Safety Performance Target (UNVTI8c).

Legislation on child restraint systems: Country-reported and WHO validated and evaluated information. Evaluation results of the topics below allows characterization of countries into 4 levels (strongest to weakest): level 3) law exists, children up to 10 years of age or 135 cm of height must use a child restraint system matching a standard in addition to the prohibition of children of a particular age/height prohibited from sitting in the front seats; level 2) same as previous level except that either the age of the child is set at 4 years or there is no requirement for a standard; level 1) law not based on age/height criteria and no standard or no legislation exist; and level 0) legislation was not available for validation. A country is interpreted as having a child restraint law where the country requires the mandatory use of child restraint systems for an identified group of children based on either their height and/or their age and/or their weight. Countries whose laws require that children within a certain age group/weight use either a seat-belt or a child restraint were reported as not having a child restraint law for this age group/height. Countries that referred to child restraint use for children sitting in the front only (and not in the rear) were reported as not having a child restraint law. Reaching the level 3 definition is used to define “Presence of effectively enforced legislation requiring the use of child restraint systems that meet appropriate standards” which doubles as UN Voluntary Global Road Safety Performance Target (UNVTI8b).

National child restraints use law: Child restraints include rear-facing child restraints, forward-facing child restraints, as well as booster seats. Regular (adult)

seat-belts, on their own, are not counted as appropriate child restraints.

Children seated in front seat: The criterion “children seated in front” sets out whether a country restricts children as passengers in front seats, and if so, what the restrictions are (e.g. a complete ban, or subject to placing the child in a safety restraint system and for which age group).

Age or height specified for children requiring child restraint: The age and/or height reported for the criteria “child restraint required” corresponds to the range of years of age for which only child restraint systems are allowed to restrain children (i.e. no other form of restraint is allowed such as seat-belts only, “other means”, etc.)

Child restraint standard referred to and/or specified: Countries that referred to either child restraint use or “other means” were considered as not meeting the “standard” criteria. The criterion “law refers to and/or specifies a standards” is answered “Yes” if the law refers to a specific standard (such as ECE 44 or ECE 120) or an authority in charge of setting such a standard, or regulations or rules to specify or develop a standard. Information on the actual adoption of the regulations prescribing a standard was not always available; in cases where the country indicated that the standard had not yet been set, a corresponding footnote was included in the Country and territory profile. Whether the country adheres to any international standard on child restraint systems is noted with a footnote.

Presence of targets to increase child restraint use (year): Country-reported information.

Civil Registration and Vital Statistics 2021: Source is WHO. See Annex 1 (Methods).

Frequency and distribution of journeys by modal type: Country-reported information.

Speeding violations and speedingg related injuries and fatalities: Country-reported information. This information is meant to capture “Presence of national and, where applicable, subnational data systems on speeding violations and speeding related injuries and fatalities”, which is UN Voluntary Global Road Safety Performance Target (UNVTI6c).

Driving under the influence of alcohol or drugs and related road traffic related fatalities and injuries: Country-reported information. This information is meant to capture “Availability of national and, where applicable, subnational data on driving under the influence of alcohol and/or psychoactive substances and related road traffic related fatalities and injuries” which is UN Voluntary Global Road Safety Performance Target (UNVTI9b).

Seat-belt and child restraint systems use: Country-reported information. This information is meant to capture “Presence of national and, where applicable, subnational data on use of safety belts, as well as the appropriate use of a-restraint systems” which is UN Voluntary Global Road Safety Performance Target (UNVTI8f).

Powered 2- and 3-wheeler helmet use: Country-reported information. This information is meant to capture “Presence of national and, where applicable, subnational data systems on helmet use” which is UN Voluntary Global Road Safety Performance Target (UNVTI7d).

Mobile phone use while driving :Country-reported information. This information is meant to capture “Presence of national and, where applicable, subnational data systems on the use of mobile phones while driving” which is corresponds to UN Voluntary Global Road Safety Performance Target (UNVTI10b).

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