SAVING LIVES BEYOND 2025

Taking Further Steps

RECOMMENDATIONS

of the Academic Expert Group

for the 4th Global Ministerial Conference

on Road Safety

Commissioned by the Swedish Transport Administration

January 2025

Foreword

Roberto Maiorana, Director General
of the Swedish Transport Administration

Though well known by those reading our report, it bears repeating that road traffic fatalities and injuries remain a critical public health problem globally, with nearly 1.2 million people dying on the roads each year. More than 90 percent of these fatalities are in low- and middle-income countries and, tragically, road deaths are the leading cause of death for children and young people. To address this crisis, the recommendations in this report call for urgent action and stronger commitments from a wide range of stakeholders – not only by governments, but also by public and private organisations, city governments, finance providers and the automotive sector.

To launch the second Decade of Action in February 2020, Sweden hosted the 3rd Global Ministerial Conference on Road Safety. This conference marked the first clear convergence of road safety and the broader Sustainable Development Goals. In preparation for the Stockholm conference, the Swedish Transport Administration convened an international Academic Expert Group (AEG) to propose recommendations for advancing global road safety. These recommendations were directed to all parts of society, low- and middle-income nations as well as high-income countries, and towards all the cornerstones of a safe road transport system. They were built around the potential of integrating road safety with the full sustainability agenda including climate, health, and equity.

In the run-up for the 4th Global Ministerial Conference on Road Safety, the Swedish Transport Administration again convened the Academic Expert Group (AEG2) to develop a new set of recommendations to further accelerate progress. Building on the broad ideas introduced in the first AEG report, the new recommendations more explicitly point out specific sectors, actors, roles, and actions that can result in near-term change in road safety globally. These recommendations build on the outcomes of the conference in Stockholm, and aim to make a tangible contribution to achieving the target of a 50 percent reduction in global road fatalities and injuries by 2030.

This report describes how organisations, both public and private, can reduce their safety footprint and stimulate others within their sphere of influence to follow their lead. In particular, the report highlights the right to safe workplaces, and how occupational health and safety obligations can motivate organisations to take on road safety as part of their efforts to demonstrate compliance and assure customers, investors, and business partners of their control of the leading cause of work-related injury deaths. About one-third of global road deaths are work-related and occupational health and safety obligations clearly cover worker safety whether on an employer's premises or on public roads.

As we gather in Marrakesh for the 4th Global Ministerial Conference on Road Safety, I am proud to share these new recommendations with the global road safety community. They were developed by a group of internationally recognized road safety professionals, reflecting their accumulated wisdom and vision for accelerating global road safety progress. The recommendations of the Academic Expert Group are universal. They can be applied anywhere in the world and are built on a solid knowledge and practice foundation.

Halfway through the second Decade of Action, we are still a long way from achieving the global target of a 50 percent reduction in road deaths, and the Swedish Transport Administration strongly believes that the only way to achieve this ambition is to work systematically and collaborate globally.

On behalf of the Swedish Transport Administration, I would like to thank the Academic Expert Group for this important intellectual contribution. I also want to acknowledge the experts in my own organisation and our many global partners for their valuable input to this lifesaving work. The theme of the 4th Ministerial conference is particularly appropriate, "one road, one world, commit to life", and in support of the Government of Morocco and the World Health Organization, we are confident that this gathering of world leaders and experts will result in strong commitments that will accelerate action towards the target of halving global road fatalities by 2030.

Together, towards Vision Zero!

Preamble

Internalizing road safety in every organization:
The next step in transforming global road safety.

> *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 31 countries. In these countries… 5% 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".*
>
> ***From the Global Status Report on Road Safety 2023***

> *The police should be more active in searching for this kind of information to make it possible to estimate the number of killed third party victims. In the present study, with some cases not possible to identify, the number of third-party victims [in work-related crashes] were three times more common than those employed or contracted killed.*
>
> ***From Kullgren et al, 2023***

Nearly 1.2 million people die annually on roads around the world, a problem recognized by the World Health Organization as a global pandemic. An organized movement centered in the United Nations is addressing the problem through coordinated strategies, plans, and investment. This UN global road safety effort now approaches the midpoint of its second decade and is showing modest progress.

A global meeting of Transport Ministers, the 4th Global Ministerial Conference on Road Safety, will mark the halfway point of the second Decade of Action for Road Safety, gathering the world's leading experts and authorities to assess progress and consider new directions. To prepare for this midcourse examination, an Academic Expert Group convened by the Swedish Transport Administration has examined the range of factors affecting road safety progress and recommended strategies that can maximize improvement in the second half of the decade and beyond.

The recommendations of the Academic Expert Group depart from tradition. After more than a century of looking to governments for primary responsibility for safe roads and traffic, the Group's deliberations recognize that the scale of the global problem will require a much broader effort. The Academic Expert Group concludes that a new level of road safety commitment and action can be reached by supplementing the work of governments with the power of non-government organizations of all types. Integrating road safety responsibility in the mission and operations of non-government organizations can leverage and extend the work of governments and compound the rate of global change.

These new recommendations follow a report from the same group at the beginning of the decade[1]. That report highlighted the synergies between road safety and the UN Sustainable Development Goals, a comprehensive set of goals for "peace and prosperity for people and the planet"[2]. Integrating road safety in these goals benefits both safety and sustainability, steering more effort to road safety while advancing the goals of equity, climate, and human well-being. Safer roads can improve access to education and healthcare, reduce global warming, and provide more livable cities by allowing children and youth to walk and cycle safely.

The new recommendations extend this principle of integration, targeting non-government as well as government organizations because of their global reach and impact, especially in low and middle-income nations where 90 percent of road deaths occur. When organizations internalize road safety – rather than externalize responsibility to individuals and/or the government – they can not only protect their workforce but also stimulate road safety responsibility and investment among the other organizations in their value chain, all those which supply their raw materials and those who distribute their finished products.

Looking at their entire value chain, the footprint of organizations comprises a significant portion of road traffic. Some organizational trips are links in long supply chains, others may move a single employee from one location to another to transact business. All these trips have a professional purpose and fall under the jurisdiction of business laws and regulations and therefore have the potential for stringent management. Organizational trips must comply with expectations, requirements, and often legal obligations, and be performed in an effective, safe, and sustainable way.

For most organizations, death and serious injuries among their employed and contracted workers, together with the third parties who are killed in these crashes, constitute their largest workplace losses. The Academic Expert Group approximates that work-related crashes comprise about one-third of total global road deaths, or about 400,000 fatalities per year. This approximation includes all those killed in a crash in which a driver was on work duty plus any third parties who were killed, such as those who were passengers in the working driver's vehicle, vulnerable road users struck by the working driver's vehicle, or occupants of other vehicles that were involved in a crash with a working driver. The approximation does not include crashes in which drivers were not working but may have been commuting to their workplace.

The new recommendations from the Academic Expert Group lay out both the rationale and a strategy for engaging non-government organizations in road safety responsibility and action. The strategy builds on existing motivations of these organizations to protect their investment in their employees, prevent injury or death to community members, and reduce the economic burden of crashes, injuries and disruptions. The recommendations focus on existing occupational health and safety obligations for performance and reporting, and include approaches for applying further incentives such as finance.

The tradition of blaming individuals for road deaths and not taking full advantage of evidence-based preventive actions can be superseded by a new paradigm where organizations are compelled to implement and maintain proven interventions to protect society. Mechanisms to internalize road safety are already in place in nearly all organizations but must be leveraged through radically improved understanding of how the best possible prevention practices can become nearly ubiquitous when integrated within organizational functions. Governments can set an example by requiring the highest safety standards, both among their workers and in their procurements. Non-government organizations can follow by adopting the best road safety risk management practices and requiring the same throughout their value chain.

The Academic Expert Group believes that approaches for reducing the pandemic of roadway deaths and serious injuries must continue to evolve and that substantial progress can be achieved if society uses its capacity to establish and enforce both regulations and public expectations to drive this transformation. It must expand its focus to create an ecosystem of road safety commitment consisting of government and non-government stakeholders, looking further than individual road user responsibility, and developing clear expectations for organizations of all types to implement evidence-based prevention techniques.

The report recommends action by sectors that can influence road safety, including non-government and government organizations and city governments in particular, the financial sector, and the automotive sector.

Recommendations address:

- How workplace safety rules and regulations and practices currently incorporate road safety and how these obligations can drive progress.
- How governments can stimulate the public sector to improve road safety by leading by example and using both regulation and its power of public procurement.
- How financial actors can compel corporations to develop plans to reduce and eventually eradicate road deaths and serious injuries across their value chains and report on their safety footprint.
- How organizations of all types can apply safe system principles and effective safety actions throughout their value chain, particularly in LMIC, and report on progress.
- How organizational safety culture can prevent road traffic deaths and serious injuries among employees and third parties in crashes where employees are involved.
- How the automotive sector can use their unique potential to produce and market vehicles to organizations that are safe and facilitate safe use.

The recommendations in this report have the potential to overcome the current compartmentalization of road safety responsibility that leads to road safety action being delegated primarily and exclusively to governments. They acknowledge the need to stimulate action to reach the road safety target adopted for the Second Decade of Action, the role of road safety in determining the peace and prosperity of our people and planet as articulated in the Sustainable Development Goals, and the need to engage sectors of society that hold great power for change. The recommendations also build on the foundation of the 2019 AEG report, extending its potential with more power for implementation.

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Executive Summary

Approaches for improving road safety over past decades have focused primarily on the governmental roles of regulation, financial support, education, and enforcement of rules, mostly aimed at the road user. These roles are essential to progress and much has been gained by refining tools for government action. We are far from finished and need to continue our work to build capacity among government officials to implement evidence-based road safety measures. However, even now we can see that governments alone will not be able to achieve the scale of change that is necessary. We must now broaden our ambition by looking to the full range of organizations, government and non-government, to better fulfill their road safety responsibilities.

The Potential of Organizations

Because road travel is an essential means for achieving the mission of virtually all organizations, those who own or manage organizations should be compelled to do all they can to prevent road traffic crashes involving their vehicles and injuries to their employees and others with whom they share the roads. Indeed, road traffic crashes are the leading cause of work-related severe injuries and death around the world. A global focus on these organizational obligations could be a game changer for road safety. By our approximation, one-third of all global road deaths – as many as 400,000 deaths annually – occur in crashes involving someone driving at or for work.

The potential of organizations is even more compelling when considering the reach of their value chains into low- and middle-income countries to access labor, production, and raw materials, and the opportunity this network provides for implementing efficient and effective prevention activities in nations that account for more than 90 percent of global road deaths.

The Power of Occupational Health and Safety Laws

Every organization, public and private, has a social contract to operate responsibly and within the law. Central in this social contract is an obligation – legal, moral, or both – to care for their employees and others who are affected by their operations. In most countries, these obligations are encoded in occupational health and safety authorities and/or regulations and laws. Road safety is included, either explicitly or implicitly, in a range of occupational health and safety conventions, regulations, standards and practices.

Work-related road traffic is fundamentally different than road use by others in the amount of control available to implement effective prevention measures. Risk prevention according to Vision Zero/Safe System principles is the key to road safety. Prevention begins with compliance with all road rules and involves decisions about the types of vehicles and safety technologies used, which roads are taken, and a range of operational factors including driver attention, sobriety, use of seatbelts or helmets, fatigue and time pressure, and travel speeds. In the work environment, Safe System principles can be embedded in the relationship between the organization and the employee, and expectations for organizational performance can be established, monitored, and enforced through occupational health and safety laws and practices.

Responsibilities Beyond the Corporate Gates

As a result of occupational health and safety laws, and expectations that an employer should take every reasonable precaution to guard the safety of its workers, occupational safety has improved dramatically over the past century. However, the gains have been primarily within the corporate gates, in the facilities owned and operated by the organization.

Legal principles are built on foundational expectations that those who have control have a responsibility to act in the public interest and these expectations are not limited by proximity. Organizations have extraordinary control of the risks of their road operations, and they can be expected to act on their responsibility regardless of whether their vehicles are within their gates or thousands of kilometers from their corporate headquarters.

The concept of the carbon footprint has changed the way we think about organizations' spheres of influence, highlighting the fact that organizational actions affect far more than what goes on inside their facilities. Organizational responsibility for their full footprint applies equally to climate and road safety. Occupational health and safety principles, conventions, standards, and laws extend to the full limits of the workplace, and the workplace commonly includes public roads.

An informal review by the Academic Expert Group did not find any occupational safety convention, regulation, or standard that differentiates the responsibility for preventing road traffic deaths and serious injuries to employees or third parties according to whether a crash occurs within the facility or outside on public roads. On the contrary, common occupational safety methods involving the **plan, do, check, and act** process are well suited to preventing unsafe working conditions in public road traffic.

The Way Forward

Realizing this opportunity for road safety is entirely feasible but requires adjustment of expectations and practices by a range of stakeholders. Our report discusses several key actions that are needed by non-government and government organizations, finance providers, as well the automotive sector in particular.

To achieve significant improvements in road safety we will continue to rely on governments for action across the road safety pillars, including policies, regulation, guidance, and funding. Additionally, we now need government leadership to fully integrate road safety in occupational health and safety expectations and practice. We also need innovative action by city governments to demonstrate how workplace safety rules can be used to improve road safety and other sustainability issues for their residents and to reform procurement processes to benefit social needs including road safety. We recommend that the public sector begin by leading by example, demonstrating how their own organizations practice road safety prevention in their public service operations. Government organizations could then build these expectations into their procurements so that any organization doing business with the public sector is expected to practice the same level of road safety care across their footprint. We recommend that governments then take a further step by clarifying expectations for road safety as part of occupational health and safety mandates and as a part of government inspection and verification processes.

The financial sector has a strong influence on organizations through the prerequisites they set for loans and investment. Over the past 20 years, the sector has organized to leverage their control, with initiatives such as Principles for Responsible Investment establishing expectations and methods of verifying that organizations receiving funds are fully in control of their performance on environmental, social, and governance (ESG) factors. Movement has started toward inclusion of road safety factors in financial decisions with examples such as the new rated criteria adopted by the World Bank in September 2023 that include detailed road safety factors for evaluating international procurements[3]. Recognizing the importance of road safety to ESG performance, the Academic Expert Group recommends that the financial sector establish specific and explicit expectations for road safety as prerequisites for funding.

For organizations of all types, our Academic Expert Group recommends the use of effective tools such as safety management systems and standards including ISO 45001 and ISO 39001. Safety management systems have proven effective in guiding organizations in measuring, improving, and reporting on road safety progress across their value chain. We also recommend that organizations establish and maintain a safety culture that supports the trust necessary to identify and report risks in road operations and systematically implement improvements.

Because the automotive sector is so critical to progress, we direct specific recommendations to the industry both as one of the largest global employers with consequent occupational health and safety obligations, and as owners of an extensive value chain of suppliers and distributors that creates an extraordinary footprint of influence that can be leveraged for road safety improvement. In addition, we stress the importance of the automotive sector facilitating the occupational health and safety efforts of other organizations by manufacturing commercial vehicles with the highest levels of safety performance including technologies that facilitate efforts by other organizations to ensure that their vehicles are operated safely and in compliance with traffic rules.

The Academic Expert Group is not the first to examine the relevance of occupational health and safety requirements to road safety. However, our review of opportunities in the context of current thought about organizational footprints and in light of the potential of new crash prevention technologies concludes that:

- Road traffic deaths are the most common cause of accidental death at the workplace, as many as 400,000 per year.
- Employers have the responsibility to prevent the risk of harm at the workplace, and are expected by laws, standards, practices, and social responsibility to use this control.
- There is no differentiation in organizations' responsibilities for work-related risks inside or outside their gates.
- Prevention practices are extremely powerful, and simply ensuring compliance with fundamental road rules is an important first step that should be applied everywhere.

Background and Context

Rationale for focusing on organizations

To inform deliberations at the 4th Global Ministerial Conference on Road Safety in Marrakech, Morocco in February 2025, an Academic Expert Group (AEG) convened by the Swedish Transport Administration considered progress and opportunities and recommended action in a direction that leverages proven strategies and substantially expands implementation and impact. This second iteration of AEG recommendations builds on the Group's prior report released in advance of the 3rd Ministerial Conference in Stockholm in 2020, elaborating on the need for evolution in road safety approaches described in that report and focusing on one of the central insights of the first Academic Expert Group report, the urgency for engaging additional sectors of society in implementing road safety practices.

These recommendations from the AEG focus on the need to expand our expectations for road safety action beyond national governments. The number of non-government organizations far outnumbers public sector agencies and tools exist for engaging many of these organizations in defined and measurable actions to reduce road deaths in their scope of influence. City governments also offer an opportunity because of their proven record of innovation in other areas of social progress and their specific ability to influence expectations for organizational action for road safety. The importance of engaging the workplace is underlined by scale of the work-related road safety problem, which the AEG approximates as about one-third of the overall problem, as many as 400,000 work-related road deaths each year.

An important part of the rationale for looking to non-government as well as government organizations for progress is the efficiency of using available tools including occupational health and safety regulations, standards of practice and reporting expectations, and the power of the financial sector to stimulate effective prevention practices. Occupational health and safety are basic human rights according to the United Nations[4] and there are provisions and processes in society to realize this expectation.

These recommendations from the AEG are based on four fundamental points concerning the potential of occupational health and safety for improving road safety.

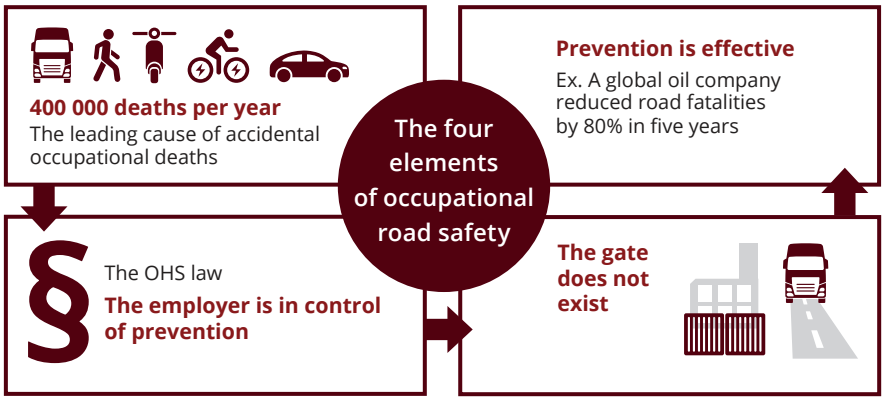


FIGURE 1. Fundamental rationale concerning the potential of occupational health and safety to improve road safety (Trafikverket)

- Road traffic deaths are the most common cause of accidental death at the workplace, as many as 400,000 per year.
- Employers have the responsibility to prevent the risk of harm at the workplace, and are expected by laws, standards, practices, and social responsibility to use this control.
- There is no differentiation in organizations' responsibilities for work-related risks inside or outside their gates.
- Prevention practices are extremely powerful, and simply ensuring compliance with fundamental road rules is an important first step that should be applied everywhere.

Progress in the Second Decade of Action

The Global Status Report on Road Safety 2023 estimates that road deaths in 2021 had dropped to an estimated 1.19 million, a reduction of about 5 percent from 2010 prior to the first Decade of Action[5]. While this estimate does not place the world on track to meet the target of 50 percent reduction that was established for the second Decade and previously for Sustainable Development Goal 3.6, it shows a decline from the prior decade despite the global vehicle fleet more than doubling and the world population increasing by nearly 1 billion.

Two-thirds of the global deaths in 2021 were among people between ages 18–59 years, with consequent health, social, and economic harm adding to the tragedy. Notably, motorcyclists and other powered two- and three-wheeler riders, vehicles increasingly used for commercial purposes, accounted for 30% of deaths. Occupants of four wheeled vehicles accounted for 25% of fatalities, pedestrians 21% and cyclists 5%. Occupants of vehicles carrying more than 10 people, heavy goods vehicles and "other" users constitute 19% of deaths. Ninety percent of

these deaths occurred in low- and middle- income countries, with of these most occurring in middle income nations. People in low-income countries continue to face the highest risk of road death per population[6].

Progress during the first decade was not evenly distributed. The European Region experienced the largest drop in road deaths, a 36% decline since 2010, while 66 countries reported increases, nearly half of which were in the African Region, which suffered a 17% rise in the number of deaths since 2010[7].

AEG Recommendations for the 3rd Global Ministerial Conference on Road Safety

The AEG was convened for the first time in 2019 to consider the experience of the first Decade of Action and develop recommendations to inform the deliberations at the 3rd Ministerial conference and the subsequent Stockholm Declaration. The AEG focused these recommendations on a vision for further road safety progress based on Safe System principles and utilizing the global momentum toward achievement of the UN Sustainable Development Goals (SDGs). The vision proposed widespread contributions to road safety by businesses, corporations, and governments through their entire value chains.

AEG Recommendations for the 3rd Global Ministerial Conference in 2020

A set of nine recommendations were made to build upon the foundation provided by the first Decade of Action and realize the vision over the coming decade:

- **Sustainable Practices and Reporting** including road safety interventions across sectors as part of SDG contributions.
- **Public Procurement** to utilize the buying power of public and private organizations across their value chains.
- **Modal Shift** from personal motor vehicles toward safer and more active forms of mobility.
- **Children's Health** encouraging active mobility by building safer roads and walkways.
- **Upgrade Infrastructure** to realize the value of Safe System design as quickly as possible.
- **Safe Vehicles Across the Globe** by adopting a minimum set of safety standards along with education.
- **Zero Speeding t**o protect road users from crash forces beyond the limits of human injury tolerance.
- **30 kph** in cities to prevent serious injuries and deaths to vulnerable road users when inevitable human errors occur.
- **Technology** development to bring benefits of safer vehicles and infra-structure to low- and middle-income countries.

Evolution of Road Safety Approaches

The first AEG report also included a description of the evolution of road safety consisting of three phases. FIGURE 2 shows that most nations begin with the road safety pillars as a foundation. Nations at every level of road safety development rely on the fundamental tools included among the pillars as the operational elements to achieve and maintain high levels of road safety.

Many nations have gone on to a second phase of road safety development that enhance the effect of pillar interventions by applying them selectively and strategically according to Safe System principles. The Safe System approach addresses problems closer to their root cause and on a broader scale than conventional methods.

The first AEG recommendations proposed a third level of road safety development that promises exponential benefits. At this level, road safety is no longer an independent initiative, (i.e., a road safety silo) but rather an integral part of the Sustainable Development Goals, that encompass a wide range of humanitarian initiatives and have broad societal support.

This second set of AEG recommendations further expand the means for implementing road safety objectives, supplementing the work of governments by engaging organizations of all types through their occupational health and safety obligations to protect employees and community members.

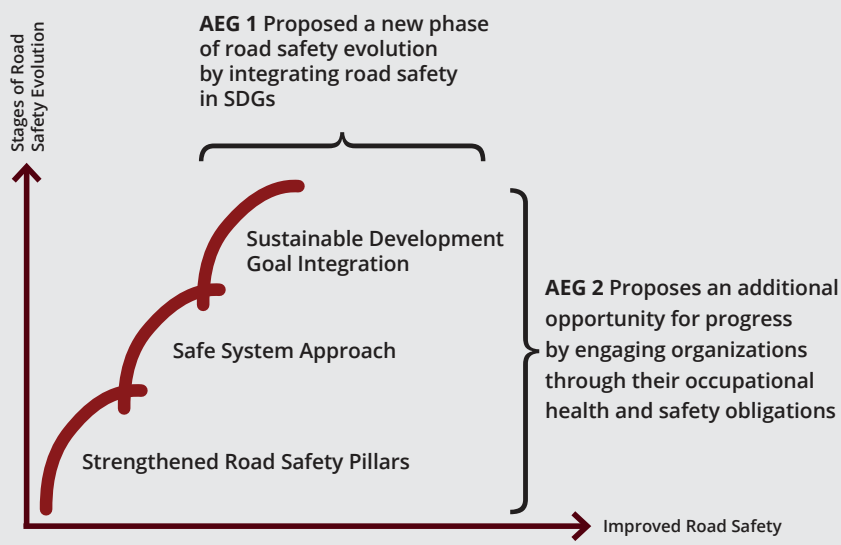


FIGURE 2. The Evolution of Road Safety – AEG 1 and AEG 2

Strengthened Road Safety Pillars

While there is still much to learn, we have the tools to vastly improve road safety around the globe. The five road safety pillars identified in the Global Plan for the 2011–2020 Decade of Action include a set of evidence-based interventions that can measurably improve the safety of road traffic, especially if they meet the design and management principles of the Safe System approach. These road safety pillars include tools for improving road safety management, and enhancing the safety of roads and mobility, vehicles, road users, and emergency response.

We have made progress in getting these tools into practice. What we need is much more progress, the sort of progress that will require a larger and more effective army of implementers. The Sustainable Development Goals – and the army of advocates who are advancing these goals around the world – can make a substantial contribution to this need.

Safe System Approach

The vision for the second decade multiplies the reach and impact of the tools within the five pillars and also extends the value of another critical component of the first decade, the Safe System approach. The vision recognizes that the tools of the five pillars will have the greatest effect on safety when they are applied alongside new tools in a strategic and pervasive manner following the proven principles of the Safe System approach. The Safe System approach – also referred to as Vision Zero – recognizes that road transport is a complex system which must be designed around human physical limitations and perceptual and cognitive capabilities. In order to achieve a high level of safety, the complete system – including road users, vehicles, the road infrastructure, and travel speeds – must interact in a way that ensures that these human capabilities are not exceeded.

A Safe System approach:

1. Seeks a transportation system that anticipates and accommodates human errors and prevents consequent death or serious injury.
2. Incorporates road and vehicle designs that limit crash forces to levels that are within human tolerance.
3. Motivates those who design and maintain the roads, manufacture vehicles, and administer safety programs to share responsibility for safety with road users, so that when a crash occurs, remedies are sought throughout the system, rather than solely blaming the driver or other road users.
4. Pursues a commitment to proactive improvement of roads and vehicles so that the entire system is made safe rather than just locations or situations where crashes last occurred.
5. Adheres to the underlying premise that the transportation system should produce zero deaths or serious injuries, and that safety should not be compromised for the sake of other factors such as cost or the desire for shorter transportation times.

Integration of Road Safety in Sustainable Development Goals

As an independent endeavor, the road safety movement is limited in potential reach and influence. Positioned as a special interest, road safety is often subordinate to other social needs and can gain progress only where it achieves attention by road users or those who make decisions about roads and vehicles. But if recognized as a basic necessity that can facilitate progress in meeting social needs ranging from gender equity to environmental sustainability, the potential of road safety can be greatly expanded.

Among the key achievements of the Decade of Action 2011–2020 was the inclusion of road safety in the Sustainable Development Goals. Because these Goals are defined as indivisible and mutually dependent, the explicit citation of road safety in the Health and Well-Being and Sustainable Cities goals is accompanied by implicit integration across the goals, and especially in those addressing climate, equity, education, and employment.

Integrating road safety among the Sustainable Development Goals is an important step toward embedding road safety expectations and activities in the far-ranging daily processes of governments and in the operations of corporations, businesses and civic organizations globally. Substantial levels of such widespread integration have yet to be achieved but have the potential to expand interventions to a scale where road deaths and serious injuries would be reduced to near zero.

The 2030 Agenda for Sustainable Development

The United Nations 2030 Agenda for Sustainable Development, adopted by all Member States in 2015, provides a shared blueprint for peace and prosperity for people and the planet, now and into the future. The Agenda is based on 17 Sustainable Development Goals (SDGs) and presented as an urgent call to action for both the public and private sectors in a global partnership.

The SDGs in FIGURE 3 cover a range of necessities for improving and stabilizing both the human condition and the condition of our planet, recognizing the interdependence of these two objectives.

FIGURE 3. United Nations Sustainable Development Goals

Making Progress by Engaging Organizations through Occupational Health and Safety

This second set of recommendations by the AEG proposes to advance road safety by engaging organizations of all types through their occupational health and safety obligations. Engaging the full range of organizations multiplies road safety potential by adding a sector that accounts for one-third of all road deaths, has proven to be effective at preventing workplace injuries within their organizational gates, and could be equally effective in reducing crashes, injuries and deaths on public roads by applying prevention interventions from our road safety pillars according to Safe System principles. Tools for engaging these organizations are readily available, including standards of practice, procurement, and reporting and compliance inspections, and finance.

Organizations and Road Safety

SIZE OF THE PROBLEM

While variations in definitions and reporting limit the precision of global estimates of the number of people killed annually in work-related crashes, data from a range of sources and perspectives support a **conservative approximation of 400,000 fatalities, or one-third of all global road deaths.** This approximation includes all of those killed in crashes related to organizational functions, both those employed by the organization and other road users who are killed as a result of the crash. This figure does not include crashes occurring during employee commutes to and from work, unless the commute is performed by the employer, for example through an organized employee bus service.

Data sources

Sources of data supporting this approximation include public databases of crash records, either at the national level or for a sub-jurisdiction, and records of occupational injuries from organizations that monitor occupational health and safety incidents. The public crash database perspective views work-related crashes as a portion of all crashes and the occupational health and safety perspective views motor vehicle crashes as part of the full range of occupational injury causes.

Each type of source has strengths and weaknesses. Public crash databases have widespread coverage in high income nations but lack consistency in reporting definitions and protocols and may not include reporting of whether a vehicle involved in a crash was being used for occupational purposes, thus under-reporting the extent of the problem[8]. Similarly, occupational health and safety databases also lack common definitions and may not include detail on motor vehicle incidents or third-party injuries.

A study of worldwide occupational road safety focused in 13 countries where data were available (primarily high income) and found that nearly half (6 of 13) of the national crash databases lacked information on whether fatal incidents were work-related and that the occupational injury sources in 5 of the 13 nations lacked reference to motor vehicle crashes as a mechanism of injury. Linkages between occupational injury and crash databases were found to be rare or non-existent[9].

Examples of work-related crash fatality estimates

Acknowledging current differences in definitions and reporting, the following examples of work-related crash fatality estimates both illustrate the range of estimates and support a reasonable approximation of the global problem.

Estimates of the proportion of occupational injuries due to motor vehicle crashes

A study of occupational injuries in Ghana found motor vehicle crashes (combined motor vehicle and pedestrian) to be the cause of about 21 percent of injuries in urban areas and 2 percent in rural areas as illustrated in TABLE 1[10].

Mechanism	URBAN		RURAL	
	No. of injuries Due to Mechanism	% of Injuries Due to Mechanism	No. of injuries Due to Mechanism	% of Injuries Due to Mechanism
Motor vehicle incidents	25	19.8	7	1.7
Pedestrian incidents	2	1.6	1	0.2
Burns	7	5.6	1	0.2
Lacerations	43	34.1	297	70.0
Gunshot wounds	0	0.0	4	1.0
Falls	16	12.7	32	7.7
Snakebite	0	0.0	38	9.1
Blunt injuries	5	4.0	1	0.2
Other	28	22.2	42	10.0
TOTAL	**126**	**100**	**418**	**100**

TABLE 1. Percentages of occupational injuries from major injury mechanisms in Ghana (Mock et al., 2005)

A study of the societal burden of work on injury deaths in New Zealand between 2005–2014 used death records to find that work-related transport injuries contributed 31 percent of all injury deaths and 30 percent of all years of life lost due to injury in New Zealand during the study period[11].

A report on The Global Burden Due to Occupational Injury was based on a range of data sources related to injuries and deaths at work and found that motor vehicle crashes are by far the most common occupational fatality in both developed and developing countries[12].

Estimates of the proportion of total motor vehicle fatalities that are work-related

A study of transport injury factors in India between 1990 and 2019 found that occupational factors contributed approximately half of total risks of transport injury death[13].

A report from the European Transport Safety Council (ETSC), Tapping The Potential for Reducing Work-Related Road Deaths and Injuries, combined crash and occupational injury data to estimate the approximate proportion of work-related crash deaths in the European Union. TABLE 2 indicates that work-related road deaths in EU countries ranged between 3 and 41 percent. The report noted that these country estimates use various definitions and categorizations and should be viewed as approximate. The report summarized with an estimate that work-related crashes comprised up to 40 percent of the 25,600 lives that were lost on the road in the European Union in 2016[14].

	Average number of recorded WRR deaths in 2013–20215 or the last three years available	Average number of road deaths in 2013–20215 or the last three years available	WRR deaths as a proportions (%) of all road deaths in 2013–20215 or the last three years available
AT	51.000	455.000	11%
CH	61.000	255.000	24%
CH*	104.000	255.000	41%
DE	414.000	3.414	12%
EE	4.000	74.000	5%
EL	41.000	826.000	5%
ES	53.000	1.686	5%
ES*	176.000	1.686	10%
FR	404.000	3.435	12%
FR*	1.352	3.435	39%
IE	8.000	178.000	5%
IE*	48.000	208.000	23%
IL	27.000	273.000	10%
IT	203.000	3.404	6%
IT*	389.000	3.404	11%
SE	8.000	263.000	3%
SI	5.000	120.000	4%

WRR death data coverage and data sources:

AT number of professional road user deaths.
Data source: Austrian Workers' Compensation Board.

CH number of professional road user and non-professional road users.

CH* number of professional road user, commuter and all third-party deaths.
Data source: police records.

DE number of professional road user and commuter deaths in private sector.
Data source: German Social Accident Insurance (DGUV)

EE number of professional road user deaths. Data source: Labour Inspectorate.

EL number of professional road user deaths. Data source: police data.

ES Professional driver deaths.

ES* commuter (who was driving or riding) deaths.
Data source: Ministry of Employment and Social Security.

FR number of professional travelers and third-party deaths in collision with professional travelers.

FR* number of professional and non-professional road user deaths.
Data source: police records, average years 2012–2014.

IE provisional number of professional driver deaths.
Source: Road Safety Authority, average years 2014–2015

IE* number of professional road user and third-party deaths.
Data source: Coroners study, average years 2008–2011.

IL number of professional road user and commuter deaths. Average years 2012–2014.
Data source: National Insurance Institute.

IT number of professional road user deaths.

IT* number of professional road user and commuter deaths.
Data source: National Insurance Institute for Accidents at Work (INAIL).

SE number of professional road user deaths. Data source: Work Environment Authority.

SI number of professional road user deaths, year 2015.
Data source: Ministry of Labour, Family, Social Affairs and Equal Opportunities.

TABLE 2. Recorded work-related road (WRR) deaths as a proportion of all road deaths, average years 2013–2015 (Adminaite et al., 2017)

An in-depth analysis of crashes in Sweden during 2019 found that of the total 214 eligible crash deaths, 37 percent were found to be either killed while at work or killed in a crash in which another driver was at work[15].

An ETSC report, How to Improve the Safety of Goods Vehicles in the EU, used crash data to conclude that 25 percent of total EU road deaths involve heavy or light goods vehicles (HGV or LGV). These vehicle types are largely used for work-related purposes. These categories do not include passenger cars or motorcycles when used for occupational purposes. About 28 percent of those killed in HGV crashes and 39 percent of those killed in LGV crashes are vulnerable road users[16].

The Global Status Report on Road Safety 2023 included an analysis of crash data from 31 countries which include information on the work status of individuals involved in the incident. These data indicate that aside from commuting, work-related drivers comprised approximately 17 percent of road deaths in these nations. This estimate does not include other occupants of the work vehicle or third parties involved in the crash[17].

WHO/ILO joint estimates of the work-related burden of disease and injury, 2000–2016 indicate that work-related crashes accounted for more than 200,000 deaths in 2016. The WHO/ILO estimate of work-related road deaths comprise about 18 percent of the total global road deaths reported by the WHO in the 2023 Global Status Report on Road Safety[18] [19].

Summary approximation of the problem

It is clear that a precise analysis of the proportion of global road deaths that are work-related is not possible with current data sources. However, in the context of recommendations by the Academic Expert Group concerning the potential of engaging organizations in road safety improvement as part of their occupational health and safety obligations, precision is not essential. For this purpose, it is sufficient to review indicators from a range of sources around the world and across income levels to assess the approximate magnitude of the problem.

From our brief review we conclude that **work-related crashes are likely to contribute at least one-third of all road deaths globally.** Our approximation considers a range of published country, regional, and global analyses of the problem, along with the frequently cited limitation of under-reporting whether the data come from crash records, occupational health and safety records, or other sources.

The Informal Commercial Powered Two-Wheeler Sector

A study of the motorcycle taxi (MCT) sector in Sub-Saharan Africa reported that in many African cities, MCTs are responsible for the majority of transport movements of both people and goods and provide hundreds of thousands of jobs. In Kenya, the number of MCTs increased from 4,000 in 2005 to 600,000 in 2018, with 200,000 new motorcycles registered in 2018 alone[20]. A systematic review of studies of risk factors associated with commercial motorcycle riders found a range of factors consistently demonstrating statistically significant association with crashes, including young age, low education status, alcohol consumption, speeding, mobile phone use while driving, non-helmet use, risky driving behaviors, long working hours, and payment based on the number of deliveries completed. Nearly half of the 20 studies meeting selection criterion were of riders in Sub-Saharan Africa[21].

Considering the high rate of motorcycle fatalities in Kenya – reported at 38 percent of all road deaths in the 2023 Global Status Report on Road Safety[22] – this occupational sector is likely to contribute substantially to annual road deaths. Peters et al. report that the MCT sector remains largely informal, and therefore not likely to be affected by occupational health and safety laws. However, the potential strength of occupational health and safety regulation in affecting road safety practices such as compliance with helmet use laws and traffic codes is further motivation to formalize this employment sector.

Applied to the most recent worldwide estimate of road deaths from the Global Status Report on Road Safety (2023)[23], our approximation implies that approximately 400,000 annual deaths can be attributed to work-related transport. This includes all fatalities where at least one involved in the crash was working, either as a driver or passenger of a vehicle or as a pedestrian (including road workers). It does not include crashes in which drivers were commuting to or from work rather than working.

Our approximation includes fatally injured vulnerable road users and people in other vehicles who were killed in a crash involving a vehicle being driven for work purposes. This is consistent with our concept of the potential of occupational health and safety obligations since the most common standard for workplace safety management, ISO 45001, addresses the role of the organization in protecting the community as well as the employee. The ETSC estimates that in crashes involving a heavy goods vehicle, an average of 7 people are killed outside of the HGV for every death in the HGV. For light goods vehicles, the ratio is 2 people killed outside the LGV for every person killed in the LGV [24].

Our approximation is higher than some prior estimates of work-related road deaths and lower than others. For example, our approximation is higher than the country estimate for Ghana[25]. Our approximation is lower than the

Global Status Report on Road Safety 2023 which estimates that 17 percent of overall road deaths involve working drivers. If third parties were added to that figure at the rate found in the ETSC analysis[26] , the resulting estimate would be much higher than 400,000.

While we do not include commuting in our approximation of work-related road deaths, there is reason to expect that an organization should have responsibility for travel to and from work, at least in some situations. For example, if a large number of employees have limited options and must use a dangerous form of transport to reach their work, an organization should be expected to facilitate preventive actions such as improving a dangerous road or upgrading an unsafe bus fleet. Likewise, an organization that requires long work shifts and/or late-night commuting should acknowledge the inherent risks to commuters and offer transportation options. Commuting involves substantial risk exposure, so the benefits of such interventions could be substantial. A study of work-related injuries in Brazil concluded that in 2019, commuting incidents were responsible for about 38 percent of total work-related injuries[27]. An in-depth analysis of fatal crashes in Sweden during 2019 found that 10 percent were either killed while commuting or killed in a crash in which another driver was commuting[28].

Potential Impact of Engaging Organizations in Road Safety

As with the approximation of the overall scale of work-related road deaths, a precise estimate of the potential of organizations to reduce the problem is not possible. However, the promising aspect of engaging organizations in fulfillment of their occupational health and safety mandate is the extraordinary degree of control they have over road risk. If motivated, organizational management could use available technologies to virtually eliminate several of the major road risks, including speeding, alcohol-impaired driving, and failure to use seat belts.

VEHICLE SAFETY MEASURES

Eliminating Speeding

Adaptive speed control is widely available, and a basic form of the technology is now required in new cars sold in the EU. So, ensuring that vehicles cannot exceed the speed limit is not a technical challenge for organizations. Because speed is such a strong determinant of crash risk and crash outcomes, even modest decreases in average vehicle speeds are associate with substantial reductions in road deaths. Vadeby (2023)[29] used national speed data from Sweden together with the exponential model explained by Elvik et al. (2019)[30] to estimate the benefits of limiting vehicle speeds to the speed limit. The study pointed out that the rate of speeding in Sweden is similar to that in other countries and concluded that if vehicle speeds in Sweden were limited to the speed limit, overall fatalities could be reduced by about 25 percent.

Such speed data is not available for work-related vehicle travel globally. However, the exponential model can be used to calculate the effects of relative changes in speed. For example, if it could be assumed that work-related vehicle speeds average 5km/h over the speed limit globally, then eliminating speeding would reduce work-related road deaths by 33 percent. If work-related traffic averaged 8 km/h over the limit, the benefit of eliminating speeding would be a 47 percent drop in fatalities[31]. This would translate to a savings of 130,000–190,000 lives saved per year from speed management.

Eliminating Alcohol-Impaired Driving

Driver alcolocks are widely available and have been used in some commercial fleets for at least 20 years. Studies of the association of blood alcohol concentration and fatal crash risk indicate a relative risk of 2–5 times among drivers at the 0.05% blood alcohol level when compared to sober drivers, and about 8–12 times at 0.08% blood alcohol concentration[32 33 34]. Estimates of the benefits of eliminating alcohol impairment are dependent on data concerning the ambient level of alcohol use, which are not available for work global work-related drivers. However, assuming that the ambient alcohol level among working drivers is similar to that for drivers in the general population and that the global population

is similar to populations where studies have been conducted, research findings would indicate that overall fatalities (including work-related deaths) could be reduced by about 25 percent by eliminating driving at above the legal limit[35] [36]. This would translate to a **savings of up to 100,000 work-related crash deaths per year from driver impairment prevention.** Note that this estimate should be viewed as an upper bound since alcohol use among working drivers may be lower than that for the general population and the study populations and working populations may not be comparable.

Ensuring Seat Belt Use

Organizations could ensure that working drivers use seatbelts by means of various types of technologies, including interlocks and driver monitoring systems. Estimating the benefits of reaching 100 percent seat belt use requires knowledge of the current use rate and the effectiveness of seat belts in preventing crash deaths. The Global Status Report on Road Safety 2023 reports findings from 57 countries indicating an overall (working and non-working) driver use rate of about 20 percent. Other studies indicate even lower use among working drivers, for example bus, minivan and taxi drivers in Egypt[37] and minibus drivers in Ghana[38].

Seat belts are about 50 percent effective in preventing crash deaths in passenger cars and light trucks[39] [40]. If organizations used technology to ensure full compliance by working drivers (assumed to account for approximately 100,000 fatalities per year), and assuming that the current use rate is about 20 percent (disregarding the fact that seat belt use in serious crashes is typically lower than observed in traffic), 80,000 drivers in serious crashes would gain seat belt protection. At 50 percent seat belt effectiveness, we could expect **a savings of about 40,000 work-related lives per year from ensuring seat belt use by working drivers.**

Other Potential Vehicle Safety Measures

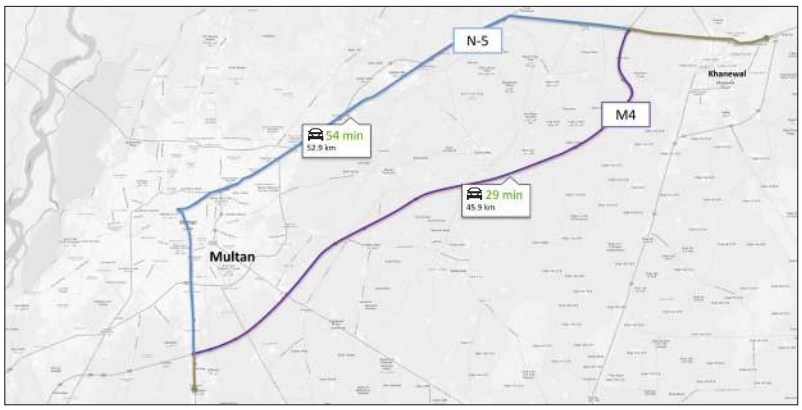
While speed management, impairment prevention, and seat belt use are major risk factors, a range of other prevention approaches could be deployed by organizations as part of their occupational health and safety mandate. For example, the Transport Research Laboratory (TRL) estimated that heavy goods vehicle designs that allow better direct vision of surrounding traffic and vulnerable road users could save up to 553 lives per year in the EU[41].

Organizations can select vehicles and technologies that are highly rated by third-party testing groups. Consumer information programs such as Euro NCAP have proven successful in advancing awareness and adoption of new vehicle technologies. A study by Kullgren et al (2019)[42] confirmed that the safety benefits of specific technologies predicted by Euro NCAP were later realized when these technologies were in use on the road. Using ratings from consumer information programs, organizations can select work vehicles that are equipped with technologies that can help ensure that they remain compliant with traffic laws, including speed limits and distracted and impaired driving laws. Consumer programs also include information on vehicle performance in crash tests and provide comparisons among vehicles regarding types of advanced driver assist technologies, such as autonomous emergency braking and lane support systems, along with crash protection features to reduce risks to occupants of the work vehicle and others involved in a crash.

In November 2024, Euro NCAP announced the availability of consumer ratings for heavy goods vehicles[43]. Willstrand et al. (2024)[44] showed that new safety technologies available for heavy goods vehicles could prevent up to 59 percent of crashes involving these vehicles that resulted in the death of a vulnerable road user.

Case Study – Work-Related route selection in Pakistan

A manufacturing company based in the Punjab region of Pakistan operates two sites as part of their manufacturing processes. Materials are stored in a warehouse near Khanewal and transported to a manufacturing factory south of Multan. Manufactured parts are then returned to the Khanewal site for assembly and packing. A light goods vehicle is used five times per day to complete this round trip. Originally the light goods vehicle travelled the 52 km along the N-5 between to two sites. Recently the M4 toll road has opened providing a more direct route between the two sites.



Analysis of the route selection would typically compare the time saving using the M4 with the additional toll cost. However, the road safety risk should also be considered as part of the impact on the business and the wider community. Using the iRAP Fatality Estimation, the Fatal and Serious injury (FSI) risk for each round trip can be calculated for four different road user groups:

FSI risk per round trip	N5	M4
Vehicle occupants	0.000016	0.000003
Motorcyclists	0.000085	0
Pedestrians	0.000022	0.000017
Bicyclists	0.000003	0.000002
Total FSI risk per round trip	0.000063	0.000011

While the FSI risk per round trip is low, it can be seen that using the N-5 creates 5.5 times higher risk than the M4. When considering all the trips made during a year, the risk difference is significant.

	N5	M4
FSI risk per year	0.164	0.029
Risk of a FSI	1 FSI injury every 6 years	1 FSI injury every 34 years

Source: The International Road Assessment Programme

ROAD INFRASTRUCTURE MEASURES

Organizations could also choose the safest routes for work-related traffic. As presented in the sidebar example, the FIA Road Safety Index describes case studies illustrating how route selection affects travel risk. Analyzing routes for risk and choosing the safest option can lower per-trip risk by up to 95 percent (R. McInerney, personal communication, November 18, 2024).

SUMMARY

The examples listed above are just some of the wide range of preventive measures available for use by organizations to control their risk on the road. Organizations should implement interventions to increase driver safety, for example by preventing speeding and impairment and ensuring seat belt use, operate vehicles with the highest levels of crash avoidance and crash worthiness technologies, and select travel routes with the lowest risk ratings. Some of these interventions, such as advanced vehicle safety technologies for heavy goods vehicles, will likely see increased availability as a result of consumer information programs. Others such as driver monitoring systems are widely available now and could be implemented immediately.

At a minimum, organizations should be expected to take available steps to ensure that their vehicles are operated within local safety laws. In most cases, this would include equipping vehicles with technology to ensure that they comply with speeding, seat belt use, and impaired driving laws and to improve the safety of vulnerable road users (VRUs). TABLE 3 shows the potential scale of lives savable if organizations adopted such prevention technologies. **A conservative estimate is that available prevention measures could reduce the number of work-related road deaths by 50 percent or more.**

Work-Related Trip Intervention (assumptions described above)	Estimated Annual Global Benefit
Reduce average speed by 5–8km/h	130,000–190,000 lives saved
Ensure seat belt use	40,000 lives saved
Prevent impaired driving	100,000 lives saved
New safety technologies for HGVs	33,000 VRU lives saved (assuming EU proportion of VRU deaths from HGV crashes applies globally[45])
Route selection	Unknown but significant number of lives saved

TABLE 3. Summary of benefits from using available technologies to reduce speeds, ensure seat belt use, prevent impaired driving, and protect VRUs.

Mechanisms for Organizational Action

ACTORS

Organizations

The Stockholm Declaration took a step in the direction of organizational involvement by calling for large corporations to include reporting on road safety performance across their entire value chains in their sustainability reporting. This idea of reporting on a safety footprint is consistent with the now familiar expectation that organizations periodically report on their carbon footprint across their value chain[46]. These recommendations from the Academic Expert Group take this idea several steps further, expanding the focus from corporations to organizations of all types, pointing to specific obligations that are already in place that should compel organizations to take responsibility for road safety, and identifying tools that will assist organizations in carrying out these responsibilities.

The International Organization for Standardization (ISO) defines an organization as a person or group of people that has its own functions with responsibilities, authorities and relationships to achieve its objectives. The ISO concept of an organization includes, but it is not limited to, entities that are sole-traders, companies, corporations, firms, enterprises, authorities, partnerships, charities, incorporated or unincorporated, and either public or private[47].

Non-government organizations far outnumber governments and are important sources of social control. Worldwide, national or territorial governments number in the hundreds while organizations with employees number in the hundreds of millions. Consistent with fundamental legal principles regarding the association of power and control with responsibility, organizations have an obligation to protect the safety and well-being of their employees.

The International Labour Conference, at its 110th Session in June 2022, amended paragraph 2 of the United Nations International Labour Organization (ILO) Declaration on Fundamental Principles and Rights at Work to include "a safe and healthy working environment" as a fundamental principle and right at work. All 187 ILO member states have an obligation to respect, promote, and implement these principles.

Organizations can – and must – use their control to prevent injury to employees. The principle of prevention is fundamental to occupational health and safety and reflected in ILO Conventions. For example, ILO Convention number 155, Occupational Safety and Health, specifies that the purpose of national policy shall be "to prevent accidents and injury to health", and Convention number 187 states that the principle of prevention is to be accorded the "highest priority" [48].

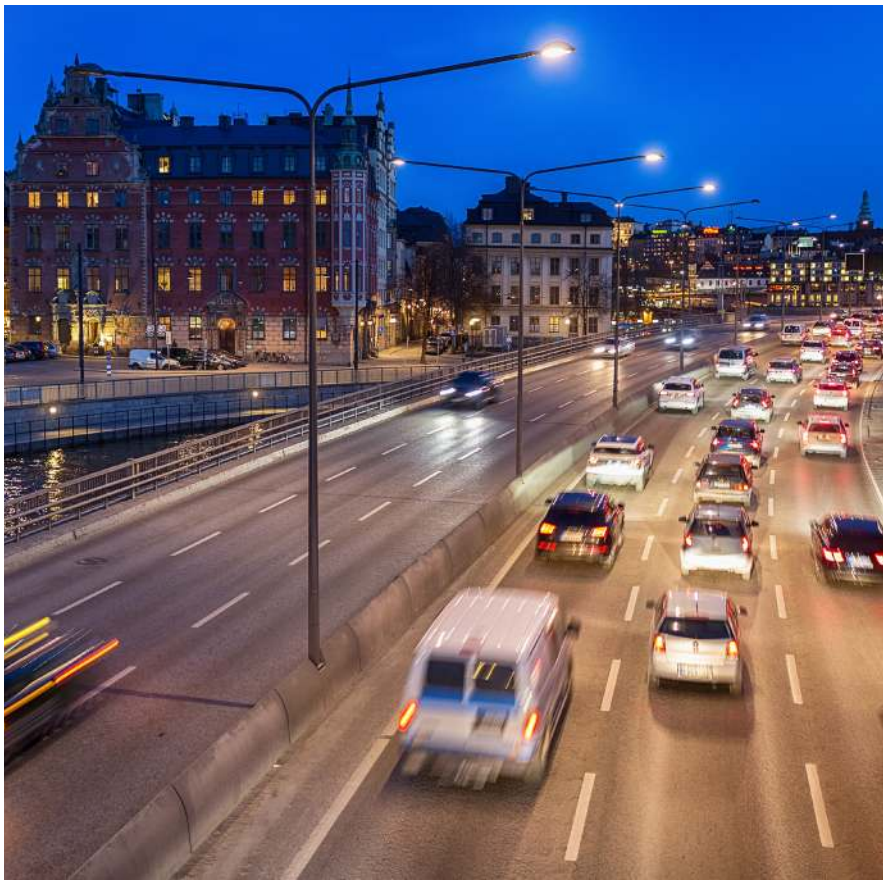
The potential of organizations to affect road safety is largely untapped. Occupational health and safety mandates clearly provide a ready and effective mechanism for engaging organizations and there are likely to be further strategies to apply their social influence to reduce road injury and death. Unlike road fatality trends, risk factors, and technical interventions, there is limited rigorous and sustained analysis of organizations, institutions and governance in road safety research[49] [50]. Governance, organizations, institutions, politics and power remain under-researched topics in road safety scholarship[51]. The range of well documented and effective road safety prevention interventions that are included among the road safety pillars (see for instance, Goel et al 2024[52], Elvik et al. 2009[53]) require an efficient organizational framework for implementation.

City Governments

The potential of engaging organizations in road safety action through their obligations for occupational health and safety is at least partially dependent on leadership from governments to clarify expectations that the workplace – and organizational responsibility – includes their use of public roads. Among governments, cities have shown extraordinary initiative in taking on this type of initiative and could be leaders in engaging organizations in road safety.

In addition to their occupational health and safety opportunities as large employers, cities have advantages as innovators including a manageable scale for change and more specific focus on local problems. Whereas national-level change can get slowed by the number and power of special interests, change is more feasible at the city level, especially when addressing recognized and urgent local problems[54]. A challenge is in scaling successful local change for regional benefit. Innovation ecosystems, collaborations among innovation hubs, have proven successful in this regard, by linking, sharing, and extending the benefits of fixed resources[55].

The 2019 report, **Enhancing Innovation Capacity in City Government**, by OECD and Bloomberg Philanthropies explains the recent increase in examples of city innovation as a result of meeting mounting social and economic needs with limited capacity for public service delivery[56]. This description fits the social need of road safety well, and utilizing the existing resources of occupational health and safety mandates, organizational responsibility, and readily available prevention interventions could be an innovative solution.



Finance Providers

The availability of finance is crucial for the sustainability of organizations of all types, especially small and medium enterprises. Approximately 400 million small and medium size organizations are in operation worldwide, consisting of 95 percent of all firms and providing about 60–70 percent of all employment [57]. The International Finance Corporation of the World Bank estimates that about 70 percent of these organizations seek finance [58].

Finance providers manage risks by placing requirements on loans and increasingly are including Environment, Social, and Governance (ESG) factors, which include workplace health and safety measures, among these criteria. The proportion of all loans based on ESG criteria is expected to reach 25 percent by 2030[59].

Because of the reach of finance services among global organizations and the increasing use of ESG factors in financial decisions, an explicit ESG requirement that enterprises of all sizes take responsibility for road safety across their footprints could substantially enhance road safety worldwide.

TOOLS

Occupational Health and Safety Regulations

The purpose of occupational health and safety law is to prevent accidents and ill health at work. The intent is forward-looking and goal-oriented, toward ensuring that the employer takes measures to prevent injuries or exposure to health risks from occurring. The emphasis is on prevention rather than holding someone accountable after an injury has occurred, although accountability is addressed.

Historically, OHS legislation has its roots in regulations aimed specifically at preventing workplace accidents, and in practice, it is still primarily in the event of accidents that criminal liability under work environment regulations is invoked. OHS rules apply to any activity and in any location where employees perform work on behalf of an employer, and while the rules are generally focused on protecting employees, third parties are also covered. When work is performed on a road, for example by an employee driving a delivery truck or on the way to a sales meeting, the vehicle and road are the workplace and other road users can also be covered in the event of a crash involving the employee.

The limits of OHS coverage are affected by the degree of employer control. In the case of road use, a range of controls are available to the employer including technologies to monitor driver performance, detect and respond to impairment by fatigue, distraction, alcohol, drugs or other causes, and control vehicle speeds. Such controls fit well in the OHS framework.

OHS obligations extend beyond employees to third parties. The foundational international convention on occupational health and safety, International Labour Organization (ILO) Convention 155, requires employers to ensure that their work-places, machinery, equipment, and processes are safe and free of health risks, and does not distinguish between health risks to employees or others who may be affected. This means that employers are responsible for the safety of those with whom their drivers and vehicles share the roads and that they need to take preventive actions to ensure within the limits of their control that their operations do not endanger other road users.

In 2017, the ILO recognized their foundational OHS Conventions and the right to a safe work environment as fundamental human rights. The ILO indicates that nearly half of high-income countries have a current national occupational health and safety program, while 25 percent of upper-middle-income countries and 21 percent of lower-middle-income countries have such programs. Among low-income countries, just 8 percent have OHS programs in place[60]. Although OHS programs are not currently widespread in low- and middle-income countries, the ILO reports that nearly every member nation has some form of authority or body responsible for OHS[61] and with awareness of the potential that an OHS program could have for improving road safety, more low- and middle-income nations may be interested in developing such programs.

Occupational Health and Safety Management Standards

Management systems are widely used by organizations of all types and sizes to assist in the structure of policies and processes to achieve their objectives. For occupational health and safety, the most widely used management standard is ISO 45001, Occupational Health and Safety Management Systems.

ISO 45001 defines the workplace as a place that a person needs to be or to go for work purposes[62]. This clearly covers the road if the person is driving for work purposes. While ISO 45001 covers road safety implicitly as a workplace risk and provides a process for managing that risk, ISO 39001 is available for organizations focusing more specifically on road safety risks. ISO 39001 specifies requirements for developing and implementing a road safety policy and developing objectives and action plans.

Nearly 400,000 sites are certified to meet ISO 45001 globally, and for each organization certified many others use the standard to structure their OHS program without certification. While on average there are fewer certified sites in low- and middle-income nations than in high-income nations, the proportion of LMIC certifications is increasing. For example, in 2023, nations in Africa had more than 6,000 employment sites certified to meet ISO 45001[63].

Procurement

In addition to their occupational health and safety obligations, organizations can have tremendous influence on society through their spending on the goods and services necessary for their functions, if those funds are directed to both reliably meet the needs of citizens and support complementary goals such as climate change, equity, local development, or road safety.

The amounts spent globally on procurement in the private and public sectors are enormous. The World Bank estimates global expenditure in public procurement at nearly 9.5 trillion US dollars[64], while private procurement just among the 500 largest companies totals another $19 trillion[65] [66].

Procurement can enable an organization to leverage road safety activity by all of the other organizations it works with along its value chain. Both government and corporate spending is directed to a value chain, the full scope of activities necessary to bring a product or service from conception to delivery. For companies that produce goods, the value chain starts with accessing raw materials used to make their products and includes every other step including distribution and use by purchasers. For government organizations that deliver public services, the value chain begins with contractors that provide equipment or support services and extends to others who receive government contracts for service delivery.

Reporting

Transparency and reporting that is relevant, reliable, and accessible help organizations demonstrate that they are seriously addressing the health and safety of their employees and the communities in which their work is performed. Reporting that is specific to road safety can further confirm that an organization acknowledges that their workplace includes the public roads they share with the community and that they are fulfilling their occupational health and safety responsibilities by preventing crashes involving their employees.

Safety management standards such as ISO 45001 and ISO 39001 provide a structure for identifying road safety risks associated with organizational activities, taking steps to eliminate or reduce those risks, and reporting on progress. Certification of compliance with the ISO standards provides confidence among business partners, the community, and regulators that the organization is aware of their risks and have them under control.

In addition to periodic reporting by the organization for external review, ongoing reporting by employees is critically important for identifying and resolving work-related risks. A strong organizational safety culture is built on trust between the employees and management. This trust is essential to motivate employees to report safety incidents to management without fear of blame or reprisal. Employees must have confidence that reporting an incident, near miss, or observed risk will be received constructively and that the organization will respond positively with remedies.

Recommendations

The following recommendations are offered by the Academic Expert Group for inclusion in the Marrakech Declaration. The recommendations are directed toward the latter half of the second Decade of Action for Road Safety and beyond and are intended to build upon those provided by the AEG in 2020. As with the prior recommendations, the AEG considers these additional recommendations to be essential strategic prerequisites for achieving the goal of reducing global road traffic fatalities by half by 2030.

These recommendations focus on the responsibilities of organizations for improving road safety as part of their occupational health and safety obligations. They complement rather than supplant or supersede prior recommendations. The Group believes that the best strategy for reaching the goal for the second decade is to maintain commitment to prior recommendations and immediately initiate action on each of these new recommendations. The benefits of this commitment will build momentum toward the 2030 target and contribute to longer term road safety progress.

Criteria Considered in Formulating Recommendations

To identify areas of focus and specific content of the recommendations, the Academic Expert Group agreed on a number of inclusion criteria:

1. Recommendations must build on those provided by the AEG in 2020 and reach beyond those previously established in Declarations from the First, Second, and Third Ministerial conferences and Resolutions from intervening UN General Assemblies.
2. Recommendations must have compelling evidence of potential impact in terms of intervention effectiveness, scale of the problem addressed and efficiency of the proposed solution.
3. Recommendations must adhere to the SMART principle:
   - **Specific** identifiable responsibilities and actions.
   - **Measurable** tangible and observable with objective units of scale.
   - **Attainable** possible considering known obstacles.
   - **Relevant** consistent with the Safe System paradigm.
   - **Timebound** achievable (or capable of substantial progress) by 2030.
4. Recommendations that extend beyond Sustainable Development Goal 3.6 and establish synergies with other Goals are prioritized.
5. Recommendations that engage non-traditional partners with potential for leadership or constituencies that could reach widespread participation are prioritized.

RECOMMENDATION #1

Road safety in workplace safety regulations and practices

In order to prevent road traffic fatalities and injuries among employees and third parties, private and public organizations should include specific attention to road safety in the systematic management of their work environment as required by occupational health and safety law.

- Compliance with road safety best practices should be a key occupational health and safety standard and a primary responsibility of the organization.
- Prevention activities should be implemented to address road safety risks throughout the organizational footprint and should be measured and reported as part of occupational health and safety compliance monitoring.
- Compliance should also be addressed by traffic law enforcement when violations occur on public roads with penalties for failure to take adequate precautions applied to the organization through occupational health and safety laws.

RATIONALE:

Foundations of Occupational Health and Safety

A worldwide focus on occupational health and safety during the twentieth century was remarkably successful in managing workplace injury and death. Data from the U.S. National Academies of Sciences, Engineering, and Medicine in FIGURE 4 show a precipitous decline in worker deaths throughout the 1900s due to increased awareness of workplace risks, a scientific approach to addressing occupational risks, and regulations to establish and enforcement standards for workplace injury prevention[67].

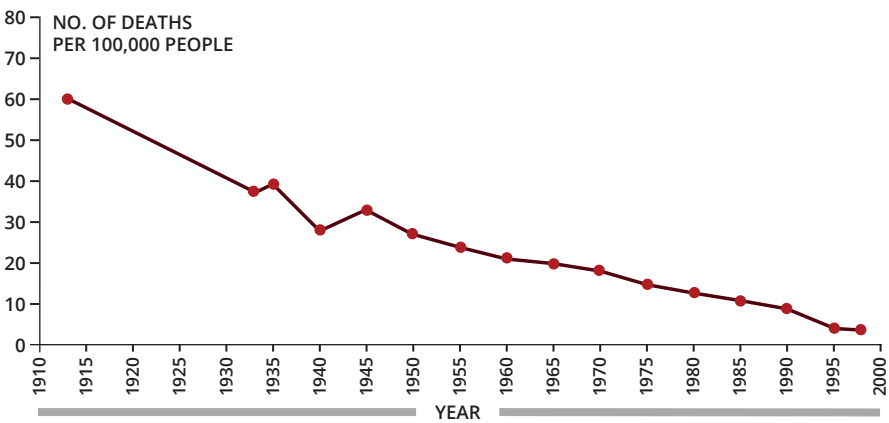


FIGURE 4. Deaths per 100,000 U.S. workers due to injury, 1913 to 1998 (National Academies of Science, Engineering and Medicine, 2000).

A comparison of trends in later years indicates that the proportional drop was similar for high-income and low- and middle-income nations. FIGURE 5 shows a 46% reduction in occupational injury deaths in HICs (from 5.7 to 3.1 per 100,000 people; 95% CI: 45–47%) and a decrease of and 43% in LMICs (from 13.2 to 7.0 per 100,000 people; 95% CI: 42–44%) between 1990 and 2016[68].

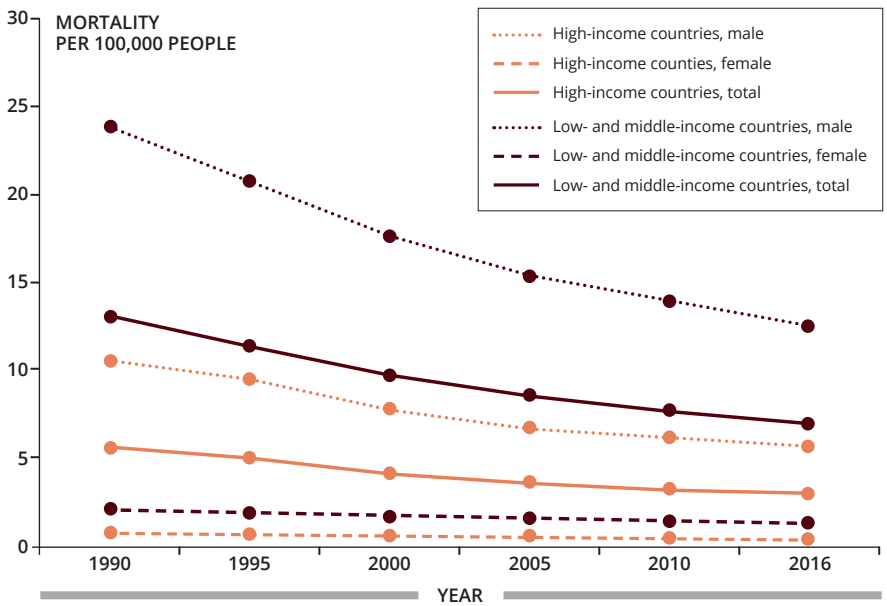


FIGURE 5. Unintentional occupational injury mortality per 100,000 persons by country income and sex, 1990–2016. (Wu et al., 2018)

Road Safety Across the Organizational Footprint

A look at the global evolution of occupational health and safety efforts in FIGURE 6 illustrates how attention has shifted from earlier eras that focused on risks associated with the worksite such as child labor, toxic chemicals, and physical agents, to later eras that incorporated work-related hazards both inside and outside the gates of the workplace, such as stress, well-being, and total worker health.

History of Occupational Safety and Health

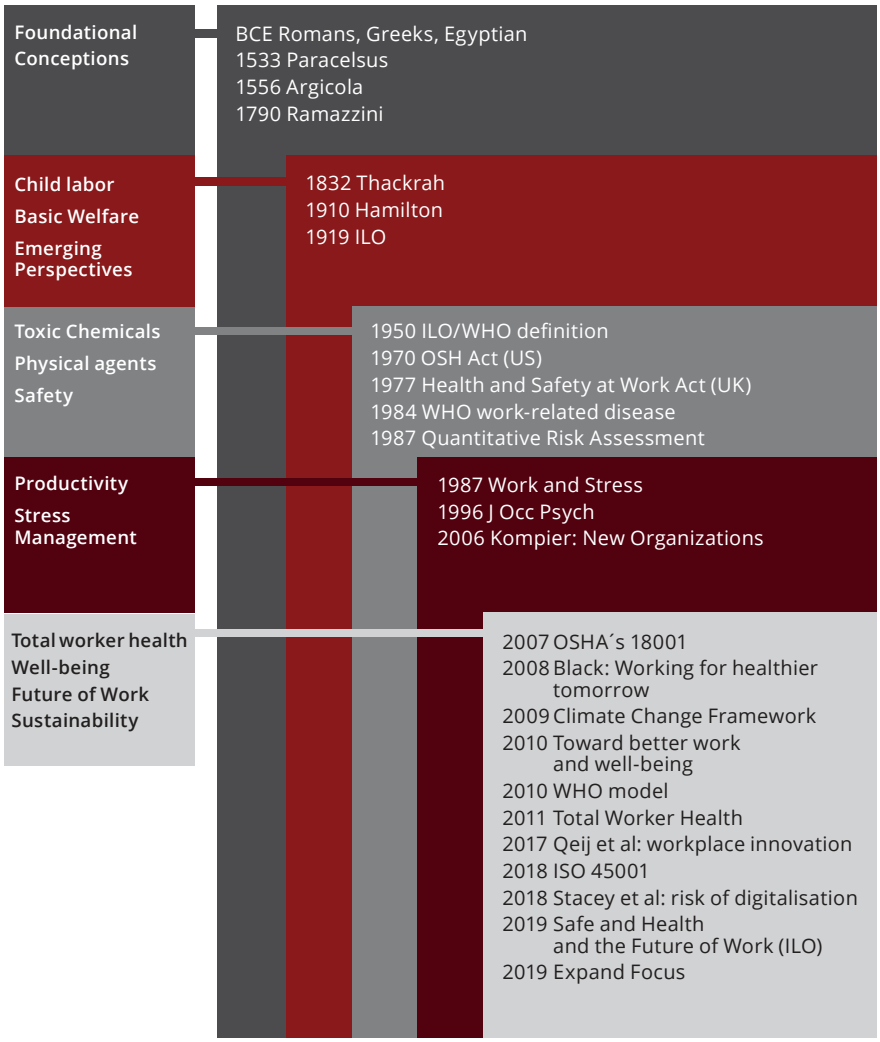


FIGURE 6. Major Eras of Occupational Health and Safety (Schulte, Sauter, 2021)

Very few organizations have yet carried this occupational health and safety trend to the point of ensuring road safety across their footprint, however there is a strong rationale for doing so. First, road crashes are the leading cause of work-related injury deaths. In the U.S. for example, more than twice as many employees are killed in work-related road crashes as in the second leading cause of injury death, falls, slips and trips[69].

Second, existing occupational health and safety standards, including the widely used ISO 45001 as well as ISO 39001, cover roadway safety as a component of occupational health and safety. Third, there is a wide range of effective interventions that could be deployed by employers to significantly reduce motor vehicle crash deaths both among employees and community members who are affected by the operation of commercial vehicles. For example, driver monitoring systems, speed limiters, and driver alco-locks could significantly improve the safe operation of an organization's vehicles, choosing the safest routes for work-related trips could reduce the frequency of crashes, and demanding and selecting the best vehicle safety technology could reduce the probability of crashes and injury severities when crashes occur.

Occupational Health and Safety Expectations

While government occupational health and safety laws differ in scope, the International Labour Organization (ILO) reports that nearly all United Nations member states have enacted national legislation requiring basic protection of workers[70]. In 2022, the ILO heightened the urgency for preventing occupational injuries and diseases by including "a safe and healthy working environment" in the ILO framework of Fundamental Principles and Rights at Work and by designating both the Occupational Safety and Health Convention, 1981 (No. 155) and the Promotional Framework for Occupational Safety and Health Convention, 2006 (No. 187) as fundamental Conventions[71].

Expectations for protecting workers and third parties vary by jurisdiction and industry, however the widely accepted best practice for organizations implementing occupational health and safety requirements is use of a systematic management approach such as prescribed by the International Organization for Standardization (ISO). ISO 45001, the Occupational Health and Safety Management System standard, uses a Plan-Do-Check-Act process to guide continuous quality improvement in organizational safety performance. A more detailed standard on road safety, ISO 39001, Road Traffic Safety Management Systems, is also suitable for both public and private organizations and provides additional focus for further reductions in road transport risk.

The remarkable success of occupational health and safety regulations over the previous century in reducing workplace risks and preventing loss of life due to illness and injury creates an opportunity for road safety. Motor vehicle crashes are the leading cause of work-related deaths from injury, and although work-related road transport risks clearly fall within the intent of health and safety requirements, few jurisdictions have yet been specific about legal expectations

for organizational road safety performance across their footprint. Filling this gap could result in substantial reductions in organizational road deaths, and because work-related traffic deaths comprise about one-third of all road deaths, such progress would lead to significant progress in global road safety.

Compliance with Occupational Health and Safety Requirements

To be fully effective, strong policies for protection from work-related risks need to be supported by third party verification of compliance. Although a high proportion of ILO member states have legislation in place to protect workers, far fewer have effective programs for implementing these policies that include assessing organizational performance and progress. This is especially true in low- and middle-income nations. The ILO reports that nearly half of high-income countries have a current national occupational health and safety program, while 25 percent of upper-middle-income countries and 21 percent of lower-middle-income countries have such programs. Among low-income countries, just 8 percent have programs in place[72].

The ILO Occupational Safety and Health Convention states that enforcement of laws and regulations concerning the working environment shall include an effective system of inspection and appropriate penalties for violations. For road safety, compliance should not only include meeting expectations for prevention safeguards for vehicles and driver safety, but also, ensuring that vehicles operated for the organization on public roads obey all traffic laws and best practices.

Considering the responsibility of organizations for safe operation of their vehicles and their potential for control through remote monitoring and vehicle technologies, a traffic violation such as speeding should have implications for the organization as well as the driver. A driver who receives a citation for a violation is typically fined through the traffic code. An organization that has allowed its vehicle to be driven unsafely should also be penalized through occupational health and safety laws for failure to take adequate precautions. Road safety authorities should report violations of commercial operators to occupational health and safety officials so that such action may be taken.

The Corporate Sustainability Due Diligence Directive enacted by the European Union in 2024[73] sets an important precedent by holding corporations accountable for human rights and environmental action across their value chains. This new Directive brings significant change in both form and substance. As a precedent, enactment of the Corporate Due Diligence Directive signals increased recognition by citizens and policymakers of the power of organizations to act across their footprint to reduce and remediate social risks, and as a policy innovation the Directive introduces a new risk-based approach to due diligence and consequences for noncompliance that are proportional to the firm's economic scale. The same approach should be extended to road safety.

RECOMMENDATION #2

Government organizations set the example with cities leading the way

In order to fully utilize the potential of governments and government organizations to improve road safety on a global scale, national and city governments and international governmental organizations should use their influence as leaders and role models as well as their power as large employers and their authority as regulators and enforcers to advance road safety actions following the Safe System approach.

- City governments in particular can serve a critical role by turning their power of innovation to demonstrating how occupational health and safety can be a key for road safety progress.
- City, national, and other jurisdictional governments as applicable should be explicit about the responsibilities of organizations for road safety as part of their occupational health and safety obligations.
- Governments should be also clear about their intent to routinely monitor and enforce these obligations. In addition, city, national, and other jurisdictional governments should use their power of procurement to incentivize road safety performance among organizations with whom they do business and as part of government-funded programs and projects.
- The United Nations system should be a role model in demonstrating attention to road safety as part of occupational health and safety because of the leadership influence of the UN in countries of every income level.

RATIONALE:

Governments have long been the sole focus of road safety responsibility and while a movement toward engagement of non-government organizations promises to broaden the road safety workforce, the need for government action will not diminish. Government leadership and action remain necessary and are essential to motivate, guide, support, and enforce this critical step in advancing road safety progress.

National and City Governments

Governments perform irreplaceable functions in advancing road safety through their authorities to set minimum requirements for the safety performance of vehicles, establish standards for road design, construction, and maintenance, and create and enforce laws that limit driver behavior. These functions are basic for the operation of a Safe System, and it is essential that governments maintain, improve, and expand these services. Beyond these fundamentals, governments can also serve a critical role in expanding the workforce, resources, and opportunities for improving road safety by using their leadership, authorities, and economic power.

Cities have become a focal point as innovation hubs for addressing global challenges and could take the lead in demonstrating how occupational health and safety policies can be used to improve road safety. Chou et al. (2024)[74] point out that cities were among the first actors to actively address climate challenges, and were leaders in developing counter-terrorism collaborations and in global health governance through development of biosafety laboratories to study viruses that might lead to pandemics. In road safety, cities on every continent have shown ambition and accomplishment, for example the new Alliance of Cities for Road Safety (ACRoS) established with funding from the UN Road Safety Fund to support implementation of the Safe System approach in African and Eastern Mediterranean cities[75], and the fifteen African cities featured as innovative case studies in the UN Environmental Program report, Walking and Cycling in Africa[76].

City innovation and leadership could be particularly effective in leading procurement reform. Cities worldwide are estimated to have procured more than $6 trillion of goods and services in 2021, and with their record of innovation might be in the best position to lead change on public procurement spending priorities. However, research from the Chicago Council on Global Affairs indicates that just one-half of one percent of city procurement could be described as non-bureaucratic, innovative, open to new ideas, or open to doing things differently[77]. New processes for using public procurement to benefit urgent social needs including road safety, could benefit urban residents worldwide. Innovation could begin with requirements that businesses providing products or services to the city have a safety management system in place, actively prevent crash risks when their employees are on public roads, and report on progress.

Governments can affect social norms both through their authority to enact and enforce laws and by using their discretionary functions to model desirable social and institutional behavior. The UK-based Behavioral Insights Team conducted research on factors that can affect climate change and found strong support for the Government to use upstream influences including both its regulatory and fiscal powers and its ability to serve as a role model. A survey of UK citizens found that 87 percent supported government action to lead by example on climate change[78].

Leading Across the Government Footprint

Government organizations have a footprint or value chain that is similar in concept to that of private sector organizations. Governments procure goods from many sources and provide a range of public services. The sphere of influence of U.S. federal government operations, for example, includes operations of the businesses that receive about 4 million contracts per year totaling $759 billion[79] [80], as well as the full range of public service activities performed daily by government employees. Federal, state, city and local governments in the U.S. alone employ about 19 million people in total[81]. Seven of the ten largest employers in the world are government organizations[82].

With their extraordinary reach and influence, national and city governments could be extremely effective in leading by example. Using their discretionary program authorities, governments should provide public information about the role of organizations in road safety, create incentive funding and recognition programs for organizational achievement, and demonstrate transparent reporting on road safety performance. By articulating a strong message about the importance of organizational commitment to road safety and backing their commitments by demonstrating the highest level of safety for their own employees, their vehicles, and the communities they operate in, governments can significantly affect normative behavior among organizations of all types. Governments should also take the lead in spreading awareness of the need to integrate road safety with the Sustainable Development Goals and building capacity among safety officials to collaborate with professionals working on climate, human rights, and other SDGs.

Realizing the Potential of Occupational Health and Safety Laws

Governments should be explicit about their interpretation and enforcement of occupational health and safety laws covering non-government organizations, pointing out where such laws cover the safety and safe operation of organizational vehicles on public roads and the types of preventative measures that are necessary for compliance.

Further, as part of a commitment to occupational health and safety, governments should hold themselves to the highest levels of road safety practice, including assuming responsibility for the safe operation of their own vehicles as they carry out government business in communities across their jurisdictions. Government agencies should be explicit about these responsibilities, and the steps they take to ensure that the vehicles they operate are as safe as possible for both their employees and the people who share the roads on which they operate. Included in their vehicle requirements, for example, should be technologies that protect the driver and all others on the road such as intelligent speed assistance, automatic emergency braking, driver impairment detection, and driver performance monitoring systems.

National, sub-jurisdictional, and city governments often regulate the delivery of public transport including bus and taxi services through permits and licenses to operate. Conditions for obtaining and maintaining these permits and licenses could include requirements that all road rules are followed and stipulations that violations of these rules will be interpreted as failures in occupational health and safety preventative plans and procedures.

Procurement

Governments can influence road safety through their procurement systems. Leading by example, governments should use their purchasing power to maximize the safety of their own vehicle fleet, the occupational health and safety of their employees, and the safety of people living in communities in which the government vehicles operate. Governments in the U.S. alone own and operate about 4.5 million vehicles on public roads[83]. Through their procurement processes, governments can extend their demand for safety to organizations which providegovernment services, requiring the safest vehicles, safe practices, as well as prevention and reporting of road safety incidents as contractual prerequisites. Such commitment will also send a clear message to the public about the priority of road safety and to owners of commercial and other non-government fleets about expectations for responsible performance under occupational health and safety laws.

The power of public procurement is even greater in low- and middle- income countries than in high-income nations. FIGURE 7 shows that government procurement is proportionally even more important in smaller economies[84].

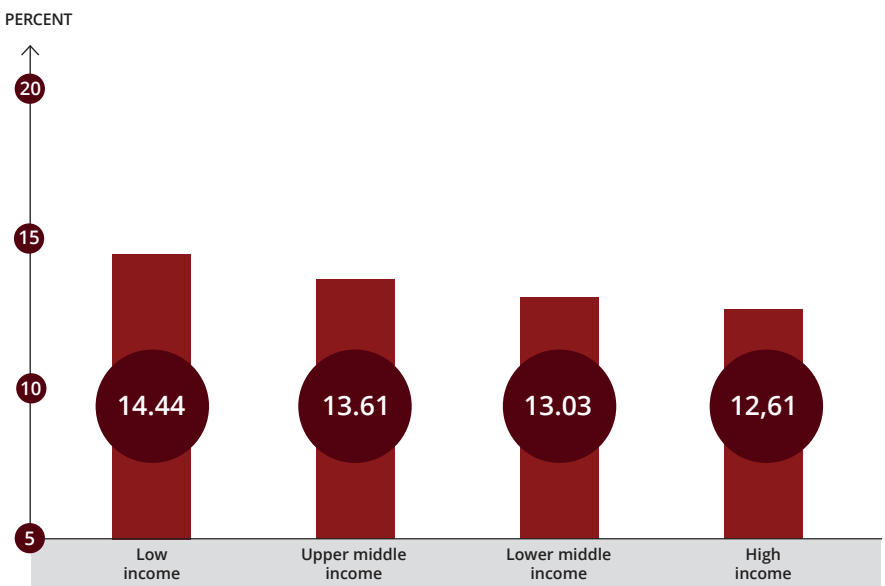


FIGURE 7. Procurement as percent of GDP by country income level (Djankov et al, 2016)

Reporting on Work-Related Traffic Crashes

Another unique government role that is critical for progress in work-related road safety is the function of crash investigation and reporting that is often performed by police agencies. These police crash reports are used as the basis for analyses that underlie safety programs and policies. A study of police crash reports in Sweden found that none of these reports for traffic fatalities in 2019 included information on the type or reason for travel[85]. Without such basic information, it is difficult to determine which trips are work-related. Governments should require that this information and identification of the owner of vehicles involved in serious injury or fatal crashes be recorded in police crash reports. This will enable accurate reporting of safety performance in organizational footprints and permit enforcement of occupational health and safety regulations.

The UN System: An Organization of Governments

High-level leadership is critical to achieve the scale of road safety change necessary among government and non-government organizations, and at the head of the leadership hierarchy is the United Nations system. The world looks to the UN for inspiration and direction in social change. The road safety movement has profited enormously from the commitment demonstrated by the UN through their General Assembly Resolutions, Sustainable Development Goals and Targets, Ministerial Conferences, Road Safety Agendas, Status Reports, Decades for Action, and appointment of the UN Road Safety Envoy. These leadership activities build on more than 70 years of technical services for road safety provided by UN organizations and regional commissions.

The UN system's well-established and highly regarded stature in leading global social progress makes it doubly important that the system provide strong leadership for engaging government and non-government organizations in road safety. First and most critical, the UN system has unique potential for effectively leading this road safety movement. Second, the success of the movement will be limited if the UN system does not appear to place priority on advancing road safety progress.

Road safety is a serious risk for the UN system. UN organizations employ more than 125,000 people and operate hundreds of thousands of vehicles in 193 countries[86]. Over the 10-year span between 2013–2022, there were 111 traffic deaths of UN personnel – not including any non-UN community members – reported in the UN system, a toll comparable to that resulting from violence across the system.

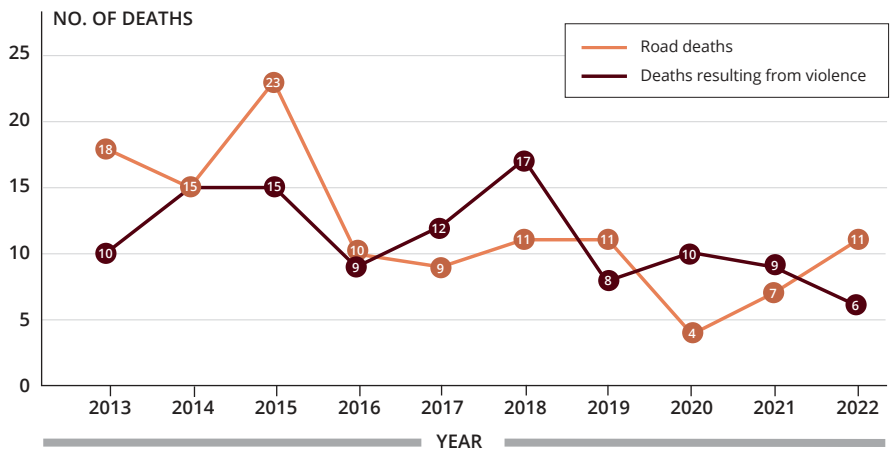


FIGURE 8. Fatalities of UN personnel resulting from road traffic crashes compared with those resulting from violence (UNCEB, 2022)

In 2011, a United Nations Security Management System (UNSMS) policy on Road Safety was established, defining safe operating practices for United Nations vehicles[87]. In 2019, following the launch of the Decade of Action for Road Safety, the policy was elaborated with a vision and strategy in accordance with the Safe System approach[88]. These two documents provide a foundation for a more comprehensive commitment to road safety by the UN system, that could begin with defining the UN system road safety footprint, requiring complete and transparent road safety reporting (including third parties) by all UN organizations, analyzing risks and potential countermeasures as described in the strategy, applying interventions, and monitoring progress. The UN system should make this commitment to organizational responsibility and act on its leadership role.

RECOMMENDATION #3
Road safety in finance decisions

In order to incentivize organizational action to improve road safety, financial actors such as banks, investors, insurance companies, and auditors should:

- Explicitly mandate that entities actively address road safety across their value chains as a prerequisite for financial involvement.
- Specifically require that organizations receiving investment funds maintain an assurance process that includes reporting on their road safety footprint across their value chains, setting crash reduction targets, and implementing evidence-based interventions where necessary to reduce or eliminate serious crashes.
- Collaborative financial initiatives, such as PRI (Principles for Responsible Investment) and PRB (Principles for Responsible Banking) should specifically include road safety as a core element of the Environmental, Social, and Governance (ESG) factors by which they assess the sustainability of investments and develop guidance for use by investors and banks in assessing road safety performance.

RATIONALE:

The Power of Finance

Finance providers have far-reaching power to shape the behavior of organizations. The global economy is highly finance-based, and finance plays a crucial role in virtually every aspect of economic activity. Finance supports growth, facilitates trade, manages risks, and enables both individuals and businesses to make informed economic decisions. Thorough analysis of organizations prior to investment allows financial providers to use their power to shape the world we live in.

The power of finance for achieving social goals has been recognized for decades. Twenty years ago, the United Nations report, **Who Cares Wins,** described the direct connections between financial investment and asset management decisions and corporate performance in environmental, social and governance (ESG) factors[89]. This 2005 report, commissioned by the UN Secretary General and produced under the auspices of the UN Global Compact, proposed actions by a broad range of financial actors, from investors to financial institutions and stock exchanges. As illustrated in FIGURE 9, recommended actions included improving ESG research and reporting by companies, consultants and NGOs, integrating ESGs in investment processes by brokers, investors and asset managers, and standardizing ESG reporting by governments, regulators, and stock exchanges. While these recommendations were built on thought that extended back at least 50 years[90], **Who Cares Wins** is widely acknowledged as the establishing the basic framework of the ESG efforts underway today.

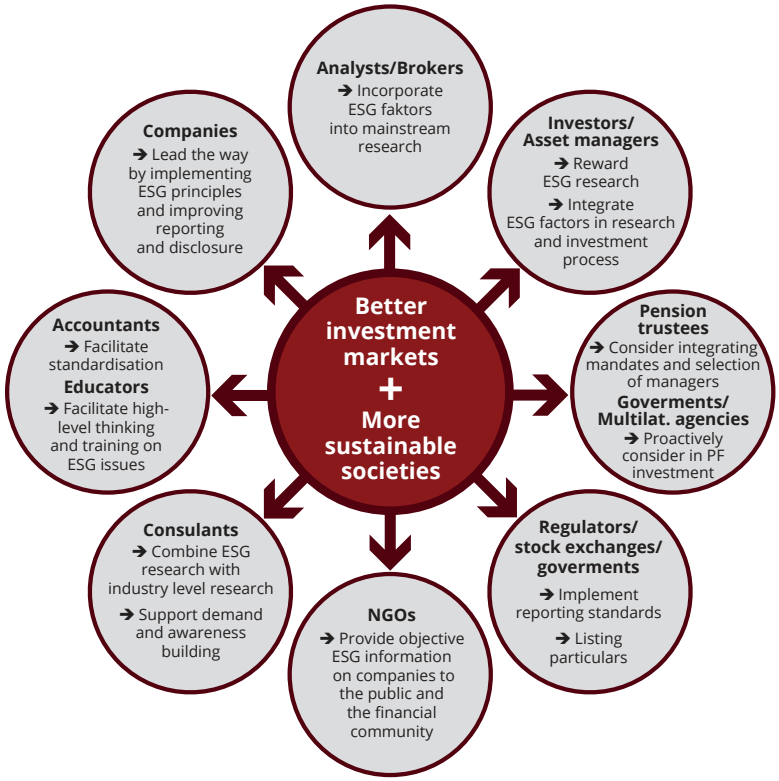


FIGURE 9.
Recommendations of the UN report, Who Cares Wins, Connecting Financial Markets to a Changing World

Over the past 20 years, a growing share of total investments have been influenced by performance on ESG factors. Bloomberg Intelligence reports that global ESG assets have grown beyond $30 trillion in 2022 and are anticipated to exceed $40 trillion by 2030, more than 25% of the projected $140 trillion of total assets under management[91]. In a 2023 survey of 250 C-suite executives and 250 senior investors from around the world conducted by Bloomberg Intelligence, 85 percent of investors reported that ESG leads to better returns, resilient portfolios, and enhanced fundamental analysis. This positive viewpoint reflects the findings of studies such as an examination of more than 3,000 firms worldwide that compared ESG performance as measured by the Thomson Reuters' ESG scoring system with corporate financial performance and found a positive correlation especially among large and high-risk businesses[92].

Closely following publication of **Who Cares Wins**, the UN Secretary General invited a group of 20 representatives from the world's largest institutional investors to develop Principles for Responsible Investment (PRI). This group established six primary principles for responsible investing which include a commitment to including ESG in investment decisions, disclosure of ESG performance by entities receiving investments, open collaboration among investors in implementing the principles, and reporting on progress. PRI provides a range of resources to assist

investors incorporating the six principles including a collaboration platform, reporting framework, and an academic network. The number of PRI signatories has grown to more than 4,000 since the group's establishment in 2005.

Road Safety as Part of ESG

The safety of road users, both those who are traveling as part of their job and others who may be affected by work-related crashes, is clearly within the scope of the ESG framework. The seminal ESG framework, **Who Cares Wins,** lists examples of corporate performance factors that fit within the Environmental, Social, and Governance framework (see FIGURE 10). The first factor listed in the category of Social factors is workplace health and safety[93]. Although not specifically mentioned, considering that road crashes are the single largest cause of workplace injury risk, road safety is included by implication.

In 2022, the International Labour Organization (ILO), a specialized agency of the United Nations, amended the Declaration on Fundamental Principles and Rights at Work by adding a **safe and healthy working environment** as a fifth principle and right.

Consistent with the 2015 UN Sustainable Development Goal (SDG) #8, **Promote sustained, inclusive and sustainable economic growth, full and productive employment and decent work for all,** the 2011 UN Guiding Principles on Business and Human Rights, and the 1948 Universal Declaration of Human Rights, Principles for Responsible Investment launched a Collaborative Stewardship Initiative and Assessment Framework in 2022 to assist in achieving Decent Work objectives that include occupational health and safety[94].

Road Safety Reporting

Occupational health and safety measures are also included in the reporting standards developed and maintained by the Global Reporting Initiative (GRI), the world's most widely used corporate sustainability reporting standards. GRI Topic Standard 403 covers both management factors associated with occupational health and safety risks, including prevention and mitigation measures, as well as incidence rates[95]. GRI does not, however, specifically require reporting of those injured or killed in work-related crashes whether employees or third parties.

Objective and transparent reporting is central to the success of financial providers. Investment firms, banks, and insurance companies rely on verified reporting as a basis for managing the uncertainties inherent in financial services. Considering the importance of road safety performance in affecting occupational health and safety and the direct link between organizational safety performance and financial risk, road safety reporting should include the risks and consequences faced by employees and third parties and address the extent to which organizations use their influence across their value chain. Current reporting processes such as the GRI reporting standard do not provide the level of road safety information required for sound financial decisions and should be upgraded.

ESG issues relevant to investment decisions differ across regions and sectors. The following are examples of issues with a broad range of impacts on companies:

Environmental issues:

- Climate change and related risks
- The need to reduce toxic releases and waste
- New regulation expanding the boundaries of enviranmental liability with regard to products and services
- Increasing pressure by civil society to improve performance, transparency and accountability, leading to reputational risks if not mananged properly
- Emerging markets for environmental services and environment-friendly products

Social issues:

- Workplace health and safety
- Community relations
- Human rights issues at company and suppliers´/contractors´ premises
- Government and community relations in the context of operations in developing countries
- Increasing pressure by civil society to improve performance, transparency and accountability, leading to reputational risks if not managed properly

Corporate governance issues:

- Board structure and accountability
- Accounting and disclosure practices
- Audit committee structure and independence of auditors
- Executive compensation
- Management of corruption and bribery issues

FIGURE 10. Examples of ESG factors affecting investment value (World Bank Group, 2017)

A Case for the Standardization of Road Safety Finance Decisions

The scale and severity of the global road safety problem, the leading killer of young people ages 5 to 29 and the 12th leading cause for all ages[96], its position as leading cause of occupational injury globally[97], and its inclusion as Target 6 under Sustainable Development Goal #3, **Good Health and Well-Being,** warrant a specific focus on road safety performance as part of investment decisions. Such deliberate attention would incentivize far-reaching action that could substantially reduce the global burden of road deaths and injuries and contribute meaningfully to the goals of ESG.

Further benefit could be realized by standardizing road safety measures in ESG so that results among investments could be compared and interventions could be evaluated and shared across sectors. Aligning ESG road safety reporting with widely accepted standards such as ISO 45001, Occupational Safety and Health Management Systems, and 39001, Road Traffic Safety Management Systems, would further enhance the consistency and quality of data and facilitate research on organizational performance and progress.

In a recent interview, the Director of Monetary and Capital Markets for the International Monetary Fund pointed out the increasing need for internal cooperation in finance regulatory policies, explaining that ongoing improvements in the quality and consistency of ESG data, together with consistent regulatory policies that preclude regulatory arbitrage – the incentive for corporations to strategically avoid regulation – will become even more important for securing global financial security[98].

Toward Improved Road Safety Reporting and Better Financial Decisions

A first step toward realizing the power of finance for improving road safety is for ESG reporting to require specific road safety reporting across organizational value chains as a prerequisite for financial services. Such reporting based on standards such as ISO 45001 and 39001 would signal to investors that organizational management recognizes the importance of managing road safety to the full extent of their influence or safety footprint.

A next step would be to require that organizations receiving financial services set targets for road safety progress based on the effectiveness of planned safety interventions. A third step toward realizing the potential of finance would be to require periodic reporting by an organization as a condition for continued investment or services. These three steps could be taken sequentially by investors as a means to phase in road safety measures and expectations as a central ESG prerequisite.

RECOMMENDATION #4

Highest levels of safety across organizational value chains

In order to internalize road safety responsibility across their entire value chain, fulfill legal requirements, and ensure compliance with road rules as a minimum standard, public and private organizations should apply a safety management system such as ISO 45001 or ISO 39001.

- At a minimum, for all road use related to operations across their value chain, organizations should purchase vehicles with the highest safety performance, and take responsibility for speed, fitness to drive, use of appropriate protective gear, and route selection.
- Organizations should report on its safety footprint, targets, actions, and results.

RATIONALE:

Safety Management Systems

Organizations of all types need management systems to function efficiently. Management systems define the intent or objectives of the organization, establish policies and procedures, and allocate responsibilities among parts of the organization to accomplish its mission. Management systems cover various aspects of organizational function, including product or service quality, operational efficiency, environmental performance, and health and safety, and can be simple or complex depending on the size and nature of the organization.

A safety management system (SMS) can be independent or integrated with other types of management systems. An SMS provides a clear analysis of risks associated with the operations of the organization, defines safety incidents, identifies prevention policies and practices, prescribes responses to safety incidents and non-compliances, and evaluates interventions for continuous improvement.

Management systems are essential to inform employees of expected procedures for themselves and others they interact with at work. They protect employees from potential harm and also provide important information to those who have relationships with the organization. Business partners, customers, suppliers, banks, and investors need to know how the organization functions and have confidence that top management is in control and able to predict and prevent risks for personnel, property, the environment, and human rights.

Management System Standards

To assist in the adoption of management systems, standards have been developed to set common expectations for assessing organizational performance. The most common are the International Organization for Standardization (ISO)

management standards. The ISO management standards facilitate confidence in business-to-business relations so that exchanges between organizations can be trusted to be compliant in terms of quality and in accordance with expectations for environmental and social impact. More than 1.2 million organizations world-wide certify compliance with ISO 9001, the management standard for quality, and over 500,000 certify compliance with ISO 14001, the management standard for environmental impact[99].

Nearly 400,000 organizations certify compliance with ISO 45001, the occupational health and safety standard, which is structured in the same way as other ISO management standards according to the Plan, Do, Check, Act (PDCA) principle as illustrated in FIGURE 11. The cyclical PDCA process guides organizations in a continuous improvement and focuses attention on key management areas.

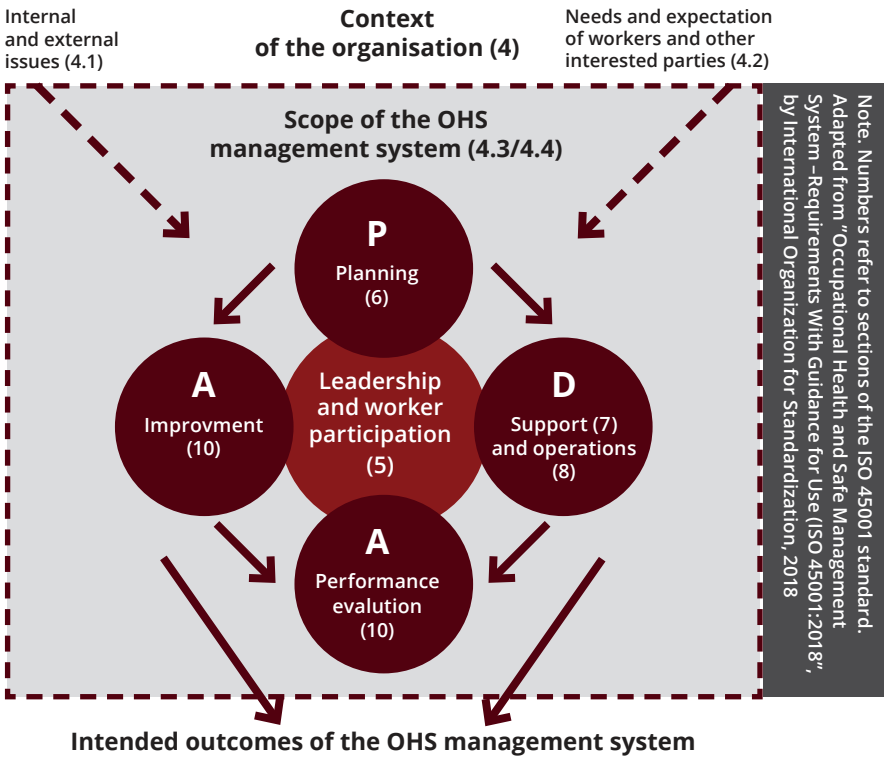


FIGURE 11. ISO 45001 Occupational Health and Safety Management System.

Road Safety Standard

ISO 45001 includes roadway operations as part of the workplace and is also clear that a safe workplace not only includes the well-being of employees and contractors but also the wider community. The background statement for ISO 45001 states, "An organization is responsible for the occupational health and safety of workers and others who can be affected by its activities"[100]. Since every organization must comply with legal requirements relevant to workplace safety,

such as speed limits, seatbelt use, and driver distraction laws, and road transport is a major, if not the largest, injury fatality risk for most organizations, road safety should be a focal point when using occupational health and safety management systems.

The specific management standard for road safety: ISO 39001, is a more advanced guide for organizations that have adopted ISO 45001. The two standards are designed to be used together as a means of reaching higher levels of road safety performance and providing greater benefits for both employees and the community.

Since management systems are a critical tool for organizations to demonstrate compliance with expectations by business partners, the community and the government, and road safety is central to minimizing both employee and community risk, it is essential that users of ISO 45001 include road safety as a focus for measurement, intervention, monitoring, and reporting. Currently only a small fraction of organizations using ISO 45001 are also applying ISO 39001, and many of those using ISO 45001 are not focusing on road safety assessment and improvement. Those who conduct certifications for ISO 45001 compliance should ensure that organizations are giving adequate attention to road safety and be aware that ISO 39001 is available to facilitate a more thorough assessment and guide further improvement. While ISO 45001 clearly addresses road safety by implication, additional emphasis could facilitate adoption and future updates and revisions of the standard should be more explicit about the importance of road safety as part of occupational health and safety.

Road Safety Beyond the Gates

To realize their full potential to influence road safety, organizations must recognize both the importance of road safety to their occupational health and safety commitment and acknowledge that their responsibility does not stop with the protection of their employees. An organization is responsible for everyone who can be affected by their operations. This includes all of those who share the roads with their employees across the full extent of their operational footprint. A strong focus on occupational health and safety within the gates of organizational facilities has resulted in dramatic reductions in workplace death and injury over the past 50 years. When organizations extend this commitment outside their gates and across their footprint, the third of all roadway deaths that are related to work could also be dramatically reduced.

ISO 45001 defines the workplace as a place under the control of the organization where a person needs to be or to go for work purposes, and adds that the organization's responsibilities under the occupational health and safety management system depend on the degree of control the organization has over the workplace[101]. This implies that an employee driving as part of their work for an organization is at their workplace. This also means that because the organization can have a high degree of control over that workplace by providing a safe environment, such as the best safety technology for preventing speeding, driver distraction, and impairment, the organization should assume responsibility for implementing these prevention measures.

RECOMMENDATION #5

Organizations adopt a safety culture

In order to establish a safety culture that goes beyond compliance with rules, organizations should introduce and nurture a safety-first principle where employees can expect the safest working environment, including:

- Encouragement for employees to identify and report safety risks without concern about punishment or retribution and with expectation that the organization will investigate and respond with corrective actions incorporating suggestions from employees where possible for improved safety procedures, products and practices.
- Commitment and action by organizational leadership to adopt policies and processes for transparent communication of safety performance including reporting of safety incidents and implementing improved safety measures in accordance with the safety-first principle.

RATIONALE:

The concept of a safety culture has been discussed in the field of organizational management for many decades, becoming prevalent in the mid-1980s in response to the catastrophic 1984 explosion of a Union Carbide pesticide plant in Bhopal, and the 1986 Chernobyl nuclear disaster. While there is no universally accepted definition, construct, or model of a safety culture, there is general consensus that the idea includes values that prioritize safety above other organizational goals, policies and processes that take a proactive approach to improving safety, and the way people in the organization behave with regard to safety. The British Health and Safety Executive (HSE), the agency that regulates health and safety in Britain, defines safety culture as **"the combination of the attitudes, values and perceptions that influence how something is actually done in the workplace, rather than how it should be done."**[102]

Elements of a Safety Culture

In describing how to engineer a safety culture, James Reason (1998)[103] describes an interconnected set of organizational cultures which together comprise their safety culture. FIGURE 12 illustrates how these individual elements fill complementary roles, with an informed culture providing a complete understanding of risks, **a reporting culture** supported by a centralized safety information system, **a learning culture** that can analyze data from the information system to draw conclusions, and **a flexible culture** that allows safety conclusions to be translated to improvements in practice. Reason stresses the importance of the **just culture** that underlies the others providing the trust that is necessary to encourage employees to observe, report, and revise without fear of blame.

FIGURE 12. Safety Culture Model (Reason, 1998)

Stages of Safety Culture Evolution

The British HSE developed a model of safety culture maturity based on studies of organizational capability models developed in other domains, together with literature on safety culture. The HSE safety culture maturity model in FIGURE 13 illustrates how an organization can transition from prioritizing production, accepting accidents as inevitable, and disregarding safety performance, through steps of sophistication to a position in which safety is prioritized, incidents are analyzed for root causes, and data is used for continuous improvement.

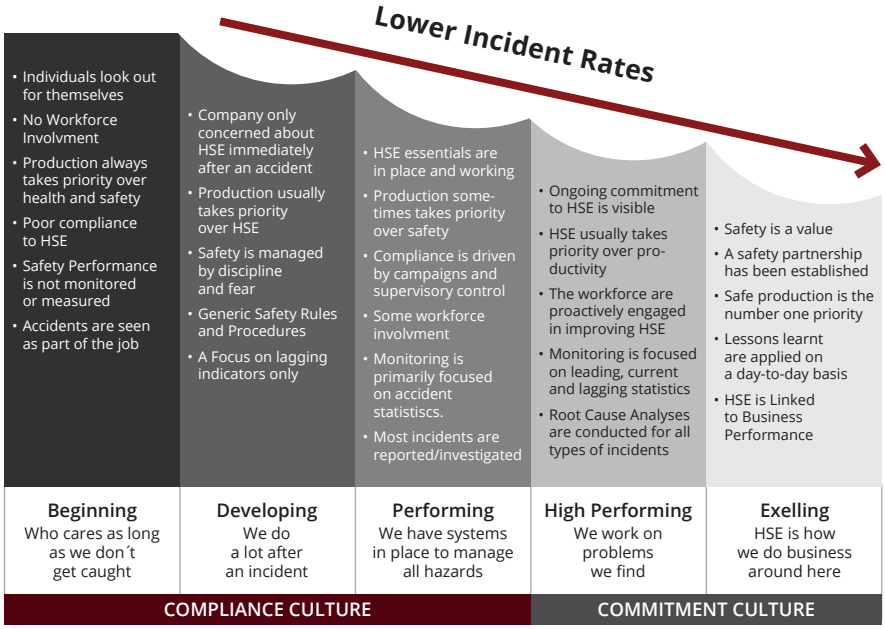


FIGURE 13. Adaptation of the British Health and Safety Executive's (HSE) safety culture maturity model (Cooper, 2016)

Organizational Commitment

A positive safety culture directly supports organizations in taking responsibility for road safety across their footprint by establishing the necessary values, building measurement and reporting capabilities, and guiding institutional processes for feedback and continuous improvement.

Creating a safety culture is most efficient when an organization focuses on the key elements: values that prioritize safety above other organizational goals, policies and processes that proactively improve safety, and the way people in the organization behave with regard to safety. While each of these elements are essential for a strong safety culture, the approach to their establishment is critical for optimal system impact.

The three key safety culture ingredients need to be nurtured as a set. A review of evidence conducted by M. D. Cooper (2016)[104] found limited proof that safety perceptions or attitudes alone are predictive of organizational safety outcomes. Similarly, changing values and norms alone was found to lack such evidence. The elements addressing policies and processes, and safety behaviors were found to have strong evidence of effect on safety outcomes, especially when combined with values that prioritize safety. Safety Management Systems are recommended by the International Labour Organization[105] as a means for strengthening both processes and behaviors.

Efforts to establish each of the three elements should be aimed at both management and employees. Cooper (2016)[106] emphasizes consistent evidence that the root cause of about 80 percent of organizational safety incidents is related to management issues and that while employee engagement is very important, management should be the main target for safety culture interventions. Establishing safety culture that goes beyond simple compliance with rules and regulations requires a long-term commitment and involves the whole organization[107].

To facilitate commitment and movement toward responsibility and action to improve road safety across their footprint, organizations should create a safety culture, using tools such as Safety Management Systems and ISO standards 39001 and 45001, and balancing attention among the three key elements and between activities directed toward management and employees.

RECOMMENDATION #6

Automotive sector supports the highest levels of organizational and vehicle safety

In order to support organizational efforts to comply with occupational health and safety obligations, take responsibility for road safety across their footprint, and realize the potential benefits of safer vehicles in the global fleet, the automotive sector, including vehicle and equipment manufacturers, should:

- Take responsibility for road safety across their organizational footprint, including transparent data collection, problem identification, implementing evidence-based interventions, and reporting on progress.
- Manufacture and market the safest possible vehicles for commercial and fleet purposes, including the full range of work and organizational applications from heavy trucks to powered two-wheelers.
- Incorporate safety technologies in vehicles marketed for commercial or fleet use that will assist organizations in ensuring that their vehicles comply with all traffic rules and protect third parties from injury, such as intelligent speed adaptation (ISA), driver impairment prevention, autonomous emergency braking systems (AEB), blind spot detection (BSD), lane support systems (LSS) and vulnerable road user protection systems.
- Market vehicles with the highest level of safety performance for all global markets.
- Submit vehicles marketed for commercial, fleet, or private use for testing by independent consumer testing programs to inform organizational purchasers about their products' safety performance.

RATIONALE:

The automotive sector has an expansive role in improving global road safety. Vehicle manufacturers and technology suppliers have made substantial contributions to safety over the past 50 years through safety innovation both on their own initiative and as a result of regulation. An analysis of safety systems mandated by U.S. Federal Motor Vehicle Safety Standards indicates that technologies introduced into the fleet between 1960 and 2012, saved over 613,000 lives[108]. This accomplishment shows the potential of the automotive sector, and with the emergence of advanced technologies the scope of opportunities for vehicle safety have expanded yet further. With road traffic crashes remaining the leading killer of children and youth from 5 to 29 years of age and the 12th leading cause of death for all ages, the responsibilities of the automotive sector are far from fulfilled, both as vehicle designers and producers, and as global organizations that can affect safety across their far-reaching footprint.

Automotive Sector Organizations

The automotive sector has an enormous global footprint, producing 93 million vehicles per year, employing more than 8 million people directly and as many as 50 million indirectly. The sector procures 112 million tons of materials annually and accounts for more than 5 percent of worldwide manufacturing jobs [109] [110] [111].

A commitment from the automotive sector to leverage this footprint and to facilitate similar efforts by other sectors will make a significant contribution to global road safety. The automotive sector could begin by ensuring that their own operations are practicing the highest levels of road safety both within their gates and beyond as their corporate vehicles travel on public roads. The same commitment to using the best safety technology on all vehicles, ensuring that vehicles comply with all traffic codes, and selecting the safest routes could then be required across the sector's value chain as a prerequisite for businesses supplying raw materials or distributing finished products.

The automotive sector has the unique ability to take an additional step that will substantially improve the safety of all commercial and organizational traffic. The International Organization of Motor Vehicle Manufacturers reports that the sector produced 26 million commercial vehicles in 2023[112]. Commercial vehicles can be designed and marketed with existing technologies that reduce risk to all road users by ensuring that they can only be operated safely and within compliance of traffic rules. Speed limiters, seat belt interlocks, driver impairment prevention, and other advanced features that prevent the consequences of human error while driving are consistent with organizational occupational health and safety obligations and should be installed in all vehicles sold for commercial purposes. This step will enable widespread road safety progress by providing an efficient and effective means for organizations to fulfill their obligations to their employees and to the communities in which they operate.

Vehicle Design and Marketing

The safety of commercial vehicles is especially important in determining global road safety both because of their role in realizing the benefits of organizational commitments to road safety and because they are often operated in in conditions that pose particular risk. The size and weight of many commercial vehicles are risks because of the extreme contrast in their level of kinetic energy – and consequent crash risk – compared to other road users, and due to the limitations they impose on visibility and safe maneuvering, especially when operated among vulnerable road users. Extremes in the frequency of use of many commercial vehicles also contribute to risk through exposure to other road users and because of driver fatigue.

A recent study of crashes involving heavy commercial vehicles in Sweden indicates that there is considerable room for safety improvement. This study used a panel of experts to review detailed information concerning incidents in which heavy vehicles struck and killed vulnerable road users. The experts used the Swedish

Transport Administration crash data system, which collects in-depth studies of every fatal crash in Sweden, reviewing all cases that involved a heavy goods vehicle (>3.5 tonnes) and resulted in the death of a pedestrian, bicyclist, or powered two-wheeler rider. The study concluded that of the 63 such cases that occurred in Sweden between 2015–2020, 59 percent could have been prevented if the heavy goods vehicle had been equipped with one of the active or passive safety systems shown in TABLE 4[113].

Active Safety Systems	Passive Safety Systems
Automatic Emergency Braking	Frontal Underrun Protection
Alcohol Lock	Passive VRU protection–sharp edges and projections
Brake Assist	Passive VRU protection–energy absorbing front
Blind Spot Information System	Rear Underrun Protection
Direct Vision	Side Underrun Protection
Intelligent Speed Adaptation	VRU airbag
Moving Off Information System	Wheel protection
Reversing Safety	
Surround View	

TABLE 4. Heavy goods vehicle safety countermeasures considered in Swedish study (Willstrand et al., 2024).

Because of their special implications for road safety, commercial vehicles should be designed and marketed with the highest standards of safety equipment. The automotive sector should respond to demand from other organizations – and fulfill their own occupational health and safety obligations – by providing commercial vehicles that are as safe as possible. Commercial and fleet vehicle manufacturers should also submit their vehicles to an independent safety testing program to provide organizational purchasers with objective information regarding safety performance. Automotive equipment producers should provide retrofit technologies where possible to allow older commercial vehicles to be upgraded with the latest safety improvements.

Disparities in Global Vehicle Safety Equipment

About 92 percent of all global road deaths occur in low- and middle-income countries. Per population, road deaths are twice as frequent in middle-income countries and nearly three times as common in lower-income nations than in high-income countries. Though the difference can be attributed to a range of factors including road conditions and traffic management, there are great differences in vehicle safety between high-income countries and low- and middle-income countries (LMICs).

The 2018 Global Status Report on Road Safety identified eight priority UN vehicle safety standards listed in TABLE 5 as fundamental to vehicle safety[114]. The Status Report points out that 124 LMICs require none or just one of these priority regulations. A study of vehicle safety in the Latin America and the Caribbean (LAC) region estimated the benefits of adopting these standards, concluding that overall regional traffic deaths could be reduced by 28 percent if all vehicles were so equipped. FIGURE 14 illustrates the relative effects of the eight vehicle safety technologies in countries of the LAC region[115]. A similar study focusing on the benefits to Southeast Asian nations of adopting vehicle safety technologies found potential impacts of comparable magnitude[116].

UN Vehicle Safety Regulation	Technology
UN regulation 94 and 95: frontal impact protection and side impact protection; crash-worthiness in crash tests at specific speeds	Occupant restraints, airbags (frontal and side), side structure and padding, and side door beams
UN regulation 140: electronic stability control; prevents skidding and loss of control, requires antilock brakes	Electronic stability control
UN regulation 78: motorcycle antilock brakes; helps maintain control during emergency braking	Motorcycle-antilock brakes
UN regulation 127: pedestrian front protection; vehicle front-end modifications to reduce severity of pedestrian injuries	Vehicle front-end design
UN regulation 14, 16, and 129: seatbelt, seatbelt anchorages, and child restraints	Occupant restraints

TABLE 5. Priority UN vehicle safety standards and associated existing technologies (World Health Organisation, 2018).

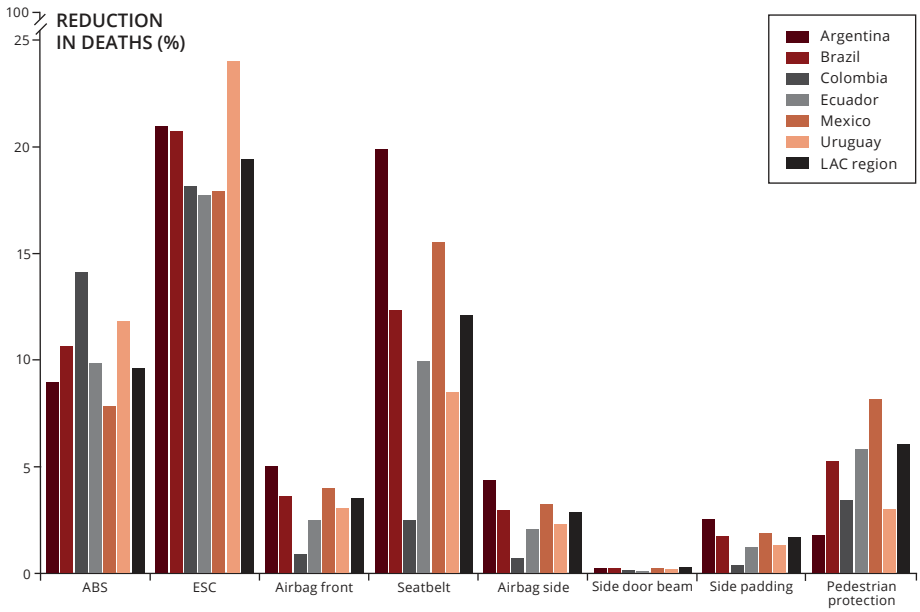


FIGURE 14. Mortality reduction resulting from adoption of eight UN standards in Argentina, Brazil, Colombia, Ecuador, Mexico, Uruguay, and the Latin America and the Caribbean region (Bhalla and Gleason, 2020).

In 2022, the International Organization of Automobile Manufacturers (OICA) published a manifesto calling on governments worldwide to place all members of the automotive sector on an equal footing by establishing mandatory minimum vehicle safety requirements for all new vehicles sold in their territory[117]. If successful, this approach would effectively prevent the sale of vehicles without fundamental safety equipment from being sold in every country. However, recognizing the scale of the geo-political and domestic government negotiation and action necessary to accomplish this objective in more than 100 LMICs, and the consequent low probability of success, the automotive sector should consider a voluntary agreement among members to sell only vehicles equipped with the technology prescribed in the priority UN vehicle safety standards to LMICs as a feasible, practical, and timely alternative.

Relevance of the AEG Recommendations to Low- and Middle-Income Nations

The Global Status Report on Road Safety 2023 offers encouraging evidence of reductions in worldwide road traffic deaths between 2010 and 2021, raising hopes that we have seen the high point of the global problem and are experiencing the beginning of a longer-term decline. However, the evidence is not uniformly positive. Low- and middle-income countries still account for 92 percent of overall road deaths and the improvements over the decade were seen primarily in high-income nations.

Notably, the Africa region, host of the 4th Global Ministerial Conference on Global Road Safety, experienced a 17 percent increase in road traffic deaths during the first Decade of Action for Road Safety, along with the highest population fatality rate globally[118]. Low and middle-income nations continue to face serious challenges in addressing road safety including competing priorities, limited capacity of local governments, as well as geographic, geopolitical, and geodemographic situations that can complicate change efforts.

Against these challenges, the recommendations of the Academic Expert Group do not provide a complete or universal solution. However, these recommendations do offer additional pathways to progress. Both realizing the potential of occupational health and safety mandates and using the power of procurement could be adopted in many environments alongside of other approaches and provide complementary benefit without drawing significantly from scarce resources.

Occupational Health and Safety

A national governance framework for occupational health and safety programs is not universal and is more prevalent among high-income countries than in low- and middle-income countries.

However, the International Labour Organization (ILO) reports that nearly all of the 187 member states have an authority or body responsible for occupational health and safety. In Africa, of the 55 ILO member states, 22 have ratified ILO Convention No. 155 and 15 have ratified ILO Convention No. 187. Twenty-one African member states have a national occupational health and safety policy[119].

International agencies are working to improve occupational health and safety in low- and middle-income countries. In Africa for example, efforts are underway to foster such programs including the collaboration announced in 2023 between the World Health Organization, the African Union Development Agency (AUDA-NEPAD) and the International Labour Organization (ILO) to strengthen the capacities of African countries to provide occupational health and safety measures for health workers[120]. Increased awareness of the

potential of occupational health and safety standards, regulation, and compliance for improving road safety may provide additional incentive for strengthening OHS programs in low- and middle-income nations.

Procurement

Low- and middle-income nations spend a higher proportion of their GDP on public procurement than high-income countries. African nations spend an average of 17 percent of GDP on public works, goods, and service contracts[121], a rate higher than the average for public procurement in low-income nations found by Djankov, et al., 2016[122]. Public procurement is a particularly promising tool for cities. Haselmeyer (2022) observes from research conducted by the Chicago Council on Global Affairs that cities can design procurement processes to incentivize and enable progress in social services, citing examples such as a school meals program in Bogotá that improved the quality and delivery of meals by restructuring city procurement approaches[123]. Innovative cities in low- and middle-income countries such as those participating in the new Alliance of Cities for Road Safety (ACRoS) being established with funding from the UN Road Safety Fund[124], and the fifteen African cities featured as innovative case studies in the UN Environmental Program report, Walking and Cycling in Africa[125] could consider similar approaches to address local road safety problems.

The Academic Expert Group acknowledges the value of the road safety pillars and continues to stress the importance of the Safe System approach as a means for applying these tools to greatest effect. As low- and middle-income nations continue their work through government action and partnerships with civil society to apply the evidence-based tools in each of the pillars – Road Safety Management, Safe Roads and Mobility, Safe Vehicles, Safe Road Users and Post-Crash Response – the Academic Expert Group recommends that these nations also consider the potential of occupational health and safety mandates and procurement to stimulate road safety action among the full range of organizations in their region.

Summary and Priorities

The recommendations in this report reflect the combined experience and insight of the Academic Expert Group and point to a pathway for road safety improvement that complements ongoing activities and has the potential to yield substantial additional momentum toward our ambition of reducing global road deaths and serious injuries. The central focus of the recommendations is on engaging organizations of all types in improving road safety as part of their existing occupational health and safety obligation.

This approach offers compelling opportunities and efficiencies:

- First, the scale of the work-related crash problem demands attention. About one-third of all global road deaths, as many as 400,000 per year, involve a driver on work duty.
- Second, the employer has the power – and responsibility – to manage their road risk through approaches such as technologies and safe practices. Major risk factors, including speed, impairment, and seat belt use are controllable with technology.
- Third, organizations have an occupational health and safety mandate to protect both their employees when using the roads for work purposes and others in the community with whom they share the roads. Nearly every nation has an authority for occupational health and safety.
- Finally, prevention practices are highly effective and tools such as safety management system standards, audits, and certification processes are widely available.

The recommendations focus on a few key stakeholders and actions:

- Governments can lead by clarifying that occupational health and safety expectations extend to the roads. Cities can use their power of innovation to reform their procurement processes for social benefit, including road safety.
- Finance providers can include road safety among the ESG factors used to assess the risk of business investments.
- The automotive sector can provide commercial vehicles equipped with the highest level of safety equipment to enable employers to effectively manage road risk.
- Organizations can take a first step by using available technologies to ensure that their vehicles obey all traffic laws and drive on the safest roads. By simply complying with their mandate and traffic laws, organizations can reduce work-related road deaths by at least 50 percent.

The Academic Expert Group offers these recommendations as efficient means for global road safety progress. New authority is not needed to apply occupational health and safety mandates to the roads and no further research is needed to engage organizations in fulfilling their responsibilities. Solving the problem of work-related road deaths will not resolve the overall global road safety challenge, but even a first step – ensuring that work-related trips comply with traffic laws – could save at least 200,000 lives per year, contributing much needed momentum toward our goal.

Recommendations of the Academic Expert Group for the 4th Global Ministerial Conference on Road Safety

TOPIC	RECOMMENDATIONS
❶ **Road safety in workplace safety regulations and practices**	**In order to prevent road traffic fatalities and injuries among employees and third parties:** • Private and public organizations should include specific attention to road safety in the systematic management of their work environment as required by occupational health and safety (OHS) law. • Compliance with road safety best practices should be a key OHS standard and a primary responsibility of the organization. • Prevention activities should be implemented to address road safety risks throughout the organizational foot-print and be measured and reported in OHS compliance monitoring. • Compliance should also be addressed by traffic law enforcement when violations occur on public roads with penalties for failure to take adequate precautions applied to the organization through OHS laws.
❷ **Government organizations set the example with cities leading the way**	**In order to fully utilize the potential of government organizations to improve road safety on a global scale:** • National and city governments and the United Nations organization should use their influence as leaders and role models as well as their power as large employers and their authority as regulators and enforcers to advance road safety actions following the Safe System approach. • Cities in particular can serve a critical role by turning their power of innovation to demonstrating how OHS can be a key for road safety progress. • City, national, and other jurisdictional governments should be explicit about the responsibilities of organizations for road safety as part of their OHS obligations. Governments should also be clear about their intent to routinely monitor and enforce these obligations. City, national, and other jurisdictional governments should use their power of procurement to incentivize road safety performance among organizations with whom they do business and as part of government-funded programs and projects. • The United Nations system should be a role model in demonstrating attention to road safety as part of OHS because of the leadership influence of the UN in countries of every income level.

TOPIC	RECOMMENDATIONS
❸ Road safety in finance decisions	**In order to incentivize organizational action to improve road safety, financial actors such as banks, investors, insurance companies, and auditors should:** • Explicitly mandate that entities actively address road safety across their value chains as a prerequisite for financial involvement. • Specifically require that organizations receiving investment funds maintain an assurance process that includes reporting on their road safety footprint across their value chains, setting crash reduction targets, and implementing evidence-based interventions where necessary to reduce or eliminate serious crashes. • Collaborative financial initiatives, such as PRI (Principles for Responsible Investment) and PRB (Principles for Responsible Banking) should specifically include road safety as a core element of the Environmental, Social, and Governance (ESG) factors by which they assess the sustainability of investments and develop guidance for use by investors and banks in assessing road safety performance.
❹ Highest levels of safety across organizational value chains	**In order to internalize road safety responsibility across their entire value chain, fulfill legal requirements, and ensure compliance with road rules as a minimum standard, public and private organizations should:** • Apply a safety management system such as ISO 45001 or ISO 39001. • At a minimum, for all road use related to operations across their value chain, organizations should purchase vehicles with the highest safety performance, and take responsibility for speed, fitness to drive, use of appropriate protective gear, and route selection. • The organization should report on its safety footprint, targets, actions, and results.

TOPIC	RECOMMENDATIONS
5 Organizations adopt a safety culture	**In order to establish a safety culture that goes beyond compliance with rules, organizations should introduce and nurture a safety-first principle where employees can expect the safest working environment, including:** • Encouragement for employees to identify and report safety risks without concern about punishment or retribution and with expectation that the organization will investigate and respond with corrective actions incorporating suggestions from employees where possible for improved safety procedures and products. • Commitment and action by organizational leadership to adopt policies and processes for transparent communication of safety performance including reporting of safety incidents and implementing improved safety measures in accordance with the safety-first principle.
6 Automotive sector supports the highest levels of organizational and vehicle safety	**In order to support organizational efforts to comply with OHS obligations, take responsibility for road safety across their footprint, and realize the potential benefits of safer vehicles in the global fleet, the automotive sector, including vehicle and equipment manufacturers, should:** • Take responsibility for road safety across their organizational footprint, including data collection, problem identification, implementing evidence-based interventions, and reporting on progress. • Manufacture and market the safest possible vehicles for commercial and fleet purposes, including the full range of work and organizational applications from heavy trucks to powered two-wheelers. • Incorporate safety technologies in vehicles for commercial or fleet use that will assist organizations in ensuring their vehicles comply with all traffic rules and protect third parties from injury, such as intelligent speed adaptation (ISA), driver impairment prevention, autonomous emergency braking systems (AEB), blind spot detection (BSD), lane support systems (LSS) and vulnerable road user protection systems. • Market vehicles with the highest level of safety performance for all global markets. • Submit vehicles marketed for commercial or fleet use for testing by independent consumer testing programs to inform organizational purchasers about their products' safety performance.

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References

1. Academic Expert Group. (2019). Saving lives beyond 2020: the next steps. Recommendations of the academic expert group for the 3rd Ministerial conference on road safety. Commissioned by the Swedish Transport Administration. Retrieved from: https://www.roadsafetysweden.com/contentassets/c65bb9192abb44d5b26b633e70e0be2c/200113_final-report-single.pdf
2. United Nations Department of Economic and Social Affairs. (2017). The 17 goals. Retrieved from: https://sdgs.un.org/goals
3. World Bank. (2024). Practice note on using rated criteria to select civil works contractors in the transport sector. Washington, DC. License: Creative Commons Attribution CC by 3.0.
4. International Labour Organization. (2022). A safe and healthy working environment is a fundamental principle and right at work. Retrieved from: https://www.ilo.org/sites/default/files/wcmsp5/groups/public/@ed_dialogue/@lab_admin/documents/publication/wcms_850673.pdf
5. World Health Organization. (2023). Global status report on road safety 2023. Geneva; License: CC BY-NC-SA 3.0 IGO.
6. World Health Organization. (2023). Global status report on road safety 2023. Geneva; License: CC BY-NC-SA 3.0 IGO.
7. World Health Organization. (2023). Global status report on road safety 2023. Geneva; License: CC BY-NC-SA 3.0 IGO.
8. Kullgren, A., Stigson, H., Rizzi, M., & Tingvall, C. (2023). Fatalities in value chains—an attempt to classify road traffic crashes in accordance with the United Nations General Assembly resolution 74/299. Traffic Safety Research, 5, 000027. https://doi.org/10.55329/mcmr2018
9. Murray, W. (2007). Worldwide Occupational Road Safety (WORS) Review Project. QUT Digital Repository: http://eprints.qut.edu.au
10. Mock, Charles & Adjei, Samuel & Acheampong, Frederick & DeRoo, Lisa & Simpson, Kate. (2005). Occupational Injuries in Ghana. International journal of occupational and environmental health. 11. 238-45. 10.1179/107735205800246028.
11. Lilley, R., Davie, G., Horsburgh, S., McNoe, B., Driscoll, T. (2023). Societal burden of work on injury deaths in New Zealand, 2005–14: An observational study, SSM - Population Health, Volume 21, 2023, 101353, ISSN 2352-8273, https://doi.org/10.1016/j.ssmph.2023.101353. (https://www.sciencedirect.com/science/article/pii/S2352827323000186).
12. Concha-Barrientos, M., Nelson, D.I., Fingerhut, M., Driscoll, T. and Leigh, J. (2005). The global burden due to occupational injury. Am. J. Ind. Med., 48: 470-481. https://doi.org/10.1002/ajim.20226
13. Behera, D.K., Singh, S.K., Choudhury, D.K. (2022). The burden of transport injury and risk factors in India from 1990 to 2019: evidence from the global burden of disease study. Archives of Public Health (2022) 80:204. https://doi.org/10.1186/s13690-022-00962-8
14. Adminaite, D., Jost, G., Stipdonk, H., Ward, H. (2017). Tapping the potential for reducing work-related road deaths and injuries. European Transport Safety Council. PIN Flash Report 33.
15. Kullgren A., Stigson H., Rizzi M. (2023). Tingvall C. Fatalities in value chains – an attempt to classify road traffic crashes in accordance with the UN General Assembly resolution 74/299. Traffic safety research, Case report 2023.
16. Adminaité-Fodor, D., Jost, G. (2020). How to improve the safety of goods vehicles in the EU? European Transport Safety Council PIN Flash Report 39.

17. World Health Organization. (2023). Global status report on road safety 2023. Geneva; License: CC BY-NC-SA 3.0 IGO.

18. WHO/ILO joint estimates of the work-related burden of disease and injury, 2000–2016: global monitoring report. (2021). Geneva: World Health Organization and the International Labour Organization. Licence: CC BY-NC-SA 3.0 IGO.

19. World Health Organization. (2023). Global status report on road safety 2023. Geneva; License: CC BY-NC-SA 3.0 IGO.

20. Peters, L., Jenkins, J., Ntramah, S., Vincent, J., Hayombe, P., Owino, F., Opiyo, P., Johnson, T., Santos, R., Mugisha, M., Chetto, R. (2023). COVID-19 and the Motorcycle Taxi Sector in Sub-Saharan African Cities: A Key Stakeholders' Perspective. Transportation Research Record 2023 2677:4, 751-764.

21. Kiwango, G., Katopola, D., Francis, F, Möller, J., Hasselberg, M. (2024). A systematic review of risk factors associated with road traffic crashes and injuries among commercial motorcycle drivers, International Journal of Injury Control and Safety Promotion, 31:2, 332-345, DOI: 10.1080/17457300.2024.2319628.

22. World Health Organization. (2023). Global status report on road safety 2023. Geneva; License: CC BY-NC-SA 3.0 IGO.

23. World Health Organization. (2023). Global status report on road safety 2023. Geneva; License: CC BY-NC-SA 3.0 IGO.

24. Adminaite, D., Jost, G., Stipdonk, H., Ward, H. (2017). Tapping the potential for reducing work-related road deaths and injuries. European Transport Safety Council. PIN Flash Report 33.

25. Mock, Charles & Adjei, Samuel & Acheampong, Frederick & DeRoo, Lisa & Simpson, Kate. (2005). Occupational Injuries in Ghana. International journal of occupational and environmental health. 11. 238-45. 10.1179/107735205800246028.

26. Adminaite, D., Jost, G., Stipdonk, H., Ward, H. (2017). Tapping the potential for reducing work-related road deaths and injuries. European Transport Safety Council. PIN Flash Report 33.

27. Carvalho Malta, Deborah & Bernal, Regina & Vasconcelos, Nádia & Ribeiro, Adalgisa & Vasconcelos, Lêda & Machado, Elaine. (2023). Commuting and work-related accidents among employed Brazilians, National Survey of Health 2013 and 2019. Revista Brasileira de Epidemiologia. 26. 10.1590/1980-549720230006.supl.1.

28. Kullgren, A., Stigson, H., Rizzi, M., & Tingvall, C. (2023). Fatalities in value chains—an attempt to classify road traffic crashes in accordance with the United Nations General Assembly resolution 74/299. Traffic Safety Research, 5, 000027. https://doi.org/10.55329/mcmr2018

29. Vadeby, A. (2023). How many lives could be saved if everyone complied with the speed limit? A case study from Sweden. Transportation Research Procordia, 72, 3024–3030.

30. Elvik, R., Vadeby, A., Hels, T., van Schagen, I. (2019). Updated estimates of the relationship between speed and road safety at the aggregate and individual levels. Accident Analysis and Prevention, Volume 123, 114–122. DOI: 10.1016/j.aap.2018.11.014.

31. Elvik, R., Vadeby, A., Hels, T., van Schagen, I. (2019). Updated estimates of the relationship between speed and road safety at the aggregate and individual levels. Accident Analysis and Prevention, Volume 123, 114–122. DOI: 10.1016/j.aap.2018.11.014.

32. Blomberg, R. D., Peck, R. C., Moskowitz, H., Burns, M., & Fiorentino, D. (2005). Crash risk of alcohol involved driving: A case-control study. Stamford, CT: Dunlap & Associates, Inc.

33. Martin, T.L., Solbeck, P.A.M., Mayers, D.J., Langille, R.M., Buczek, Y. and Pelletier, M.R. (2013). A Review of Alcohol-Impaired Driving: The Role of Blood Alcohol Concentration and Complexity of the Driving Task. J Forensic Sci, 58: 1238-1250. https://doi.org/10.1111/1556-4029.12227

34. Voas RB, Torres P, Romano E, Lacey JH. Alcohol-related risk of driver fatalities: an update using 2007 data. J Stud Alcohol Drugs. (2012). May;73(3):341-50. doi: 10.15288/jsad.2012.73.341. PMID: 22456239; PMCID: PMC3316710.

35. Farmer, C., (2020). Potential lives saved by in-vehicle alcohol detection systems. Insurance Institute for Highway Safety. July 2020.

36. Lahausse, J. A., & Fildes, B. N. (2009). Cost-Benefit Analysis of an Alcohol Ignition Interlock for Installation in all Newly Registered Vehicles. Traffic Injury Prevention, 10(6), 528–537. https://doi.org/10.1080/15389580903173706.

37. Kargar, S., Ansari-Moghaddam, A. & Ansari, H. (2023). The prevalence of seat belt use among drivers and passengers: a systematic review and meta-analysis. J. Egypt. Public. Health. Assoc. 98, 14 (2023). https://doi.org/10.1186/s42506-023-00139-3.

38. Teye-Kwadjo, E., Salia, S., Owusu Mensah, G., Ofori, R., (2020). Exploring Ghanaian commercial drivers' intentions to wear a seat belt, Case Studies on Transport Policy, Volume 8, Issue 2, 2020, Pages 453-459, ISSN 2213-624X, https://doi.org/10.1016/j.cstp.2019.10.009.

39. Elvik R., Høye A., Vaa T., Sørensen M. (2009). The handbook of road safety measures, 2nd edition. Bingley: Emerald Group Publishing; 2009.

40. Høye, A. (2016). How would increasing seat belt use affect the number of killed or seriously injured light vehicle occupants?, Accident Analysis & Prevention, Volume 88, 2016, Pages 175-186, ISSN 0001-4575, https://doi.org/10.1016/j.aap.2015.12.022.

41. TRL. (2015). Benefit and feasibility of a range of new technologies and unregulated measures in the fields of vehicle occupant safety and protection of vulnerable road users, https://bit.ly/3chH9d8.

42. Kullgren, A., Axelsson, A., Stigson, H., Ydenius, A. (2019). Developments in car crash safety and comparison between results from EURO NCAP tests and real-world crashes. 26th International Technical Conference on the Enhanced Safety of Vehicles (ESV): Technology: Enabling a Safer Tomorrow. Eindhoven. Paper Number 19-0291.

43. Euro NCAP. (2024). Heavy goods vehicle safety in the spotlight as Euro NCAP launches brand-new TRUCK SAFE assessment programme. Press Release. 20th November 2024. Retrieved from: https://www.euroncap.com/en/press-media/press-releases/heavy-goods-vehicle-safety-in-the-spotlight-as-euro-ncap-launches-brand-new-truck-safe-assessment-programme/

44. Willstrand, T.D., Holmquist, K., Fredriksson, R., Rizzi, M. (2024). Potential of heavy goods vehicle countermeasures to reduce the number of fatalities in crashes with vulnerable road users in Sweden. Traffic Safety Research. vol. 6 (2024) e000053 https://doi.org/10.55329/dpjc9540

45. Kockum, S., Örtlund, R., Ekfjorden, A., & Wells, P. (2017). Volvo trucks safety report 2017. Göteborg: Volvo Trucks.

46. Kullgren A., Stigson H., Rizzi M., Tingvall C. (2023). Fatalities in value chains – an attempt to classify road traffic crashes in accordance with the UN General Assembly resolution 74/299. Traffic safety research, Case report 2023.

47. International Organization for Standardization. (2024). ISO 45001:2018 Terms and definitions.
Retrieved from: https://www.iso.org/obp/ui/en/#iso:std:iso:45001:ed-1:v1:en.

48. International Labour Organization. (2022). A safe and healthy working environment is a fundamental principle and right at work. Retrieved from: https://www.ilo.org/sites/default/files/wcmsp5/groups/public/@ed_dialogue/@lab_admin/documents/publication/wcms_850673.pdf

49. Goel R., Tiwari G, Varghese M., Bhalla K. et al. (2024). Effectiveness of road safety interventions: An evidence and gap map. Campbell Systematic Reviews. 20: e1367.

50. Khayesi M. (2024). Beyond risk factors and interventions: The importance of advancing road safety governance research. In: Tiwari G, Varghese M, Bhalla K, editors. Safe and sustainable mobility by design: Safe cities, vehicles, institutions and human rights. Springer Nature. (in press).

51. Khayesi M. (2024). Beyond risk factors and interventions: The importance of advancing road safety governance research. In: Tiwari G, Varghese M, Bhalla K, editors. Safe and sustainable mobility by design: Safe cities, vehicles, institutions and human rights. Springer Nature. (in press).

52. Goel R., Tiwari G, Varghese M., Bhalla K. et al. (2024). Effectiveness of road safety interventions: An evidence and gap map. Campbell Systematic Reviews. 20: e1367.

53. Elvik, R., Høye, A., Vaa, T., Sørensen, M. (2009). The handbook of road safety measures Emerald, Bingley, UK (2009).

54. Brandtner, C. (2023). Can Cities Be the Source of Scalable Innovations? Stanford Social Innovation Review. https://doi.org/10.48558/PWBD-NN15

55. Hoffecker, E. (2018). Why Cultivating Your Innovation Ecosystem Is Worth the Work. Stanford Social Innovation Review. https://doi.org/10.48558/HNNY-EZ91

56. OECD. (2019). Enhancing Innovation Capacity in City Government, OECD Publishing, Paris, https://doi.org/10.1787/f10c96e5-en

57. Danish Institute for Human Rights. (2024). National action plans on business and human rights. Retrieved from: https://globalnaps.org/issue/small-medium-enterprises-smes/

58. International Finance Corporation. (2013). Access to credit among micro, small, and medium enterprises. IFC Advisory Services. Access to Finance. 94916.

59. Chen, S. Song, Yu. Gao, Peng. (2023). Environmental, social, and governance (ESG) performance and financial outcomes: Analyzing the impact of ESG on financial performance, Journal of Environmental Management, Volume 345, 2023, 118829, ISSN 0301-4797.

60. International Labour Organization. (2023b). Implementing a safe and healthy working environment: Where are we now? ISBN: 9789220389492.

61. International Labour Organization. (2023b). Implementing a safe and healthy working environment: Where are we now? ISBN: 9789220389492.

62. International Organization for Standardization. (2024). ISO 45001:2018 Terms and definitions. Retrieved from: https://www.iso.org/obp/ui/en/#iso:std:iso:45001:ed-1:v1:en.

63. International Organization for Standardization. (2023). The ISO survey of management system standard certifications. Explanatory note. Retrieved from: https://www.iso.org/committee/54998.html?t=KomURwikWDLiuB1P1c7SjLMLEAgXOA7emZHKGWyn8f3KQU-TU3m287NxnpA3DIuxm&view=documents#section-isodocuments-top

64. World Bank Group. (2020). Global public procurement database: share, compare, improve! Who we are/news/Feature Story March 23, 2020.
Retrieved from: https://www.worldbank.org/en/news/feature/2020/03/23/global-public-procurement-database-share-compare-improve

65. Fortune. (2024). Fortune Global 500.
Retrieved from: https://fortune.com/ranking/global500/

66. Schannon, D., Thakarar, D., Neuhaus, K., Tsang, R. (2016).
Unearthing the hidden treasure of procurement. Bain and Company. Brief.

67. National Academies of Sciences, Engineering, and Medicine. (2000). Safe Work in the 21st Century: Education and Training Needs for the Next Decade's Occupational Safety and Health Personnel. Washington, DC: The National Academies Press.
https://doi.org/10.17226/9835.

68. Wu Y., Schwebel DC., Hu G. (2018) Disparities in Unintentional Occupational Injury Mortality between High-Income Countries and Low- and Middle-Income Countries: 1990–2016. International Journal of Environmental Research and Public Health. 2018; 15(10):2296. https://doi.org/10.3390/ijerph15102296.

69. Bureau of Labor Statistics. (2023). National census of fatal occupational injuries in 2022. Press Release. December 19, 2023. USDL-23-2615. Retrieved from: https://www.bls.gov/news.release/pdf/cfoi.pdf.

70. International Labour Organization. (2023b). Implementing a safe and healthy working environment: Where are we now? ISBN: 9789220389492

71. International Labour Organization. (2023). A call for safer and healthier working environments. Geneva : ILO; 2023.

72. International Labour Organization. (2023b). Implementing a safe and healthy working environment: Where are we now? ISBN: 9789220389492.

73. European Commission. (2024). Directive on corporate sustainability and due diligence. Directive 2024/1760. Retrieved from: https://commission.europa.eu/business-economy-euro/doing-business-eu/sustainability-due-diligence-responsible-business/corporate-sustainability-due-diligence_en

74. Chou, M.-H., Erkkilä, T., & Mölsä, J. (2024). Crafting innovation hubs: Future cities and global challenges. The British Journal of Politics and International Relations, 26(3), 694-717. https://doi.org/10.1177/13691481231191921

75. UNRSF. (2024). The Global Alliance of Cities for Road Safety (ACROS) – A one-stop-shop for cities to save lives. United Nations Road Safety Trust Fund. Retrieved from: https://mptf.undp.org/project/00140127.

76. UNEP. (2022). United Nations Environment Programme and United Nations Human Settlements Programme. Walking and cycling in Africa: Evidence and Good Practice to Inspire Action. Nairobi. https://wedocs.unep.org/20.500.11822/40071

77. Haselmayer, S. (2021). Serving the citizens—not the bureaucracy: A strategic vision for city procurement. The Chicago Council on Global Affairs. June 2021. Retrieved from: https://globalaffairs.org/sites/default/files/2021-06/CCGA-City%20procurement_vFb%5B94%5D.pdf

78. Team, B. I. (2023). How to build a Net Zero society: using behavioural insights to decarbonise home energy, transport, food, and material consumption. Behavioural Insights Team, Manchester.

79. The White House. (2023). FACT SHEET: Biden-Harris administration announces new better contracting initiative to save billions annually. White House Briefing Room. November 8, 2023.

80. U.S. Government Accountability Office. (2024). GAO analysis of federal procurement data system data as of May 2024. https://www.gao.gov/blog/snapshot-government-wide-contracting-fy-2023-interactive-dashboard

81. U.S. Census Bureau, Census of Governments, Survey of Public Employment & Payroll Summary Report: 2022.

82. Goldschein, E., Lopez, L. (2011). The 10 biggest employers in the world. Business Insider. Sep 12, 2011.

83. Federal Highway Administration. (2023). State motor vehicle registrations - 2022. Highway Statistics Series. https://www.fhwa.dot.gov/policyinformation/statistics/2022/mv1.cfm

84. Djankov, S., Saliola, F. (2016). How large is public procurement in developing countries? Realtime economic issues watch. Peterson Institute for International Economics.

85. Kullgren, A., Stigson, H., Rizzi, M., & Tingvall, C. (2023). Fatalities in value chains—an attempt to classify road traffic crashes in accordance with the United Nations General Assembly resolution 74/299. Traffic Safety Research, 5, 000027. https://doi.org/10.55329/mcmr2018

86. United Nations System Chief Executives Board for Coordination. (2022). UN system statistics. Personnel by region. https://unsceb.org/human-resources-statistics

87. UNSMS Security Policy Manual. (2017). Chapter VII. Provisions on Safety Matters. https://policy.un.org/sites/policy.un.org/files/files/documents/2020/Oct/spm_-_chapter_vii_-_section_c_-_road_safety_1.pdf

88. UNDSS. (2019). Road safety strategy for the United Nations System and its personnel. https://www.un.org/sites/un2.un.org/files/2020/09/road_safety_strategy_booklet.pdf

89. World Bank Group. (2017). Who cares wins: connecting financial markets to a changing world (English). Washington, D.C. http://documents.worldbank.org/curated/en/280911488968799581/Who-cares-wins-connecting-financial-markets-to-a-changing-world

90. Bowen, H. R. (2013). Social Responsibilities of the Businessman. University of Iowa Press. https://doi.org/10.2307/j.ctt20q1w8f

91. Bloomberg. (2024). Global ESG assets predicted to hit $40 trillion by 2030, despite challenging environment, forecasts Bloomberg Intelligence. https://www.bloomberg.com/company/press/global-esg-assets-predicted-to-hit-40-trillion-by-2030-despite-challenging-environment-forecasts-bloomberg-intelligence/

92. Chen, S. Song, Yu. Gao, Peng. (2023). Environmental, social, and governance (ESG) performance and financial outcomes: Analyzing the impact of ESG on financial performance, Journal of Environmental Management, Volume 345, 2023, 118829, ISSN 0301-4797.

93. World Bank Group. (2017). Who cares wins: connecting financial markets to a changingworld (English). Washington, D.C. http://documents.worldbank.org/curated/en/280911488968799581/Who-cares-wins-connecting-financial-markets-to-a-changing-world

94. Principles for Responsible Investment. (2024). Advance: A stewardship initiative for human rights and social issues. https://www.unpri.org/investment-tools/stewardship/advance

95. Global Reporting Initiative. (2018). GRI 403: Occupational health and safety. Global Sustainability Standards Board. Amsterdam, Netherlands: GRI.

96. World Health Organization. (2023). Global status report on road safety 2023. Geneva. License: CC BY-NC-SA 3.0 IGO.

97. World Bank Group. (2017). Who cares wins: connecting financial markets to a changing world (English). Washington, D.C. http://documents.worldbank.org/curated/en/280911488968799581/Who-cares-wins-connecting-financial-markets-to-a-changing-world

98. International Monetary Fund. (2021). The Future of Finance and the Global Economy: Facing Global Forces, Shaping Global Solutions. Interview with Tobias Adrian, Financial Counsellor and Director, Monetary and Capital Markets Department, IMF. https://www.imf.org/en/News/Articles/2021/09/27/sp092721-the-future-of-finance-and-the-global-economy

99. International Organization for Standardization. (2023). The ISO survey of management system standard certifications. Explanatory note. Retrieved from: https://www.iso.org/committee/54998.html?t=KomURwikWDLiuB1P1c7SjLMLEAgXOA7emZHKGWyn8f3KQU-TU3m287NxnpA3DIuxm&view=documents#section-isodocuments-top

100. International Organization for Standardization. (2024). ISO 45001:2018 Terms and definitions. Retrieved from: https://www.iso.org/obp/ui/en/#iso:std:iso:45001:ed-1:v1:en.

101. International Organization for Standardization. (2024). ISO 45001:2018 Terms and definitions. Retrieved from: https://www.iso.org/obp/ui/en/#iso:std:iso:45001:ed-1:v1:en.

102. Health and Safety Executive. (2024). Achieving safety culture excellence. Retrieved from: https://www.hsl.gov.uk/what-we-do/safety-culture

103. Reason, J. (1998). Achieving a safe culture: theory and practice. Work & Stress, 12(3), 293-306.

104. Cooper, Dominic. (2016). Navigating the safety culture construct: a review of the evidence. July 2016.

105. International Labour Organization. (2001). Guidelines on management systems (ILO-OSH 2001). ISBN: 9221116344

106. Cooper, Dominic. (2016). Navigating the safety culture construct: a review of the evidence. July 2016.

107. Hudson P. (2007). Implementing a safety culture in a major multi-national. Safety science 45 2007 (692-722).

108. Kahane, C.J. (2015). Lives Saved by Vehicle Safety Technologies and Associated Federal Motor Vehicle Safety Standards, 1960 to 2012 – Passenger Cars and LTVs. National Highway Traffic Safety Administration.

109. International Labour Organization. (2020). Sectoral brief: COVID-19 and the automotive industry. 8 April 2020.

110. International Organization of Motor Vehicle Manufacturers. (2024). Production statistics 2023. Retrieved from: https://www.oica.net/category/production-statistics/2023-statistics/

111. World Economic Forum. (2024). How to navigate sustainability in the automotive industry. Retrieved from: https://www.weforum.org/agenda/2024/05/how-to-navigate-sustainability-in-the-automotive-industry/

112. International Organization of Motor Vehicle Manufacturers. (2024). Production statistics 2023. Retrieved from: https://www.oica.net/category/production-statistics/2023-statistics/

113. Willstrand, T.D., Holmquist, K., Fredriksson, R., Rizzi, M. (2024). Potential of heavy goods vehicle countermeasures to reduce the number of fatalities in crashes with vulnerable road users in Sweden. Traffic Safety Research. vol. 6 (2024) e000053 https://doi.org/10.55329/dpjc9540

114. World Health Organization. (2018). Global status report on road safety 2018. Geneva; License: CC BY-NC-SA 3.0 IGO.

115. Bhalla, K., Gleason, K. (2020). Effects of vehicle safety design on road traffic deaths, injuries, and public health burden in the Latin American region: a modelling study. The Lancet Global Health, Volume 8, Issue 6, e819 - e828.

116. Antona-Makoshi, Jacobo, Muslim, Husam, Medojevic, Marko, Watanabe, Sandra, Seguí Gómez, María. et al. (2023). Estimated potential death and disability averted with vehicle safety interventions, Association of Southeast Asian Nations. Bulletin of the World Health Organization, 101 (3), 211-222. World Health Organization. http://dx.doi.org/10.2471/BLT.22.288895

117. International Organization of Motor Vehicle Manufacturers. (2022). Global Road Safety OICA Manifesto. 2022-06-30. Retrieved from: https://www.oica.net/wp-content/uploads/OICA-manifesto-on-global-road-safety-30-06-2022.pdf

118. World Health Organization. (2023). Global status report on road safety 2023. Geneva; License: CC BY-NC-SA 3.0 IGO.

119. International Labour Organization. (2023b). Implementing a safe and healthy working environment: Where are we now? ISBN: 9789220389492.

120. World Health Organization. (2023). WHO, African Union Development Agency, and the International Labour Organization join forces to safeguard health workers in Africa. News. 12 April 2023. Retrieved from: https://www.who.int/news/item/12-04-2023-who--african-union-development-agency--and-the-international-labour-organization-join-forces-to-safeguard-health-workers-in-africa

121. Arisov, E., Leipold, K. J., Messan, K. H. (2023). The expanding role of public procurement in Africa's economic development. World Bank Blogs. January 17, 2023. Retrieved from: https://blogs.worldbank.org/en/governance/expanding-role-public-procurement-africas-economic-development.

122. Djankov, S., Saliola, F. (2016). How large is public procurement in developing countries? Realtime economic issues watch. Peterson Institute for International Economics.

123. Haselmayer, S. (2021). Serving the citizens—not the bureaucracy: A strategic vision for city procurement. The Chicago Council on Global Affairs. June 2021. Retrieved from: https://globalaffairs.org/sites/default/files/2021-06/CCGA-City%20procurement_vFb%5B94%5D.pdf

124. UNRSF. (2024) The Global Alliance of Cities for Road Safety (ACROS) – A one-stop-shop for cities to save lives United Nations Road Safety Trust Fund. Retrieved from: https://mptf.undp.org/project/00140127.

125. UNEP. (2022) United Nations Environment Programme and United Nations Human Settlements Programme. Walking and cycling in Africa: Evidence and Good Practice to Inspire Action. Nairobi. https://wedocs.unep.org/20.500.11822/40071

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if...

"If wishes were horses, beggars would ride"
We all have wishes for ourselves and humanity

What if every child has at least a balanced meal every day?

What if every human being drinks at least two litres of clean water every day?

What if each citizen goes out of their home every day and comes back without fearing crime and injury?

What if each city has clean air every day?

What if every human being has at least a blanket to cover every night?

What if every individual can read and write?

What if every expectant mother is assured of holding her baby in her hands at the end of her pregnancy?

What if every household has at least US$ 1.25 per day?

What if every individual has a mobile phone with access to the Internet?

What if governments truly know what health and development issues kill their citizens?

What if elected political leaders spend only one hour every day working on the issues that affect the welfare of their citizens?

What if every human being does a physical activity for at least 30 minutes every day?

What if every government acts on at least one item of a single global resolution it has endorsed every day?

What if every organisation promotes health, keeps the world safe and serves the vulnerable?

What if all these wishes were achieved in every human settlement of the world?

What is your wish?

Meleckidzedeck Khayesi
and Kidist Bartolomeos