



**HIGH VOLUME
TRANSPORT**
APPLIED RESEARCH

SAFE ROADS MATTER



STATEMENT

This policy guide was produced by Evidence on Demand contracted through the CEIL PEAKS programme, jointly managed by DAI Europe (which incorporates HTSPE Limited) and IMC Worldwide Limited and the Applied Research Programme in High Volume Transport. Both Programmes are funded by the UK Department for International Development (DFID).

This policy guide is published in partnership with the Transformative Urban Mobility Initiative (TUMI), the World Road Association (PIARC) and the FIA Foundation.

The views expressed are not necessarily those of DFID, TUMI, PIARC or FIA Foundation.

ACKNOWLEDGEMENTS

This policy guide was authored by Dr Suzy Charman of the Road Safety Foundation. Detailed review was undertaken by Rob McInerney of the International Road Assessment Programme (iRAP). Sincere thanks are expressed to the Global Road Safety Facility and all those who have commented on all drafts.

First published 2020
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Front and back cover pictures courtesy of FIA Foundation.

ISBN: 978-1-913317-02-7

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FOREWORD

With 1.35 million people killed in road traffic crashes every year and as many as 50 million injured, we pay an unacceptable price for our mobility. Apart from the enormous suffering and grief they cause, the social and economic costs of road traffic injuries are profound and far-reaching.

This global crisis is made even more unforgiving when we recognise the disproportionate impact on the young and the vulnerable. Road traffic injury is the leading cause of death for people aged 5 to 29 years. The loss of a breadwinner or the need to care for an injured family member can impact an entire family and place them in poverty for several generations. This impact on individuals, families, communities and countries is unsustainable.

World leaders have committed to halving road traffic deaths and injuries as part of the Sustainable Development Goals. While progress is being made, the scale and pace of change must accelerate. Road traffic crashes are preventable, and we must build on the successes countries achieved during the Decade of Action for Road Safety, 2011-2020, to provide political and technical leadership and build a greater capacity for rapid change.

Member States have agreed on 12 Global Road Safety Performance Targets that provide the framework for measurement, scale and success. Establishing national action plans; ensuring all new roads are built to a 3-star or better standard for all road users; guaranteeing all new and used vehicles meet the recommended priority UN Regulations; addressing risks such as speeding and failing to use helmets and child restraints; and providing professional emergency care are just some examples of priorities for action.

There are countless interventions across all disciplines in road safety that are cost-effective and life-saving. The potential to make a difference is enormous. This guide brings together key information about some of those priorities – and points the reader to other sources for more information. It provides a step-by-step approach for strategic action, action that is desperately needed.

Dr Etienne Krug

Director of the Department of Social Determinants of Health, World Health Organization



INTRODUCTION

Road traffic crashes are a global health epidemic. Despite some positive achievements over the last decade, and a general stabilisation in the numbers of road deaths when considered against the increasing global population and rapid motorisation trends over the same period, there is still a very long way to go and much to be done to reach the global targets.

This policy guide provides some background and context on the problem and who is at risk. It sets the scene for establishing strong foundations for road safety action and examples of practical solutions and actions that can be taken now if we are to save lives and prevent injury.

Everyone should find the guidance useful – but it specifically targets policy-makers and key decision-takers in lower income countries where the risk of a road traffic death is more than three times higher than in high-income countries. Here too, it is the vulnerable road users – pedestrians, particularly children and young people, cyclists and motorcyclists who are exposed to the highest risk from road travel.

Safer roads are possible. It starts with raising awareness of the issues, increasing demand for solutions and securing the commitment of action from the political leadership. The development of a national road safety strategy provides a good foundation and framework against which commitment and progress can be made. Budgeted action plans, based on good data and evidence and outlining targets to be achieved, can provide the basic roadmap for investment in safer roads.

A wealth of resources exist that provide guidance on good practice and many sources are referred to in this policy guide.

There is no shortage of possible solutions as this guide demonstrates, but there needs to be a collective will and commitment from those responsible for the system such as politicians, vehicle manufacturers, road authorities, educationalists and hospitals, along with a sense of shared responsibility from road users and civil society.

Every life matters!



1.35m

deaths per year
due to road crashes

50m

injured
per year

Leading cause of
death for children and
young adults aged

5-29 years

Road crashes cost
most countries
approximately
**3% of their gross
domestic product**

What they are saying...

“In the Sustainable Development Goals, world leaders have committed to halve the number of deaths from road crashes by 2020. ... far too little progress has been made towards this goal. There is an urgent need to scale up evidence-based interventions and investment!.”

- Dr Tedros Adhanom Ghebreyesus,
Director General, World Health Organisation (WHO)

“Road safety is an issue that does not receive anywhere near the attention it deserves – and it really is one of our great opportunities to save lives around the world!.”

- Michael R. Bloomberg,
Founder, Bloomberg L.P. & Bloomberg Philanthropies;
WHO Global Ambassador for Non-communicable Diseases and Injuries.

“On the same day that I lost Zenani, a thousand other families also lost a child on the world’s roads. My grandfather, Nelson Mandela, knew a bit about difficult challenges. As he famously said, ‘it always seems impossible, until it is done’. What lies in front of us may be difficult, but it is far from impossible. This is a man-made epidemic and we have in our hands the tools to defeat it.”

- Zoleka Mandela,
Mother of Zenani who was killed two days after her 13th birthday.

“In my work I’ve reviewed many road safety studies that show that, through simple interventions, lives can be saved. The economic returns from road safety programmes can be extremely high so investing in road safety is commendable in terms of reducing pain, grief and suffering and it is logical.”

- Professor Rune Elvik,
Institute of Transport Economics (TOI).

“We cannot stress enough that road safety is a top-level priority for road authorities and operators across the globe. PIARC has recognized road safety as a cross-cutting issue and we have a mandate, as well as a moral obligation, to continue identifying all possible solutions and sharing best practice.”

- Claude Van Rooten and Patrick Malléjacq,
President and Secretary General, PIARC

The message is CLEAR

Good roads are essential for trade, health and economic progress - they are critical to achieving many of the Sustainable Development Goals (SDGs). However, as mobility increases in a country, and improved prosperity is in sight, road traffic fatalities and injuries almost always rise.

Worldwide around 1.35 million people are killed every year, and a further 50 million are injured – that is the equivalent to nearly 3,700 people losing their lives every day. Behind these statistics are countless stories of grief and suffering, of lost parents, children and loved ones. Apart from this human suffering, road deaths on average cost a country up to 3% of their Gross Domestic Product (GDP)³.

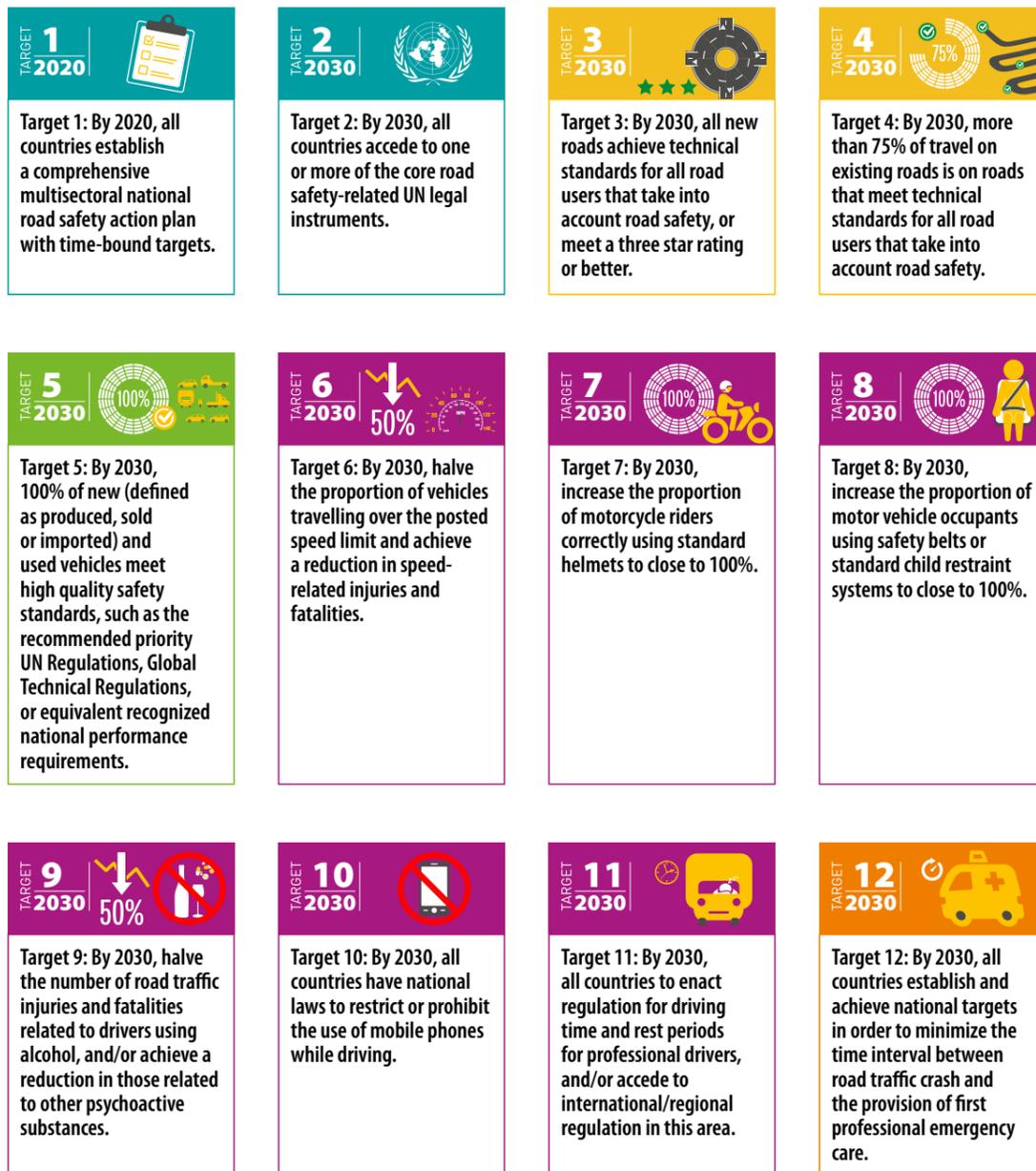
This is an enormous loss when combined with budget deficits and poor economic growth. Economically active and young people are at the greatest risk of being killed or injured in road crashes; their loss or injury often results in poverty for their families, sometimes for generations.

The United Nations (UN) Decade of Action for Road Safety 2011-2020 was launched in recognition of the scale of the worldwide road safety problem. The accompanying 'Global Plan' outlined action across five key pillars for road safety: Road Safety Management, Safer Roads and Mobility, Safer Road Users, Safer Vehicles and Post-Crash Response.

Along with the Decade of Action, international focus has continued to increase on road safety. There are specific road safety targets within two of the SDGs:

- SDG 3: Ensure healthy lives and promote well-being for all ages: Target 3.6: By 2020, halve the number of global deaths and injuries from road traffic accidents. (this echoes the Decade of Action for Road Safety Target)⁴; and
- SDG 11: Make cities and human settlements inclusive, safe, resilient and sustainable: Target 11.2: By 2030, provide access to safe, affordable, accessible and sustainable transport systems for all, improving road safety, notably by expanding public transport, with special attention to the needs of those in vulnerable situations, women, children, persons with disabilities and older persons⁵.

GLOBAL ROAD SAFETY PERFORMANCE TARGETS



- PILLAR 1: Road safety management
- PILLAR 2: Safer roads and mobility
- PILLAR 3: Safe vehicles
- PILLAR 4: Safe road users
- PILLAR 5: Post-crash response

Following the request of the United Nations General Assembly, on November 22, 2017 Member States reached consensus on 12 global road safety performance targets. For more information: http://www.who.int/violence_injury_prevention/road_traffic/road-safety-targets/en/

Member States have also agreed on 12 Global Road Safety Performance Targets to support the achievement of the SDGs⁶.

The Third Global Ministerial Conference on Road Safety and the associated Stockholm Declaration captured progress on the Decade of Action and outlined future priorities for road safety as part of the UN SDGs.

The Declaration and the UN Secretary General’s report in 2019⁷ recognise the key achievements of the Decade of Action but also raise great concern about the about the ongoing high levels of death and injury, especially in low- and middle-income countries.

With an estimated 500 million road traffic deaths and injuries expected worldwide between 2020 and 2030, the Declaration called for an intensification of political will and investment in proven counter-measures and achieving the Global Road Safety Performance Targets agreed by Member States.

The good news is that road deaths are not inevitable – lives can be saved.

Moreover, it is cost effective to do so.

There is no doubt that improving road safety can be a challenge, not least because of the co-ordination required to make significant progress. Even so, with commitment and drive from decision-makers and practitioners it is possible to put in place effective measures and save many lives.

Action is essential to prevent the further unnecessary loss of life. This policy guide draws attention to some of the solutions that can be used to reduce road traffic casualties and outlines the foundations needed to make them successful.

Figure 1: Global road safety performance targets⁶



The size of the problem

The scale of the problem of road crashes, who is at risk and why you should act.

THE GLOBAL ROAD CRASH CRISIS

WHO estimates that 1.35 million people lost their lives in road traffic crashes in 2016, and around 50 million more were injured¹.

Between 2013 and 2016, there were no reductions in the number of road traffic deaths in any low-income countries. In 48 middle- and high-income countries some reductions were observed, but at the same time, there were increases in 104 countries during this time¹.

It is increasingly clear that the targets set at the beginning of the Decade of Action for Road Safety (2011-2020) and in the SDGs will not be met. Re-mobilisation and funding are needed to make sure progress is made in the next 10 years.

FOR MORE INFORMATION

WHO (2018). Global status report on road safety, 2018. www.who.int/violence_injury_prevention/road_safety_status/2018/en/

Heydari, S., Hickman, A., McIlroy, R., Turner, J. and Bachani, A.M. (2019). Road safety in low-income countries: state of knowledge and future directions. Sustainability, 11 (22), 6249. www.mdpi.com/2071-1050/11/22/6249/htm

“This is predominantly a killer of the poor. It is the poorest communities which live alongside the fastest roads. It is the poorest children who have to negotiate the most dangerous routes to school. It is the most vulnerable road users, pedestrians and cyclists, who are at greatest risk yet are the most routinely forgotten by the planners and policymakers.”

- Desmond Tutu,
Emeritus Archbishop of Cape Town⁸

Who is at risk?

The risk of being killed in a road traffic crash is far higher in low- and middle-income countries.

Low-income countries (LICs) account for 9% of the global population, 1% of registered motorised vehicles and yet 13% of road deaths. Middle-income countries (MICs) have 76% of the world's population, 59% of registered motorised vehicles and 80% of road deaths¹.

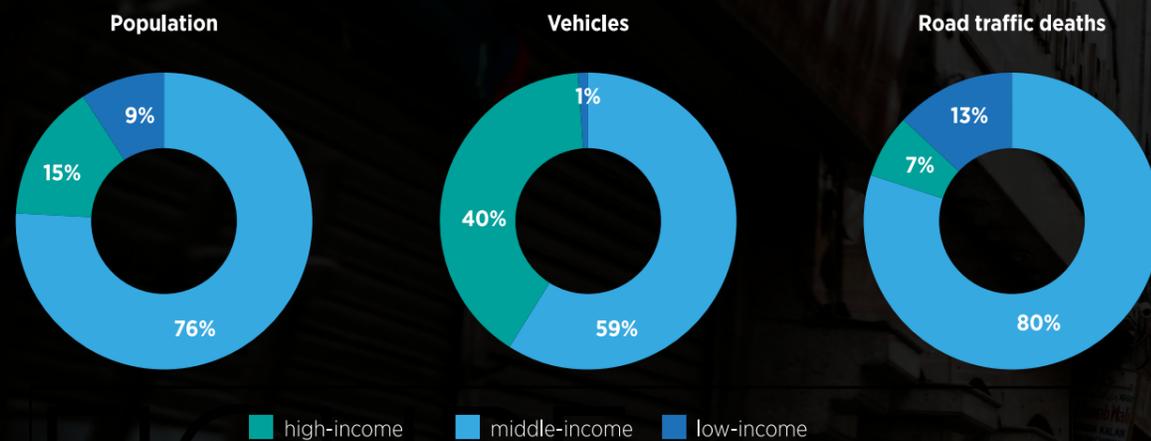


Figure 2: Population, registered motorised vehicles and deaths by country income status¹.

With only 1% of the world's registered vehicles, road traffic deaths per 100,000 population is highest in LICs at 27.5, about 3 times higher than for high-income countries (HICs) and ten times higher than the leading countries in the world.

Cyclists, pedestrians and motorised 2- and 3-wheelers (motorcyclists and rickshaw occupants etc.) account for over 50% of all road deaths globally¹.

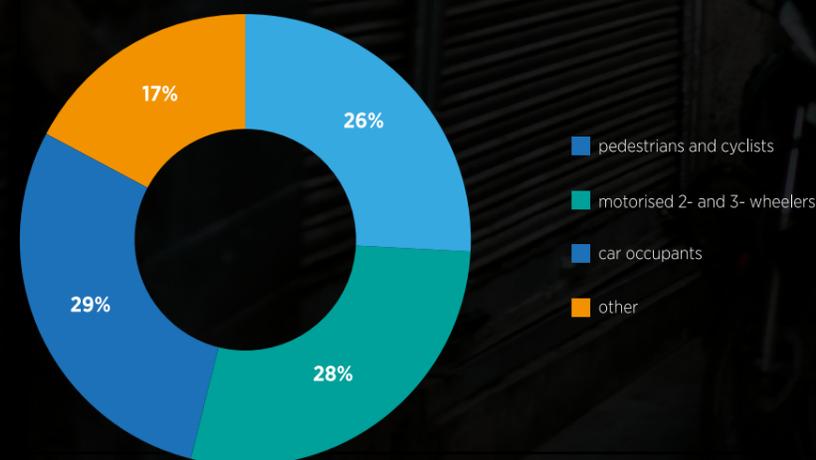


Figure 3: Road deaths by mode of travel, 2016¹

Road traffic crashes are now the 8th leading cause of death for all age groups, more people now die from road crashes than from HIV/AIDS, tuberculosis and diarrhoeal diseases¹.

Rank	Cause	% of total deaths
1	Ischaemic heart disease	16.6
2	Stroke	10.2
3	Chronic obstructive pulmonary disease	5.4
4	Lower respiratory infections	5.2
5	Alzheimer's disease and other dementias	3.5
6	Trachea, bronchus, lung cancers	3.0
7	Diabetes mellitus	2.8
8	Road traffic injuries	2.5
9	Diarrhoeal diseases	2.4
10	Tuberculosis	2.3

Table 1: Leading causes of death, all ages, 2016¹

Road traffic crashes are the leading killer of children and young people aged 5 to 29¹. This indicates a need to re-think the child health agenda. Children are particularly at risk because they have not yet developed the perceptual and decision-making skills necessary for safe road use.

In addition, while children are growing, their skeletal system is still soft, making them more vulnerable in the event of a crash. It is because of this that some countries are now introducing laws for longer use of child seats where the child faces the rear of the vehicle.

Just as young people have started to become independent, productive members of society they face an enormous risk on the roads.

Other groups that face particularly high risk include:

- The elderly, because they are at a greater risk of serious injury when involved in a crash, are slower to cross roads, and their reaction times and perceptual skills may be reducing with the aging process; and
- Males because they are more likely to take risks when using the roads.

“As a young person, mobility is a dangerous game all across the world. This is one of the reasons why I believe that young people themselves should have a real say in road safety decision-making and the implementation of road safety policies.”

- Floor Lieshout,
Director, Youth for Road Safety (YOURS)



WHY TAKE ACTION?

The social and economic costs of road traffic crashes are huge. With such a high number of crashes and casualties there are few people that remain untouched by this issue. As well as causing intangible levels of pain, grief and suffering, road traffic crashes are estimated to cost countries up to 3% of GDP (potentially more in LICs and MICs)⁴.

The Business Case for Safer Roads⁹ summarised in the latest PIARC report on the Implementation of Safe System Policies¹⁰ outlines the scale of road death and injury and associated costs by country income category. The analysis also outlines the investment returns possible with targeted investment in safer roads and safer speeds in support of the Global Road Safety Performance Targets. After the initial cost of attending and clearing up after a crash, there are also costs associated with insurance claims, hospital care, rehabilitation, long term care of the severely injured and social care.

If you talk to any emergency room doctor or those working in trauma recovery wards, they will tell you that most of the beds contain victims of road traffic crashes.

In the UK, 75% of hospital capacity for dealing with serious head injuries is consumed by road crashes¹¹. Crashes tend to claim the lives of those that are economically productive, so their skills and contribution to the economy are also lost. In Kenya, for example, more than 75% of road traffic casualties were economically productive young adults¹².

Many countries have crash costing figures that represent the cost to the economy of a fatality, serious or slight injury, and of damage-only crashes. These figures are useful to highlight the scale of the economic impact, and in order to make a case for road safety investment.

UN Target 4>75% of travel on roads that meet technical standards for For all road users by 2030 (equivalent to 3-star or better)					
	Low income	Lower middle income	Upper middle income	High income	All
Number of countries	31	45	51	50	177
Current situation					
Annual number of fatalities	195,569	423,148	472,563	116,331	1,207,611
Facilities per 100,00 population	24.2	17.1	19.6	9.2	17.3
Annual number of fatalities and serious injuries	2,151,259	4,654,628	5,198,193	1,279,641	13,283,721
Annual cost of fatalities and serious injuries (% of GDP)	5.8%	4.2%	4.7%	2%	2.9%
What can be Achieved? with >75% of travel on 3-star or better roads for all road users by 2030*					
Annual investment as a % of GDP (2018)	0.14%	0.18%	0.12%	0.14%	0.14%
Reduction in fatalities per year	86,342	169,259	174,016	37,332	467,039
Reduction in fatalities and serious injuries (FSI) over 20 years	18,995,159	37,237,024	38,303,352	8,213,036	102,748,571
Economic benefit (\$US)	\$273bn	\$1,335bn	\$5,063bn	\$4,507bn	\$11,180bn
Benefit Cost rRatio	18	9	16	5	8

Table 2: Business case for safer roads

Next steps

Know the size of the problem

- Collect and collate crash data
- Refer to www.vaccinesforroads.org/irap-big-data-tool-map/ as a starting point

Use crash data to determine the number of crashes and casualties of different severity levels occurring in your country

- See WHO global status report on road safety¹

Agree national figures for the cost of individual crashes and/or casualties by severity (note that these will differ slightly as there can be multiple casualties involved in a crash)

- Either conduct a formal study or refer to iRAP 'The true cost of road crashes'¹³

Calculate the cost of crashes or casualties by multiplying the number of crashes or casualties by the costs

- Do not forget to add the costs of property damage only crashes and those for likely levels of under-reporting

Use your data to make a case for road safety investment

- Present this information to the Finance Ministry for budget approval for road safety

FOR MORE INFORMATION

PIARC (2019). Implementation of National Safe System Policies

www.piarc.org/en/order-library/31644-en-Implementation%20of%20National%20Safe%20System%20Policies:%20A%20Challenge

iRAP (2019). The Business Case for Safer Roads. www.vaccinesforroads.org/business-case-for-safer-roads/.

World Bank (2017). The High Toll of Traffic Injuries: Unacceptable and Preventable. www.worldbank.org/en/programs/global-road-safety-facility/publication/the-high-toll-of-traffic-injuries-unacceptable-and-preventable

Dahdah, S. and McMahon, K. (2004). The True Cost of Road Crashes.

www.irap.org/2016/12/upload_file_specification/

World Health Organisation (2004). World Report on Road Traffic Injury Prevention.

www.who.int/violence_injury_prevention/publications/road_traffic/world_report/en/

Sustainable Urban Transport Project (2017): Urban Road Safety.

http://sutp.org/files/contents/images/resources/A_Sourcebook/SB5_Environment%20and%20Health/SUTP_5b_Urban%20Road%20Safety-2017_final.pdf

Creating solid foundations

Introducing the foundations needed to ensure that efforts to improve road safety are effective

Everybody has a role to play in road safety, from the parent of a child starting to independently use a road, through to the police, and Ministers of finance, health, transport and others.

One of the greatest challenges in making roads safe is the way responsibilities can cut across sectors. Road safety requires co-ordination across different organisations. Stakeholders need to work together to achieve results.

Involving the private sector, civil society, charities and Non-Governmental Organisations (NGOs) can enhance skills and resources available in the public sector.

The icons for each stakeholder shown below are used throughout the rest of the document to show where different organisations need to make a contribution.



Lead Agency



Finance Ministry or Chancellor



Parliament



Transport Ministry



Road Authorities



Health Ministry



Education Ministry



Communications Ministry



Justice Ministry



Police



Fire and Rescue



Universities and Research Organisations



National Statistics Office



Private Sector



Civil Society, Non-Government Organisations and Charities



Learned Societies



Road Assessment Programme



Investors, MDBs and Donors



Regional NCAP



Vehicle Inspection Agency

ENSURE ACCOUNTABILITY AT THE HIGHEST LEVEL

Success requires leadership by governments, and a strong commitment across many organisations (within and outside of government), with accountability at the very highest level.

For accountability there needs to be:

- Head of state/ government recognition of the national road safety problem and endorsement of national road safety efforts;
- Ministerial level commitment and accountability for casualty reduction; and
- Clearly defined agency level responsibility.

This needs to be supported by data collection and monitoring which should align with the Global Road Safety Performance Targets and Regional Road Safety Observatories and keep track of:

- National casualty numbers;
- Casualties by road user group, age, severity; and
- Other interim indicators of performance such as: seatbelt and child restraint wearing rates, mobile phone usage by drivers, speed limit compliance, road infrastructure star ratings, vehicle star ratings and compliance with UN regulations, helmet wearing, drug and alcohol infringements.

These indicators can be used to set and track targets within a national plan and can be reported annually. If progress is not being made fast enough in one area, efforts can be directed to ensure targets are achieved.

In some countries there is a lead agency that holds the road safety action plan and obtains input from other agencies and organisations as required. This lead agency would have the responsibility to deliver to the national road safety targets. The challenge is ensuring co-ordination, collaboration and integration across all agencies.

In other countries, there is a national road safety council or committee with representation from each sector. They together, hold responsibility for delivering an action plan and the national casualty reduction targets. The challenge here is ensuring that each agency is held accountable.

The lead agency and national council approaches can be combined, with the lead agency chairing a national road safety council and being ultimately accountable for traffic casualty numbers and achievement of safety performance targets.



Road safety moves forward at a much faster pace when there is a road safety champion at a senior level in government. This champion is often the driving force behind effective action, advocacy and change.

“Lack of accountability in road safety, at international and national levels, is a major reason [road safety] has been so neglected. Without accountability there is no pressure for performance whether by development banks to ensure safe road design or by interior ministries to reform and train their traffic police.¹⁴”

- Rt. Hon. Lord Robertson of Port Ellen,
Chairman, FIA Foundation

DEVELOP A NATIONAL ROAD SAFETY STRATEGY, TARGETS AND ACTION PLAN

Road safety strategies and targets

Each country should have a road safety strategy. This provides a focus for a common and shared vision among stakeholders and a framework against which commitment can be made.

Typically, a national road safety strategy will include an endorsement from a senior political figure, a description of the road safety vision for the country, a review of recent progress and current levels of performance, road safety targets and finally what the country plans to address priority areas.

Priority areas ideally focus on the 'real issues' behind a road safety problem; researched thoroughly using crash data analysis and surveys.

It is important to articulate a 'long-term vision' which is complemented with interim targets for specific periods (normally 3 to 5 years). Effective targets should be challenging but achievable in order to drive tangible action.

There can be an overall casualty reduction target (that may need to take into account increasing motorisation) along with sub-targets, for example for particular age groups or road user types.

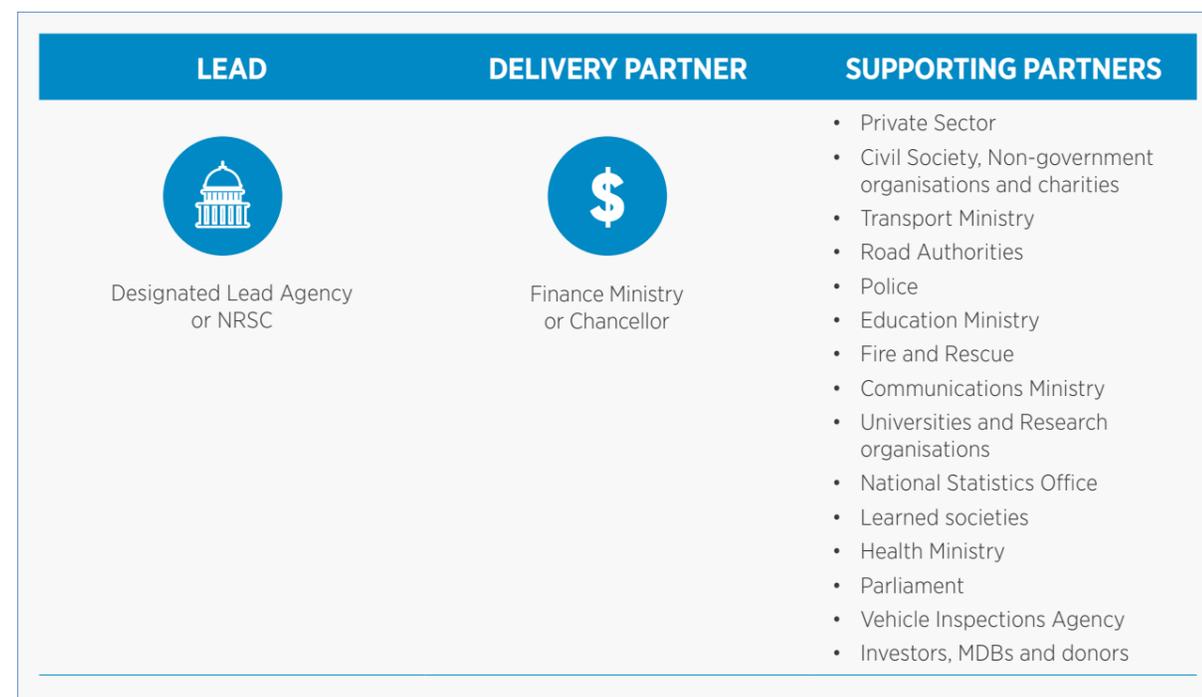
Targets for interim measures are also helpful, e.g. raise seatbelt wearing rates in the front of vehicles to x%. All targets should be monitored and reported on annually.

Action plans

Action plans are designed to deliver desired road safety targets and include multi-sectoral actions to bring a country in-line with international good practice in road safety.

An action plan should include an indicative budget and source of funds for each action along with roles and responsibilities, a timeframe for completion and clear accountability.

An action plan must be regularly monitored with progress and results reported widely and transparently.



INVEST IN ROAD SAFETY

The returns that can be achieved from road safety investment are potentially huge and can be considered excellent value for money.

There is strong evidence that the scale of economic returns possible through investment in road safety action are significant. For example, for every dollar spent in Norway, a return to the economy is achieved of:

- US\$1.50 for simple road markings;
- US\$14 for upgrading marked pedestrian crossings;
- US\$2.50 for pedestrian bridges or underpasses; and
- US\$10 for guard rails alongside the road¹⁵.

Other studies have estimated that for every dollar invested, returns of:

- US\$8 can be expected for reaching a target for >75% of travel on 3-star or better roads for all road users⁹;
- US\$3 - US\$242 can be expected for recommendations from design stage road safety audits¹⁶;
- US\$2.4 - US\$84 can be expected for recommendations from road safety assessments of existing roads¹⁶;
- US\$100 can be expected for random drug tests (in Victoria, Australia)¹⁷;
- US\$77 can be expected from semi-covert mobile speed cameras (in Victoria, Australia)¹⁷;
- US\$1.13 can be expected from the use of child restraints in vehicles (in Norway)¹⁸;

- US\$11 can be expected from investment in road safety engineering measures on 10% of a country's road network (in low and lower middle-income countries)⁹; and
- US\$19 can be expected from investment in road safety engineering measures on 10% of a country's road network (in upper middle-income countries)⁹.

It is appreciated that road safety is only one of the many competing demands on your resources however, a road safety action plan will not be delivered without adequate funds in place.

It is challenging for individual agencies to invest in an issue that does not directly cost them money. Why should the road authority invest when health/social/insurance sectors bear most of the cost? It is advisable to set budgets and as far as possible ring fence funds at the highest level.

Funding can come from a variety of sources including:

- Funding from the national budget;
- Road user charges with contributions from vehicle licensing, taxation, fuel levy or insurance etc.;
- A proportion of road traffic violation fines;
- An element of the road maintenance budget;
- Private sector sponsorship and public-private partnerships;
- NGOs and charities working in your country;
- Multilateral and bilateral aid organisations; and
- Social impact bonds¹⁹.



SUSTAINABLE FUNDING FOR ROAD SAFETY IN AUSTRALIA

One example of a successful model for road safety funding is the Transport Accident Commission (TAC) in Australia. TAC is the compulsory injury insurer in the state of Victoria that provides compensation when people are killed or injured as a result of road traffic crashes.

TAC recognises that investing in road safety reduces the amount it has to pay out, therefore it makes sense to support extensive road safety programmes including campaigns and awareness to support enforcement activities, provision of funds to the Victoria Police to purchase equipment for drink driving and speed enforcement, and more recently large-scale road safety engineering improvement schemes.

“Financial support in the field of road safety continues to be a challenge to the attainment of the goal of the Decade of Action for Road Safety. More funding is needed to support road safety activities by United Nations organizations, Member States and civil society”

- Ban Ki-moon,
Former Secretary General, United Nations²⁰

PRIORITISE DATA COLLECTION AND ANALYSIS

Having adequate and informative data and evidence is critical to enable you to make effective decisions and to maximise impact and value for money. Data are needed in order to set and monitor against targets, take an evidence-led approach and optimise decisions on further investment.

It is normally the police who collect data at the scene of a crash. Those working in the field of road safety need information about crashes so that they can find the right solutions, not just information about who was at fault. The information they need includes the precise location of the crash (GPS or map co-ordinates), information about the road layout where the crash happened, circumstances such as weather, time of day, presence of street lighting, information about casualties and vehicles, and contributory factors (the police's assessment of what contributed to the crash happening, e.g. excessive speed, distraction etc.).

Police should collect data using a standardised collection form – this can be paper-based or electronic using mobile technology. Ideally data will be held in a web-based database so that road safety practitioners from different sectors can use the data to inform their activities (while sensitive information is kept hidden and secure).

Police officers can feel that the information they are required to collect holds them up from doing their other core duties, so it is key to ensure they understand the importance of their task and how the data will be used and have access to all consolidated crash reporting information.

Computerised systems that support the collection, storage and analysis of data have been successfully used in many countries (including low- and middle-income). Digitising the process can help reduce the administrative effort for crash data collection and make data analysis straightforward.

For countries with limited geo-referenced crash data, iRAP assessments have provided detailed fatality and serious injury estimates for road lengths broken down by road user group (vehicle, motorcycle, pedestrian and cyclist) and all road crash types (e.g. head-on, run-off road, pedestrian crossing road).

These data can inform infrastructure decisions as well as other safe-system actions for road-user behaviour, speed management, vehicles and post-crash care.

Other data that are essential for planning and monitoring road safety activities include in-depth crash investigation data, and annual surveys such as seatbelt and child restraint use, mobile phone use, helmet use and speed. Insurance and health data are additional rich sources of intelligence on road traffic crashes. Linking these databases to police crash data can give an indication of reporting levels and provide additional information on injury outcomes.

USE EVIDENCE TO DIRECT ACTION

Evidence needs to direct decisions and action at *real* road safety problems, making sure that the approach taken has the potential to address the specific problem it is aimed at tackling.

It is easy to spend scarce funds on activities that look like they may work or that capture the interest of the media, rather than activities that will really address a defined problem.

Including an evaluation component in all programmes allows an evidence base of what does and, equally importantly, what does not work helping to determine if an approach gives value for money.

Once an evidence base is established, it is possible to predict the outcomes of different approaches and, if necessary, select the measure most likely to have the greatest impact²¹.

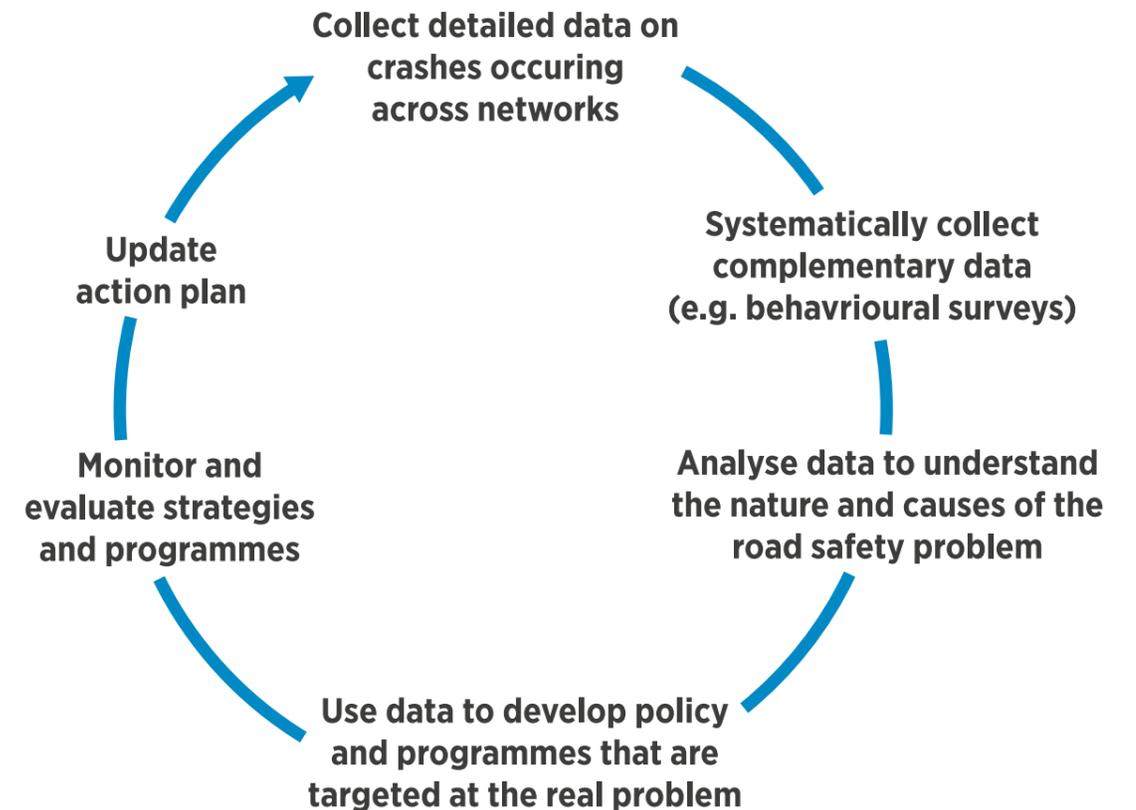


Figure 4: Evidence-led working in road safety



Next steps to creating solid foundations for road safety action

Designate a lead agency for road safety

- The legal remit of the organisation needs to be established, staff recruited/trained, and budget identified.

Establish a National Road Safety Council (NRSC)

- Chaired by the lead agency, with members from all relevant ministries; and
- Establish working groups that report to the NRSC that include public sector agencies, private sector and representatives from civil society.

Put in place a funding mechanism

- Establish a sustainable funding mechanism for road safety action.

Collect road safety data - crash data and surveys

- Develop a crash data reporting form, train police to record data accurately;
- Set up a crash database;
- Establish effective system for inputting data, storage and analysis; and
- Conduct behavioural surveys.

Conduct a situational analysis and analyse available data

- Determine current levels of performance, structures, policies and practice;
- Compare with international good practice to identify opportunities for improvement; and
- Analyse available data to determine priority areas for action.

Develop a national road safety strategy with measurable targets

- Ensure all road safety stakeholders feel ownership of the document and sign up to the casualty reduction targets;
- Adopt the Global Road Safety Performance Targets as a minimum and align metrics with regional road safety observatories where active; and
- Include a vision for road safety, review of recent progress and current levels of performance, road safety targets and actions for priority areas.

Agree a detailed national road safety action plan and make a business case for investment

- With clear and deliverable action items from across all disciplines, timescales, budget, responsibilities for delivery and clear accountability.

Invest and implement the action plan

- Establish a budget for the action plan;
- Make finances available to those responsible for each action; and
- Implement the action plan in full.

Monitor and review performance

- Monitor completion of the action plan;
- Monitor crash and casualty numbers against targets;
- Conduct annual behavioural surveys; and
- Review progress for delivery of action plan.

FOR MORE INFORMATION

Road safety management, establishing a lead agency, undertaking road safety management reviews and action plans:

PIARC Road Safety Manual.
<https://roadsafety.piarc.org/en>

World Bank Road Safety Management Capacity Reviews and Safe System Projects Guidelines.
www.worldbank.org/en/topic/transport/publication/road-safety-management-capacity-review-guidelines

UN Road Safety Collaboration (2019). Ten Steps for Safer Road Infrastructure.
www.gtkp.com/themepage.php&themepgid=368

WHO Global Road Safety Performance Targets.
www.who.int/violence_injury_prevention/road_traffic/12GlobalRoadSafetyTargets.pdf?ua=1

Collecting and analysing road safety data:

WHO (2010). Data systems: a road safety manual for decision-makers and practitioners
www.who.int/roadsafety/projects/manuals/data/en/

African Development Bank (AfDB) (2015). Road safety manuals for Africa – existing roads: reactive approaches.
www.afdb.org/fileadmin/uploads/afdb/Documents/Publications/ROAD_SAFETY_MANUALS_FOR_AFRICA_%E2%80%93_Existing_Roads_Reactive_Approaches.pdf

International Traffic Safety Data and Analysis Group (IRTAD).
www.itf-oecd.org/IRTAD

iRAP (2018). Vaccines for Roads
www.vaccinesforroads.org/

The costs and benefits of different road safety interventions:

Elvik, R., Høy, A., Vaa, T. and Sørensen, M. (2009). The Handbook of Road Safety Measures (2nd Edition). UK: Emerald Group Publishing.

Federal Highway Administration Crash Modification Factors Clearing House.
www.cmfclearinghouse.org/

iRAP Road Safety Toolkit.
<http://toolkit.irap.org/>

Safety Cube.
www.safetycube-project.eu/

How to improve road safety

Effective solutions to reduce casualties

There are effective solutions that have been implemented all around the world, including to:

- Legislate, educate and enforce;
- Set safe speed limits and improve compliance;
- Make your roads safe;
- Raise the safety of vehicles;
- Promote public transport;
- Deal with crashes that do happen – effectively; and
- Work with the private sector and civil society.

These solutions are covered in more detail in the following sections.

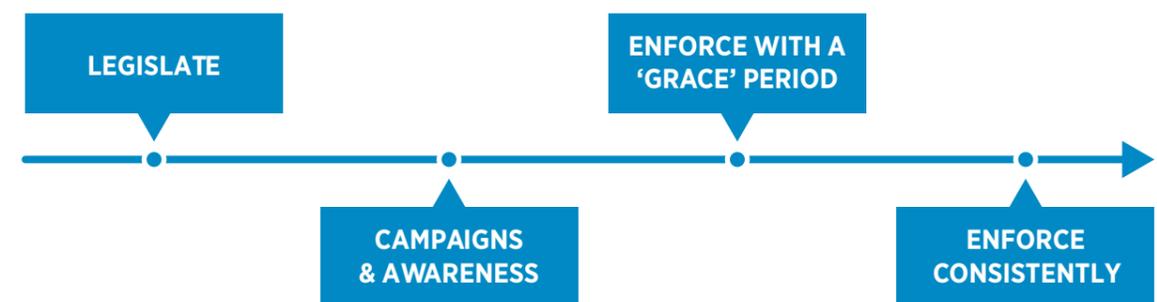
Note that they are not presented in priority order, and ideally should be selected based on a situational assessment, crash data analysis and the national road safety action plan.

LEGISLATE, EDUCATE, ENFORCE

Improving road user behaviour should reduce the number of crashes that happen and also help to reduce crash severity. Legislation, education and enforcement are most effective when they are co-ordinated.

Key behaviours that need to be tackled through legislation, education and enforcement are:

- Seatbelt and child restraint use;
- Helmet wearing (for motorcyclists and cyclists);
- Mobile phone use by drivers;
- Driving under the influence of alcohol and drugs;
- Driving while tired; and
- Speeding.



Legislate

Legislation underpins safe road use. Comprehensive national road safety laws and regulations need to be in place to allow effective enforcement.

Putting in place effective and comprehensive road safety laws requires political will, resources and capacity and for stakeholders to work closely with the Ministry of Justice.



“Politics, the art of what is possible, gives us the responsibility to make an impact on people’s lives. When it comes to unpopular decisions, to persuade is as essential as to enforce. Persuasion and enforcement ensure sustainability”

- Karla Gonzalez Carvajal,
Former Minister of Transport, Costa Rica.

Educate

Effective education of road users needs to happen throughout their lives. This starts at home with parents, is formalised by including road safety education in the school curriculum and continues through campaigns throughout adulthood.

For those that become vehicle drivers, specific training and testing is in place.

Effective educational strategies include:

- Reaching new parents at hospital and in health clinics with information on the use of child restraints and keeping their child safe;
- Integrating road safety into the school curriculum at all ages to ensure adequate classroom time is dedicated to this important topic;

- Campaigns and awareness programmes designed to reach specific target groups with specific messages. The UK’s THINK! Campaign is an example of clear branding and planned messaging. For further information: <http://think.direct.gov.uk/>; and
- New drivers are trained and tested on their ability to drive safely (not just operate the vehicle). Graduated driver licensing (where new drivers are given increasing freedoms with experience) and hazard perception testing are effective.



Enforce

Proactive enforcement is one of the most effective ways of bringing about behavioural change. To achieve an effective deterrent, enforcement activities need to be planned and strategic:

Police officers need to be trained to:

- Understand their role in the efforts to improve behaviour;
- Deliver clear and consistent messages when interacting with the public; and
- Use enforcement equipment correctly and provide good quality evidence to the courts.

Penalties (fines or points) are perceived to be fair (not influenced by corruption or prejudice) and commensurate with the offence.

An enforcement strategy will address three types of deterrent:

- The experience of being penalised has an impact on the road user (financially or potentially on their permission to drive) so that they decide not to commit the offence again – this is called a specific deterrent;
- The police focus some visible enforcement activity at high risk locations – this is called a localised deterrent; and
- Road users have the impression that if they break the law they may be detected at any place and at any time – this is called a generalised deterrent.



FOR MORE INFORMATION

WHO (2018). Global Road Safety Performance Targets. www.who.int/violence_injury_prevention/road_traffic/12GlobalRoadSafetyTargets.pdf?ua=1

WHO (2013). Strengthening road safety legislation: a practice and resource manual for countries. www.who.int/violence_injury_prevention/road_traffic/countrywork/legislation_manual/en/

Global Road Safety Partnership (GRSP) (2007). Drinking and driving: a road safety manual for decision-makers and practitioners. www.who.int/roadsafety/projects/manuals/alcohol/0-Introduction.pdf

FIA Foundation (2009). Seat-belts and child restraints: a road safety manual for decision-makers and practitioners. www.who.int/roadsafety/projects/manuals/seatbelt/seat-belt.pdf

gTKP website pages on safer road users. www.gtkp.com/index.php?id=16&themepid=371

CASE STUDY EDUCATION: MONROVIA SAFE STREETS FESTIVAL 2019 ROAD SAFETY STRENGTHENS ECONOMY IN MONROVIA

Thousands of people gathered to celebrate Safe Streets in Central Monrovia, capital of Liberia, on the first Saturday of December 2019. The Liberia National Police with assistance of the Deutsche Gesellschaft für Internationale Zusammenarbeit (GIZ) (on behalf of the German Federal Ministry for Economic Co-operation and Development (BMZ)) and in collaboration with other partners, conducted a one-day road safety awareness festival in Central Monrovia, dubbed Safe Streets Festival, under the motto “Road Safety Strengthens Economy”. This was the second of its kind following 2017’s initiative of the Festival.

For the entire day, one of the city’s central streets, Broad Street, was blocked to motorized transport and became a safe zone for pedestrians and a showground of the Safe Streets Festival. The festival featured a 6km race in the morning followed by cultural troupe performances, drama sketches and comedic performances related to road safety as well as a dance training – and culminated in a concert with top Liberian musicians.

Some of the city’s high-ranking officials added weight to the festival’s purpose, attending the opening ceremony and stressing the importance of road safety. The City Mayor, Chief of Traffic, who was led the Festival’s organization, as well as the German and European Union Ambassadors to Liberia.

Prior to the event no marketing opportunity was left out. Good preparation is half of the job – radio talk shows, crosswalk paintings, distribution of printed posters and flyers as well as announcements in schools and communities were organized in order to attract people to the event.

Almost 10,000 people attended the event and hundreds were actively involved.

- 150 people took part in the race, including the German Ambassador to Liberia and GIZ Country Director;
- 200 children tested their bicycle skills;
- 250 children took dance lessons;
- 300 children had fun at the bouncing castle;
- almost 50 vendors of Made-in-Liberia products displayed and sold their products; and
- over 70 people served as volunteers.

Learn more here: <http://sutp.org/en/news-reader/monrovia-safe-streets-festival-2019-road-safety-strengthens-economy-in-monrovia.html>



DID YOU KNOW

It is estimated that 300,000 lives have been saved and 9 million injuries prevented by seat belts in the industrialised world since 1980²².

A child up to four years of age has an 80% lower risk of injury in a rear-facing child restraint¹⁸.

In 2003, action was taken to improve seatbelt wearing in Costa Rica. This included traffic police enforcement, media campaigns and a reinstated law for compulsory seatbelt wearing. As a result, seatbelt wearing rates for drivers in Costa Rica increased from 24% to 82% in less than a year, saving many lives²³.

Road users that are impaired by alcohol have a significantly higher crash risk than normal. After drinking, a driver will have reduced co-ordination, reduced ability to track moving objects, difficulty steering and reduced response to emergency driving situations²⁴.

Driving while using a mobile phone can increase your risk of being involved in a crash by up to 4 times²⁵ and using a mobile hands-free is no safer than using a hand-held phone²⁵.

Driving while tired can have a similar impact on driving as drink driving.

SET SAFE SPEED LIMITS AND IMPROVE COMPLIANCE

There is a clear and consistent relationship between speed and the likelihood and severity of crashes. Speed management is therefore an exceptionally important activity to improve road safety. In order to be effective, speed management requires multi-sector working across engineering, enforcement and education.

Setting and signing speed limits

Safe speed limits reflect the road function, road users present, and design characteristics of the road. A speed limit is 'safe', when a driver who is alert and compliant will not be seriously injured or killed (or seriously injure or kill another road user) if they have a crash. That means that the speed limit is safe given the mix of road users and the design and features of the road. Self-explaining speed limits will always be intuitive and apparent to the road user as the drive along the road. Where it is not possible to reduce speed limits to a 'safe' level, it will be necessary to upgrade the safety level of the road itself.

Road engineering measures

The road infrastructure can be designed so that roads are forgiving (the road and vehicle in combination protect the road user from serious or fatal injury), self-enforcing (using treatments such as road humps, speed tables and chicanes to reduce speed) and self-explaining (road designs are intuitive and clear and in accordance with the speed limit which is well-signed and highlighted by effective gateway treatments).

Police Enforcement

Enforcing speed limits and creating a deterrent is achieved through a mixture of covert and highly visual enforcement activities. This requires background legislation, agreed forms of evidence for use in court, a speed enforcement strategy, training for police officers and equipment. In order for enforcement to be accepted by the public, care needs to be given to eliminate corruption and ensure that there is transparency on how fines are used. Ensuring police salaries are adequate, and establishing a sense of pride in their vocation, can help to reduce corrupt practices.

Education

If drivers understand the importance of speed limits, it is more likely that they will comply with them. Education can occur at schools, during driver training, through public information campaigns and awareness.

FOR MORE INFORMATION

WHO (2018) Global Road Safety Performance Targets www.who.int/violence_injury_prevention/road_traffic/12GlobalRoadSafetyTargets.pdf?ua=1

PIARC (2020) Road Safety Manual <https://roadsafety.piarc.org/en/road-safety-management-safe-system-approach/safe-system-elements>

GRSP (2008). Speed management: a road safety manual for decision-makers and practitioners. www.who.int/roadsafety/projects/manuals/speed_manual/en/

UN Road Safety Week (2017). Save Lives – Slow Down. www.unroadsafetyweek.org/en/previous-weeks/2017-slowdown

gTKP website pages on the Decade of Action. www.gtkp.com/themepage.php?themepgid=98

iRAP Star Rating Demonstrator. <https://demonstrator.vida.irap.org/calculate-star>





A 5% decrease in mean vehicle speeds typically leads to a decrease in injury crashes of 10% and a decrease in fatal crashes of 20%²⁶.

Lowering the speed limit alone by 10km/h leads to a decrease in mean speeds of 3-4km/h²⁷.

MAKE YOUR ROADS SAFE

Build safe roads

The opening of a new road brings anticipation of enhanced livelihoods and health access for the communities it serves. Without careful planning and safety checks, the opposite can occur. A fast-new road can be catastrophic for a community living in the vicinity with unnecessary loss of lives and injury – often those on foot or using 2-wheeled transport are at the greatest risk.

There is almost always pressure for roads to be designed and constructed as inexpensively as possible with little or no provision for vulnerable road users, and little acknowledgement that cutting costs can mean endangering lives.

Roads that are built as cheaply as possible kill and injure road users. By the time authorities realise just how many people are being killed or seriously injured it can be difficult and costly to retrospectively ‘fix’ a dangerous new road. Designers should not be asked to continually cut the cost of road projects, and instead be challenged to optimise the design for safety of all road users. It is essential to allow sufficient budget for a safe road to be built.

Key recommendations are to:

- Ensure new roads meet minimum technical standards and 3-star or better design targets for all road users (as per target 3 of the agreed Global Road Safety Performance Targets), challenging and inspiring designers to increase the safety of their designs²⁸;
- Implement the UN Road Safety Collaboration Ten Steps for Safer Infrastructure;
- Review design options at pre-feasibility stage to determine safety impact using Road Safety Impact Assessment methodology;

- Undertake an independent Road Safety Audit on all new roads and schemes (all sizes) at one stage prior to construction of the road and one stage following construction of the road (at a minimum); note that ideally, a Road Safety Audit will be undertaken at all stages of design and construction and is particularly valuable during pre-feasibility and design stages;
- Pay attention to the needs of all road user groups that are at risk on the roads, in particular Vulnerable Road Users (VRUs) such as pedestrians, cyclists and motorised 2- and 3-wheelers and those with disabilities;
- Balance ‘access’ and ‘mobility’, ensuring that roads where VRUs are expected are welcoming for pedestrians and cyclists and that safe speed limits are set (e.g. 30km/h);
- Ensure local roads are designed to be accessible to those with disabilities;
- Develop and follow Work Zone safety guidance;
- Implement construction quality control and management to ensure key road infrastructure features that support safety are correctly installed;
- Monitor all new road schemes post opening through data analysis and Road Safety Audit; and
- Engage with national/ local design institutes and institutions in charge of norming road design guidelines to ensure regular update of standards according to international best practices.



Manage the safety of your existing roads

Constructing safe new roads is within the control of the road authority; ensuring an existing legacy network is safe, is potentially much more of a challenge. That said, treatments can be inexpensive and very cost effective¹⁶.

Key recommendations are to:

- Establish targets for more than 75% of travel on roads that meet technical standards for all road users (equivalent to 3-star or better) that take into account road safety in support of the agreed Global Road Safety Performance Targets;
- Implement the UN Road Safety Collaboration Ten Steps for Safer Infrastructure;
- Review the business case for safer roads for the network being assessed to assist in securing dedicated funding within new or existing programs⁹;

- Identify the worst 10% of sites and road sections across the network every year through the analysis of crash or inspection data (OR work with the police to improve crash data so that this can be done) and budget for targeted treatment programmes for implementation in the next financial year;
- Undertake iRAP surveys at least every 5 years on main roads, follow up with detailed reviews and development of treatment programmes;
- Evaluate treatments to build an evidence base of what works, and what does not work;
- Pay attention to the needs of all road user groups that are at risk on the roads, in particular VRUs; and
- Undertake comprehensive maintenance inspections.



FOR MORE INFORMATION

WHO Global Road Safety Performance Targets.
www.who.int/violence_injury_prevention/road_traffic/12GlobalRoadSafetyTargets.pdf?ua=1

PIARC (2015). Road Safety Manual.
<https://roadsafety.piarc.org/en>

UN Road Safety Collaboration - Ten Steps for Safer Road Infrastructure.
www.gtkp.com/themepage.php?themepgid=368

gTKP website pages on Safer Roads and Mobility.
www.gtkp.com/themepage.hp&themepgid=370

AfDB (2015). Road safety manuals for Africa – new roads and schemes: road safety audit.
www.afdb.org/en/documents/document/road-safety-manuals-for-africa-new-roads-and-schemes-road-safety-audit-51937

AfDB (2015). Road safety manuals for Africa – existing roads: reactive approaches.
www.afdb.org/en/documents/document/road-safety-manuals-for-africa-existing-roads-proactive-approaches-51935/

AfDB (2015). Road safety manuals for Africa – existing roads: proactive approaches.
www.afdb.org/en/documents/document/road-safety-manuals-for-africa-existing-roads-proactive-approaches-51935

iRAP road safety toolkit.
<http://toolkit.irap.org/>

iRAP website pages on ‘Developing a Local RAP Programme’.
www.irap.org/partnering-to-save-lives/regional-raps/

iRAP website pages on ‘How we can help’.
www.irap.org/how-we-can-help/

RAISE THE SAFETY OF VEHICLES

Improvements in vehicle safety have a huge contribution to make to saving lives.

The WHO global road safety performance target no. 5 is: By 2030, 100% of new (defined as produced, sold or imported) and used vehicles meet high quality safety standards, such as the recommended priority UN Regulations, Global Technical Regulations, or equivalent recognised national performance requirements.

To work towards meeting target 5, key recommendations for improving vehicle safety (1) are:

At the country level, governments can:

- Improve the standard of new (imported or locally manufactured) vehicles by adopting the UN regulations for frontal and side impact, seatbelt/seatbelt anchorages, Electronic Stability Control (ESC) and pedestrian protection;
- Adopt and promote New Car Assessment Programme (NCAP) star ratings;
- Encourage fleet purchasers in the public and private sectors and rental companies to choose five-star NCAP vehicles wherever possible;
- Along with insurance companies, provide incentives to encourage more rapid deployment of new technologies (such as electronic stability control) through the passenger car fleet;
- Require all motorised vehicles to be subjected to an annual safety check;
- Undertake roadside roadworthiness inspections (including tyre depth and pressure checks);
- Create and enforce rules on overloading;
- Set requirements for trucks, coaches and buses to have the latest available technology; and
- Apply conformity of production checks to models already approved on their market and consider scrappage schemes to remove older unsafe vehicles from the road.

At the international or regional level:

Automobile manufacturers can:

- Make a voluntary commitment to apply UN regulations for front and side impact crash test standards seatbelt/seatbelt anchorages, ESC and pedestrian protection to all their new models from 2020;
- Make the full range of safety design and devices available in all their major markets and price the relevant technologies separately – ceasing the practice of de-specification and bundling of safety features; and
- Improve the content of their sustainability responsibility reporting to include data on the applied safety standards of its global vehicle production.

Governments and donors can:

- Support NCAPs to extend consumer related testing to include all the world’s major automobile markets and the widest range of models possible;
- Invest in laboratory capacity and training of personnel to enable type approval, in use compliance and independent NCAP testing in all world regions; and
- Participate in the World Forum for Harmonisation of Vehicle Regulations to promote a levelling up of the safety standards in an open and competitive market for automobiles and their components.

FOR MORE INFORMATION

Global NCAP (2015). Democratising car safety: Road map for safer cars 2020. London, UK: Global NCAP.
www.globalncap.org/wp-content/uploads/2015/04/road-map-2020.pdf

gTKP website pages on vehicle safety.
www.gtkp.com/themepage.hp&themepgid=373

International Motor Vehicle Inspection Committee:
<http://citainsp.org/>

International Organization of Motor Vehicle Manufacturers:
www.oica.net/

UNECE website pages on vehicle regulations.
www.unece.org/trans/main/welcwp29.html





DID YOU KNOW

Improvements in the protective safety equipment in vehicles in the UK from 1989 to 2009 were responsible for a 15% reduction in vehicle occupant fatalities – the single greatest overall contributor to the reduction in the number of fatalities on UK roads³⁰.

If improvements in protective safety equipment in vehicles that have been made in the EU were made in Brazil, it is estimated that 34,000 fatalities and 350,000 serious injuries could be saved between 2015 and 2030³¹.

PROMOTE PUBLIC TRANSPORT

The provision of safe, clean, efficient and affordable public transport can be an effective strategy to reduce road crashes, by encouraging the public to use public transport instead of their own vehicles.

This relates to city-based and inter-city transport systems. The contribution to the broader SDGs enhances the benefits of safe and secure public transport systems³².

For this to be a success:

- Public transport managers and drivers need to be trained to a high level and understand their role in ensuring safe movement of their customers including those with disabilities;
- Vehicles will be fit for purpose and subjected to regular and mandatory safety checks and meticulous maintenance regimes;
- Careful thought is given to the whole journey ensuring that pedestrians or cyclists can access the public transport safely (for example, safe waiting areas and crossings and minimum 3-star or better routes for pedestrians and cyclists); and
- Public transport should be accessible and disability inclusive³³.

All new public transport schemes should be subjected to a Road Safety Audit prior to construction, and once in place, should be reviewed through an assessment that includes monitoring of crash and near miss data.

Particular attention can be given to the safety of passengers (pedestrians and cyclists) as they approach public transport and how public transport interacts with other road users, modes and modal intersections.

LEAD	DELIVERY PARTNER	SUPPORTING PARTNERS
 Transport Ministry	<ul style="list-style-type: none"> • Roads authority • Private sector • Vehicle Inspection Agency 	<ul style="list-style-type: none"> • Roads Authority • Lead Agency • Civil society, non-government organisations, charities

DEAL WITH CRASHES THAT DO HAPPEN EFFECTIVELY

Crash victim survivability is much improved if the patient arrives at the right hospital for treatment within the 'golden hour' after a crash has occurred. As well as the golden hour, there is also the 'platinum ten'.

This is the first 10 minutes after a crash where key emergency services need to reach a badly injured casualty (such as those unconscious and trapped) to improve their chances of survival. Once a casualty has arrived at hospital, they may need to be stabilised, receive complex treatment and ultimately long-term rehabilitation.

The starting point for effective post-crash response is a clear national health strategy that specifically tackles road traffic crashes and sets clear roles and responsibilities of emergency services and health care providers. Every part of the emergency care chain needs to operate effectively, with the person at the centre.

Particular attention should be given to:

- The way in which crashes are reported – ideally through a single emergency services number directed to a National Control Centre who can co-ordinate response with a dedicated medical dispatch team;
- Ensuring protocols are in place for co-ordination and scene management, and that emergency services undertake joint training exercises;
- Providing ambulances and rescue personnel with necessary equipment (e.g. jaws of life cutting equipment) and training;

- Ensuring that Emergency Medical Services are clinically led and have clinical guidelines and pharmacology protocols that include enhanced patient assessment, advanced airway management, and gold standard pain relief;
- Efficient transfer to hospital with information relayed between the ambulance crew and emergency room on the availability of critical care beds and the condition of the patient;
- Effective handover upon arrival to the emergency room, and triage system is in place;
- Having effective hospitals with appropriate specialist doctors and nurses, 24/7/365 (all day, every day) availability of specialist surgeons and availability of key diagnostic medical equipment;
- Ensuring that hospitals have the facilities and resources to provide comprehensive rehabilitation services for those seriously injured in road traffic crashes; and
- The way in which society cares for those that have been injured in road traffic crashes and provides a safety net for any dependents.

FOR MORE INFORMATION

gTKP website pages on Post-crash Response.
www.gtkp.com/themepage.php?themepgid=372

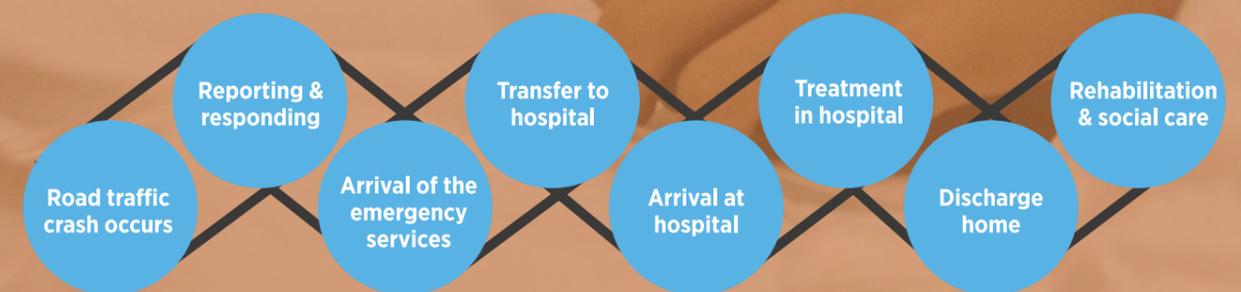
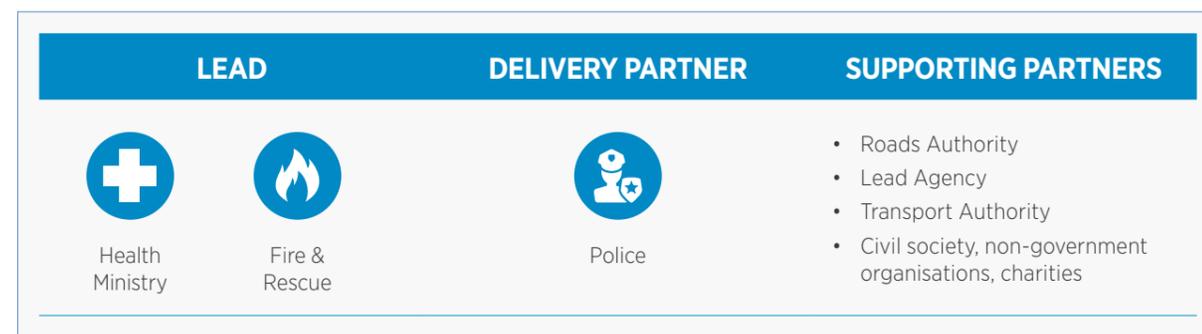


Figure 5: The emergency care chain

WORK WITH THE PRIVATE SECTOR AND CIVIL SOCIETY

Working with the private sector and civil society can increase the 'road safety work force' dramatically and release very necessary funds and skills.

This can be done through:

- Engaging with private firms through their corporate social responsibility activities – this works best when activities are co-ordinated at the national level;
- Helping private companies recognise the need to manage their own road safety risk through effective policies and education - often good practice can influence road user behaviour outside of work;
- Ensuring local private consultancy firms and research organisations have appropriate skills to support the delivery of the national road safety action plan; and
- Working with NGOs and charities.

FOR MORE INFORMATION

UN Road Safety Collaboration.
www.who.int/roadsafety/en/

Global Alliance for Road Safety.
<http://roadsafetynegos.org/>

Global Road Safety Partnership.
www.grsproadsafety.org/

International Road Assessment Programme.
www.irap.org/

Global NCAP.
www.globalncap.org/

International Road Federation.
<https://irfnet.ch/> and www.irf.global/

International Fire and Rescue Association.
www.ifra.co.uk/

UN Road Safety Fund.
www.unece.org/unrsf/home.html

World Bank Global Road Safety Facility.
www.worldbank.org/en/programs/global-road-safety-facility

“With more than 180,000 vehicles on the world’s roads, FedEx is positively focused on safety. We work with the Global Alliance of NGOs for Road Safety to empower them to save lives, and over the last 20 years we have helped Safe Kids Worldwide to reach more than 17 million children in 10 countries, using around 20,000 FedEx volunteers to teach kids life-saving road skills.”

- Shane O'Connor,
Communications Advisor, FedEx Global Citizenship

“iRAP is a registered charity with the vision for a world free of high-risk roads. Together, if we can achieve the 2030 targets for 3-star or better roads, we will save more than 100 million people from death or injury from road crashes over the life of the treatments. More than \$8 of benefits will be achieved for every \$1 invested. Our partnerships with government, Development Banks, Mobility Clubs and Experts across more than 100 countries worldwide encourage locally led programmes that can unlock this potential for safer roads to save lives.”

- Rob McInerney,
CEO iRAP

“Transaid has been working with the Industrial Training Centre (ITC) in Zambia for 10 years. The ITC provides driver training to many of the private sector haulage companies in Zambia. Those that are trained are safer in their professional driving and provide an example to colleagues, friends, family and their wider communities”

- Caroline Barber,
CEO, Transaid

LEAD	DELIVERY PARTNER	SUPPORTING PARTNERS
 <p>Lead Agency or NRSC</p>	<ul style="list-style-type: none"> • Private sector • Civil society, non-government organisations, charities 	<ul style="list-style-type: none"> • Finance Ministry • Education Ministry • Communications Ministry

NEXT STEPS TO IMPROVE ROAD SAFETY

Next steps should be implemented in accordance with a prioritised national road safety action plan. These should include some or all of the following actions:

Legislate, educate and enforce

Legislate

- Introduce legislation for key behaviours including seatbelt and child restraint use, mobile phone use by drivers, drink and drug driving, speed and speed limits, and helmet use; and
- Introduce a penalty point system.

Educate

- Embed road safety education into the school curriculum for all ages; and
- Develop and implement campaigns and awareness plans with clear branding and messaging.

Enforce

- Train the police in use of equipment, communicating with the public and enforcing road safety legislation; and
- Develop and implement a data/intelligence led enforcement strategy.

Set safe speed limits and improve compliance

- Review all speed limits to check if they are safe and appropriate for the road - update the speed limit and/or improve road design where necessary;
- Make sure the start and finish of all speed limits is clearly signed;
- Provide training to the police for using different speed enforcement technology, and develop a strategic plan for speed enforcement; and
- Include speed awareness in educational initiatives and campaigns.

Make your roads safe

- Introduce Star Rating targets, Road Safety Impact Assessment, Road Safety Audit (at a minimum one stage before and after construction) and monitoring for all new road schemes;
- Develop, implement and monitor Work Zone safety guidance;
- Undertake annual crash data analysis to identify the worst 10% of sites or sections for targeted improvements;
- Undertake iRAP surveys at least every 5 years to track performance and identify opportunities for targeted improvements;
- Undertake regular maintenance inspections; and
- Ensure road design standards are up to date and reflect best international practice.

Raise the safety of vehicles

- Introduce UN regulations for frontal and side impact, seatbelt/seatbelt anchorages, ESC and pedestrian protection;
- Lobby manufacturers to adopt UN regulations for front and side impact crash tests, and include all available safety features available to the public; and
- Introduce annual safety checks and roadside roadworthiness inspections.

Promote public transport

- Train public transport managers and drivers;
- Make sure that public transport is safe and accessible;
- Ensure regular and mandatory vehicle safety checks and meticulous maintenance regimes are implemented; and
- Subject all new public transport schemes to Road Safety Audit before, during and after construction, and monitor performance through the analysis of crash and near miss data.

Deal with crashes that do happen - effectively

- Introduce a single emergency services number and medical dispatch team at a National Control Centre;
- Undertake a study to determine the level of resourcing, skill and equipment required for effective:
 - Dispatch, rescue and extrication of crash victims;
 - Treatment at the scene, during transit to the hospital and during handover;
 - Treatment in hospital; and
 - Rehabilitation (in- and out-patient).

Work with the private sector and civil society

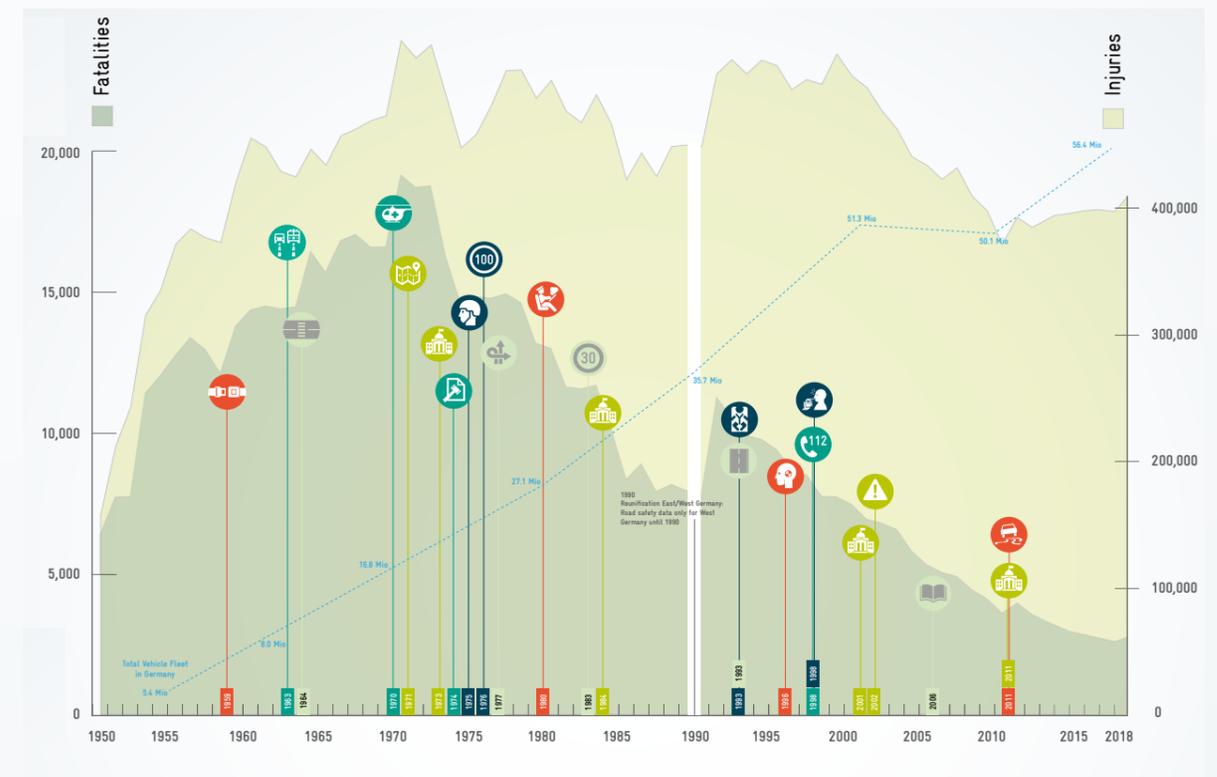
- Include representatives from the private sector and civil society in working groups where relevant; and
- Establish a private/civil society forum for co-ordination of activities at which training can be provided.

Evaluate, monitor and review

- Ensure all road safety programmes have an evaluation component;
- Monitor performance through annual analyses and surveys; and
- Amend the national road safety action plan according to results.

A COMPREHENSIVE APPROACH FOR ROAD SAFETY: THE EXAMPLE OF GERMANY

To reduce injuries and fatalities, many proven measures are available – from better infrastructure to safer vehicles, better enforcement and education and improved emergency medical services. The infographic illustrates the comprehensive approach that Germany has taken as a response to sharply rising fatality rates since the 1950s - comprising a bundle of measures that can inspire policy-makers and experts elsewhere.



User Related Measures
(TRAINING AND EDUCATION, TRAFFIC LAW, INCENTIVES, ENFORCEMENT)

Infrastructure Related Measures
(ROAD DESIGN, ROAD CONSTRUCTION, MAINTENANCE)

Vehicle Related Measures
(ACTIVE SAFETY, PASSIVE SAFETY, TELEMATICS)

Organization
(PLANNING, FINANCING, CONTROLLING)

Rescue Services
(ALERT, RESCUE)



Published by **giz**
Technische Gesellschaft für Internationale Zusammenarbeit (GIZ) GmbH

On behalf of
Federal Ministry for Economic Cooperation and Development



German Partnership for Sustainable Mobility

http://sutp.org/files/contents/documents/resources/J_Others/GIZ_SUTP_Comprehensive-Approach-for-Road-Safety-Germany_EN_2019.pdf

Building capacity to deliver

At present achieving sustainable local capacity is one of the greatest challenges in road safety. All of the strategies outlined in this policy guide can only be delivered if there are sufficient skilled personnel available.

Road safety training is often piecemeal and included within other projects, normally allowing only short courses to be held. Specific investment is needed in order to achieve sustainable local capacity. A road safety expert is not made through a one- or two-week training course, but instead needs formal training along with practical experience under supervision.

Building sustainable capacity requires:

- University courses to include road safety (particularly Civil Engineering);
- A programme of road safety training available across all disciplines that can be accessed according to the role of the person;
- Access to experienced practitioners who can provide guidance and supervision; and
- Continued professional development that is overseen by membership of a society – a good example of this is the UK’s Society of Road Safety Auditors.

For an individual country this can be a daunting process. Regional centres of excellence or regional road safety observatories can offer the opportunity for co-operation between a number of countries with similar challenges.

Multilateral lending institutions and donors may provide grants and low-interest loans for projects focused on policy development and institutional capacity building for road safety.

There are road safety training courses on offer in leading NGO, academic and research organisations globally that can help you to start the process of building local capacity.

FOR MORE INFORMATION

For more information on capacity building: PIARC Training and International Seminars. www.piarc.org/en/activities/PIARC-International-Seminars-Proceedings

UNRSC Road Safety Engineering Capacity Building Resources. www.gtkp.com/themepage.php?themepgid=378

International Road Federation (IRF) Global. www.irf.global/training/ and IRF <https://irfnet.ch/knowledge-expertise/>

International Road Assessment Programme. www.irap.org/training-and-accreditation/

Global Road Safety Partnership. www.grsroadsafety.org/programmes/global-road-safety-leadership-course/

LEAD	DELIVERY PARTNER	SUPPORTING PARTNERS
 <p>Lead Agency or NRSC</p>	<ul style="list-style-type: none"> • Education Ministry • Learned societies • Universities and research organisations 	<ul style="list-style-type: none"> • Private sector • Civil society, non-government organisations, charities

Next steps

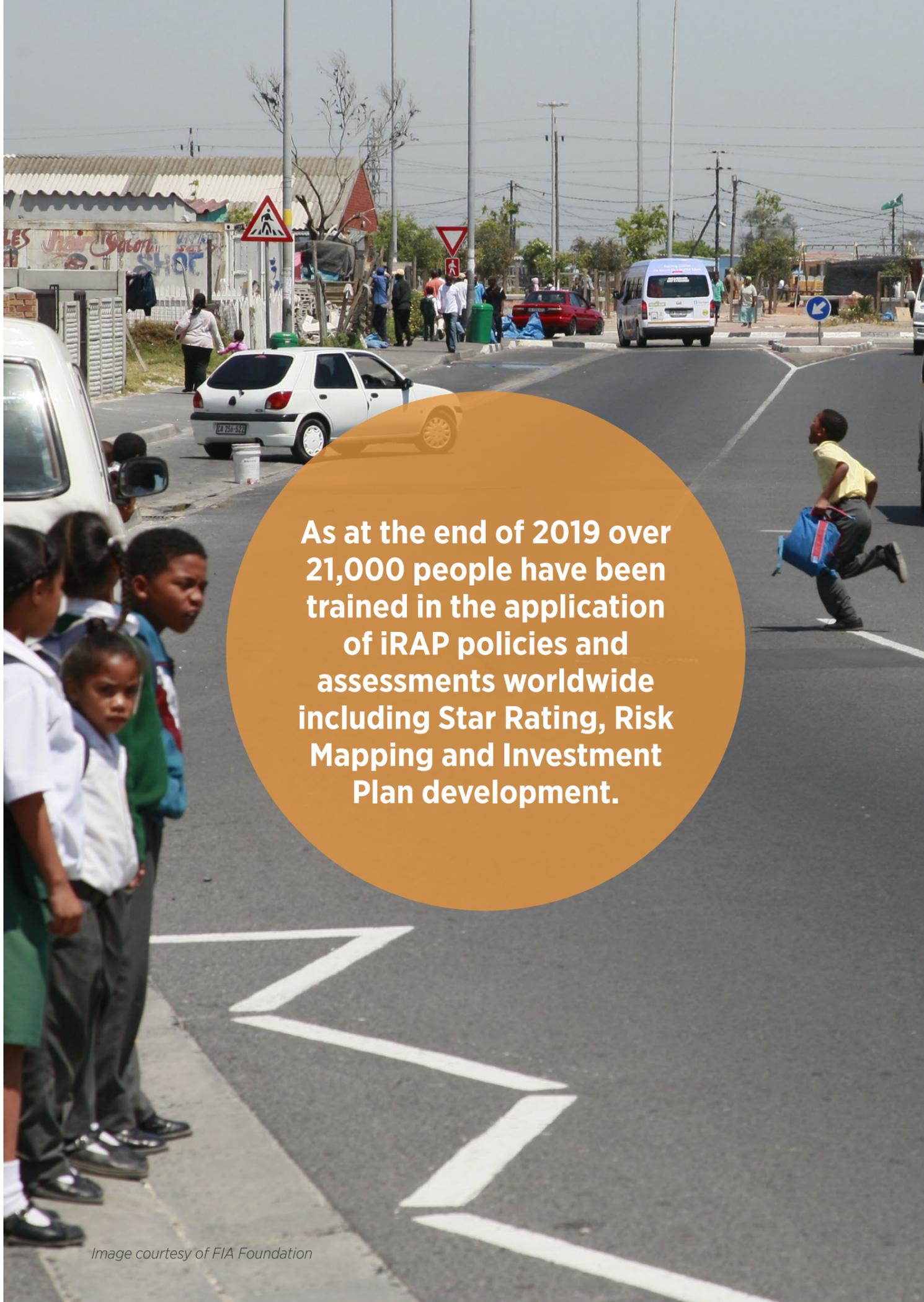
Once the national road safety action plan is complete, undertake a training needs analysis for each sector

Put in place 'short term' solutions for training or expertise (this may include interim training courses, teams working alongside international experts or assistance from the private sector)

Develop a national strategy to build sustainable local capacity over a period of 5-10 years

Implement the proposed approach

Review annually



As at the end of 2019 over 21,000 people have been trained in the application of iRAP policies and assessments worldwide including Star Rating, Risk Mapping and Investment Plan development.

Benefits of international co-operation

YOU ARE NOT ALONE

There are many sources of support and further information in the wider international road safety community.

PIARC (World Road Association) was founded in 1909 as a non-profit, non-political Association. PIARC'S goal is to organise the exchange of knowledge on all matters related to roads and road transport, for the benefit of members and of the global community. Low- and middle-income countries are a specific focus of PIARC's work.

More than 1,000 experts are currently mobilised in PIARC working groups, and they publish technical reports (one per month on average) including practical recommendations on diverse topics including finance, pavements, disaster management, tunnels operations, etc.

Road safety is recognised as a cross-cutting issue by members. PIARC has recently provided knowledge products on road safety audits, road safety inspections, speed limits, human factors, vulnerable road users, land use and safety, national safe system policies, etc.

Engaging with PIARC for further support and guidance can be done through the road safety technical committee (TC 3.1 Road Safety).

Chair: John MILTON

PIARC Road Safety Online Manual:
<https://tunnels.piarc.org/en>

Recent PIARC Technical reports:
www.piarc.org/en/activities/PIARC-Directory-Technical-Reports/PIARC-Technical-Reports-Cycle-2016-2019

In addition to this, the World Health Organisation (www.who.int/gho/road_safety/en/), United Nations Road Safety Collaboration (www.who.int/roadsafety/en/), Global Road Safety Partnership (www.grsroadsafety.org), International Road Assessment Programme (www.irap.org/resources/), FIA Foundation (www.fiafoundation.org/our-work/road-safety), Global NCAP (www.globalncap.org/resources/), Global Alliance of NGOs for Road Safety (<http://roadsafetyngos.org/publications/>), Global Road Safety Facility (www.worldbank.org/en/programs/global-road-safety-facility), and the partners of the Transformative Urban Mobility Initiative (www.transformative-mobility.org/) provide excellent reports and manuals for road safety action.

Members of the international road safety community can be found via forums such as the Decade of Action for Road Safety LinkedIn Group.

Questions

A series of questions that aim to help understand current practice and opportunities for improvement.

CREATING SOLID FOUNDATIONS

- Is there head of state/government recognition of the national road safety problem and a lead agency for road safety?
- Is there clear accountability for casualty reduction and are agency level responsibilities clearly defined? Are there active working groups/committees to support collaborative working?
- Is there a road safety champion at a senior level in government? Is there a national road safety strategy, targets and action plan?
- Is there a sustainable and sufficient funding mechanism in place?
- Is it easy for road safety stakeholders to access good quality road crash data for analysis? Are annual surveys undertaken to support crash data?
- Do stakeholders use road crash data to plan and direct their activities?
- Are road safety efforts monitored and evaluated to determine effectiveness of different approaches?

LEGISLATE, EDUCATE AND ENFORCE

- Is current legislation effective and does it cover all road safety issues?
- Do annual behavioural surveys suggest there is good compliance?
- Do educational interventions meet the needs of road users at all ages?
- Do campaigns and awareness programmes target specific groups with specific messages, and are they paired with enforcement when appropriate?
- Are new drivers given sufficient training, and are driving tests comprehensive?
- Are the police sufficiently trained and equipped to take a strategic and objective approach to enforcement?

SET SAFE SPEED LIMITS AND IMPROVE COMPLIANCE

- Are speed limits set at a safe level and is there a comprehensive educational and enforcement speed management strategy in place?

MAKE YOUR ROADS SAFE

- Are planning schemes inclusive of road safety needs and outcomes?
- Are star rating targets and minimum technical safety standards set for all new schemes?
- Are Road Safety Impact Assessments and Road Safety Audits undertaken for all new road schemes at all levels of scheme development, and once opened are all new roads monitored?
- Is there a Work Zone safety manual and policy in place and is this followed in practice?
- Are crash data analyses undertaken every year to identify roads/sections/locations that are high risk, and are they treated effectively?
- Are maintenance inspections undertaken annually, and iRAP surveys undertaken at least every 5 years, with follow up detailed assessments of high priority sections?
- Are the needs of all road user groups met in newly designed roads and considered in the assessment of existing roads?

RAISE THE SAFETY OF VEHICLES

- Have UN regulations for frontal and side impact, seatbelt/seatbelt anchorages, ESC and pedestrian protection been adopted?
- Have NCAP star ratings been adopted and promoted to the public, fleet operators and rental companies?
- Are all cars subjected to an annual safety check?
- Are roadside roadworthiness inspections undertaken and is there good compliance?

IMPROVE THE PROVISION OF PUBLIC TRANSPORT

- Do road users have the opportunity to use public transport instead of their own vehicles?
- Is public transport perceived as safe and efficient, and can it be safely accessed by pedestrians and cyclists?
- Are public transport drivers trained to a high level, and is safety adequately covered in their training?
- Are vehicles subjected to frequent safety checks and meticulous maintenance regimes?

DEAL WITH CRASHES THAT DO HAPPEN – EFFECTIVELY

- Is there a single emergency services number that is directed to the National Control Centre who can co-ordinate response with a dedicated medical dispatch team?
- Are emergency response personnel trained adequately and provided with necessary equipment?
- Are there sufficient hospitals with appropriate equipment, surgeons, doctors and nurses for trauma care and rehabilitation?
- Are there systems in place for the care of those that have been injured, and social assistance for their dependents?

WORK WITH THE PRIVATE SECTOR AND CIVIL SOCIETY

- Are the skills and resources of the private sector, NGOs and charities used to their greatest effect within the national road safety efforts?
- Do private sector companies have good road safety policies in place for their employees?

BUILD CAPACITY TO DELIVER

- Do university courses include road safety training?
- Are there a wide variety of training courses available covering different road safety topics? Are there experienced practitioners who can provide guidance and supervision to new staff?
- Is there a mechanism to ensure continued professional development of road safety practitioners?

ACRONYMS

AfDB	African Development Bank
BMZ	German Federal Ministry for Economic Co-operation and Development
DFID	Department for International Development
ESC	Electronic Stability Control
GDP	Gross Domestic Product
GIZ	Deutsche Gesellschaft für Internationale Zusammenarbeit
GRSP	Global Road Safety Partnership
HIC	High-Income Country
iRAP	International Road Assessment Programme
IRF	International Road Federation
ITC	Industrial Training Centre
LIC	Low-Income Country
MIC	Middle-Income Country
NCAP	New Car Assessment Programme
NGO	Non-Governmental Organisation
NRSC	National Road Safety Council
PIARC	World Road Association
SDG	Sustainable Development Goal
TAC	Transport Accident Commission
TOI	Institute of Transport Economics
TUMI	Transformative Urban Mobility Initiative
UN	United Nations
VRU	Vulnerable Road Users
WHO	World Health Organisation
YOURS	Youth for Road Safety

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SAFE ROADS MATTER

POLICY GUIDE

DFID High Volume Transport

Safer roads depend on the awareness and commitment of everyone engaged in transport, from policy-makers to pedestrians. This guide draws on best practices worldwide and provides practical solutions and actions to make roads safer for all road users.