

MODULE 1

INTRODUCTION TO ROAD SAFETY AND THE SAFE SYSTEM APPROACH

July 12, 2021

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GLOBAL
ROAD SAFETY
PARTNERSHIP





24 seconds...



Every **24** someone dies
on the road
SECONDS

Overview

- Status of global road safety
- Global developments
- The role of strategic frameworks to promote coordination and integration
- The Safe System Approach



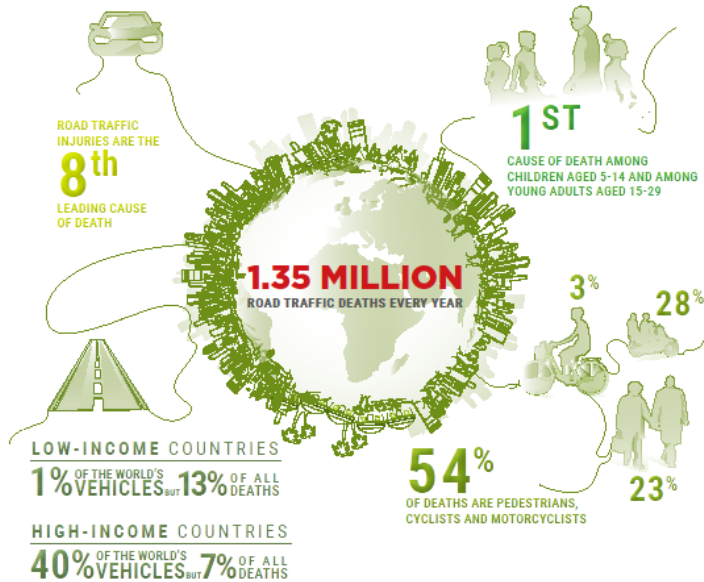


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Status of Global Road Safety

ROAD TRAFFIC INJURIES: THE FACTS



**EVERY 24 SECONDS
SOMEONE DIES ON THE ROAD**



#RoadSafety



source: WHO Global status report on road safety 2018

www.who.int/violence_injury_prevention/road_safety_status/2018/en/

Where are we now?



The Global Road Safety Partnership is hosted by:



- In 2000: 1.15 million deaths
- In 2016: 1.35 million deaths
- Rate of deaths/100,000 population stabilised

Where are we now?



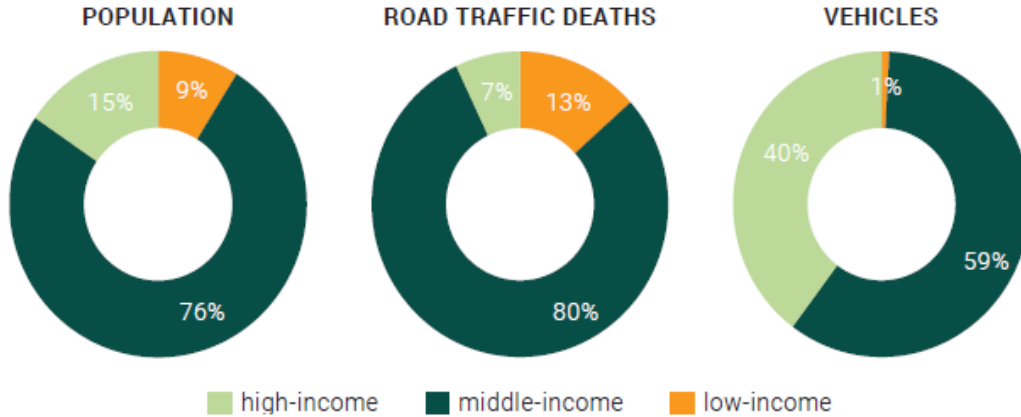
The Global Road Safety Partnership is hosted by:



Road traffic injuries
are the **8th** leading cause
of death 

- More people now from road traffic injuries than from
 - HIV/AIDS
 - tuberculosis and
 - diarrhoeal diseases
- Annually, 50 million people suffer life-changing injuries as a result of road crashes
- Great disparity across the world

Disparity



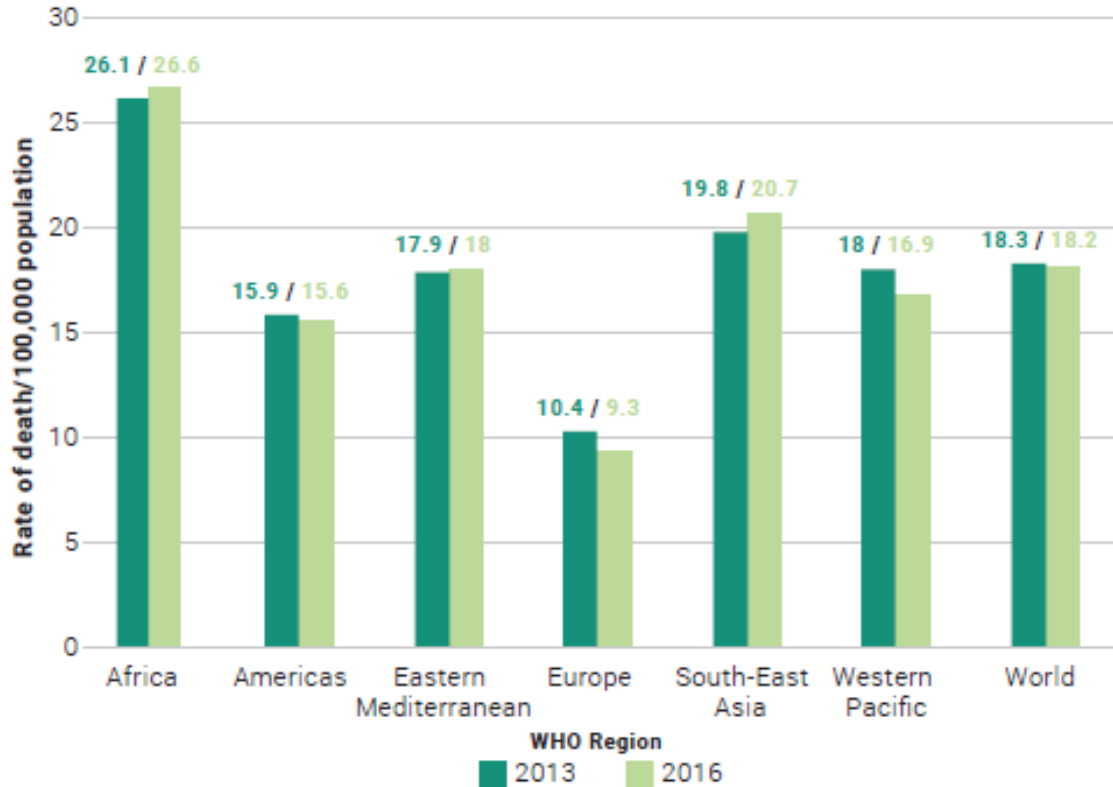
*income levels are based on 2017 World Bank classifications.

- Disproportionately distributed by income level, region, and road user type.
- Low- and middle-income countries (LMICs) have
 - 60% of the world vehicles
 - 93% of road traffic deaths



Poll question #1

Regional Disparity



Global: **18.2**/100,000 population

Africa region:

– **26.6**/100,000 population

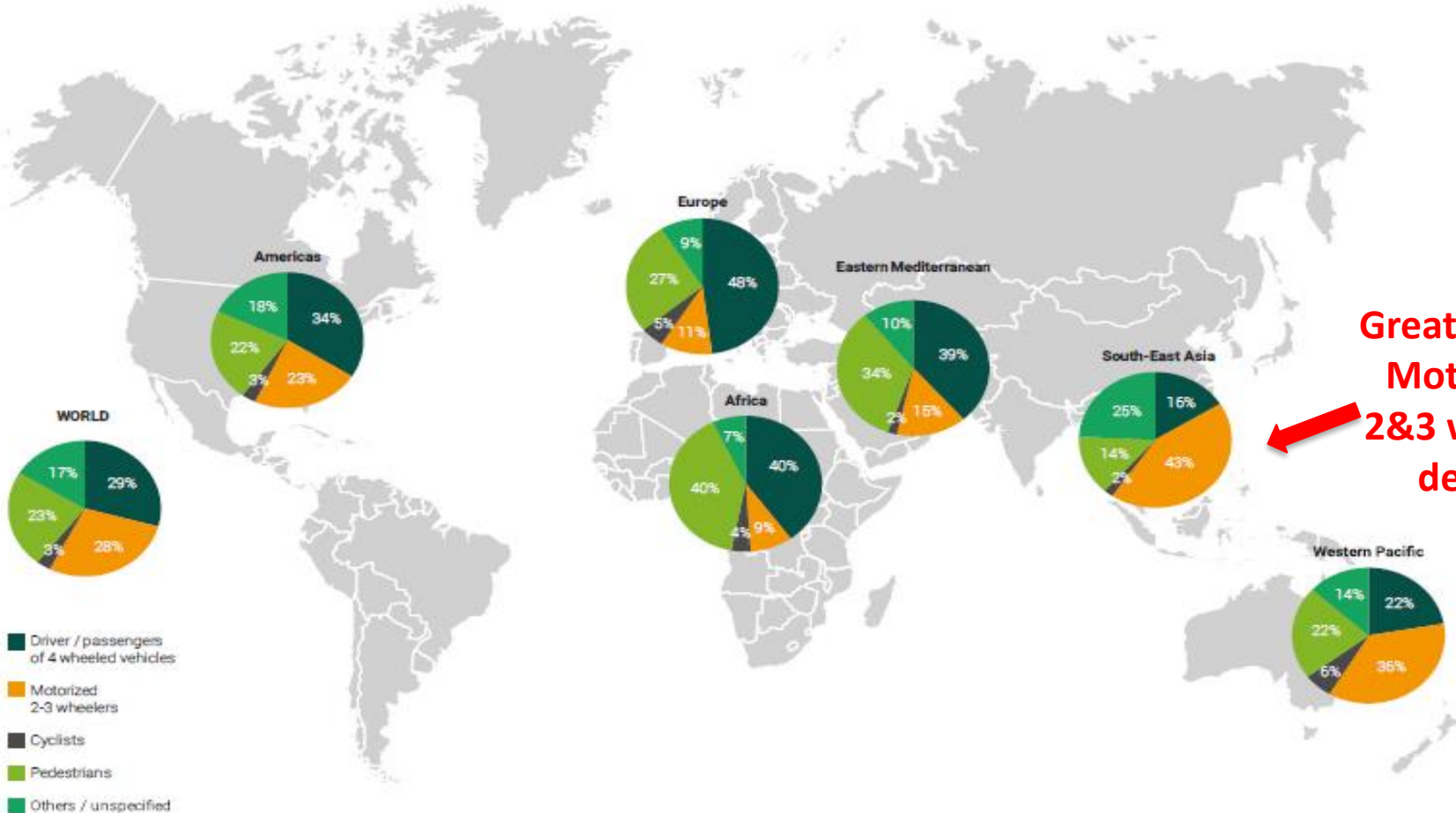
South-East Asia

– **20.7**/100,000 population

Western Pacific

– **16.9**/100,000 population

Distribution of deaths by road user type



**Greatest % of
Motorised
2&3 wheeler
deaths**



**Why do
these
disparities
exist?**



**Your
country?**

Using the Global Status Report Data

WHO GRSInfo: An app for road safety data



- Easily find information from regions and individual countries
- Access online
- Access via the **WHO GRS Info App**
 - Access key messages
 - View and compare country profiles
 - Run queries, explore trends, save results

How to use the app:

https://www.who.int/violence_injury_prevention/road_safety_status/GRSInfo-App/en/



The Global Road Safety Partnership is hosted by:



Global Developments in Road Safety

1970s+

- ✓ Many countries adopt **more scientific** approach
- ✓ Enhanced **crash data reporting**
- ✓ Introduction of **evidence-based standards, policies & laws**
- ✓ Increase of **intensive road policing** supported by **mass media** education
- ✓ **Greater coordination** - development of national & subnational road safety strategies



1970s+

- ✓ **Research**, monitoring & evaluation
- ✓ Ongoing **professionalisation** of the road safety field
- ✓ Growing concern about global road safety, particularly in countries experiencing **rapid motorisation**
- ✓ 1990s+ **New strategic perspectives** emerge that attract global attention:
 - The Netherlands' Sustainable Safety
 - Sweden's Vision Zero
 - Safe System Approach



21st Century



- ✓ Global recognition & scale up
 - ✓ **United Nations Road Safety Collaboration (UNRSC)**
 - ✓ **Global Ministerial Conferences**
 - ✓ **Global Status Reports**
 - ✓ **More donors & funding**
 - ✓ **UN Global Road Safety Weeks**
 - ✓ **UN Resolutions on Improving Global Road Safety**
 - ✓ **UN Road Safety Fund**
 - ✓ **Inclusion in Sustainable Development Goals**



Other developments

- Continuing **rapid motorisation** in low and middle income countries
- Global proliferation of **smartphone** technology
- Rapid development in **vehicle automation & cooperative intelligent transport systems**
- Increasing **alignment** of road safety with ‘safe mobility’, ‘active transport’ and ‘sustainable transport/mobility’ **agendas**
- Growing concern about **environmental impact** of motor vehicles
- **Improved reporting** of road crashes & associated trauma
- Previously decreasing road trauma trend in many **high income countries is increasing**



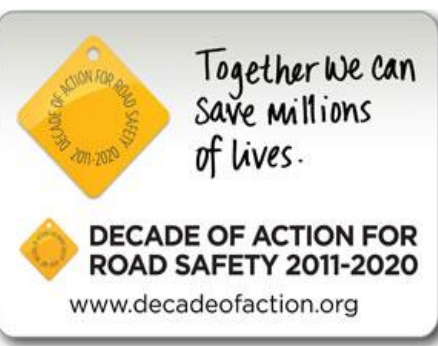


The Global Road Safety Partnership is hosted by:



Decade of Action 2011-2020

A Global Plan & 5 Pillars



**International coordination/
strengthening global architecture**

National activities

**Pillar 1
Road safety
manage-
ment**

**Pillar 2
Infra-
structure**

**Pillar 3
Safe
vehicles**

**Pillar 4
Road user
behaviour**

**Pillar 5
Post crash
care**



The Global Road Safety Partnership is hosted by:



2nd Decade of Action

2021 - 2030

- **August 2020: UN General Assembly adopted another resolution**
- **Proclaimed the 2nd Decade of Action for Road Safety**



Goal:

Reduce deaths and injuries by at least 50% by 2030

Plan development:

- **WHO-UN Regional Commissions Task Force**
- **Present plan at 75th Session of UN General Assembly, Sept 2021**

2030 Agenda for Sustainable Development



The Global Road Safety Partnership is hosted by:



**SUSTAINABLE
DEVELOPMENT
GOALS**

17 Interlinked Goals

A shared blueprint for peace, prosperity for people and the planet

Urgent call for action by all countries in global partnership

2030 Agenda for Sustainable Development



The Global Road Safety Partnership is hosted by:



Recognise that ending poverty and other deprivations must go **hand-in-hand** with strategies that **improve health and education, reduce inequality**, and spur **economic growth** while **tackling climate change** and working to preserve our oceans and forests.

Putting Road Safety on the International Development Agenda



Goal 3: Ensure healthy lives and promote well-being for all:

- 3.6. By 2020, **halve the number of global deaths and injuries** from road traffic accidents



Goal 11: Make cities and human settlements inclusive, safe, resilient and sustainable:

- 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 persons



**How is this
relevant to
your work?**



The Global Road Safety Partnership is hosted by:



How can road safety issues help with attaining other SDGs?



**Improved
Road Safety**





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+CIFRC

4 June 2020

'DON'T TAKE YOUR EYES OFF THE ROAD'

The critical case for ongoing road safety investment

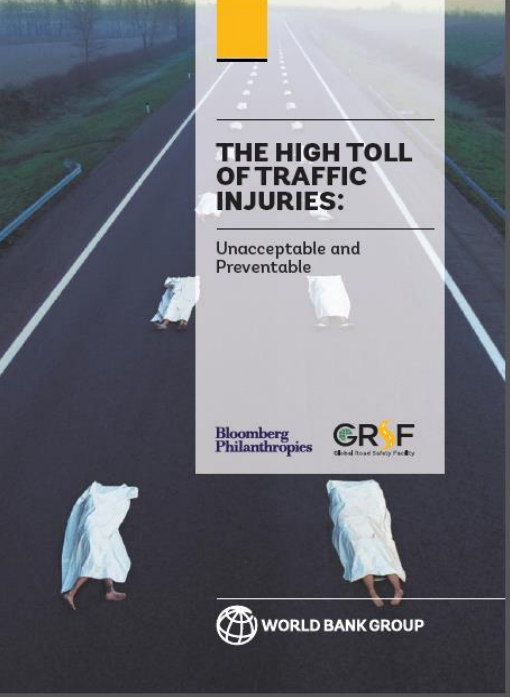
As the world responds to the COVID-19 pandemic, the ongoing road safety pandemic has had a temporary reprieve as road traffic volumes have fallen with governments globally taking unprecedented steps to reduce virus contagion. The economic impacts, of course, will be profound.

Worryingly, a new threat may well emerge. Road safety stakeholders the world over predict that road trauma and the consequential health impacts across the globe will rise dramatically if investment by governments and the private sector is reduced or does not continue.

[Link: Don't Take Your Eyes Off The Road | | GRSP | Global Road Safety Partnership \(grsproadsafety.org\)](https://www.grsp.org/)

Consider Other Costs

- Improving road safety, and road traffic injury prevention, is not a transport challenge!
- It is a **development challenge** with strong impacts on **health, wellbeing and economic growth**
 - Halving road traffic injuries could translate into an additional 15% to 22% of GDP per capita income growth over 24 years
 - Welfare benefits equivalent to 6 - 32% of national GDP can be realised from reducing 50% of road deaths and injuries over a period of 24 years



Global Performance Targets

TARGET 1
2020



Target 1: By 2020, all countries establish a comprehensive multisectoral national road safety action plan with time-bound targets.

TARGET 2
2030



Target 2: By 2030, all countries accede to one or more of the core safety-related UN legal instruments.

TARGET 3
2030



Target 3: By 2030, all new roads achieve technical standards for all road users that take into account road safety, or meet a three star rating or better.

TARGET 4
2030




Target 4: By 2030, more than 75% of travel on existing roads is on roads that meet technical standards for all road users that take into account road safety.

TARGET 5
2030



Target 5: By 2030, 100% of new (defined as produced, sold or imported) and used vehicles meet high quality safety standards, such as the recommended priority UN Regulations, Global Technical Regulations, or equivalent recognized national performance requirements.

TARGET 6
2030



Target 6: By 2030, halve the proportion of vehicles travelling over the posted speed limit and achieve a reduction in speed-related injuries and fatalities.

TARGET 7
2030



Target 7: By 2030, increase the proportion of motorcycle riders correctly using standard helmets to close to 100%.

TARGET 8
2030



Target 8: By 2030, increase the proportion of motor vehicle occupants using safety belts or standard child restraint systems to close to 100%.

TARGET 9
2030



Target 9: By 2030, halve the number of road traffic injuries and fatalities related to drivers using alcohol, and/or achieve a reduction in those related to other psychoactive substances.

TARGET 10
2030



Target 10: By 2030, all countries have national laws to restrict or prohibit the use of mobile phones while driving.

TARGET 11
2030



Target 11: By 2030, all countries to enact regulation for driving time and rest periods for professional drivers, and/or accede to international/regional regulation in this area.

TARGET 12
2030



Target 12: By 2030, all countries establish and achieve national targets in order to minimize the time interval between road traffic crash and the provision of first professional emergency care.



- 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

Towards the 12 voluntary global targets for road safety

Guidance for countries on activities and measures to achieve the voluntary global road safety performance targets



Assessing Global Performance Targets

Guidance for countries on activities and measures to achieve the voluntary global road safety performance targets



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Strategic Frameworks



Poll question #2



**People make
mistakes**



**Behaviour
change is not
easy**

The need for system-based perspective

Historically:

- Crash prevention by changing behaviour

Blame the road user

- Delayed recognition & application of prevention measures in other parts of the injury causal chain:
 - Infrastructure
 - Vehicles
 - Post-crash care



The need for a strategic framework



The Global Road Safety Partnership is hosted by:



- Address different (often competing) goals of transport system
 - *safety, mobility, social justice, environmental sustainability, workplace participation*
- Articulate a guiding vision to promote coherent & consistent decision making
- Identify core goals for the future
- Provide foundation for guiding principles and objectives
- Identify areas of accountability



Globally recognised strategic frameworks

- Strategic frameworks that have attracted considerable attention:
 - Vision Zero (Sweden)
 - Sustainable Safety (Netherlands)
 - Safe System Approach (OECD & Australia)
- Different strategic principles and objectives flow from each of the visions



The Safe System Approach



The Global Road Safety Partnership is hosted by:



- Reflects different aspects of Vision Zero & Sustainable Safety concepts
- Refined and adopted by:
 - OECD in the highly influential report: *Towards Zero: Ambitious Road Safety Targets and the Safe System Approach*
 - Global road safety community in the Decade of Action Global Plan & UN Resolutions







What is the Safe System Approach?

- Holistic approach
- Underlying principles:
 - **we make mistakes**
 - **human body has physical limits**
- Aims to ensure that these mistakes do not result in deaths or injuries



What is the Safe System Approach?



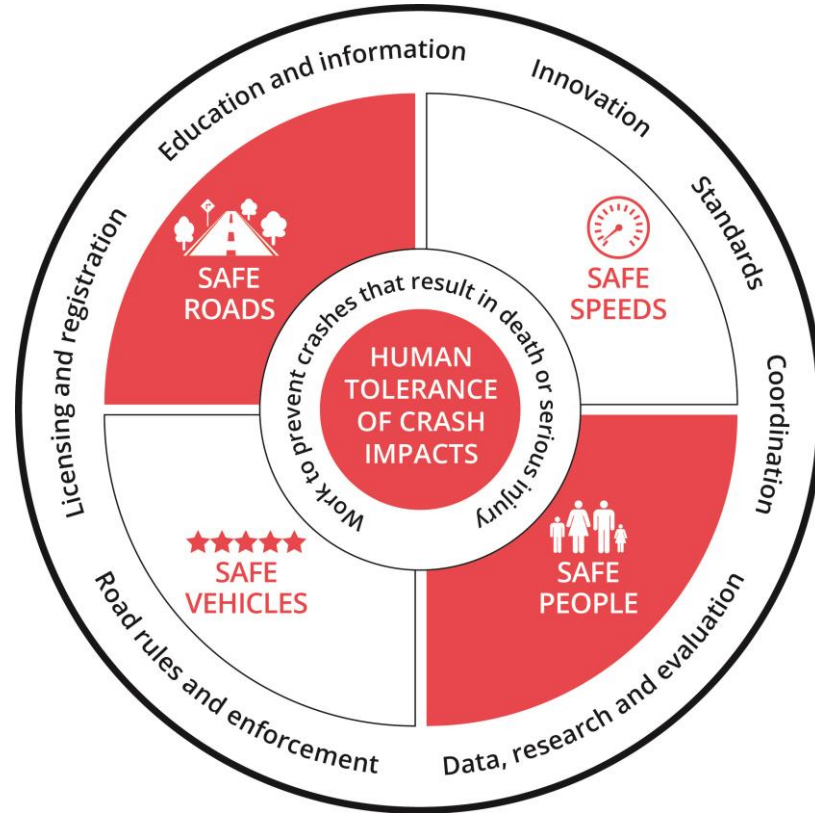
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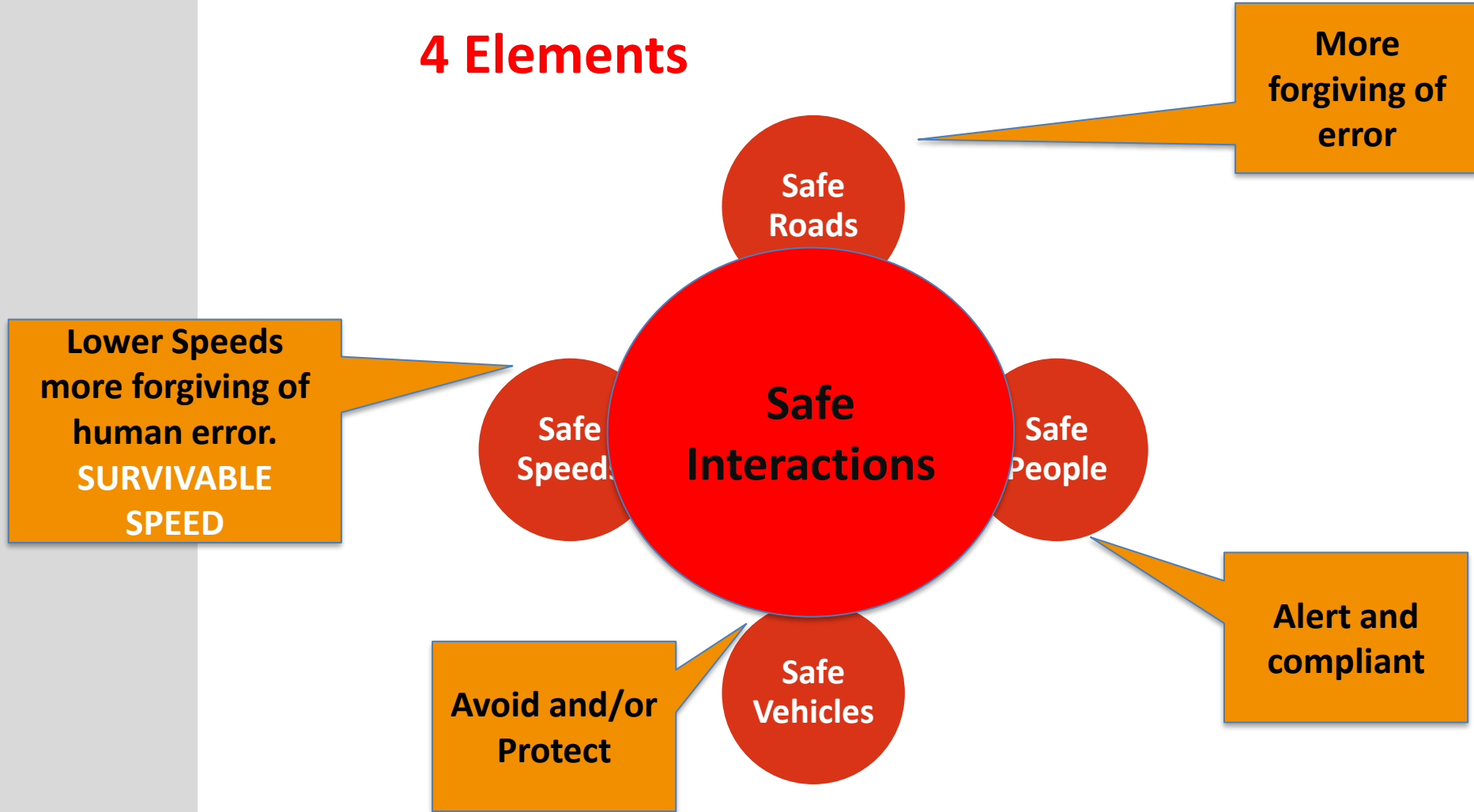
- The goal is to **create a transport system which is more human-proof**
- The safety of the system is everyone's responsibility



The Safe System Approach



4 Elements



Change Thinking



	Traditional Thinking	Safe System Thinking
What is the problem?	Crashes	Fatalities and serious injuries
What causes the problem?	Human Factors	People make mistakes, people are fragile
Who is ultimately responsible?	Road users	System designers
What is the major planning approach?	Incremental approach to reduce the problem	Systematic approach to build a safe road system
What is the appropriate goal?	Optimum number of fatalities & serious injuries	Zero fatalities & serious injuries

The difference between life & death



The Global Road Safety Partnership is hosted by:



YouTube ^{CH}

the difference between life and death driver

In memory of the **27,289** people who died or were seriously injured on our roads in the last ten years

NZ TRANSPORT AGENCY

0:02 / 1:04

The Difference Between Life and Death – a 1 minute preview

NZTransportAgency

Subscribe 9.4K

2,466 views

The image shows a screenshot of a YouTube video player. The video is titled 'the difference between life and death driver'. The video content is a dark, textured background with white text that reads: 'In memory of the 27,289 people who died or were seriously injured on our roads in the last ten years'. Below the video player, the title 'The Difference Between Life and Death – a 1 minute preview' is visible, along with the channel name 'NZTransportAgency', a 'Subscribe' button with '9.4K' subscribers, and '2,466 views'.

<https://www.youtube.com/watch?v=mFcLUctUAzc>

<http://www.saferjourneys.govt.nz/about-safer-journeys/the-safe-system-approach/>

SUSTAINABLE & SAFE

A Vision and Guidance for Zero Road Deaths

WORLD
RESOURCES | ROSS
INSTITUTE | CENTER

GRSF
Global Road Safety Facility

EMBARQ

WRI.ORG | WORLD.BANK.ORG/GRSF

- Provides guidance on developing context-specific road safety strategy based on Safe System Approach
- Describes SSA, principles, examples of application in policy, & evidence
- Discusses opportunities for wider application in LMICs
- Outlines specific steps policymakers can take to create a plan



4 Key Findings



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Safe System Approach:

1. shown to be more effective in reducing traffic deaths & injuries than more traditional approaches
2. based on evidence-based measures
3. is sustainable
4. can be adopted by countries at all income levels

GUIDE FOR

ROAD SAFETY OPPORTUNITIES AND CHALLENGES:

LOW-AND MIDDLE-INCOME

COUNTRY PROFILES



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- Key Metrics for determining road safety activity, performance and monitoring

[Guide for Road Safety Opportunities and Challenges: Low and Middle Income Country Profiles | GRSF \(roadsafetyfacility.org\)](https://roadsafetyfacility.org)



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GUIDE FOR

ROAD SAFETY OPPORTUNITIES AND CHALLENGES:

LOW-AND MIDDLE-INCOME

COUNTRY PROFILES



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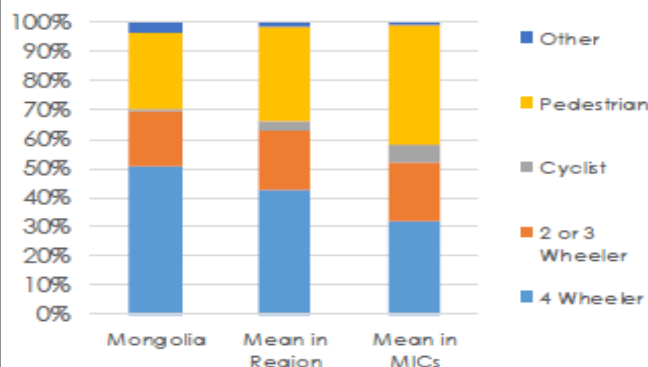


Information on:

- Status of the 5 Pillars
- Current status for each country & region
- Key risk factors, issues & opportunities


THE SCALE OF THE ROAD SAFETY CHALLENGE Ref: 1,2,3,4,5
ROAD CRASH FATALITIES AND INJURIES SNAPSHOT

Country Population, 2016 : 3,027,398
Country Reported Fatalities, 2016 : 484
WHO Estimated Fatalities, 2016 : 499
GBD Estimated Fatalities, 2016 : 541
WHO Est. Fatalities per 100,000 Pop., 2016 : 16.50
GBD Est. Fatalities per 100,000 Pop., 2016 : 16.95
Estimated Serious Injuries, 2016 : 7,485
Cost of Fatalities and Serious Injuries, 2016 : \$ 613.09 million
Cost as % of country GDP, 2016 : 5.5%

FATALITIES BY USER COMPARISON CHART


84% Percentage of Road Crash Fatalities and Injuries in the economically productive age groups (15 - 64 years.)

3 : 1 Ratio of Male to Female Fatalities with the 15 - 49 year age group being most vulnerable to fatalities

1,037 life yrs. affected due to disability from road crash injuries per 100,000 people

POSITIONING OF COUNTRY IN THE REGION (COMPARED TO COUNTRIES WITH THE LOWEST TRAFFIC FATALITIES IN THE REGION AND GLOBALLY)

	2016 WHO Estimated Road Fatalities	2016 GBD Estimated Road Fatalities	2016 WHO Estimated Fatality Rate/100,000 pop.	2016 GBD Estimated Fatality Rate/100,000 pop.	% Trend in Fatality Rate/100,000 (2013 - 2016)	Motorized Registered Vehicles/100,000 population
Mongolia	499	541	16.5	16.9	-5.0%	27,797

BEST PERFORMING COUNTRIES IN REGION

Micronesia	2	16	1.9	15.7	-0.3%	5,406
Kiribati	5	12	4.4	10.4	-5.2%	3,240

BEST PERFORMING COUNTRIES GLOBALLY

Switzerland	223	334	2.65	3.89	-5.4%	71,182
Norway	143	215	2.72	4.09	2.4%	75,544
Singapore	155	197	2.76	3.53	-4.9%	16,604
Sweden	278	390	2.83	3.88	-3.2%	62,037

ROAD SAFETY MANAGEMENT Ref: 1

PILLAR 1

To produce positive road safety outcomes, strong management in all aspects of road safety is key. Presence of a funded lead agency to guide the national road safety effort and implement a Safe Systems approach is recommended.



Mongolia has a lead agency present, Ministry of Road and Transport Development, The National Committee, which is funded in the national budget, and has a road safety strategy which is partially funded. The functions of the agency include coordination, legislation and monitoring and evaluation of road safety strategies. The country has both a fatal and non-fatal road safety target, to reduce fatalities by 50% with a timeline of 2012 - 2020.

SAFE ROADS AND ROADSIDES Ref: 1.4

Improved infrastructure provides solid and well understood crash and injury reduction outcomes and are critical for long term and sustainable trauma reduction in line with the Safe Systems Approach. The International Road Safety Assessment Programme (iRAP) provide a business case for safer roads and road star ratings which give a simple and objective measure on the level of safety which is 'built-in' to the road for the road users. 5 Star roads are the safest while 1 star roads are the least safe.

Road Infrastructure Star Rating Results

NO ROAD ASSESSMENT SURVEY DATA FOR MONGOLIA IS PUBLICLY AVAILABLE ON THE iRAP WEBSITE.

PILLAR 2

Information on Infrastructure in Mongolia:

Audit/Star Rating Required for New Road Infrastructure;

No Inspection/Star Rating Required for Existing Roads;

Investment is not Allocated to Upgrade High Risk Locations

Business Case for Safer Roads

Infrastructure and Speed Management
Investment required: **\$ 960.36 million**

Annual Investment as a % of GDP
(2019-2030): **0.69%**

Reduction in fatalities per year: **239**

Approximate reduction in fatalities and
serious injuries (FSI) over 20 years: **50,000**


Economic Benefit: **\$ 2.96 billion**

B/C Ratio: **3**





SAFE SPEEDS Ref: 1,6,7,8

Speeding is a major risk factor for road crash injuries, contributing to both crash risk and crash consequences. A 5 % cut in average speed can result in a 20 % reduction in the number of fatal road crashes. Effective speed management measures such as establishing and enforcing speed limit laws, traffic calming through roadway design and other measures, and vehicle technology need to be widely implemented.

MAXIMUM SPEED LIMITS AND ENFORCEMENT

	60 km/h	80 km/h	100 km/h	Manual and Automated
				
NATIONAL SPEED LIMIT LAW	URBAN ROADS	RURAL ROADS	MOTORWAYS	SPEED ENFORCEMENT
Difference with Recommended Safe Systems Speeds	+ 30 km/h 6 times lower	+ 10 km/h 2 times lower	+ 10 km/h 1 times lower	Potential Decrease in Fatal Road Crashes from Enforcement of Safe System Speed Limits











MAJOR SPEED CALMING MEASURES BEING IMPLEMENTED IN MONGOLIA:

 NARROWING	 VERTICAL DEFLECTIONS	 HORIZONTAL DEFLECTION	 BLOCK OR RESTRICT ACCESS
Include lane narrowings by extending sidewalks, curb extensions, pedestrian refuges etc.	Include speed bumps, humps, cushions, tables, raised pedestrian crossing, variation in ride surface etc.	Used to make vehicles swerve slightly, include chicanes, pedestrian refuges, chokers etc.	Include median diverters, closing streets to create pedestrian zones, cul-de-sacs etc.

SAFE VEHICLES Ref: 1,8

Universal deployment of improved vehicle safety technologies for both passive and active safety through a combination of harmonization of relevant global standards, consumer information schemes and incentives to accelerate the uptake of new technologies will reduce road crash fatalities significantly.

VEHICLE REGISTRATION, STANDARDS AND IMPORT REGULATIONS

841,537		5.1%		COUNTRY COMPLIANCE TO THE UN VEHICLE SAFETY REGULATIONS							
TOTAL REGISTERED VEHICLES AS OF 2016	MOTORIZED 2/3 WHEELERS AS OF 2016	FRONTAL AND SIDE IMPACT (Reg. 94, 95)		MOTORCYCLE ANTI-LOCK BRAKING SYSTEM (Reg. 78)		PEDESTRIAN PROTECTION (Reg. 127)		ELECTRONIC STABILITY CONTROL (Reg. 140)		SEAT BELTS AND ANCHORAGES (Reg. 16, 14)	
	Regulated		10 Yrs.		No		Yes		No		
REGULATION OF IMPORT OF USED VEHICLES		IMPORT AGE LIMIT		TAXATION BASED LIMITS		IMPORT INSPECTIONS		PERIODIC INSPECTION			

SAFE ROAD USERS Ref: 1.8

The key behavioral risk factors for road crash injuries are drunk driving, non-use of helmets, seat-belts or child restraint, and speeding. Establishing and enforcing laws to address these risk factors is effective in reducing road crash fatalities and their associated injuries.

NATIONAL SEATBELT, DRINK DRIVING AND HELMET LAWS (WHO, 2018)

PILLARS								Not restricted		18 yrs.	
	NATIONAL SEATBELT LAW	DRIVER	FRONT	BACK	MOTORCYCLE HELMET LAW	HELMET STANDARDS	MOTORCYCLE OCCUPANT AGE RESTRICTION		LEGAL MINIMUM DRIVING AGE		
			<0.04		<0.04	<0.04		Approx. 25.0%			
	NATIONAL DRINK DRIVING LAW	IS LAW BAC BASED?	GENERAL POPULATION		YOUNG DRIVERS	PROFESSIONAL DRIVERS	RANDOM DRINK DRIVING TESTS	% OF ROAD CRASH FATALITIES INVOLVING ALCOHOL			
BLOOD ALCOHOL CONCENTRATION (BAC) LIMITS (g/dl)											

POST CRASH CARE Ref: 1.8,9

Good post-crash care reduces deaths and reduces disability and suffering for road crash survivors. The emergency medical care system elements and processes need to be effective to attain this objective.

PILLAR 6	National, Multiple Numbers		National		COUNTRY HEALTH COVERAGE INDEX - SDG		63	EXPENDITURE ON HEALTHCARE AS % OF GDP		4%
	NATIONAL EMERGENCY CARE ACCESS NUMBER		TRAUMA REGISTRY SYSTEM		Target 3.8; Target - 100					
Mongolia has several emergency numbers. These are 105 (General); 102 (Police); 103 (Ambulance).										

REFERENCES

1. Global Status Report on Road Safety 2018. World Health Organization; 2. Institute for Health Metrics and Evaluation (IHME). GBD Results Tool. Seattle, WA: IHME, University of Washington, 2015; 3. Serious injuries have been calculated assuming a ratio of 15:1 (15 serious injuries for every death). This estimation broadly falls in the range of 30:1 in high income countries to 10:1 in low- and middle-income countries as crashes tend to be more fatal in the later context. 4. Vaccines for Roads, International Road Assessment Programme (iRAP). Available from <https://www.vaccinesforroads.org/>; 5. World Bank Databank for Development Indicators; 6. M.H. Cameron, R. Elvik. 2010. Nilsson's Power Model connecting speed and road trauma; 7. Austroads. Balance between harm reduction and mobility in setting speed limits; 8. UNEP-ITC Background Paper on Used Vehicles Globally and Various Media Sources (Wikipedia and vehicle import websites); 9. 2018 World Health Statistics, WHO.

A reminder:



The Global Road Safety Partnership is hosted by:



Every **24** someone dies
on the road
SECONDS

A reminder:



The Global Road Safety Partnership is hosted by:



**Your decisions and
actions can help
protect everyone as
they use the road
network in your
country**



GLOBAL ROAD SAFETY PARTNERSHIP SECRETARIAT



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