XXVIITH WORLD ROAD CONGRESS PRAGUE 2023

PIARC

THE NEED FOR A SUSTAINABLE KNOWLEDGE AND RESEARCH INFRASTRUCTURE IN LMICS.

WORKSHOP: BOOSTING ROAD SAFETY IN LMICS

DR. HANS GODTHELP

CO-CHAIR WG ROAD SAFETY IN LMICS

ROAD SAFETY FOR ALL, THE NETHERLANDS

WORKSHOP: BOOSTING ROAD SAFETY IN LMICS

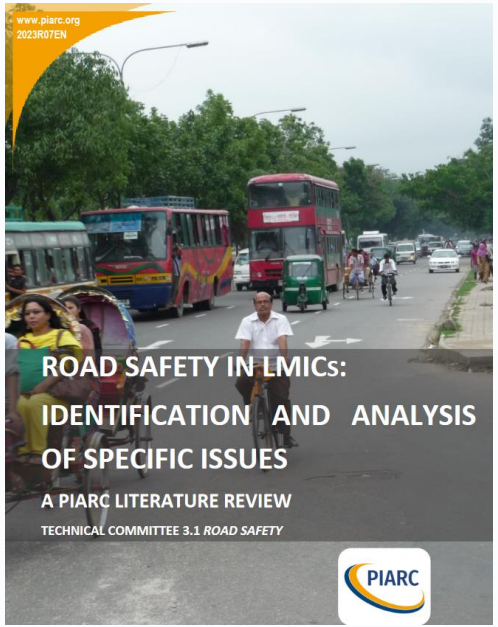
PIARC TC ROAD SAFETY 3.1.

THE NEED FOR A SUSTAINABLE KNOWLEDGE AND RESEARCH INFRASTRUCTURE IN LMICS.

- **BACKGROUND**
- **PRESENT APPROACH**
- **PRESENT POSITION AND INITIATIVES**
- **ZIPPER MODEL**
- **SUGGESTIONS..**

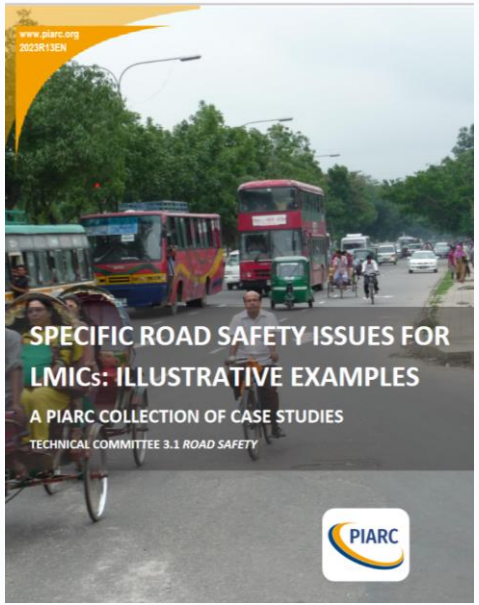
WORKSHOP: BOOSTING ROAD SAFETY IN LMICS

PIARC TC ROAD SAFETY 3.1



OUR TASK:

- **REVIEW LITERATURE**
- **CASE STUDIES**



WORKSHOP: BOOSTING ROAD SAFETY IN LMICS

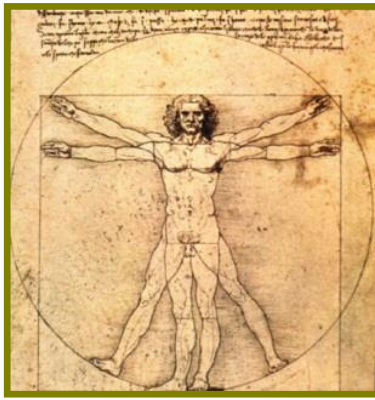
PIARC TC ROAD SAFETY 3.1

THE FOLLOWING MEMBERS OF WORKING GROUP 3.1.1 PARTICIPATED IN THE PREPARATION OF THE WG REPORTS:

John Barrell, Andrew Burbridge, Stephanie Davy, Hans Godthelp, Michael S. Griffith, Gael Italiano, Leszek Kania, Paulin Kouassi, Ahmed Ksentini, Andrea Pimentel Rivera, Steven Robertson

WORKSHOP: BOOSTING ROAD SAFETY IN LMICS

PIARC TC ROAD SAFETY 3.1



12 ISSUES at 3 LEVELS

Strategical

I. SDG's: integral approach
II. Road safety culture
III. Road safety management and leadership
IV. Building road safety expertise and science

Tactical

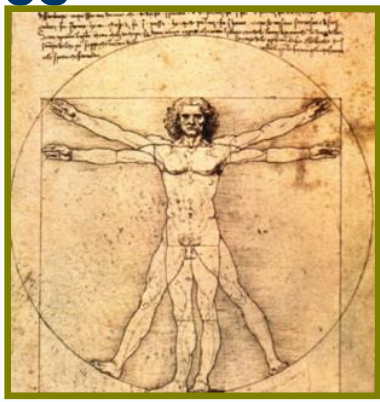
V. The transportation system as a whole
VI. City design, architecture, land use, rural planning.
VII. Selecting cost effective measures
VIII. Legislation and enforcement

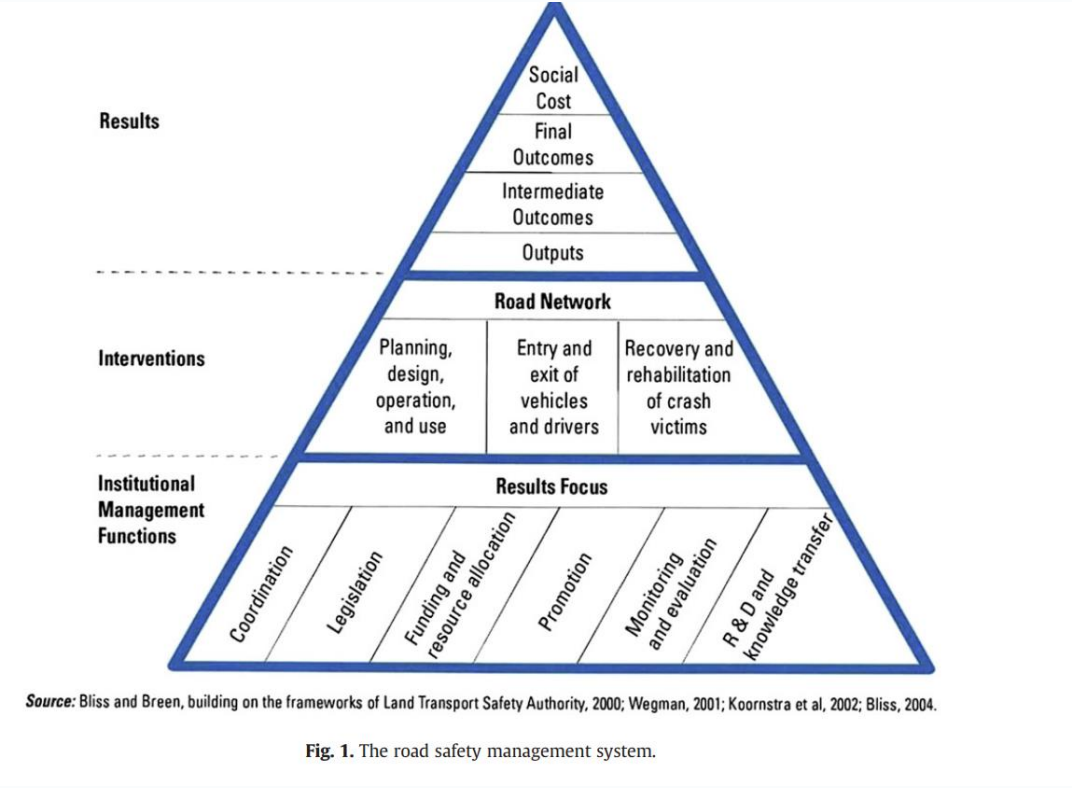
Operational

IX. Speed
X. Sustainable safe roads
XI. Safe vehicles
XII. Post crash health care

WORKSHOP: BOOSTING ROAD SAFETY IN LMICS

PIARC TC ROAD SAFETY 3.1.

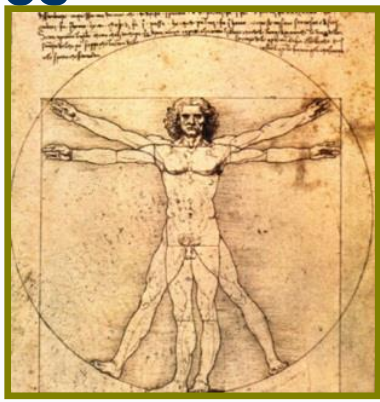




Source: Bliss and Breen, building on the frameworks of Land Transport Safety Authority, 2000; Wegman, 2001; Koornstra et al, 2002; Bliss, 2004.

Fig. 1. The road safety management system.

PIARC TC ROAD SAFETY 3.1.



Special issues for LMICs: an example:

IV. Building road safety expertise and science

LMICs to:

- develop university road safety programs at bachelor and master level
- build research capacity in centers of road safety excellence
- connect to regional road safety observatories
- connect to international network of universities and centers of excellence

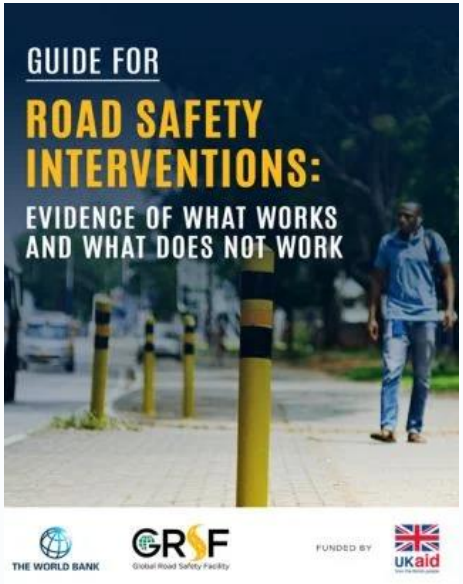
WORKSHOP: BOOSTING ROAD SAFETY IN LMICS

PIARC TC ROAD SAFETY 3.1.

Capacity building: the present appoach:

Providing safe system knowledge through:

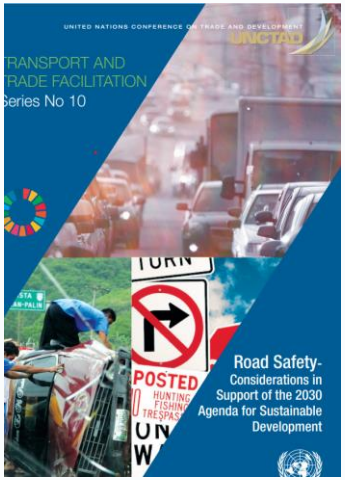
Courses, webinars, workshops, campaigns, …
Guides, manuals, …
Audit, inspection, star rating, …..



Johns Hopkins/GRSP, Vision Zero Academy, iRAP, IRF, ITF/OECD, DRSC/Delft University, WHO, UNs, NCAP, Worldbank/GRSF, WRI, FIA F, PIARC, NGO's …..

WORKSHOP: BOOSTING ROAD SAFETY IN LMICS

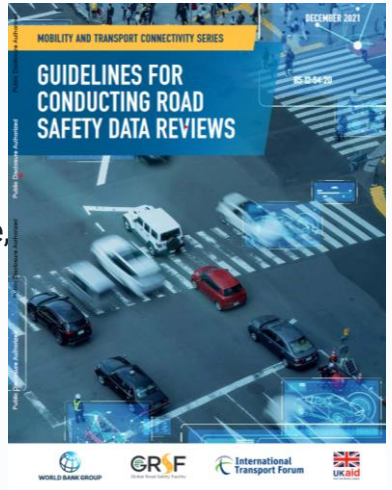
PIARC TC ROAD SAFETY 3.1.



Capacity building : the present approach:

Providing safe system knowledge through:

Demonstration programs
Lead agency development
Road safety data systems



BIGRS, Institute for Transportation and Development Policy, iRAP, ratings,Global Designing Cities Initiative, UNRSF: Alliance of Cities for Road Safety (ACRoS), ITF/OECD, Worldbank/GRSF, Ten steps program Tanzania, NCAP, local NGO programs, IRF-LEARN Coalitions

PIARC TC ROAD SAFETY 3.1.

Safety Science 2021, Haghani et al

Road safety research in the context of low- and middle-income countries: Macro-scale literature analyses, trends, knowledge gaps and challenges

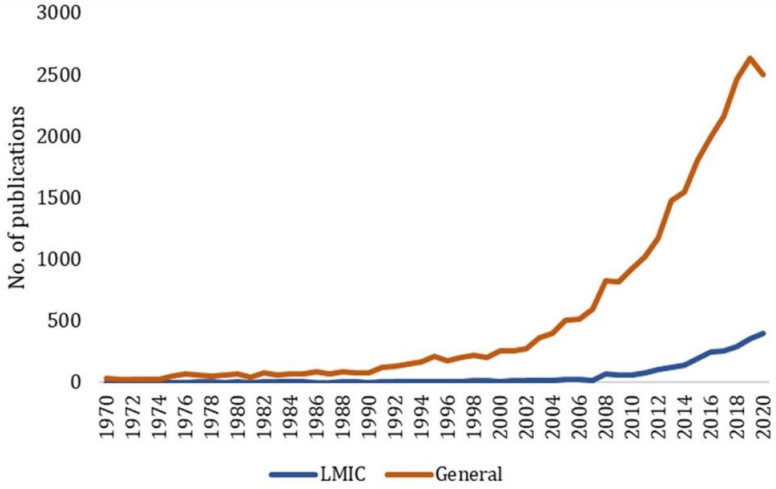


Fig. 5. Number of documents from authors of different countries to the general road safety literature (top) and LMIC subset (middle). The bottom figure shows the number of such papers over time since 1970.

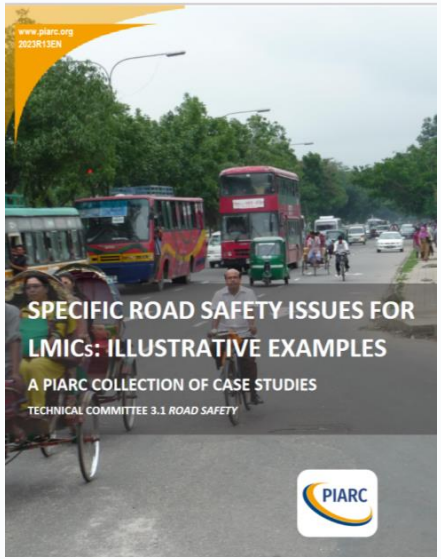
WORKSHOP: BOOSTING ROAD SAFETY IN LMICS

PIARC TC ROAD SAFETY 3.1.

SPECIFIC ROAD SAFETY ISSUES FOR LMICS:
ILLUSTRATIVE EXAMPLES
A PIARC COLLECTION OF CASE STUDIES
TECHNICAL COMMITTEE 3.1 *Road safety*

18 evidence based, successful cases:

National authors	2 cases
International authors	7 cases
Mix	9 cases



WORKSHOP: BOOSTING ROAD SAFETY IN LMICS

PIARC TC ROAD SAFETY 3.1.

Sustainability Review 2019

Road Safety in Low-Income Countries: State of Knowledge and Future Directions

Shahram Heydari 1,*, Adrian Hickford 1 , Rich McIlroy 1, Jeff Turner 2 and Abdulgafoor M. Bachani 3

Road safety in low-income countries (LICs) remains a major concern. Given the expected increase in traffic exposure due to the relatively rapid motorisation of transport in LICs, it is imperative to better understand the underlying mechanisms of road safety. This in turn will allow for planning cost-effective road safety improvement programs in a timely manner. With the general aim of improving road safety in LICs, this paper discusses the state of knowledge and proposes a number of future research directions developed from literature reviews and expert elicitation. Our study takes a holistic approach based on the Safe Systems framework and the framework for the UN Decade of Action for Road Safety. We focused mostly on examining the problem from traffic engineering and safety policy standpoints, but also touched upon other sectors, including public health and social sciences. We identified ten focus areas relating to (i) under-reporting; (ii) global best practices; (iii) vulnerable groups; (iv) disabilities; (v) road crash costing; (vi) vehicle safety; (vii) proactive approaches; (viii) data challenges; (ix) social/behavioural aspects; and (x) capacity building. Based
on our findings, future research ought to focus on improvement of data systems, understanding the impact of and addressing non-fatal injuries, improving estimates on the economic burden, implementation research to scale up programs and transfer learnings, as well as capacity development.

Our recommendations, which relate to both empirical and methodological frontiers, would lead to noteworthy improvements in the way road safety data collection and research is conducted in the context of LICs

WORKSHOP: BOOSTING ROAD SAFETY IN LMICS

PIARC TC ROAD SAFETY 3.1.

Journal of Injury & Violence Research · July 2019

Complexities of road safety interventions in Low and Middle Income Countries (LMICs) posed a major challenge in achieving decade goal-lessons for the next span

AKM Fazlur Rahman,*, Farah Naz Rahman, Centre for Injury Prevention and Research, Bangladesh

Background: Most of the Low and Middle Income Countries in the world unsucessful to reduce the fifty percent of theRoad Traffic Injury (RTI) deaths, which was target set in the last decade goals (2011-2020). This failure is largelydue to the result of complexities of the problem itself, its causes, designing and implementing interventions andevaluation of Road Traffic Injury in low resource settings. The paper aimed to explore the nature of thesecomplexities and provide a direction to address the RTIs efficiently in next decade in LMICs.Methods: Review of literatures related to the RTI prevention in LMICs especially nature of problem, factors related toRTIs and policy & interventions. Special emphasis was given on the complexity of road transport system, perceptionof road safety issues, road user's behavior, public health system and policy maker's behavior in LMIC context. TheGlobal Status Reports on Road Safety were critically analyzed to explore the complexities of road safety related tolow resources.Results: The complexities related to the RTI prevention in LMICs are mostly expressed on its i) incorrect perception ofthe problem, ii) factors related to RTIs, iii) multi-dimensional preventive approach, iv) inequalities in health and well-being, v) complicated evaluation modalities. Factors linked to incorrect perception of RTI problem are insufficientinformation, societal insights about the RTIs and health system's inability to capture the RTI events. Complex riskfactors of RTIs related to demographic, social, environmental, and economic and inequity that exists in low resourcesettings and most of them are interlinked. There is no one- single approach effective for RTI prevention.Conclusion: Although RTI is a leading killer of productive peoples in many LMICs, it failed to create enoughimportance in national and global policy issues as magnitude and causes and interventions of RTIs are unclear, andcomplex. So the complex RTI landscaping hinders in priority setting, resource allocation and prevention efforts. It is high time to reinvent new strategies beside existing preventive approach for RTIs prevention considering all these complexities in LMICs through intensive research.

WORKSHOP: BOOSTING ROAD SAFETY IN LMICS

PIARC TC ROAD SAFETY 3.1.

World Conference on Transport Research – WCTR 2019, Mumbai, 26-30 May 2019

Combatting the Road Safety Burden in the Developing World: The Case of South Africa

Marianne Vanderschuren, Melvin Arendse, Tanya Lane-Visser, and Aliasgher Janmohammed
University of Cape Town, Centre for Transport Studies, Rondebosch, South Africa
Western Cape Government, Transport and Public Works, Cape Town, South Africa

An estimated 1.25 million people died globally, as a result of road traffic crashes, in 2013 (WHO, 2015). The majority of these deaths occur in low- and middle-income countries (Peden et al., 2004). Low-income countries have fatality rates that are more than double those in high-income countries (WHO, 2015) and, although global fatalities have plateaued since 2007, the fatalities in low- and middle-income countries are still increasing. According to Perel et al. (2007), road safety in low- and middle-income countries is a neglected research area. This paper aims to assist in closing this research gap. The paper starts with an international road safety comparison on a per country level, followed by a more detailed analysis of different South African provinces. All provinces have shown an increase in population, while six out of nine provinces have absolute and relative (per 100 000 population) reductions in road fatalities between 2005 and 2015. Focusing on the province that reduced road fatalities most, i.e. the Western Cape, road safety measures were proposed, and scenario calculations carried out. The results provide valuable insights regarding the road safety status-quo in South Africa and identifies the most cost-effective road safety measures for the Western Cape Province, going forward. Despite the decreasing road fatalities being the best performing province in terms of road safety management in South Africa, the Western Cape still needs to find ways to reduce road fatality rates. The effectiveness of specific measures was compared through combining a scenario approach with the CBA method. When taking the required investments and operational costs into account, it appears that rumble strips, improved lighting and the implementation of motorcycle-based emergency services are the most promising, cost effective road safety measures to be implemented in the province. The authors conclude that great improvements in road safety in South Africa are required. A pathway to achieve this would be for the worst performing provinces to start emulating the road safety management practices of Gauteng and the Western Cape. Whilst the majority of provinces still have to catch up, the best achievers should still continue to improve their status, as there is still a lot of room for improvement to catch up with international best practice. It should, however, be borne in mind that local factors (such as the population density, motorization levels and modal split in a province) can significantly impact the optimal road safety management measures to be applied in that province and, consequently, the road safety gains that can be achieved. In other words, each province will require a tailor-made approach to improve its road safety levels. A detailed, localized analysis of road safety measures (such as the one presented

WORKSHOP: BOOSTING ROAD SAFETY IN LMICS

PIARC TC ROAD SAFETY 3.1.

Zipper model

Henk Stipdonk, personal communication

Evidence based policy

Evidence based research

Road safety strategy

Research institutes
Centres of excellence

Road safety lead agencies
Ministries
Observatories

University curricula

XXVII[TH] WORLD ROAD CONGRESS PRAGUE 2023

PIARC

WORKSHOP: BOOSTING ROAD SAFETY IN LMICS

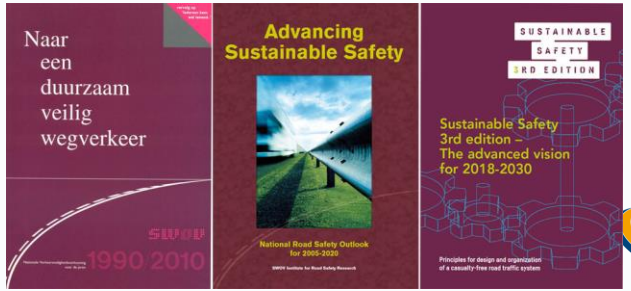
PIARC TC ROAD SAFETY 3.1.

Castle Oud Poelgeest (1990)

Road safety fellows conference

University colleagues
Lead agency colleagues
Research institutes colleagues

Result: purple book on Sustainable road safety



WORKSHOP: BOOSTING ROAD SAFETY IN LMICS

PIARC TC ROAD SAFETY 3.1.

Need for a sustainable LMIC knowledge and research infrastructure

Research institutes
Centres of excellence

Universities curricula

Road safety lead agencies
Ministries

Road safety data

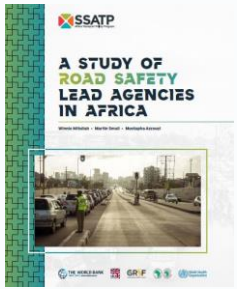
Community, police, hospitals, schools, parents, ngo's

WORKSHOP: BOOSTING ROAD SAFETY IN LMICS

PIARC TC ROAD SAFETY 3.1.

Variety of Initiatives

SSATP/AfDB



University of Malawi Road Safety Research Unit
https://www.rosaf.org/projects.php

University of Rwanda: center of excellence

Road safety observatories

AfroSAFE
Virtual Centre of Excellence
Uni Dar Es Salaam

TRIP CENTRE

TRANS SAFE
TRANSFORMING ROAD SAFETY IN AFRICA

MIROS
MALAYSIAN INSTITUTE OF ROAD SAFETY RESEARCH
ASEAN ROAD SAFETY CENTRE

XXVII[TH] WORLD ROAD CONGRESS PRAGUE 2023

PIARC

WORKSHOP: BOOSTING ROAD SAFETY IN LMICS

PIARC ROAD SAFETY 3.1.

WORKSHOP: BOOSTING ROAD SAFETY IN LMICS

PIARC TC ROAD SAFETY 3.1.

SUMMARIZING:

THE NEED FOR A SUSTAINABLE KNOWLEDGE AND RESEARCH INFRASTRUCTURE IN LMICS.

WORKSHOP: BOOSTING ROAD SAFETY IN LMICS

PIARC TC ROAD SAFETY 3.1.

Summarizing:

Reinventing the wheel in LMICs?

No, safe system *principles* will also work in LMICs

However:

1) strong need to transfer safe system principles to solutions tested under local circumstances and culture

2) local professionals to be responsable for knowledge development, research and building a national road safety memory

WORKSHOP: BOOSTING ROAD SAFETY IN LMICS

PIARC TC ROAD SAFETY 3.1.

Summarizing:

Suggestions:

1) **Zipper model** to organize evidence based policy
   - University programs
   - Lead agency
   - Research institutes

2) **Special program** to build knowledge infrastructure
   - Capacity building conference
   - Extension of running programs
   - FERSI type of organization
   - Star rating for knowledge infrastructure
   - PIARC, WHO, UN, ITF,GRSF, ...

THE NEED FOR A SUSTAINABLE KNOWLEDGE AND RESEARCH INFRASTRUCTURE IN LMICS.

Thank you

Dr. Hans Godthelp

Road safety for all
The Netherlands
Co-chair PIARC WG 3.1.1
HG@roadsafetyforall.org