Switching to Vision Zero–thinking instead of finding the traffic rules offenders

Dago Antov

Professor on transport planning

Tallinn University of Technology, Estonia

IMPROVING THE SAFETY IS ALWAYS A POSITIVE ACTION

NOBODY IS INTENDED TO WORSEN THE SAFETY...

...BUT UNDERSTANDING THE SAFETY IS RATHER DIFFERENT

- Who is guilty
- WHO IS RESPONSIBLE?
- How to improve safety?

- There are very different attitudes and views about safety

How can we improve safety?

Public understanding

- Legislation- let's put more severe fines
- Enforcement- „there is no enough police onthe roads"
- Better roads, less limitations „lets allow higher speeds, as the roads and vehicles are better"
- Let's eliminate „bad guys" in the traffic. But how?
- What about normal road users? …and traffic management? …and road design/maintenance, etc?
  - Can the legislation help here?
  - If yes– how much and how to create a „good law" or good standards?

Who is guilty?

It is usual that we are trying to find the ONE AND ONLY REASON of accident occurance!

- From the legal point of view we should separate legal guiltyness from accident causation
- **If everything is set due to the law or standards, it does not guarantee the safe traffic!**

- Every accident is the consequence of some mistaken behaviour
  - Mistakes or misbehaviour of road users
    - Overspeed, wrong driving, drunk driving, taking additional risks, …
      - > **Overestimating your own driving capabilities**
  - But infrastructure- bad, dangerous traffic maangement solutions?
    - Which might be designed due to the standards, thus legal ones?

Estonian Traffic Act

Chapter 2
TRAFFIC RULES

Division 1 General Provisions

§ 14. Road traffic rules

(1) The right-hand rule of the road applies to vehicular traffic.

(2) All road users, managers of traffic and other persons must follow the requirements of the traffic legislation, exercise carefulness and cautiousness in traffic and ensure the smoothness of traffic in order to prevent danger and causing damage.

…

(7) Nobody may endanger or obstruct traffic by their acts or omissions. A person causing a danger must take all measures in their power to eliminate the danger or reduce its harmful effects.

Enforcment of traffic regulations

Accepted generally with the focus of road users

- Speeding
- Drunk driving
- Red light infringement
- Seat belt usage
- ....

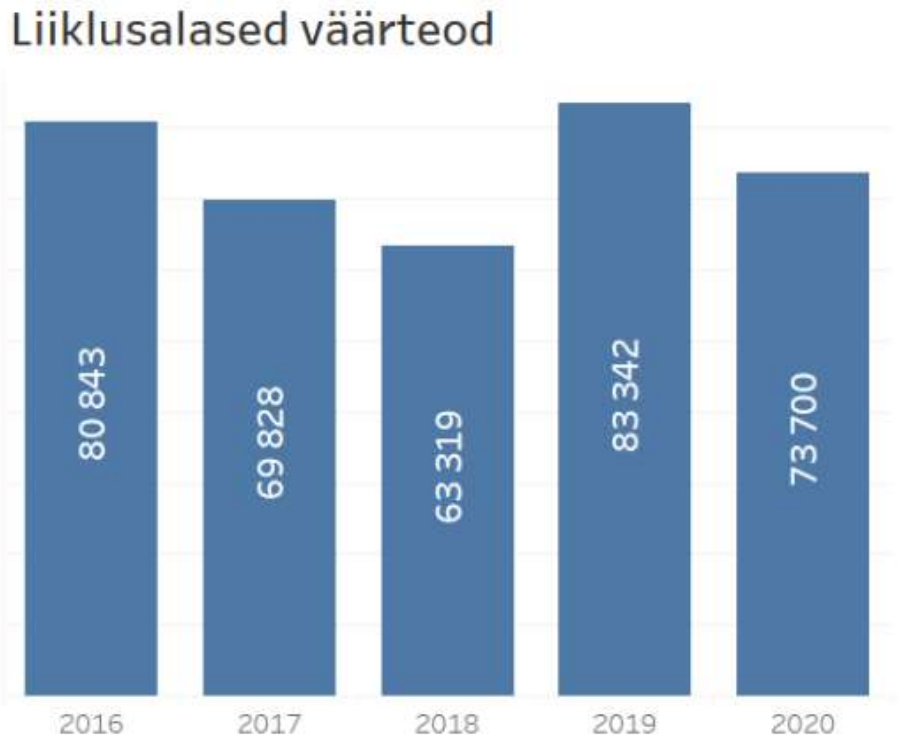
Manual enforcement is often limited to manpower and suitable locations.

It's often does not follow neither the location, the period of the biggest risk or risky road user groups!

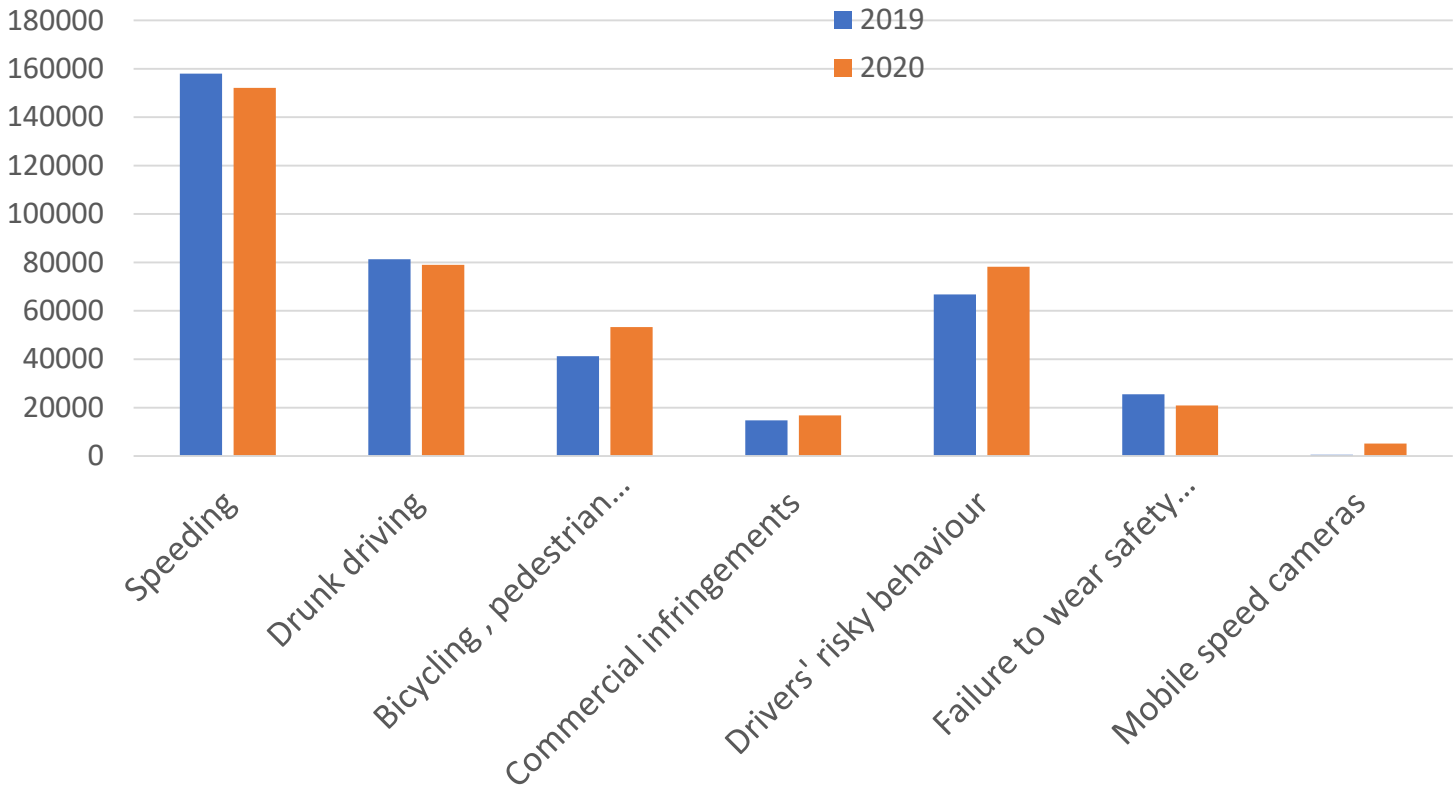
Automatic enforcement is 99% focusing on speeding and does not cover other road safety risks.

Enforcement - detected infringements

Estonia 2017-2020

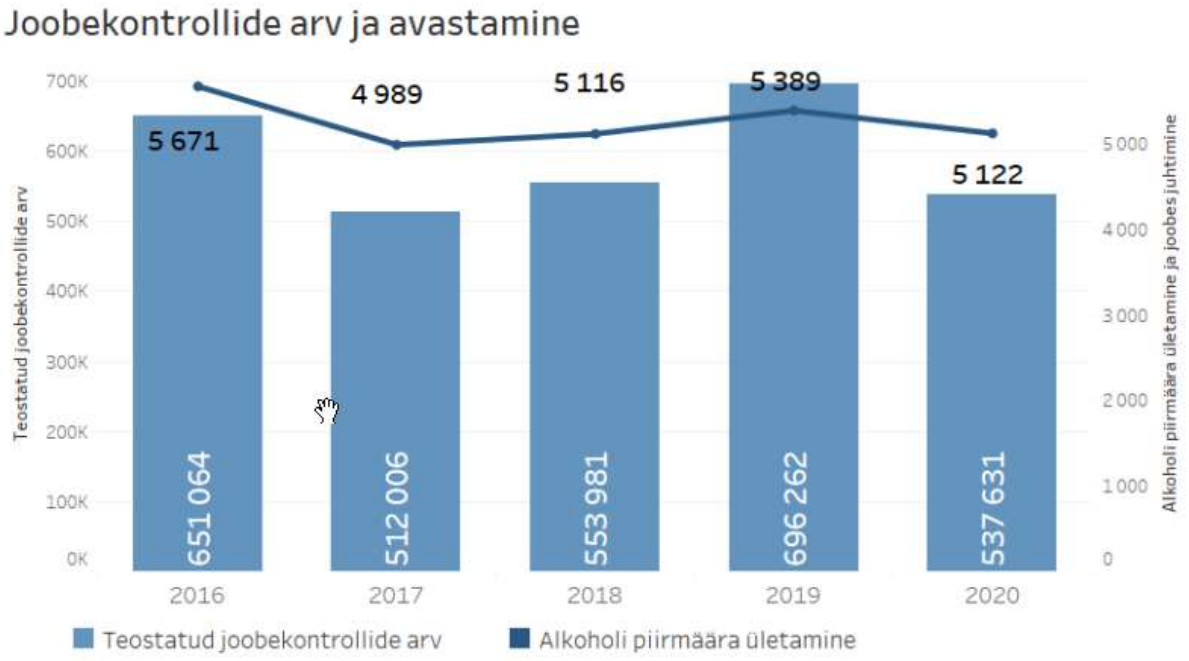


Detected infringements by type



Drunk driving

Number of drunk driving tests and offenders



Speeding offenders

Kiiruse rikkumised

Year	Kuni 20 km/h	21–40 km/h	41–60 km/h	Üle 60 km/h	Total	Automaatne
2019	21 332	19 634	1 413	202	42 581	94 932
2020	17 067	16 727	1 404	216	35 414	138 695
Change	-20,0%	-14,8%	-0,6%	6,9%	-16,8%	46,1%

Traffic behaviour monitoring
2001 - 2020

Key points:

- statewide observation study
- different safety performance indicators
- over 100 fixed observation places
- standardized data collection methods

Main objective - to **monitor behavioral changes**

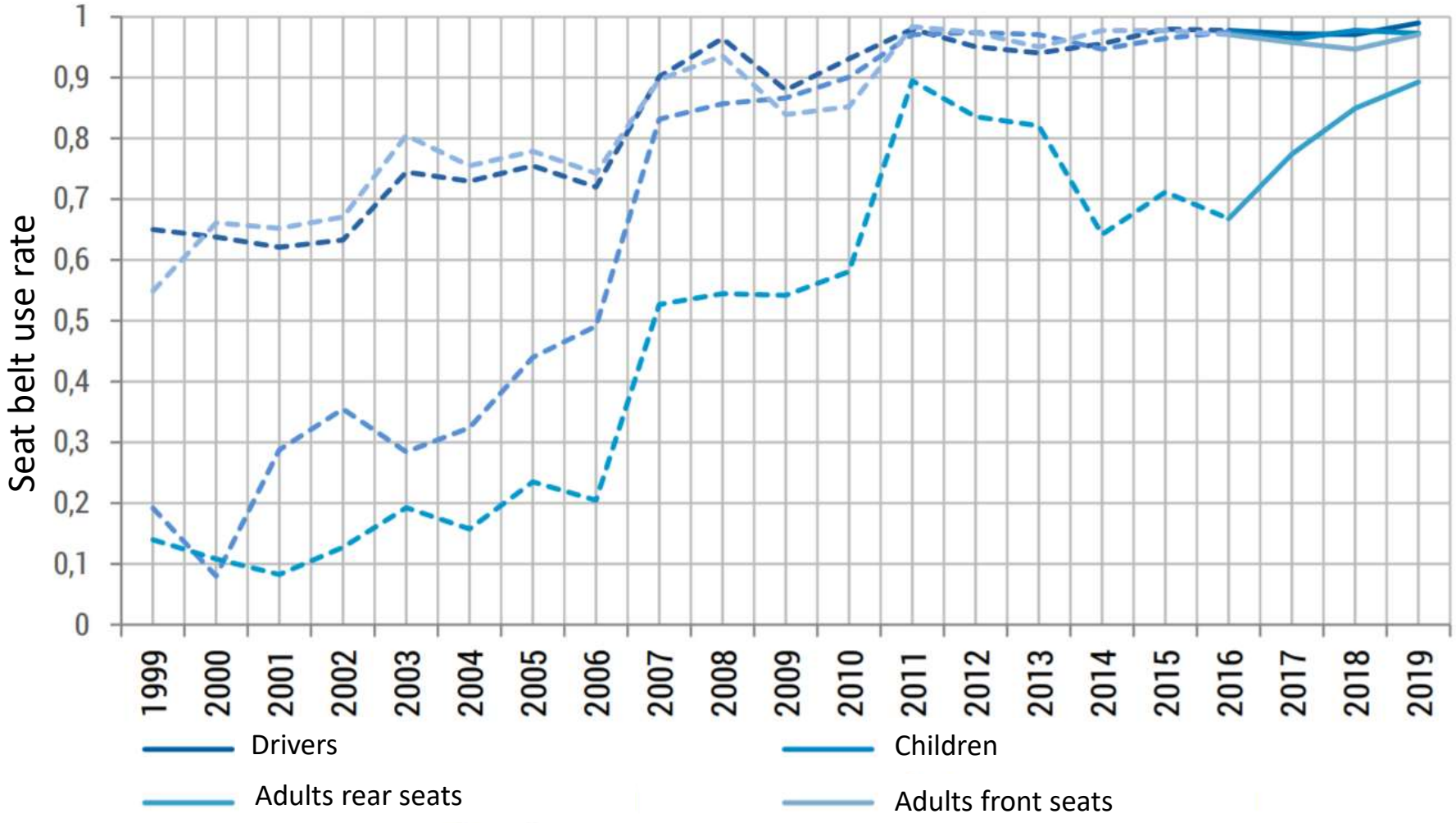
Source: Liikluskäitumise monitooring, Teede Tehnokeskus, 2020

Safety performance indicators
(average violation rates, 2019)

- Drivers' compliance with traffic signals:
  - Yellow – 49%
  - Red – 14%
- Pedestrians' compliance with traffic signals – 12%
- Giving way to pedestrians at uncontrolled crossings – 33%
- Using seat belts (front seats) – 3%

Source: Estonian Road Administration

Seat belt use rate in Estonia 2001 - 2019



Source: Estonian Road Administration

Rules offending-
is it only a case for road users?

- What about infrastructure and traffic management?

Example of traffic signs

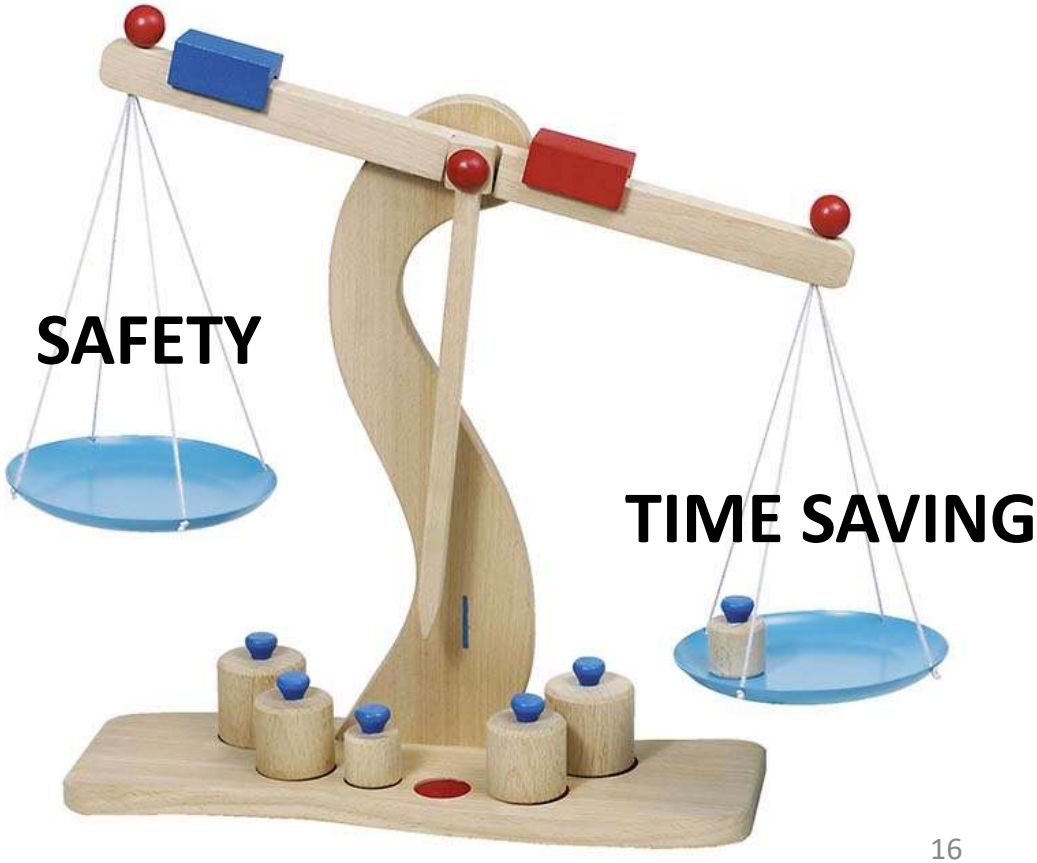
“Hard” and “soft” signs

- Hard:
- Weak

- “Cheap” signs:

“Hard” are often used for different purposes!

What is the right speed? For road users? To be accepted



„Introducing the 80 kph speed limit in Estonia will kill the life at rural areas...“

Citate from the discussion show at Estonian TV, 24.11,2020

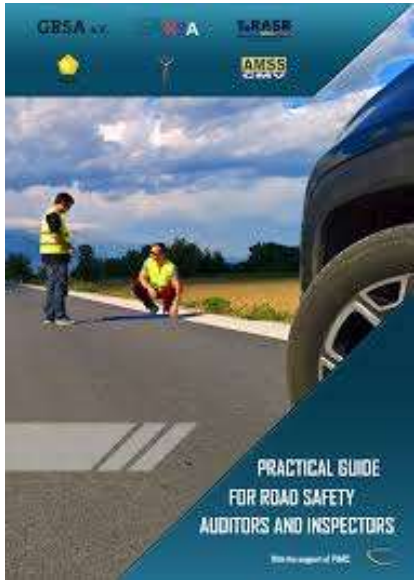
Standards for road engineering

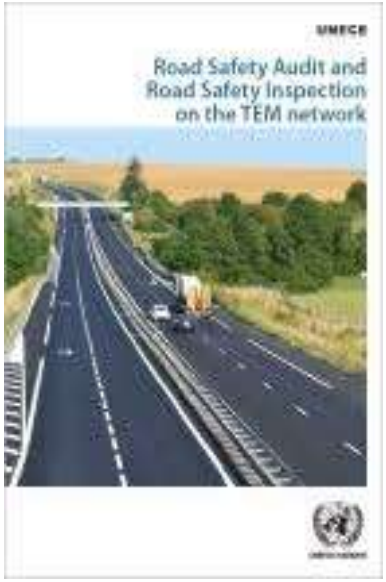
Do they guarantee safety?

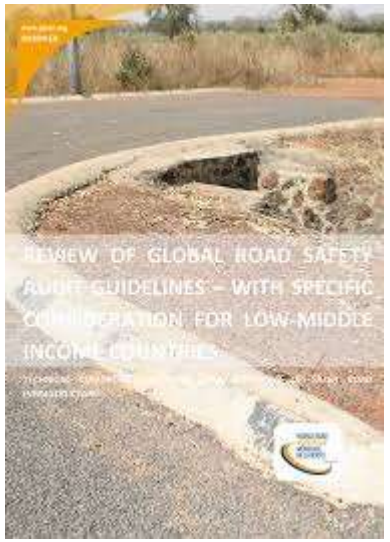
- Standards are flexible - the road engineering quality is highly dependent on designers expertise
  - We build/reconstruct only a very small part of the network- these sections are following the modern standards?
- What about the rest?
- How to assess safety on roads, which are not planned to reconstruct?

Road safety audits and inspection

- ... These procedures have proved to be one of the most cost beneficiary measures in the field of infrastructure safety







TRAFFIC MANAGEMENT

TRAFFIC MANAGER KNOWS WHAT THEY WANT!

1. Does the road user understands?

2. Does the road user accepts that logic?

3. Does the road user behaves as preseen?
    - Or perhaps other arguments are getting more important?

TRAFFIC MANAGEMENT SHOULD BE:

- SIMPLE AND EASY TO UNDERSTAND!
  - Road user is not a lawyer!
- LOGICAL!
  - Pedestrians are crossing the road where they look it logic for them, not where the traffic manager looks it feasible

Vision Zero

Preconditions:

- All humans make mistakes;
- Many road users break the rules.

  - If the road user makes a mistake, even by breaking the rules, the system must be developed in the way that the consequences are not fatal or even severe loss of health.

  - Thus- when planning the system, everybody must take account the possible mistakes which will take place - but the fatal or severe consequences could be avoided.

  - We should focus on human lives and serious injuries - even when the crashes and slight injuries cannot be avoided!

Conclusions

Enforcment is still necessary, but...

It remains to be the cat-and-mouse-game until we don’t introduce the main principles of **vision zero** approach are not generally introduced and accepted