



Sustainable Safety in the Netherlands

2nd UN Stakeholders Forum on Global Road Safety

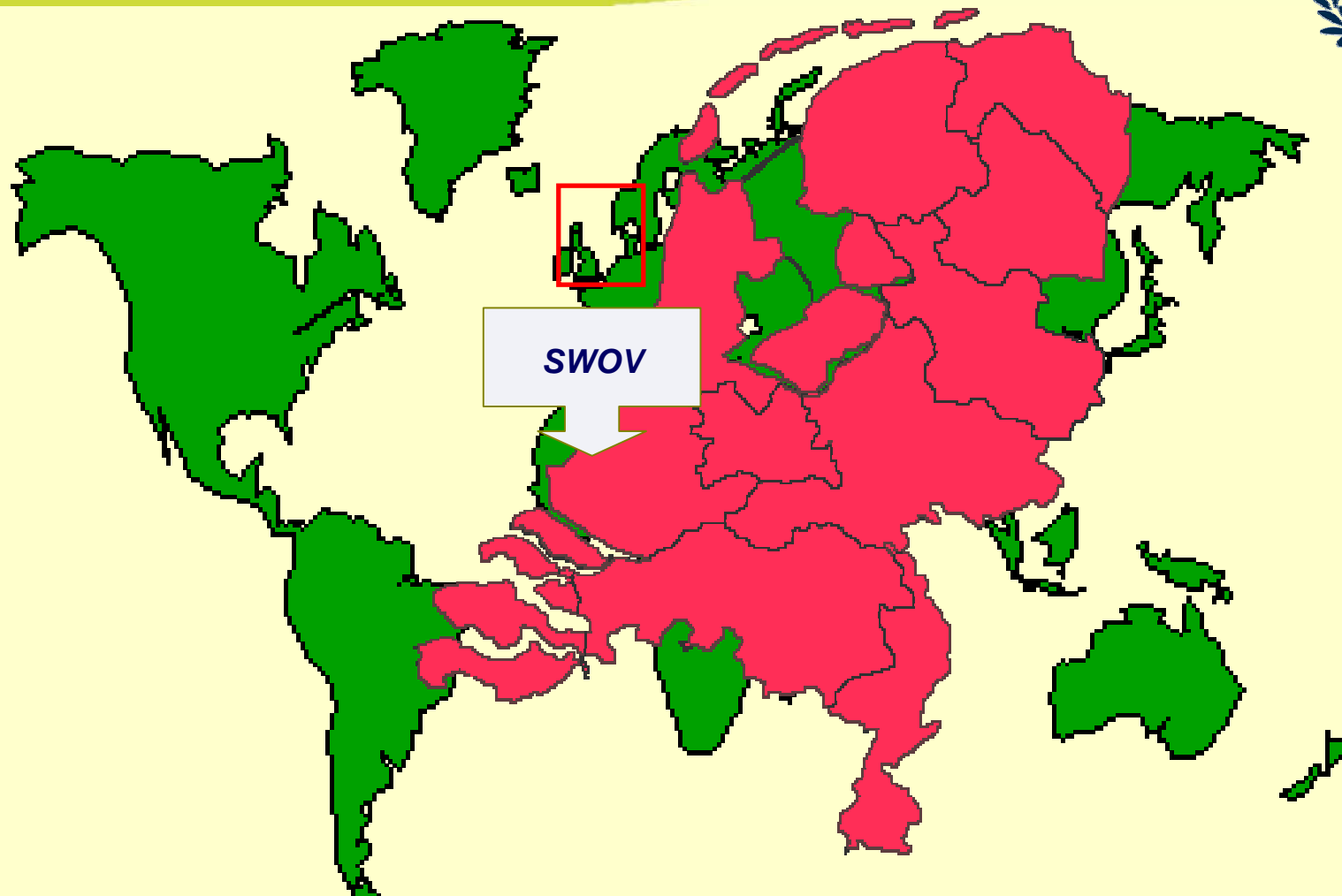
Fred Wegman

SWOV Institute for Road Safety Research

Where we are...

SWOV

INSTITUTE FOR
ROAD SAFETY RESEARCH



The Netherlands ...



A busy country indeed

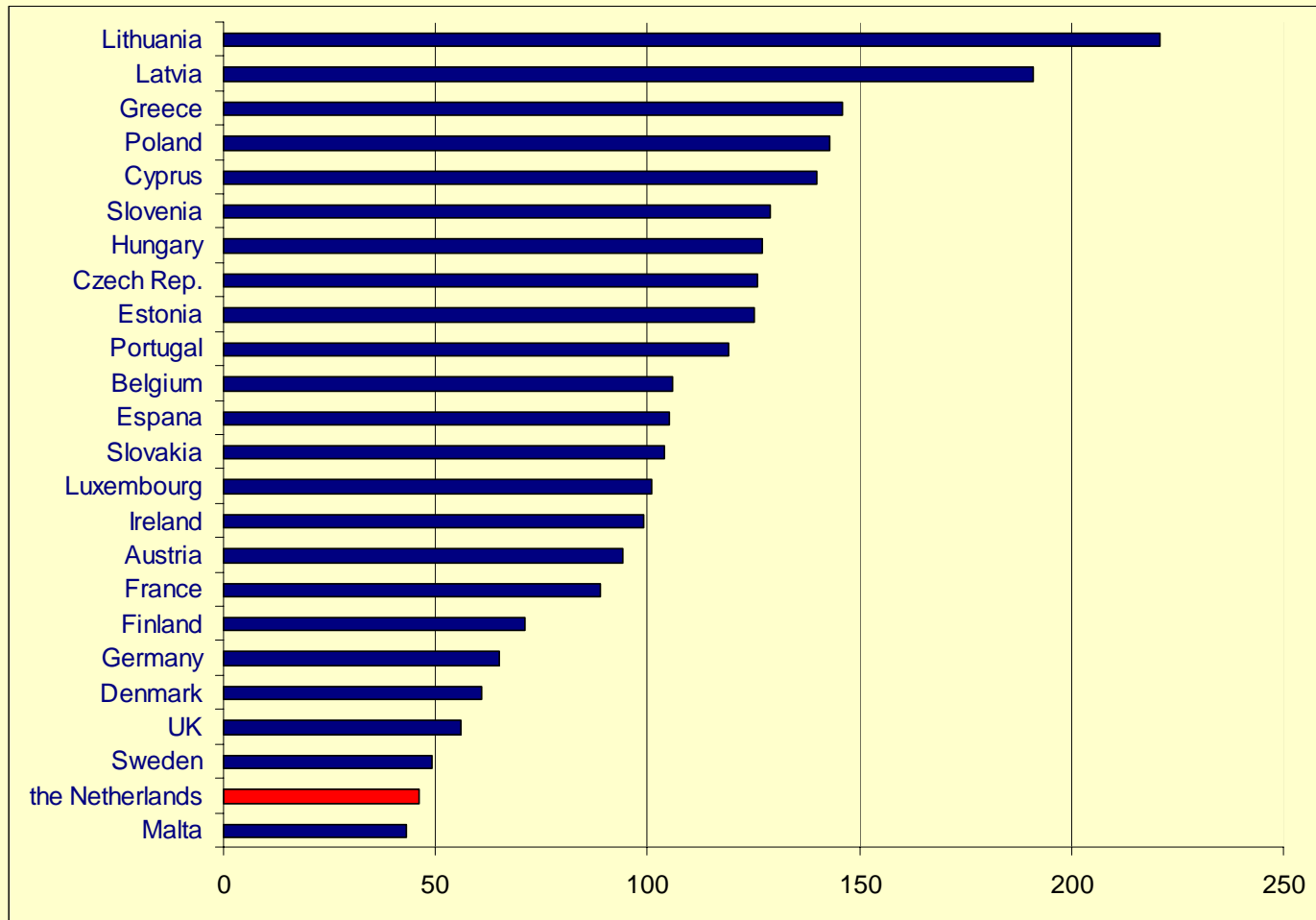




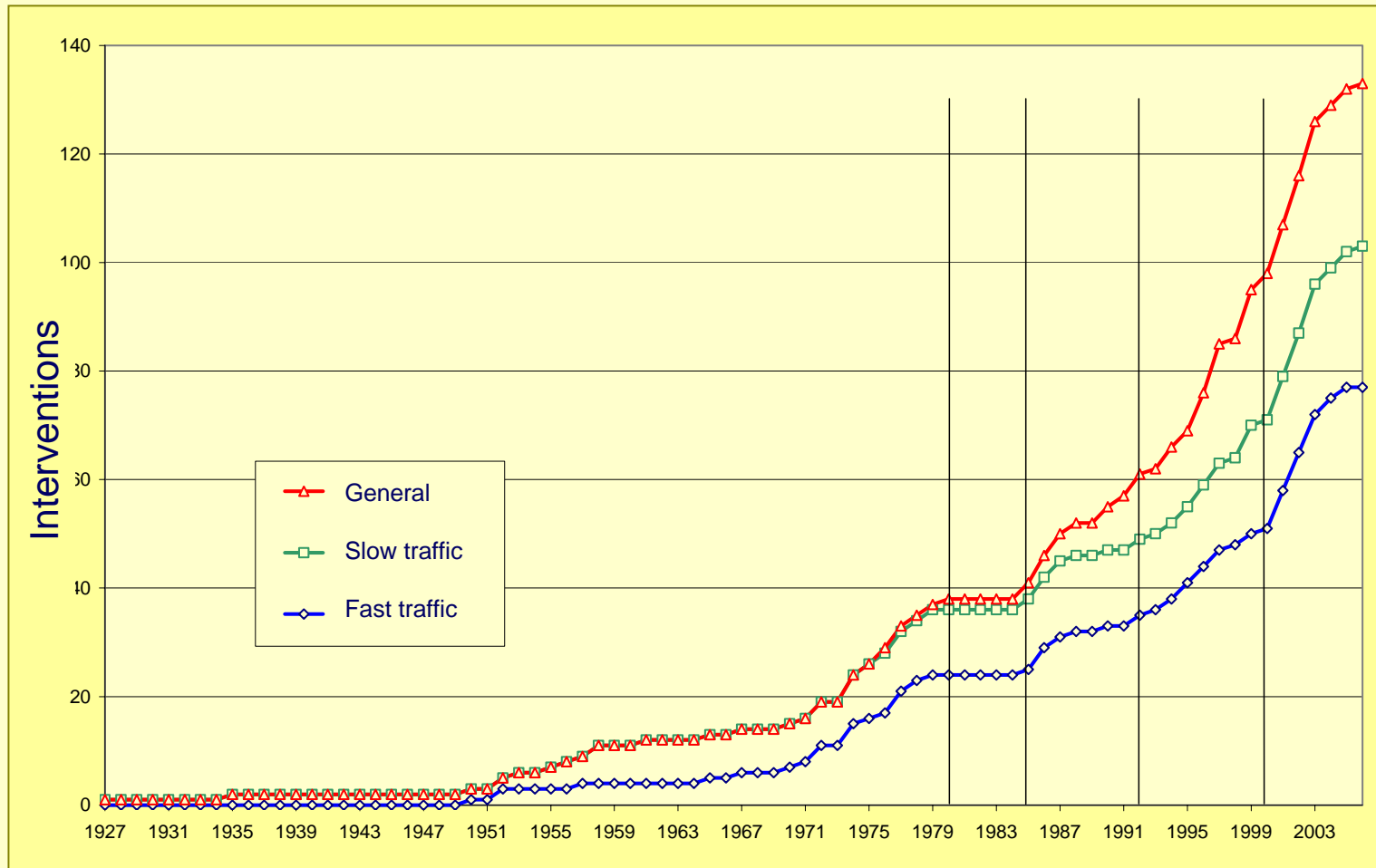
Road safety in the Netherlands

- Well developed system of safety legislation and (massive) enforcement
- Good safety quality of roads, especially for vulnerable road users, incl. traffic calming
- Well developed system of post-crash care

Fatalities per million inhabitants in the European Union (2005)



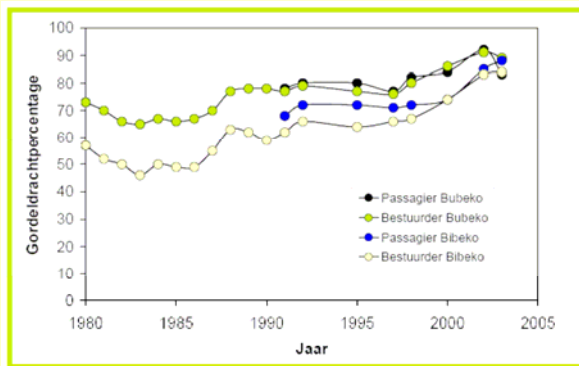
Road safety interventions over the years



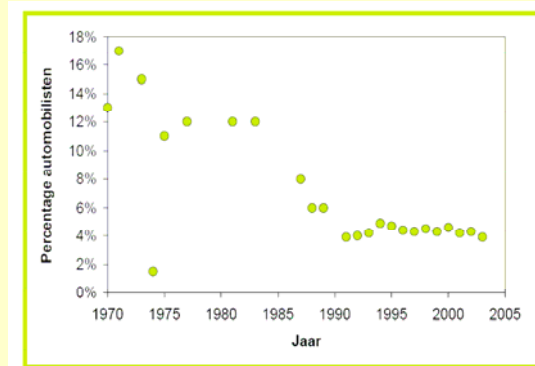
We are making progress ...

- On safety performance indicators (SPI's), e.g.

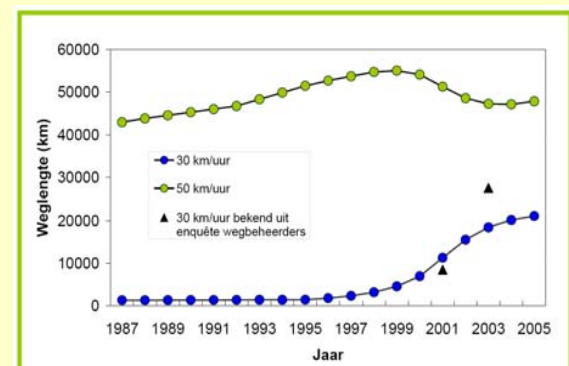
Seat belts



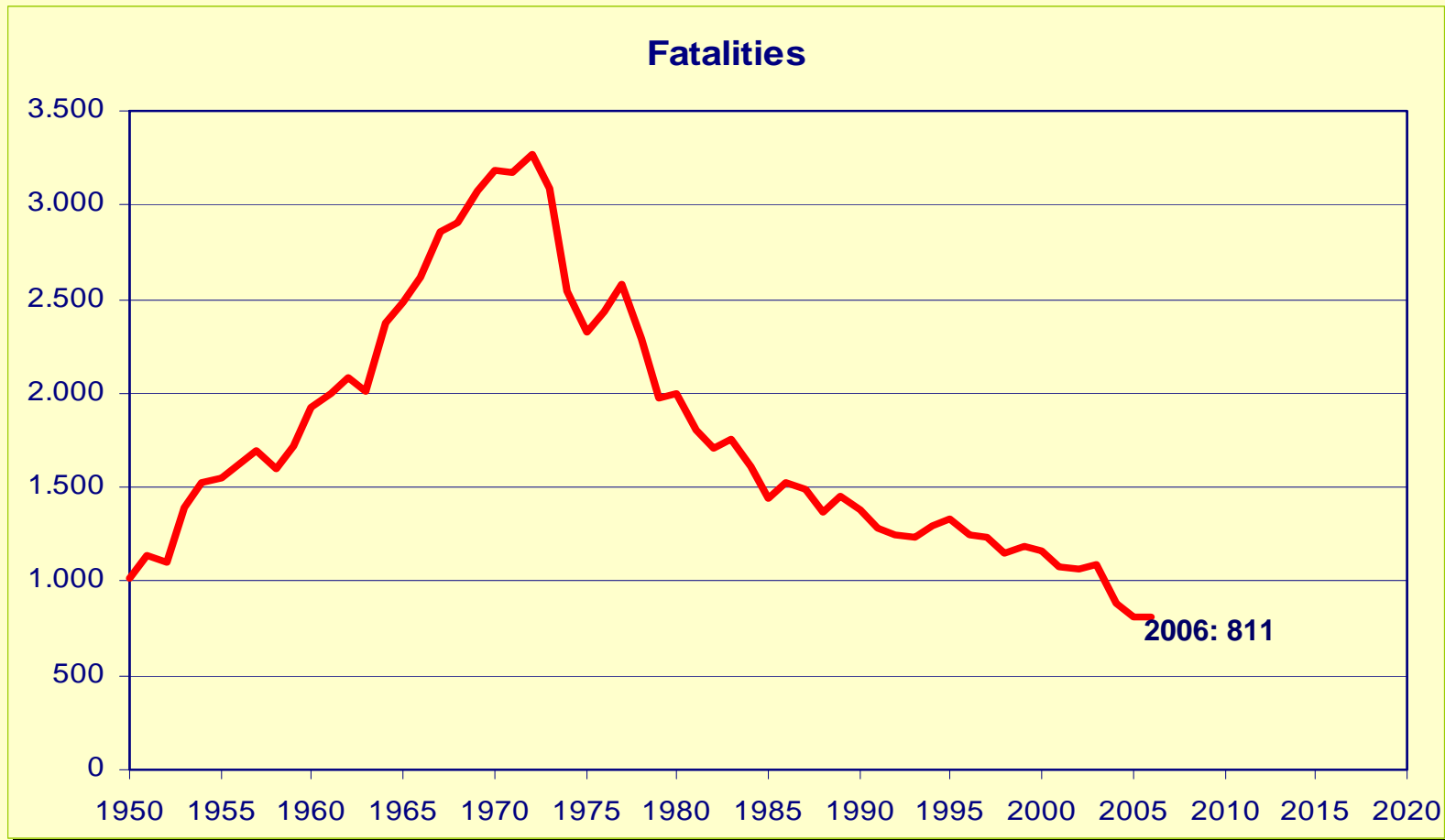
Drink driving



Speed management



Road fatalities in the Netherlands since 1950



However,

- We still wish to improve road safety, because
 - Economical costs 12 billion euro per year are substantial
 - We don't want to live with *preventable crashes*: we know the causes, we know what to do with cost beneficial investments
- Road safety targets for 2010 and 2020
- Results in the past are no guarantee for the future!!
- Next steps?



Traditional approach

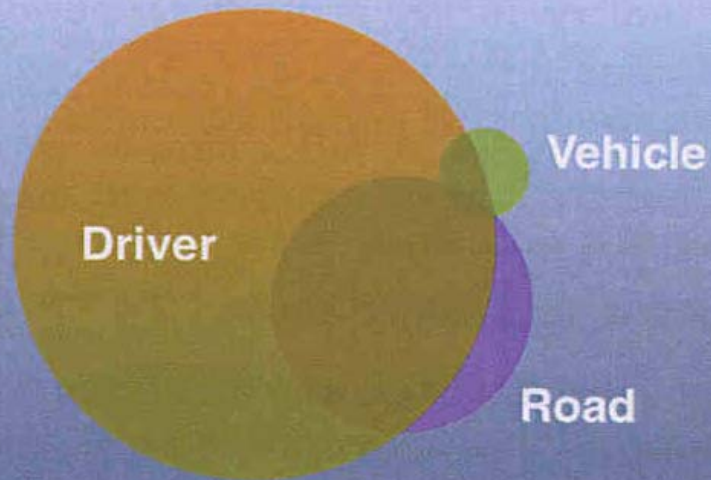
- Treat high risk groups and take cost-effective countermeasures, e.g.
 - Young novice drivers
 - Black spots
 - Vehicle inspection
 - Violators, recidivism

- Certainly progress can be made, but we reach a stage that this will be less effective/efficient

- We need a paradigm shift

Discussion on a paradigm shift

Relative contribution



'System' failures
driver / vehicle / road

Driver failures:
'excess'

Driver failures:
inexperience

Rod Kimber TRL (2003)



Our fundamental road safety problem

- Today's road traffic is *inherently* unsafe
- The road system of today has not been designed with safety in mind, as is the case with air transport or rail transport
- Which means we are almost fully dependent on 'human behaviour', whether a road user makes a mistake or error in preventing a crash
- The Dutch approach to a solution: *Sustainable Safety*

Sustainable Safety



- *Sustainable* means: we don't want to hand over a road system to our children which, inevitably, results in the number of road crashes as of today
- (inspired by the Brundtland-report on sustainable development)



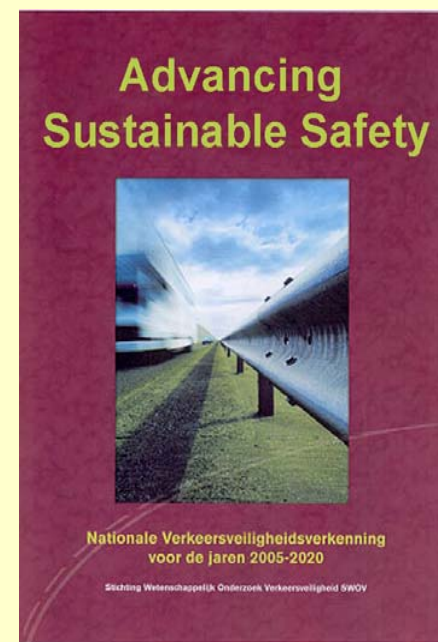
Sustainable Safety fundamentals

- *User oriented system approach*
- *Brings knowledge from different fields together:*
transportation planning, traffic engineering, social sciences, biomechanics, management, economics
- *It is a safe system for everyone*

Sustainable Safety: *the Dutch approach*



- 1992: the Sustainable Safety vision
- 2005: updated by 'Advancing Sustainable Safety'
- *Aims of Sustainable Safety:*
 - to prevent crashes in advance
 - and, if impossible to reduce crash severity (serious injuries virtually excluded)



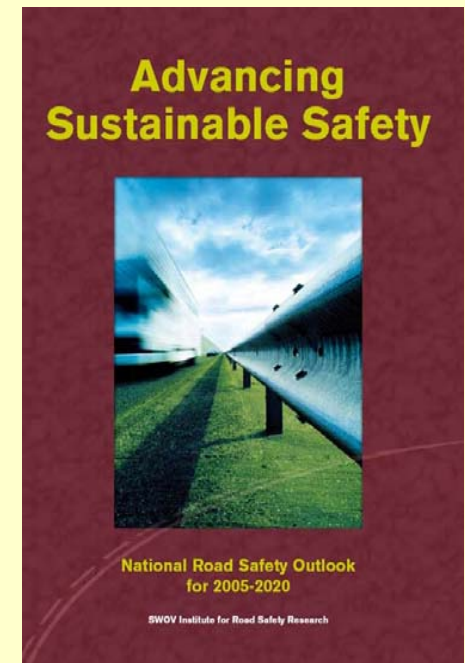
Sustainable Safety

- Philosophy developed in early nineties by SWOV
- Basis of the Dutch road safety policy
- Implementation since mid nineties
- Update in 2005

English version published in November 2006

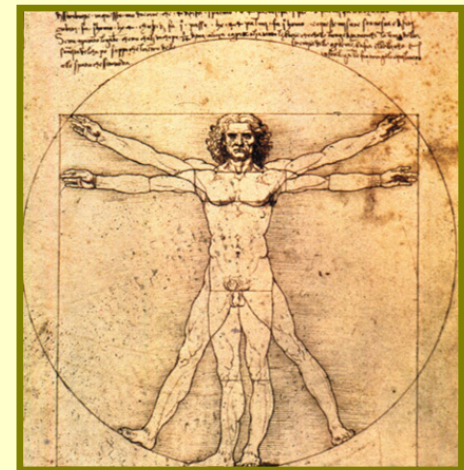
Copies free downloadable from

www.sustainablesafety.nl



Man is the measure of all things

- Physical properties
 - Humans are vulnerable
- Psychological properties
 - Humans are error prone
 - Humans do not always obey rules



Proactive approach

- Proactive: preventing system gaps
 - Intervening in chain of 'system design' to 'traffic behaviour' as early as possible



How could this happen?

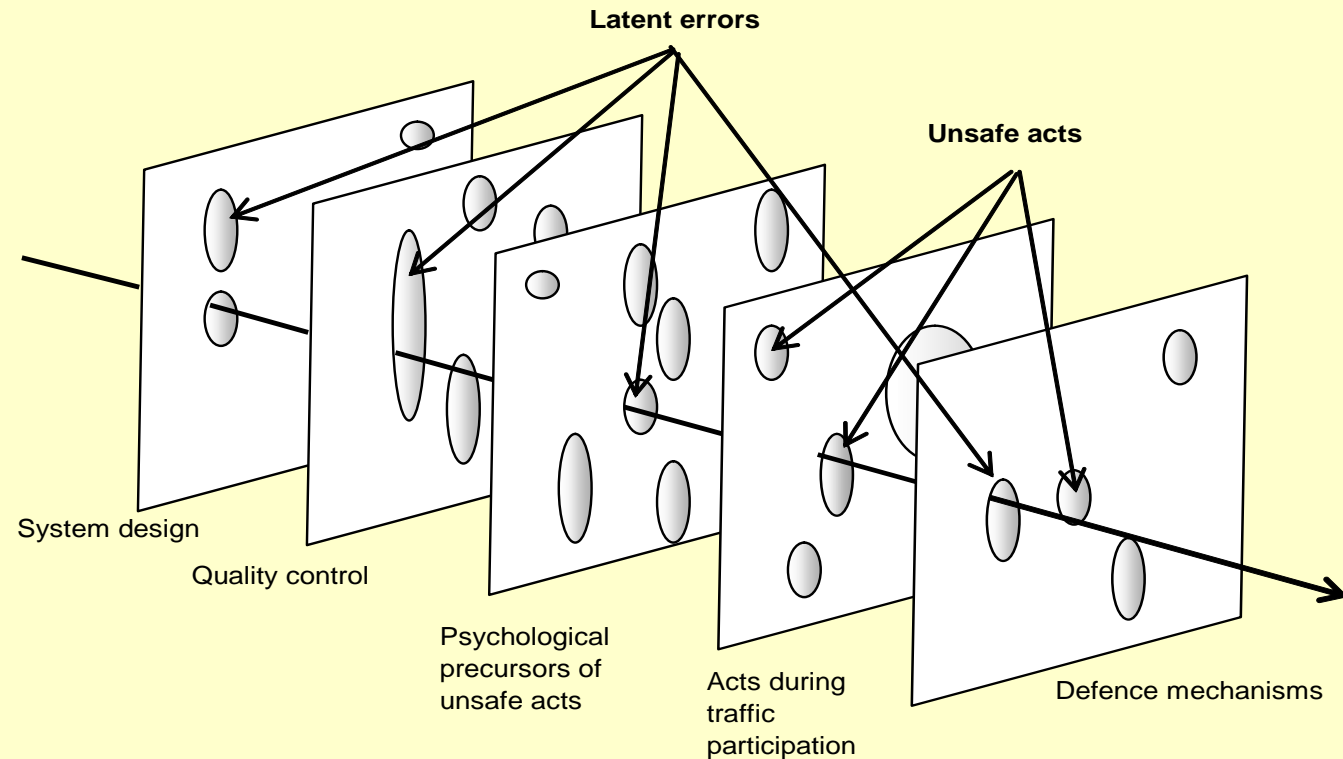
~~Who or what caused the crash?~~



- Making road safety less dependent on individual choices

Proactive approach

- Systems approach: prevention of latent/hidden errors
 - Intervene as early in chain as possible
 - Make unsafe acts less dependent from choices of individual road users





Principles in the advanced vision

Sustainable safety principles

Functionality of roads

Homogeneity of masses and/or speed and direction

Predictability of road course and road user behavior by a recognizable road design

State awareness by the road user

Forgivingness of the environment and of road users



Some thoughts for discussion

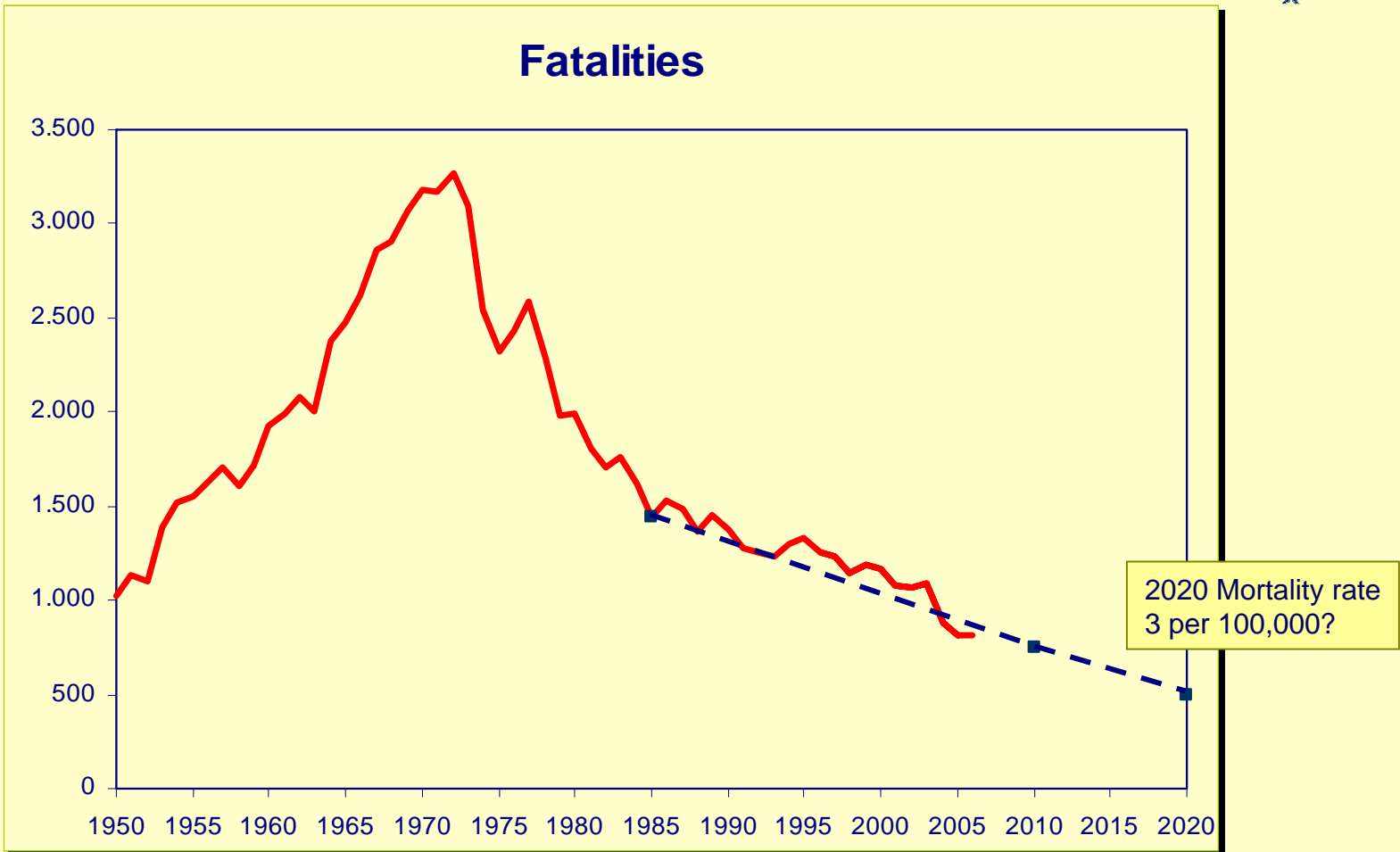
- Public acceptance of crashes/injuries
- It just don't happen to me: ordinary vs. villain driver
- Cultural change: values, beliefs, norms, behaviour
- Specific vs. general deterrence
- Government involvement: shared responsibilities
- Good will and low-cost interventions are not enough
- Opinion, intuition, folklore vs evidence based
- Make organisations accountable
- Distinguish short term and long term wins
- Safe system approach ??

Relevance for developing countries

- Fundamentals are true all over the world
 - Human being is fallible/vulnerable and makes errors
 - Risk increasing factors
 - Road transport system is inherently unsafe
- Only evidence based interventions: knowledge transfer + capacity building
- Where to find information on road injuries ++ generation interventions
 - WHO/World Health Organization
 - World Bank
 - ERSO



Further progress ??



2020 Mortality rate
3 per 100,000?