

Implications of Road Safety in National Productivity and Human Development in Asia

Prof. Jac Wismans, SAFER Vehicle and Traffic Safety Centre, Sweden

INTERGOVERNMENTAL EIGHTH REGIONAL ENVIRONMENTALLY SUSTAINABLE TRANSPORT (EST) FORUM IN ASIA

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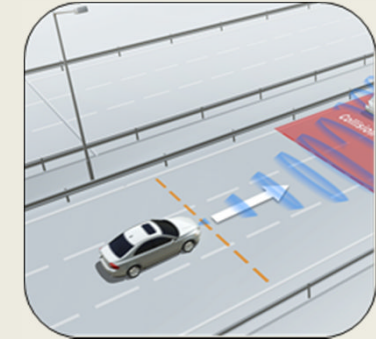
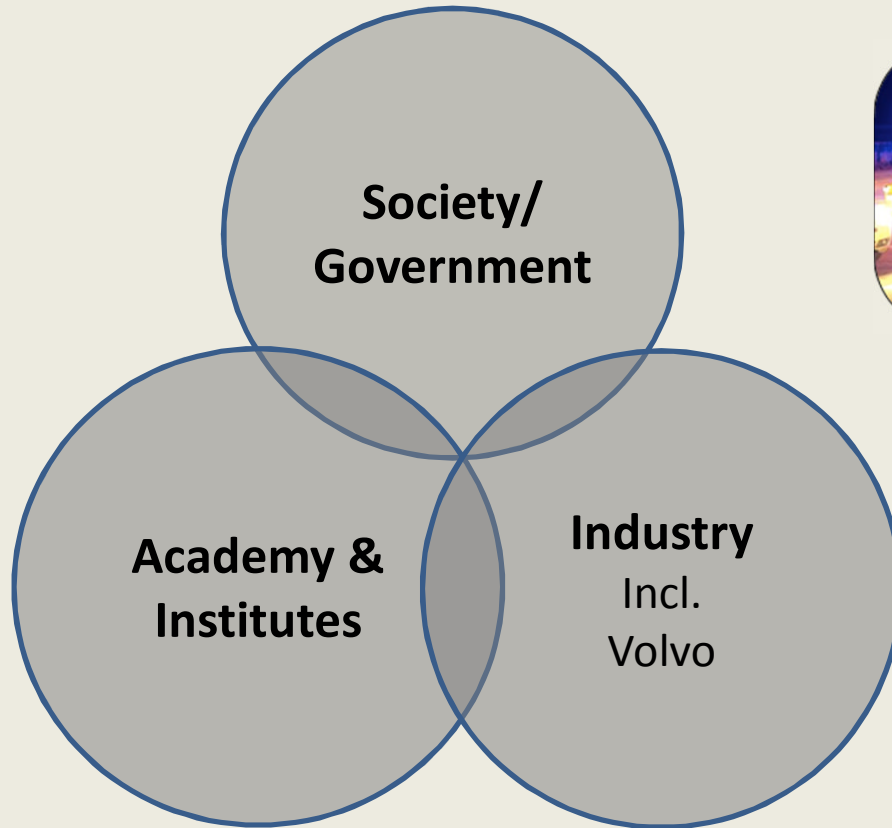


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Institute of Transport Economics
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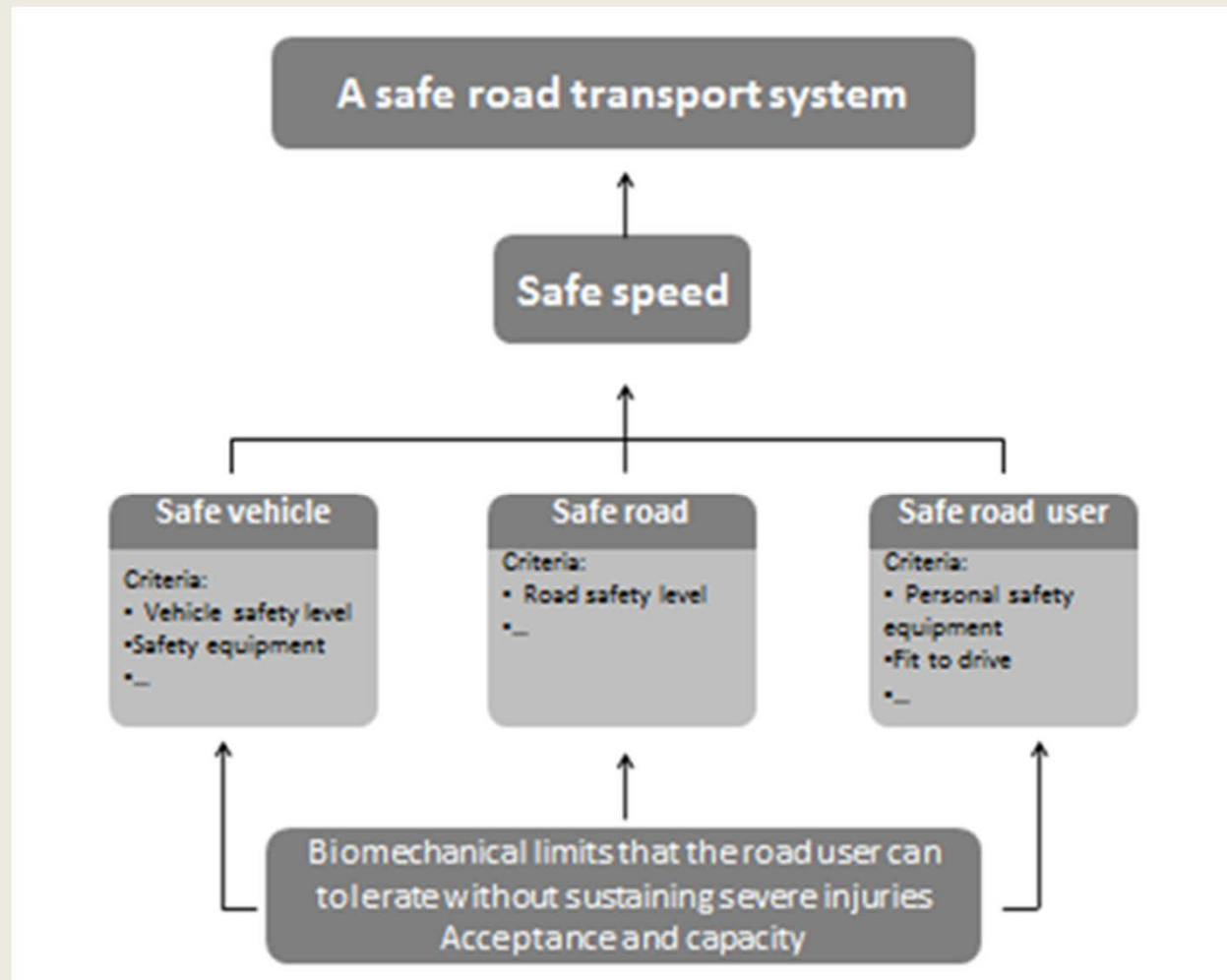
SAFER Vehicle and Traffic Safety Centre at Chalmers University, Gothenburg, Sweden



SAFER = 30 partners in collaboration



Vision Zero for Safe Road Transport



Safety and Asian EST

2005 Aichi statement a.o.:

- Increasing **safety for non-motorized transport**
- Acknowledging the need for **safe urban transport** to the alleviation of poverty and promotion of social development



2010 Bangkok 2020 declaration a.o.:

- Goal 13: Adopt a **zero-fatality** policy.....

2013 Bali Declaration:

- Vision Three Zeros - Zero Congestion, Zero Pollution, and **Zero Accidents** - towards Next Generation Transport



Road transport deaths due to road accidents in 2010

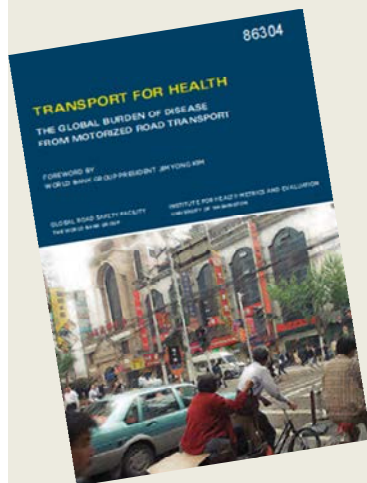
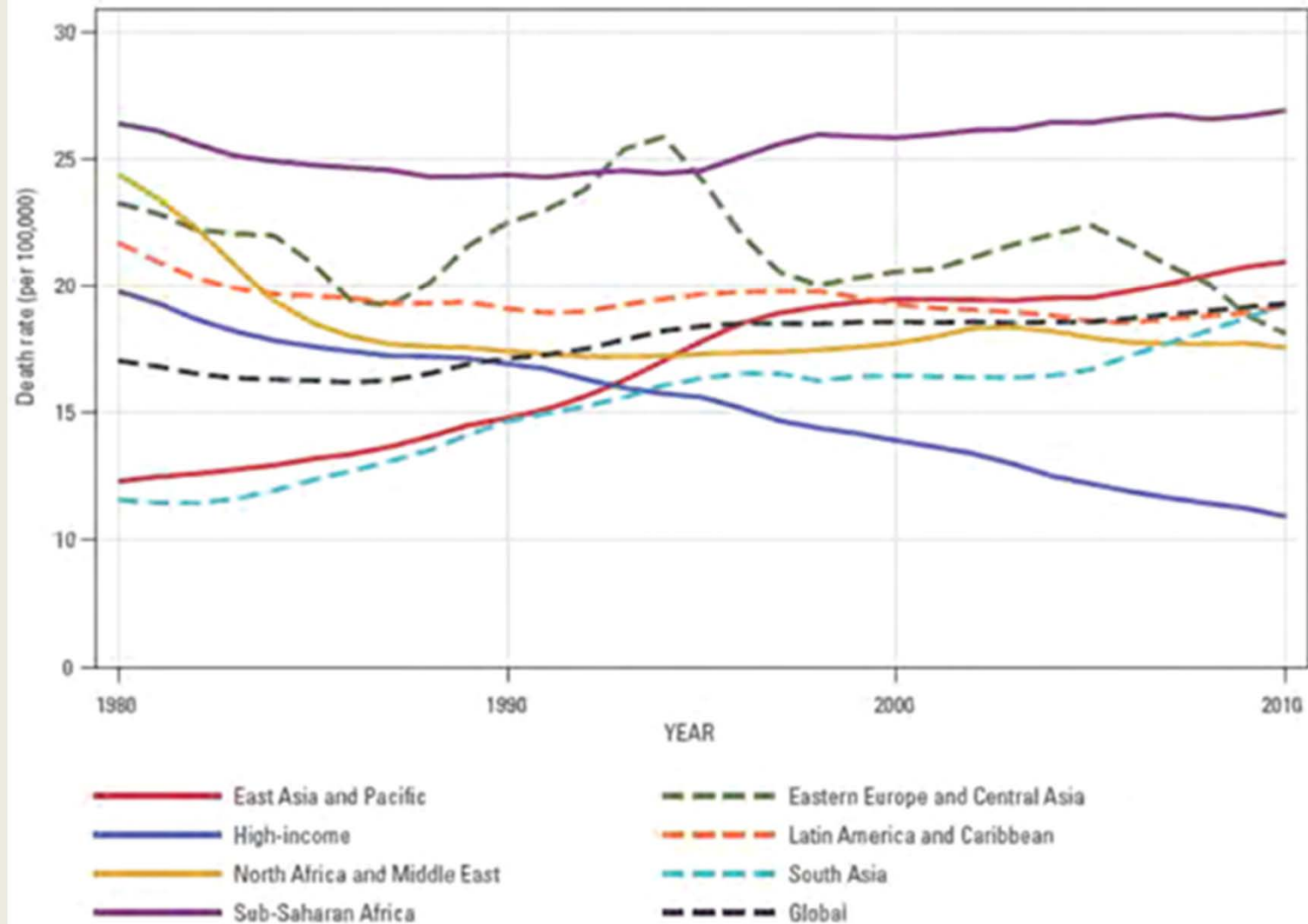
Worldwide: 1.3 million deaths

Asian EST region: 0.75 million deaths

Source: WHO 2013 and World Bank/IHME 2014

Total 2004	Total 2030
1 Ischaemic heart disease	1 Ischaemic heart disease
2 Cerebrovascular disease	2 Cerebrovascular disease
3 Lower respiratory infections	3 Chronic obstructive pulmonary disease
4 Chronic obstructive pulmonary disease	4 Lower respiratory infections
5 Diarrhoeal diseases	5 Road traffic crashes
6 HIV/AIDS	6 Trachea, bronchus, lung cancers
7 Tuberculosis	7 Diabetes mellitus
8 Trachea, bronchus, lung cancers	8 Hypertensive heart disease
9 Road traffic crashes	9 Stomach cancer
10 Prematurity and low birth weight	HIV/AIDS
11 Neonatal infections and other	Nephritis and nephrosis
12 Diabetes mellitus	Suicide
13 Malaria	Liver cancer
14 Hypertensive heart disease	Colon and rectum cancer
15 Birth asphyxia and birth trauma	Oesophagus cancer
16 Suicide	Homicide
17 Stomach cancer	Alzheimer and other dementias
18 Cirrhosis of the liver	Cirrhosis of the liver
19 Nephritis and nephrosis	Breast cancer
20 Colon and rectum cancers	Tuberculosis
22 Homicide	

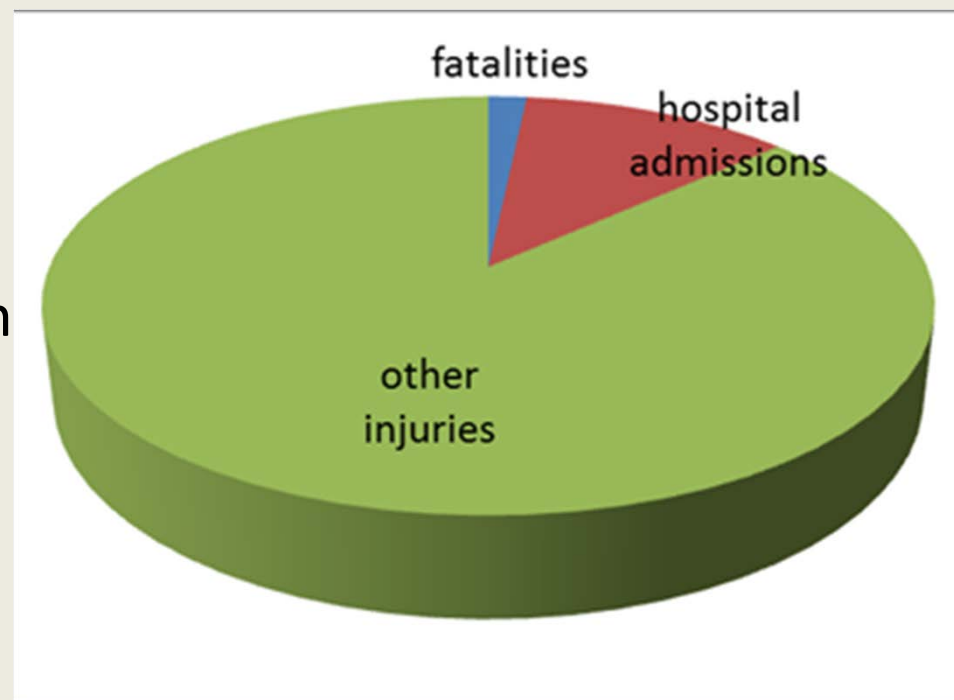
The problem is increasing in SE Asia



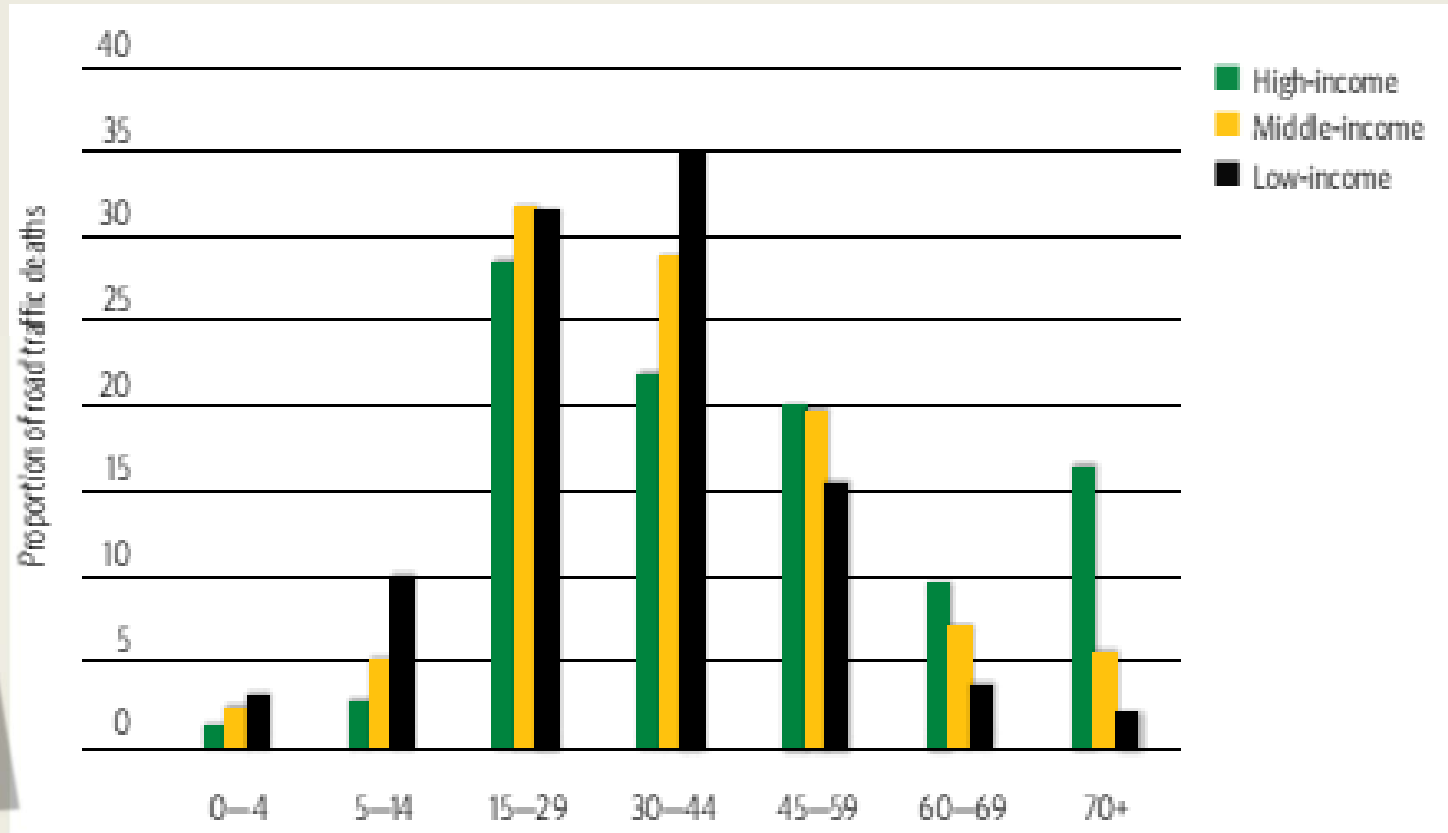
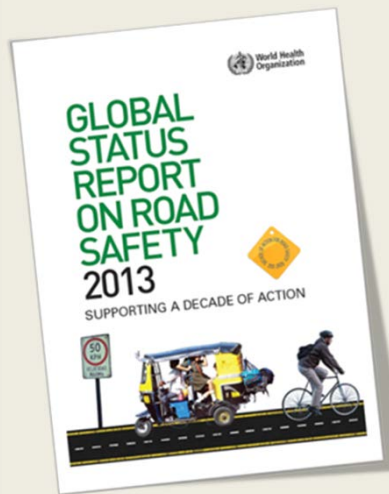
Fatalities are just the top of the Iceberg 2010

source: WHO 2013 and Worldbank/IHME 2014

- In addition to 1.3 million fatalities road accidents cause almost 80 million injuries of which 9 million requiring hospital admission
- 50 million (2/3) of the injuries are sustained in the Asian EST area
- Ratio fatalities / hospital admissions / other injuries:
1 / 7 / 52



Road accident deaths by age and income status (WHO 2013)

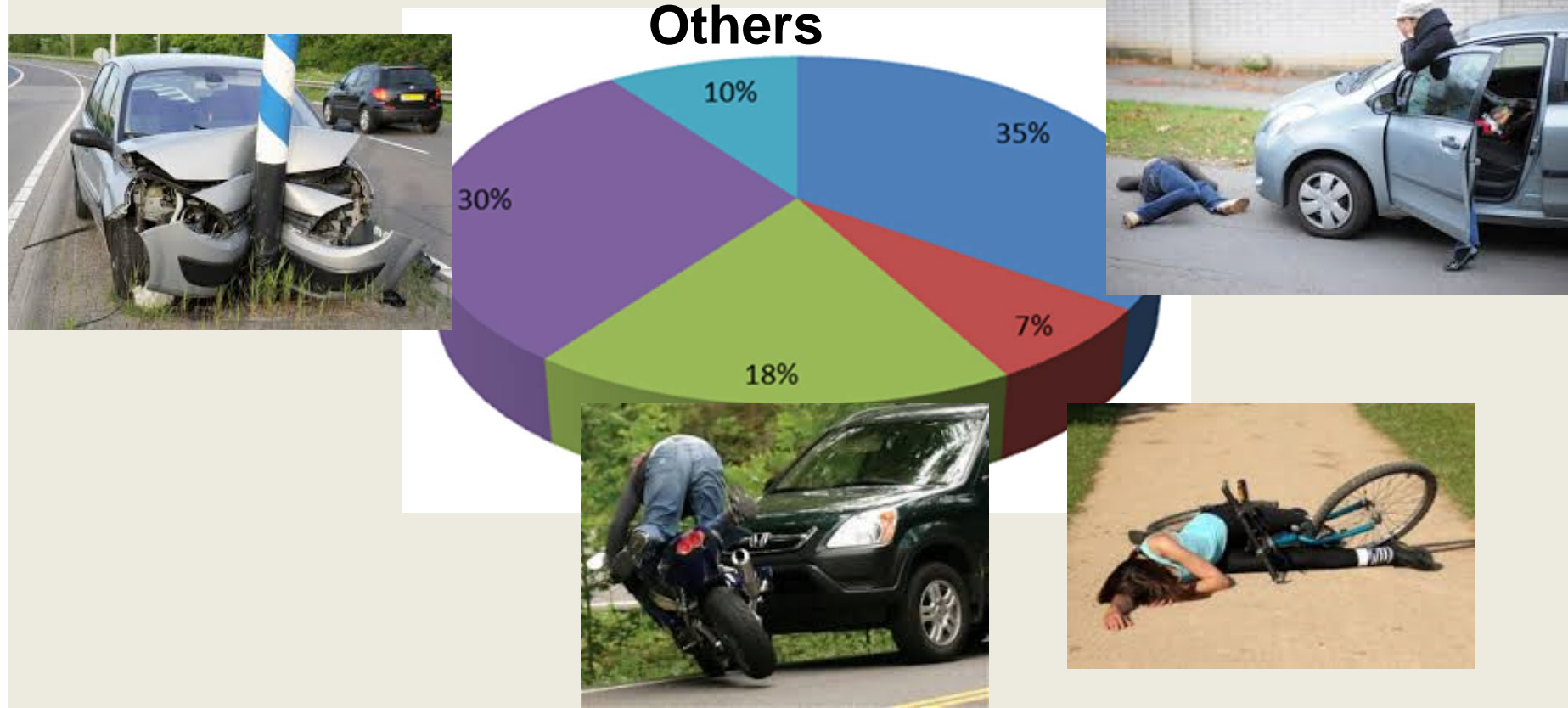


Productivity impact and economic burden in Asian EST countries

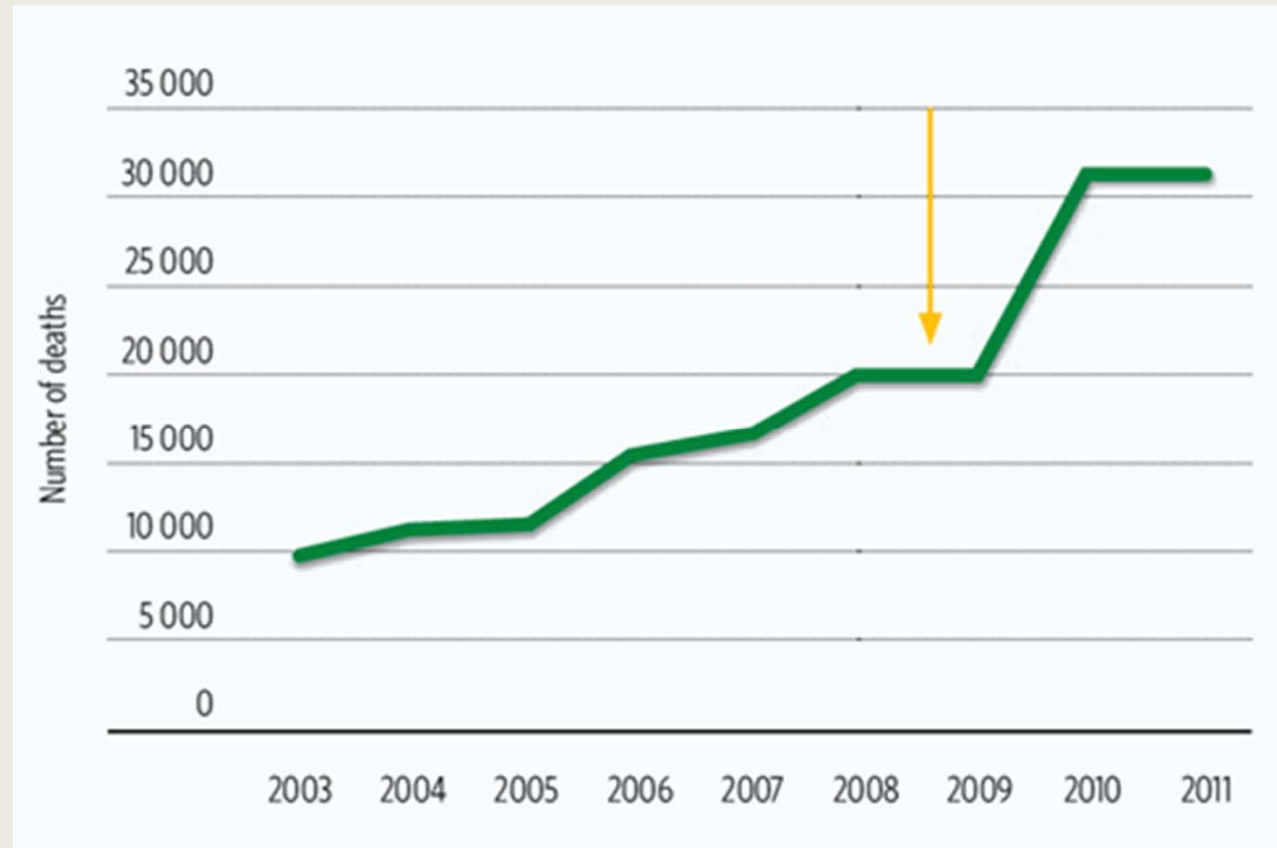
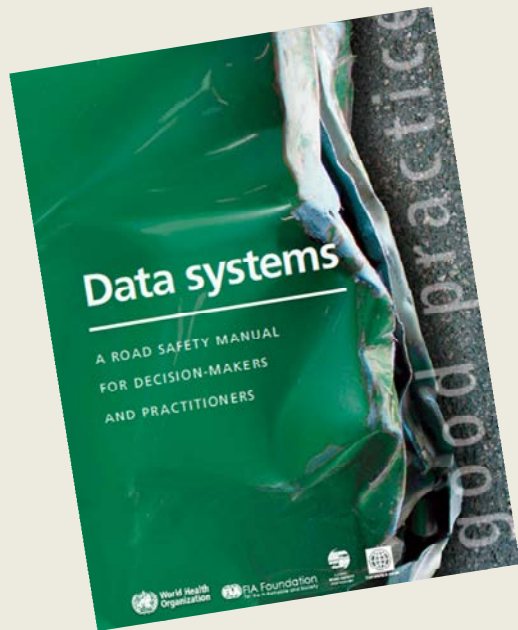
- Taking the age of road victims into account both for injuries and fatalities **the years of working live lost** have been calculated and on the basis of this the total loss for the economy incl. medical costs etc.
- Total costs for Asian EST region: **735 billion US\$** or **3.3% of GDP** in this region



Fatalities in Asia EST countries for different modes of road transport

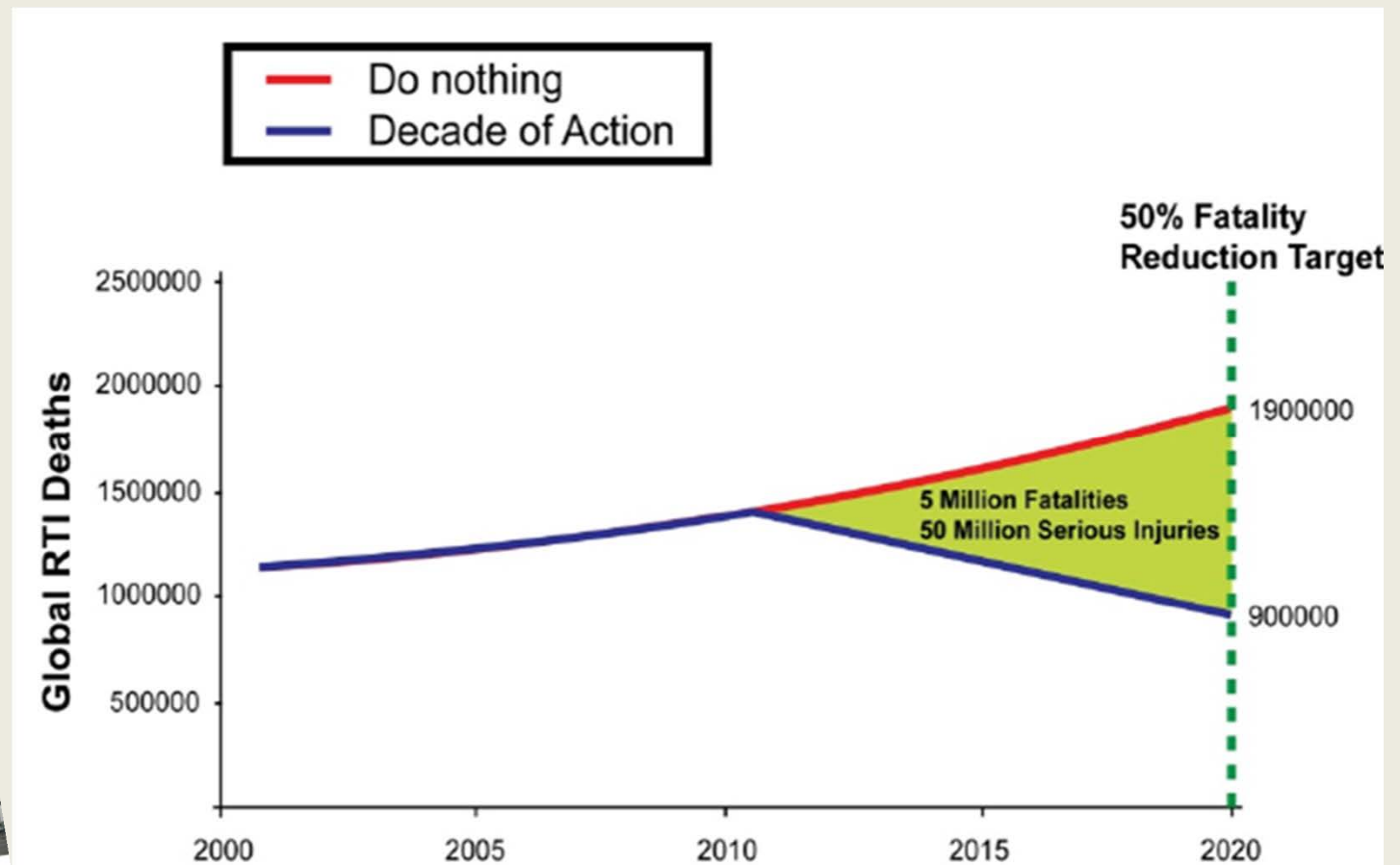
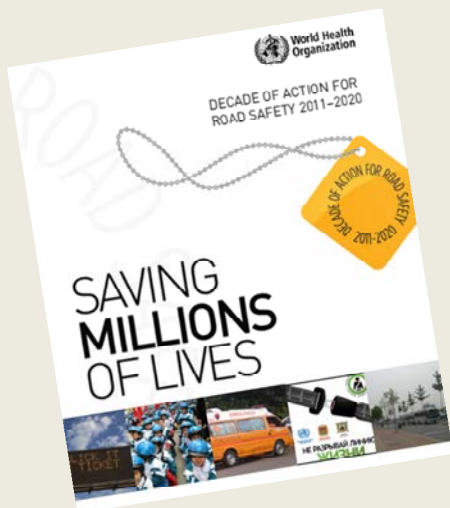


Importance of accurate national accident data

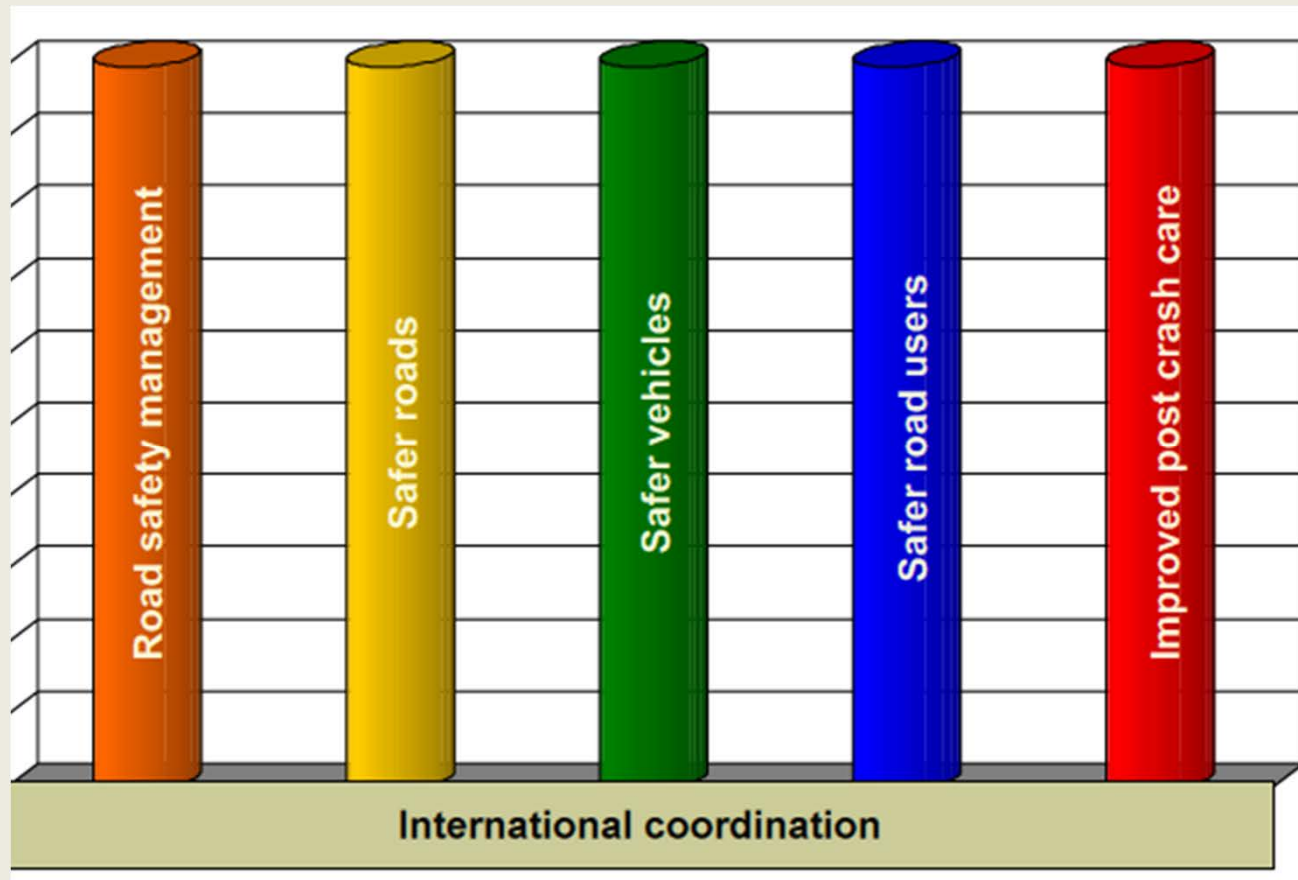


example Indonesia

Goal of 2011-2020 Decade of Action for road safety: first stabilize and then reduce.



Plan for the Decade: 5 Pillars (left) and 5 risk factors (right)



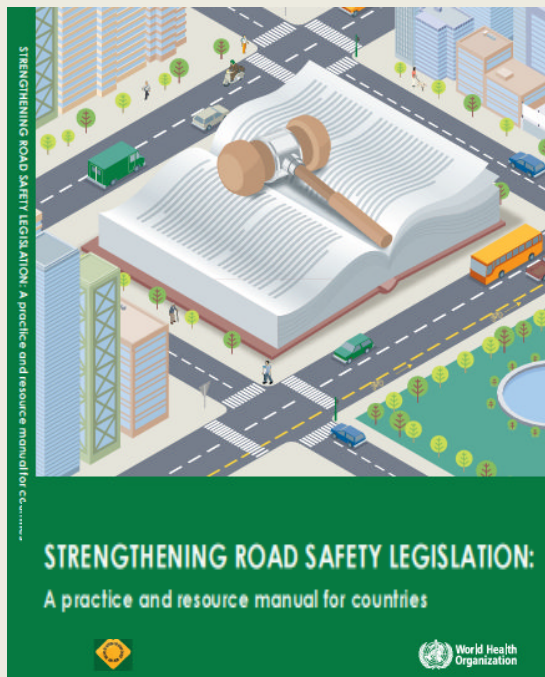
- Speed
- Drunk-driving
- Not wearing motorcycle helmets
- Not wearing seat-belts
- Not using child restraints

Best Practice guidelines

see: <http://www.who.int/roadsafety/publications/en>

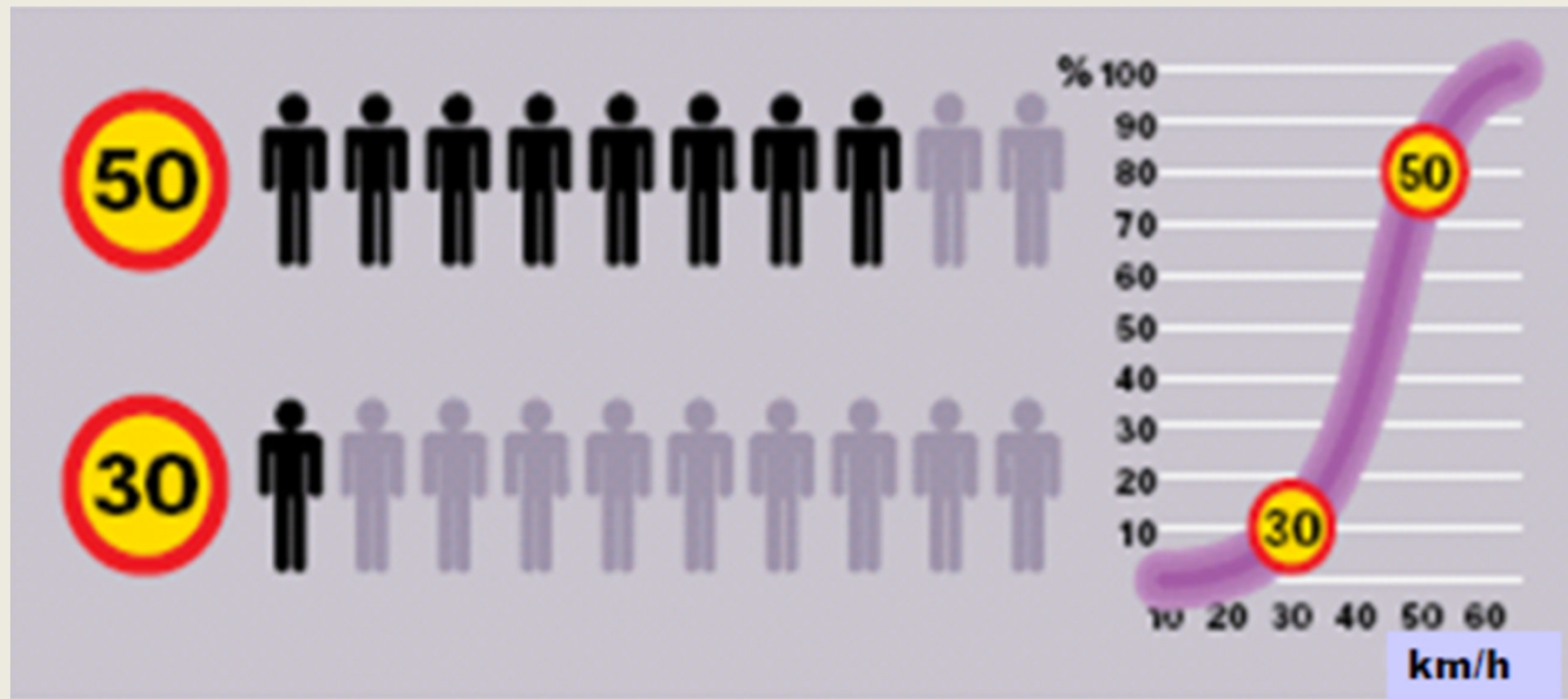
Implementing the Recommendations of the
World Report on Road Traffic Injury Prevention

Country Guidelines for the Conduct of Road Safety
Management Capacity Reviews and the Specification
of Lead Agency Reforms, Investment Strategies
and Safe System Projects



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Importance of speed reduction: pedestrian fatality risk



Safe travel speeds

Types of road infrastructure and traffic	Safe travel speed (km/h)
Conflicts between cars and pedestrians/cyclists	30
Intersections with possible side impacts between cars	70
Two-lane roads with possible frontal impacts between cars	80

DatsunGo Global NCAP test



DATSUN GO - NO AIRBAGS

August | 2014



0.00 max. 17.00 - Adult



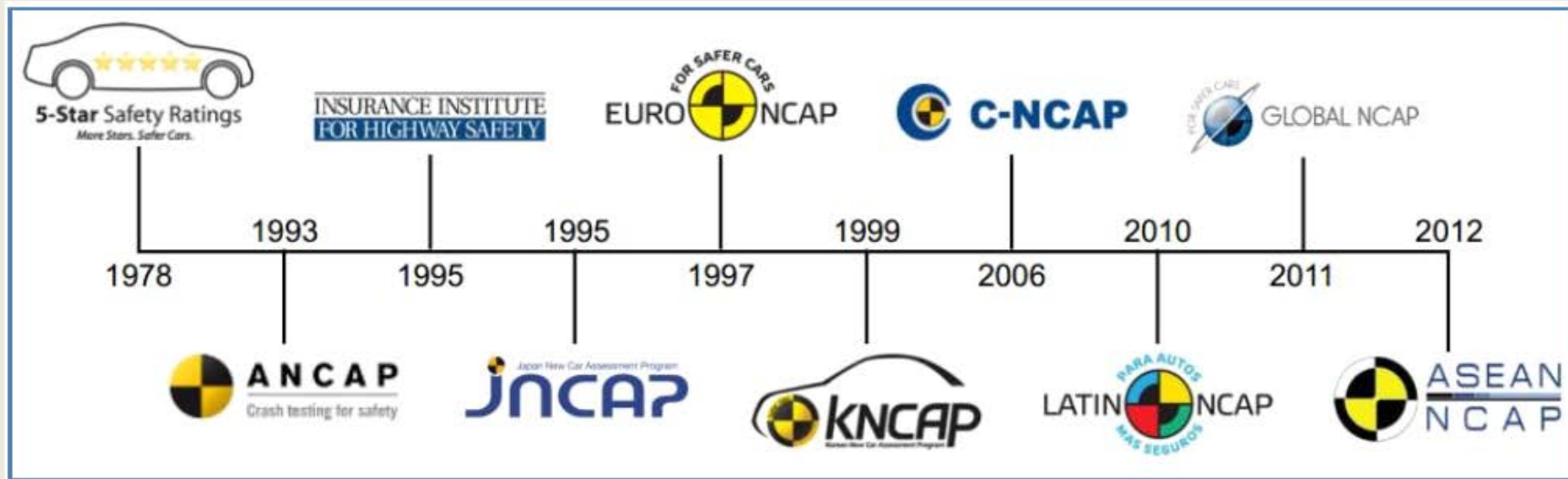
15.06 max. 49.00 - Child

64
km/h

Valid for: Indian Market
Car made in India



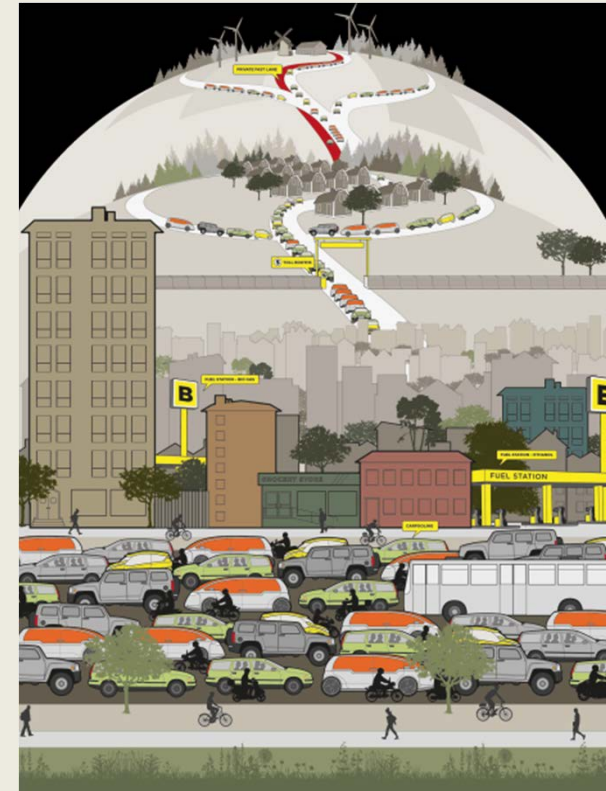
Status NCAP Worldwide



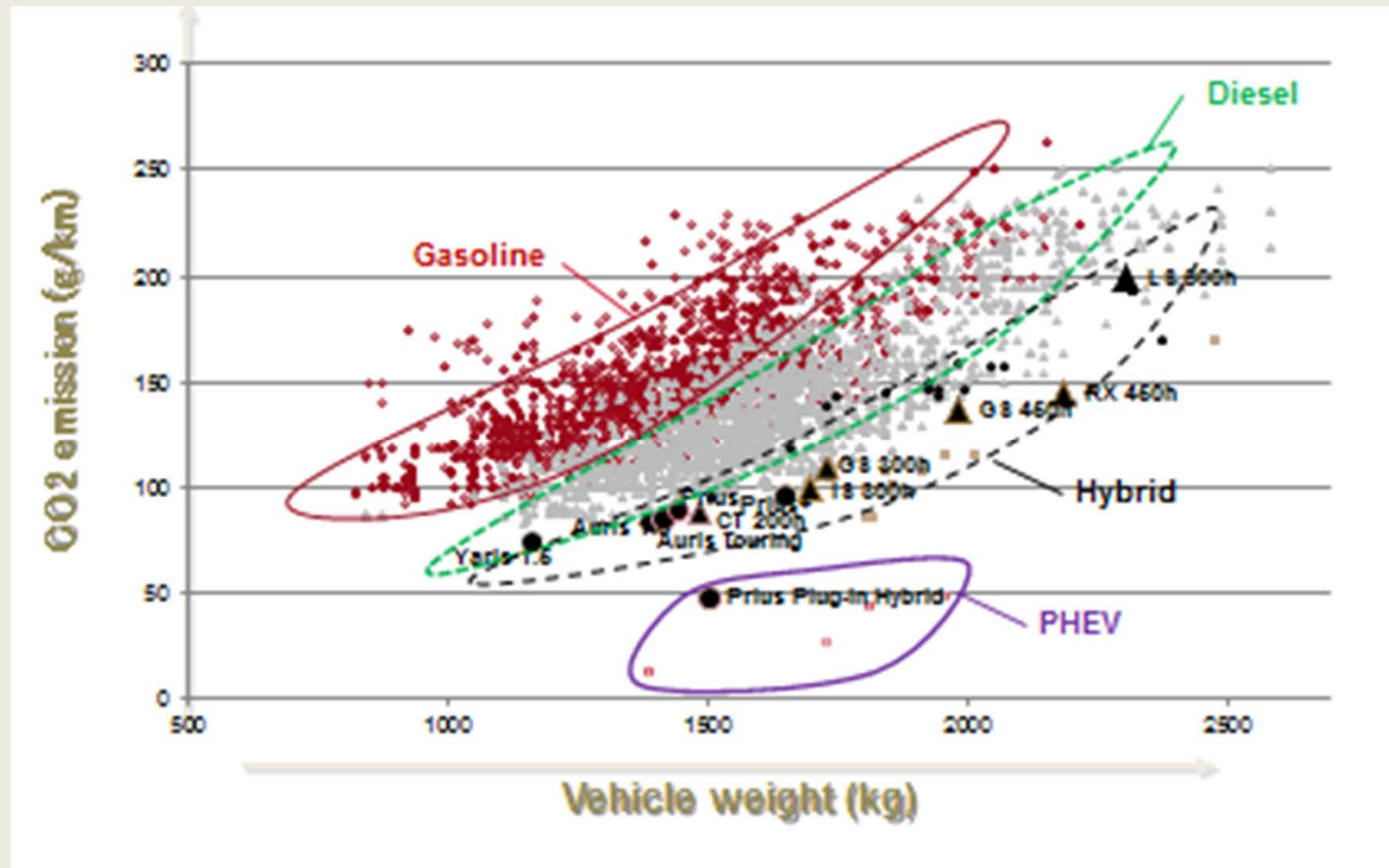
India: 2016 BVNSAP (proposed)

Future Outlook

- Shift in transport paradigm
- Sustainable lighter/smaller vehicles
- The way to Automatic driving



Sustainable lighter/smaller vehicles



Sustainable lighter/smaller vehicles: increased safety risk



25-11-2014

The way to Automatic driving

Automation Level

No-Automation (Level 0)

Function-specific
Automation (Level 1)

Combined Function
Automation (Level 2)

Limited Self-Driving
Automation (Level 3):

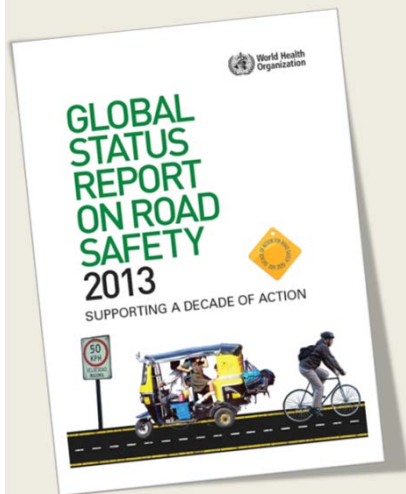
Full Self-Driving
Automation (Level 4)



Recommendation 1

Implement actions from the 2011-2020 Decade of Action for Road Safety including:

- Implementation of the minimum UN vehicle safety regulations and of a new car assessment programs (NCAPs) for consumer information
- Implementation of measures concerning the 5 risk factors: speed, drunk-driving, not wearing motorcycle helmets, not wearing seat-belts and not using child restraints.



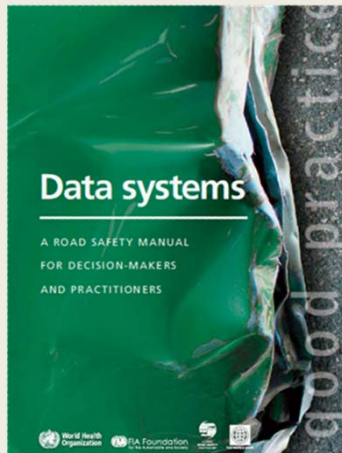
Recommendation 2

Implement specific recommendations resulting from this paper including:

- Safe public transport (public transport is >10 safer than cars)
- Separate lanes for Non-Motorized Traffic (NMT)
- ICT for safety (smart cities)
- Introduction of new collision avoidance technologies
- Truck safety in crashes with other road users (underrun protection)
- Measures to improve motorcycle safety (ABS, protective clothing, visibility)
- Recommendations concerning safety of pedestrians, cyclists and elderly road users.

Recommendation 3

- Introduction of good data systems for accidents including establishment of a “base-line” status and means to track progress and effectiveness.



Thanks for your attention



Acknowledgements

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Contact information:

Prof. Jac Wismans, SAFER Vehicle and Traffic Safety Centre, Sweden

E-mail: jac.wismans@chalmers.se