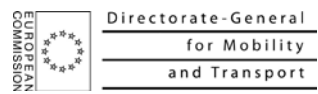




# Development of the European Road Safety Observatory *Work Package 4 – « Decision Support »*

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Project co-financed by the European Commission, Directorate-General for Mobility and Transport

## *2 main activities:*

- Forecasts of fatality trends up to 2020
- Tools facilitating access to scientific information
- ... in liaison with National Experts

# FORECASTS

## Objectives/characteristics:

- Based on risk:  $\text{Fatalities} = \text{Mobility} * \text{Risk}$   
( $\log \text{Fatalities} = \log \text{Mobility} + \log \text{Risk}$ )
- Aim: Facilitate target setting
- !Assuming continuation of past developments!
- ... and for different mobility scenarios

# Example:

	<b>Vehicle kilometres (billions)</b>	<b>Fatalities</b>
<b>Situation 2008:</b>	<b>76</b>	<b>679</b>
<b>Prediction for 2020 assuming:</b>		
<b>Continuation of development</b>	<b>96</b>	<b>378</b>
<b>Stronger growth</b>	<b>110</b>	<b>432</b>
<b>Lower growth</b>	<b>83</b>	<b>331</b>

*Forecasts for Austria based on different mobility scenarios (predicted mobility value +/- one standard deviation).*

# TOOLS FOR ACCESSING INFORMATION

- *Webtexts*
- *Country Overviews & Composite RS indices*


## Objectives/characteristics

- Scientifically grounded yet accessible and compact
- Addressing key RS issues
- New texts and up-dates (ERSO)
- Under supervision of a selected committee of experts

Home
Safety issues
Countries
Statistics
Methods
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FAQ

### Safety issues

- Age groups
  - Novice drivers
  - Older drivers
- Road users
  - Pedestrians and cyclists
  - Powered two wheelers
- Hazardous behaviour
  - Fatigue
  - Alcohol/drugs
  - Speeding
  - Work-related road safety
- Post crash
  - Post impact care
  - E-safety
- Road safety measures
  - Roads
  - Speed enforcement
  - Vehicle safety
- Policy issues
  - Quantitative targets
  - Cost-benefit analysis
  - Safety ratings
  - Road safety management



Project co-financed by the European Commission

## Fatigue

[Open pdf about fatigue](#)

**Summary:**

In the literature many definitions are used for fatigue. The concepts of "fatigue", "sleepiness" and "drowsiness" are often used interchangeably. Sleepiness can be defined as the neuro-biological need to sleep, resulting from physiological wake and sleep drives. Fatigue has from the beginning been associated with physical labour, or in modern terms task performance. Although the causes of fatigue and sleepiness may be different, the effects of sleepiness and fatigue are very much the same, namely a decrease in mental and physical performance capacity.

The most general factors that cause fatigue are lack of sleep, bad quality sleep and sleep demands induced by the internal body clock. Besides these general factors, prolonged driving (time-on-task) can increase driver fatigue, especially when drivers do not take sufficient breaks. For specific groups of drivers, e.g. professional drivers, these general factors often play a more persistent role due to long or irregular work schedules. A small part of the general population (3-5%) has to cope with obstructive sleep apnoea, a sleeping disorder which contributes to above average day-to-day sleepiness.

Fatigue leads to a deterioration of driving performance, manifesting itself in slower reaction time, diminished steering performance, lesser ability to keep distance to the car in front, and increased tendency to mentally withdraw from the driving task. The withdrawal of attention and cognitive processing capacity from the driving task is not a conscious, well-planned decision, but a semi-autonomic mental process of which drivers may be only dimly aware. Drivers may try to compensate for the influence of fatigue, for instance by either increasing the task demands (e.g. driving faster so that a 'new' sensation of driving spurs adrenaline and attention levels) or lowering them (e.g. increasing the safety margins by slowing down or using larger following distances). But crashes and observations of driving performance show that compensatory strategies are not sufficient to remove all excess risk.

Survey research world-wide suggests that over half of all private drivers drive while being fatigued or drowsy at least once a year. Amongst young drivers, driving while fatigued is quite common due to lifestyle factors. Adolescents need more sleep than adults; fatigue may affect youngsters more than adults. Most professional drivers and shift workers have to cope with fatigued driving on a frequent basis due to work-related factors. About half of professional drivers take less than normal sleep time before a long-distance trip.

Fatigue is a major factor in a large proportion of road crashes (range 10-20%). Several studies suggest that fatigue is associated with increased crash risk. A person who drives after being awake for 17 hours has a risk of crashing equivalent to being at the 0.05 blood alcohol level (i.e. twice the normal risk). The increased risk often

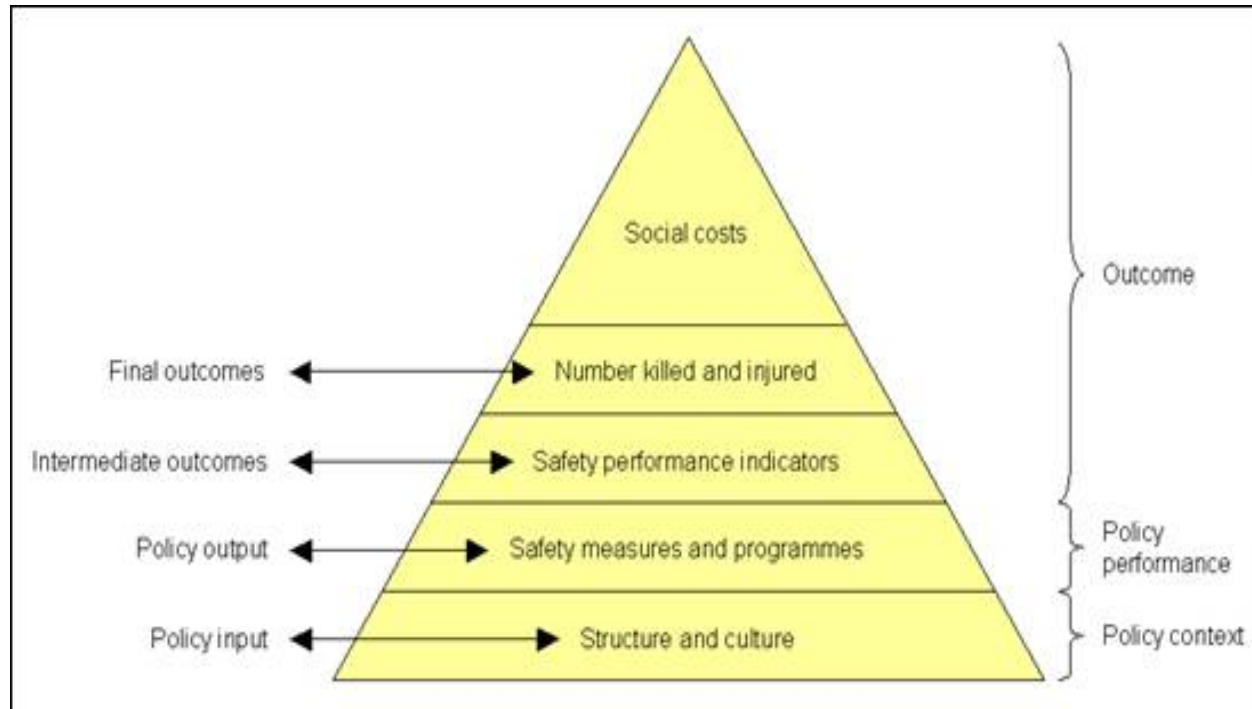


# TOOLS FOR ACCESSING INFORMATION

- *Webtexts*
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# The Sunflower Pyramid

(Koornstra et al., 2002)



→ <http://sunflower.swov.nl>

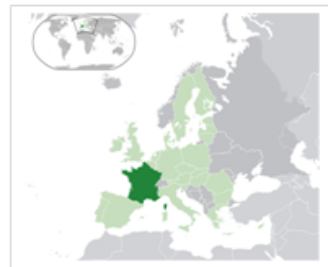
# Country Overviews (1)

- Organized according to SunFlower RS pyramid
- Country-specific RS information
- Together with european reference information

# Country Overviews (2)

## Road Safety Country Overview

### France



### Structure and Culture

(source: Wikipedia)



The number of vehicle kilometres driven in France is more than 3 times higher than the EU average]

• **Basic data**

- Population: 64.716.213 million inhabitants (2010)
- Area: 544.000 km<sup>2</sup> (2010)  
(0,3% unused land or water) (2010)[4]
- Climate and weather conditions:  
Average winter temperature of the capital city (November to April): 6,8°C  
Average summer temperature of the capital city (May to October): 15,0°C  
Annual precipitation level for the capital city (mm): 649,7
- Exposure (billion vehicle km – 2010): 561,3  
Passengers cars: 76%  
Motorcycles: 1%

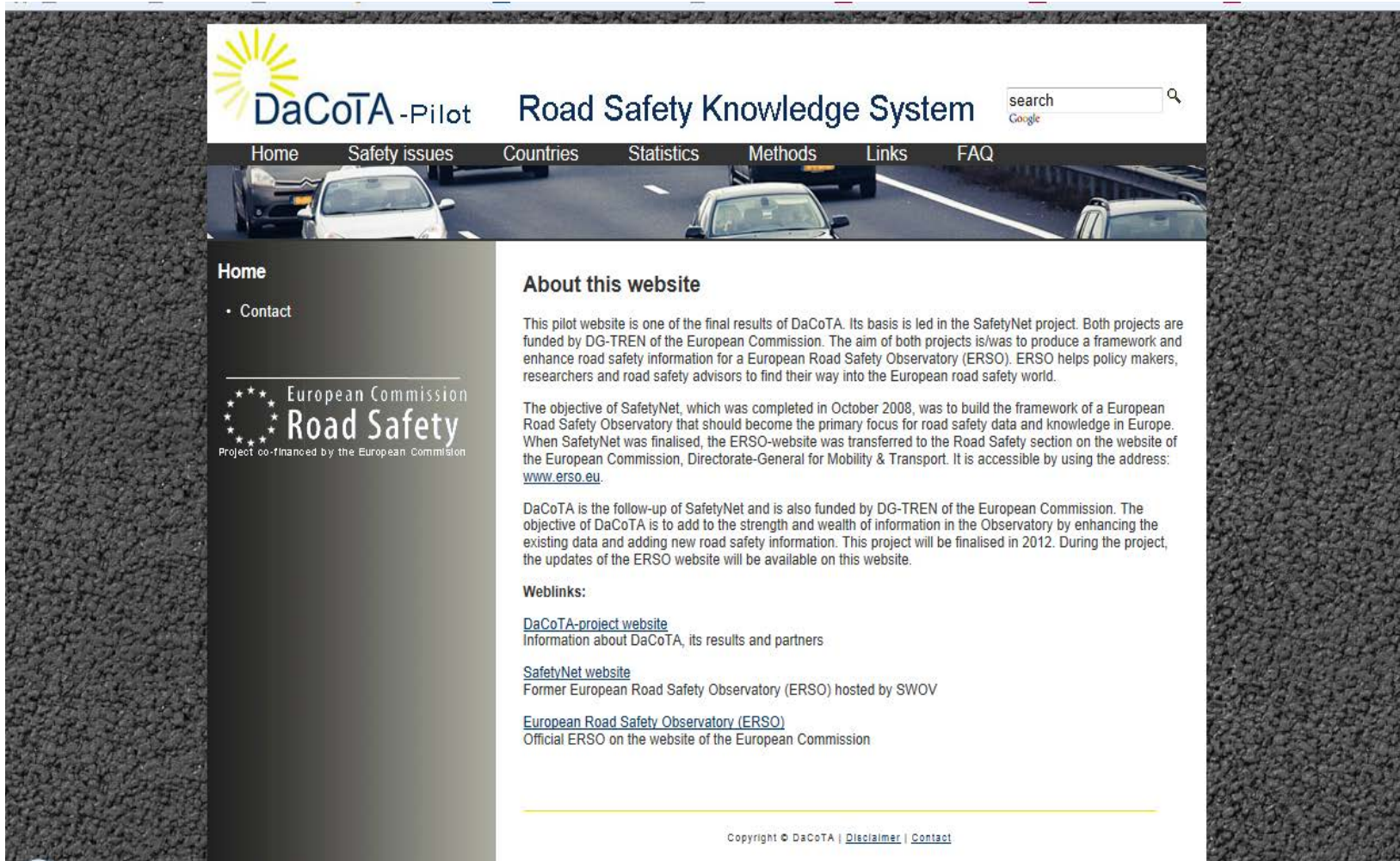
**European average**

17.1 million (2010<sup>i</sup>)[1,2]  
156.225 km<sup>2</sup> (2010)[1,3]  
3% unused land (2010)[4]  
  
168 billion vehicle km (2010<sup>ii</sup>)[1]

# Composite RS indices

- For ranking/benchmarking
- Developed for 3 layers of the RS pyramid:
  - RS outcomes
  - RS performance indicators
  - RS policy performance
- For meaningful comparisons: grouping of countries based on structure and culture

- Check it out at: <http://dacotapilot.swov.nl/>:



# Thank you for your attention!

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