

## Dutch road safety in international perspective

### Summary

The level of road safety in the Netherlands has been one of the highest in the world for many years already and the country occupies second place in terms of traffic fatalities per million inhabitants. Only Malta is (slightly) safer in this respect. Within Europe, the level of road safety is likewise high in the United Kingdom, Sweden, Norway, Switzerland, Iceland and Germany. Over approximately the last two decades, developments in the number of fatalities in the Netherlands virtually matched the average of the fifteen original European Union (EU) Member States. Development in the twelve new EU Member States has been somewhat slower. As is the case for most EU countries, it is unlikely that the Netherlands will achieve the European target of halving the number of fatalities by 2010 relative to 2001.

From the beginning of the 1990s, the number of fatalities among vulnerable road users (pedestrians, cyclists, moped and light moped riders) in the Netherlands decreased somewhat more slowly than average in the other 'old' EU countries. For motorcyclists and car occupants, the development in the Netherlands was however somewhat more favourable. If the population is categorized according to age, the mortality rate in the Netherlands is lower than the average in the other 'old' Member States for almost all age groups. The rate is only higher for the 9-13 and 80 and over age groups.

### Background

In comparison with many other countries, the Netherlands has excellent road safety performance and is currently one of the safest countries in Europe and the world in this respect. This fact sheet compares the Netherlands with other EU countries and a range of other European and non-European countries on the basis of a number of measures of road safety. With respect to EU Member States, a distinction is sometimes made between the 'old' fifteen Member States (Austria, Belgium, Denmark, Finland, France, Germany, Greece, Ireland, Italy, Luxembourg, the Netherlands, Portugal, Spain, Sweden and the United Kingdom) and the twelve new Member States (Cyprus, the Czech Republic, Estonia, Hungary, Latvia, Lithuania, Malta, Poland, Slovenia, Slovakia from May 2004 and Bulgaria and Romania from January 2007).

It must be borne in mind that the road safety data of different countries is often difficult to compare. Numbers of crashes or fatalities are not automatically comparable and must be related to, for example, the given country's population or distances travelled in kilometres. Moreover, when interpreting such data, gaps in information and differences in definitions of, for example, crashes, fatalities, severities of injury and road types must always be taken into account. Nevertheless, documentation on those definitions is available, thus making comparison possible in broad terms. Numerous initiatives have recently been developed to improve the quality and comparability of data. For further information on the subject, please see the SWOV Fact sheet [International comparability of road safety data](#).

### Mortality: what is the position of the Netherlands in an international perspective?

To compare road safety in different countries, use is often made of the so-called mortality rate: the number of fatalities per million inhabitants. *Figure 1* presents the average mortality figures of the three most recent years (usually 2005-2007) for the 27 EU Member States and the individual averages of these countries (EU). The figures for a number of non-EU countries are shown for purposes of comparison. By this measure, the Netherlands occupies second place in the EU after Malta and is closely followed by the United Kingdom and Sweden. The non-EU countries Iceland, Norway and Switzerland likewise follow closely. Outside Europe, Japan, Israel and Australia have similar mortality rates resulting from road crashes.

The latest Road Safety Performance Index (PIN) study of the European Transport Safety Council ETSC (Jost et al., 2009) indicates that the Netherlands has dropped to fourth place. This is because, for the Netherlands only, use was made in the study of the higher, real number of fatalities rather than the number registered by the police.

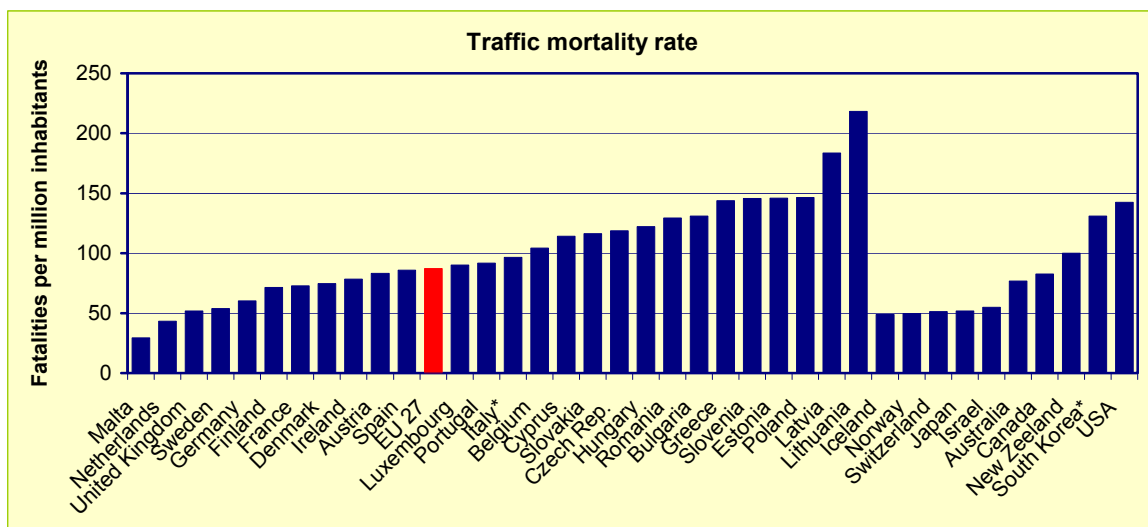


Figure 1. Number of registered fatalities per million inhabitants (mortality rate) in different European and non-European countries. 2005-2007 average (\* 2004-2006 for Italy and South Korea). Source: IRTAD/CARE/Eurostat.

#### Level of risk: what is the position of the Netherlands in an international perspective?

Mortality rate does not take the quantity of traffic, motorized or otherwise, in a country into account. To an extent, dissimilarities between countries can therefore be caused by differences in degree of motorization and/or mobility. The level of risk, here defined as the number of fatalities per motor vehicle kilometre, is more accurate in this respect (Figure 2). Unfortunately, only a limited number of countries have reliable data on the annual distance travelled. Insofar as data is available, it indicates that the Netherlands has the lowest number of fatalities per motor vehicle kilometre within the EU, followed closely by Sweden, Finland and Germany. Outside the EU, the road safety performance of Switzerland and Norway is also good.

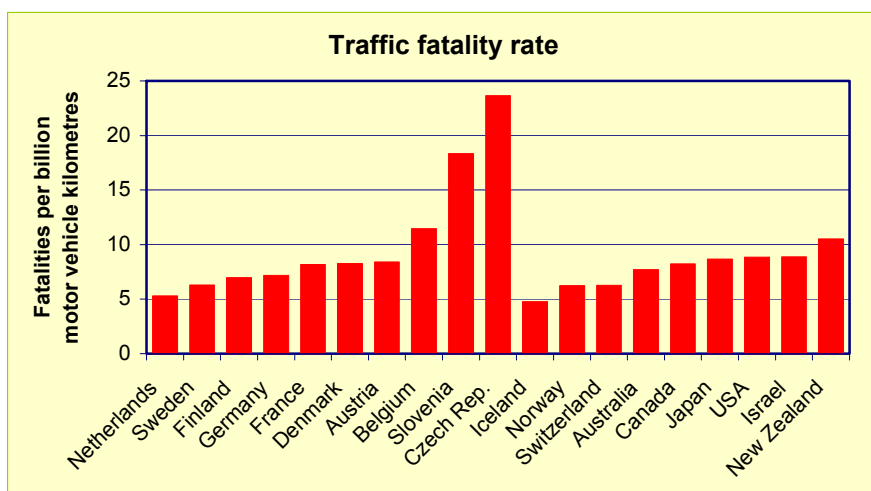


Figure 2. Number of registered fatalities per billion motor vehicle kilometres in different European and non-European countries (2005-2007 average; vehicle kilometres for 2006). Source: IRTAD.

## How does development in the Netherlands compare to other countries?

Table 1 shows the annual average development in the number of fatalities between 1991 and 2006/2007. A distinction is made between the fifteen original EU Member States (EU 15) and the twelve new Member States (NMS 12) as well as a few other countries or groups of countries. The number of fatalities in the Netherlands decreased by an average of 3.6%, a rate of decrease virtually equal to the average of the original fifteen Member States (3.5% rate of decrease). However, a more favourable, development could be seen in a number of countries in this group, namely Germany, France, Austria and Portugal. The average annual decrease in the new Member States during the same period was 2%. The rate of decrease was higher than the average of the original EU 15 in only three of these Member States, namely Estonia (-5%), Slovenia (-4.5%) and Latvia (-3.6%). With an average annual decrease in the number of fatalities of 4.6%, the rate of decrease was highest in Asian countries for which data is available. Finally, there was a slightly increased trend in the number of fatalities in the United States.

Country	Annual development in the number of fatalities for the period 1991 up to and including 2007 (* up to and including 2006)	Country	Annual development in the number of fatalities for the period 1991 up to and including 2007 (* up to and including 2006)	Country	Annual development in the number of fatalities for the period 1991 up to and including 2007 (* up to and including 2006)
Netherlands	-3.6%	Slovenia	-4.5%	Iceland	+1.5%
Sweden	-2.5%	Czech Republic	-1.5%	Norway	-1.6%
Finland	-2.8%	Poland	-2.0%	Switzerland	-4.4%
Germany	-4.9%	Slovakia	-0.6%	Israel	-1.1%
France	-4.8%	Hungary	-2.7%	<b>Rest of Europe</b>	<b>-2.2%</b>
Denmark	-3.5%	Malta	+0.4%	Australia	-1.7%
Austria	-4.3%	Cyprus	-1.8%	Japan	-4.5%
Belgium	-3.1%	Romania	-1.8%	New Zealand	-3.1%
United Kingdom	-1.8%	Bulgaria	-1.8%	South Korea*	-5.9%
Luxembourg	-3.7%	Estonia	-5.0%	<b>Asia*</b>	<b>-4.6%</b>
Italy*	-2.0%	Latvia	-3.6%	Canada	-1.7%
Spain	-3.5%	Lithuania	-1.2%	United States	+0.3%
Ireland	-1.4%	<b>NMS 12</b>	<b>-2.0%</b>	<b>North America</b>	<b>+0.2%</b>
Portugal	-7.2%	<b>EU 27</b>	<b>-2.9%</b>		
Greece	-2.4%				
<b>EU 15</b>	<b>-3.5%</b>				

Table 1. Average annual trend in the number of fatalities between 1991 and 2007 (\* or 2006) in different European and non-European countries (Weijermars et al., 2008).

## Will the Netherlands achieve the European road safety target?

The EU has set the ambitious target of halving the number of fatalities in Member States by 2010 relative to 2001 (Commission of the European Communities, 2001). A survey of the European Transport Safety Council ETSC (Jost et al., 2009) indicates that only Luxembourg, France, Portugal, Spain and Belgium are on course to achieve this target. These countries achieved reductions ranging from 43% to 49% between 2001 and 2008. The Netherlands achieved a reduction just slightly greater than the average of 28% in the 27 EU countries and Israel, Norway and Switzerland. This measure does not, of course, take 2001 levels of safety into account. The higher the starting level of safety, the more difficult it will be to achieve the target set. A number of individual countries, including the Netherlands, have maintained their own road safety targets instead of European ones (see Weijermars et al., 2008: 97-98 for an overview).

### How do the involved modes of transport in the Netherlands relate to those in other countries?

Unfortunately, it is not possible to provide an accurate picture of the safety of different modes of transport in the Netherlands as compared with those in other countries. The number of casualties per million inhabitants is not a good measure, as it is not corrected for use of the respective modes of transport. In the Netherlands, for example, more cycling is done than in most other countries. Proportionally speaking, per million inhabitants, the Netherlands therefore has more fatalities among cyclists than other European countries. A more realistic picture would be obtained if it were possible to correct for distance travelled with the different modes of transport. Regrettably, insufficient data is available internationally to enable such a comparison.

It is possible, however, to consider the relative developments within the different modes of transport. In the period 1997-2001 (*Table 2*), the average annual decrease in the number of fatalities among pedestrians, cyclists and moped and light moped riders was somewhat less in the Netherlands than it was in the other 'old' EU Member States. For motorcyclists and car occupants, on the other hand, the development in the Netherlands was more favourable than it was in other Member States. The differences may have to do with developments in the crash rate of the different modes of transport as well as with developments in the mobility of those modes of transport.

Mode of transport	Annual trend in the Netherlands in the period 1991-2007	Annual trend in the EU 13 in the period 1991-2006
Pedestrian	-4.4%	-5.0%
Bicycle	-3.5%	-4.5%
Moped/light moped	-3.7%	-5.4%
Motorcycle	-2.2%	+0.6%
Car driver	-4.2%	-2.8%
Car passenger	-4.9%	-4.5%
Other	-1.8%	-2.6%
Total	-3.8%	-3.3%

Table 2. Average annual trend in the number of registered fatalities for different modes of transport between 1991 and 2007 (2006) in the Netherlands and in thirteen other 'old' Member States (Weijermars et al., 2008).

### How does the distribution of fatalities according to age in the Netherlands relate to that in other countries?

*Figure 3* shows the number of fatalities according to age per million inhabitants of that age for the Netherlands and the other thirteen original EU countries (German data is again lacking). The figure displays the total number of fatalities in thirteen EU Member States for 2006 as compared with the average number in the Netherlands during the period 2003-2007. The number of fatalities per million inhabitants in the Netherlands is lower than in other countries for almost all age groups. Road safety performance in the Netherlands is worse than the average in the other 'old' EU countries only for the 6-13 and 75 and over age groups. The comparison is not entirely equitable, however, given that the number of casualties in the Netherlands decreased by 8% on average during the period 2003-2007, whereas the comparison is based on the 2006 figures of the other 'old' EU countries. Appropriate correction reveals that only the 9-13 and 80 and over age groups remain below the average of the rest of these 'old' EU countries. This probably has to do with the degree of bicycle mobility referred to earlier. Bicycle mobility is certainly higher in the Netherlands relative to other countries with respect to these age groups and, compared to motor vehicles, bicycle mobility has a higher crash rate.

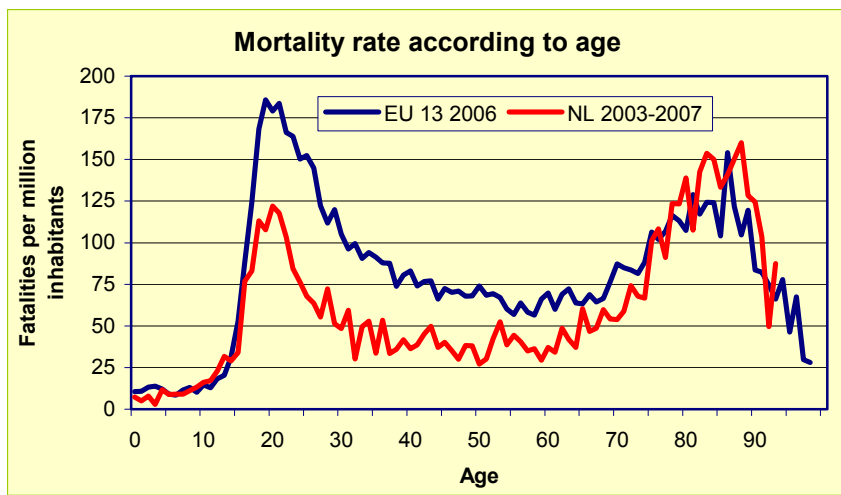


Figure 3. Registered number of fatalities according to the age of the casualty per million inhabitants of that age. The Netherlands (2003-2007 average) as compared with 13 EU countries in 2006 (Weijermars et al., 2008).

The development between 1991 and 2006/2007 indicates that the number of fatalities in the Netherlands decreased more rapidly than in the other 13 EU Member States for almost all age groups. With an annual decrease of 5% in the Netherlands and one of 4.2% in the other thirteen EU countries respectively, the difference in the rate of decrease was largest for the 18-29 age group. The Dutch rate of decrease was the same as that of the other thirteen Member States only for the 60 and over age group (Weijermars et al., 2008).

#### Why do countries develop similarly or differently? The SUNflower projects

It is clear that developments in road safety differ per country. Three successive international projects examined the determinative factors in this respect, the lessons that could be learned by other countries and the way in which these factors could be made concrete and measurable. These so-called SUNflower projects (see also [www.sunflower.swov.nl](http://www.sunflower.swov.nl)) were co-ordinated by SWOV and carried out with financial support from the European Commission.

The first SUNflower study focused on Sweden, the United Kingdom and the Netherlands, the 'SUN' countries, which have been among the safest in Europe for a long time already. The study (Koorstra et al., 2002) revealed that while all three countries have taken targeted measures in relation to driving under the influence, speeding violations, the use of seatbelts and safer roads, policies are implemented in different ways. In addition, quantitative targets – that is, a percentage by which the number of road casualties must decrease within a set period of time – are used in all of the countries referred to.

Six countries from Southern and Central Europe joined the second study. This SUNflower+6 study (Wegman et al., 2005) revealed that different factors influenced the development in the number of casualties and underlying performance indicators in the different countries. With respect to the three SUN countries, for example, the Netherlands stands out in a negative sense in terms of the safety of moped riders and young drivers. A comparison of the measures taken in Sweden and the United Kingdom with those taken in the Netherlands for these groups led to a number of concrete recommendations. Among other things, the Netherlands could ensure that young drivers have more experience prior to taking the driving test through, for example, supervised driving. For moped riders, more stringent training requirements should be applied, the correct use of a helmet should be more strictly enforced and mopeds should be issued with registration numbers to simplify monitoring in relation to speed and other matters. Meanwhile, many of these recommendations have been implemented in the Netherlands or are otherwise the subject of well-advanced implementation plans.

The third, and for the time being last, SUNflower study, SUNflowerNext, set out the way in which SUNflower would like to study road safety in Europe in the future (Wegman et al., 2008). Countries are usually compared by means of data on casualties or relevant road user behaviour, the so-called performance indicators. The SUNflowerNext study attempted to develop a composite road safety

performance index based on a range of different indicators. Such a composite index would enable a far more complete picture of countries' respective road safety performances and would clarify what countries could still learn from each other.

## Conclusion

The level of road safety in the Netherlands has been one of the highest in the world for many years already and the country occupies second place in terms of the number of fatalities per million inhabitants. Only Malta is safer in this respect. Within Europe, the level of road safety is likewise high in the United Kingdom, Sweden, Norway, Switzerland, Iceland and Germany. Over approximately the last two decades, the development in the number of fatalities in the Netherlands has been similar to the average of the fifteen 'old' EU Member States. The development in the twelve new EU Member States is somewhat slower. As is the case for most EU countries, it is unlikely that the Netherlands will achieve the European target of halving the number of fatalities by 2010 relative to 2001.

In comparison with the 'old' Member States, the development in safety over approximately the last two decades in the Netherlands was somewhat less favourable for vulnerable road users (pedestrians, cyclists and moped and light moped riders) and slightly better for motorcyclists and car occupants. If the population is categorized according to age, the mortality rate in the Netherlands is lower than the average in the other 'old' Member States for almost all age groups. The rate is only higher for the 9-13 and 80 and over age groups.

The monitoring of road safety and relevant road user behaviour, preferably in relation to other factors that influence road safety, such as degree of mobility, weather conditions and the like, can yield greater insight into the how and why of developments in different countries. Such insight would make it possible to identify success factors and enable countries which are developing less quickly to learn from the faster developing countries. The recently completed series of SUNflower projects have contributed to the development of a sound method for that purpose.

## Publications and sources

Jost, G., Popolizio, M., Allsop, R. & Eksler, V. (2009). [2010 on the horizon; 3rd road safety Performance Index PIN report](#). European Transport Safety Council ETSC, Brussels.

Commission of the European Communities (2001). [White Paper: European transport policy for 2010: time to decide](#). Office for Official Publications of the European Communities, Luxembourg.

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[CARE](#): Community database on Accidents on the Roads in Europe

[IRTAD](#): International Road Traffic and Accident Database

[Eurostat](#): Het Europese Statistisch Bureau in Luxemburg