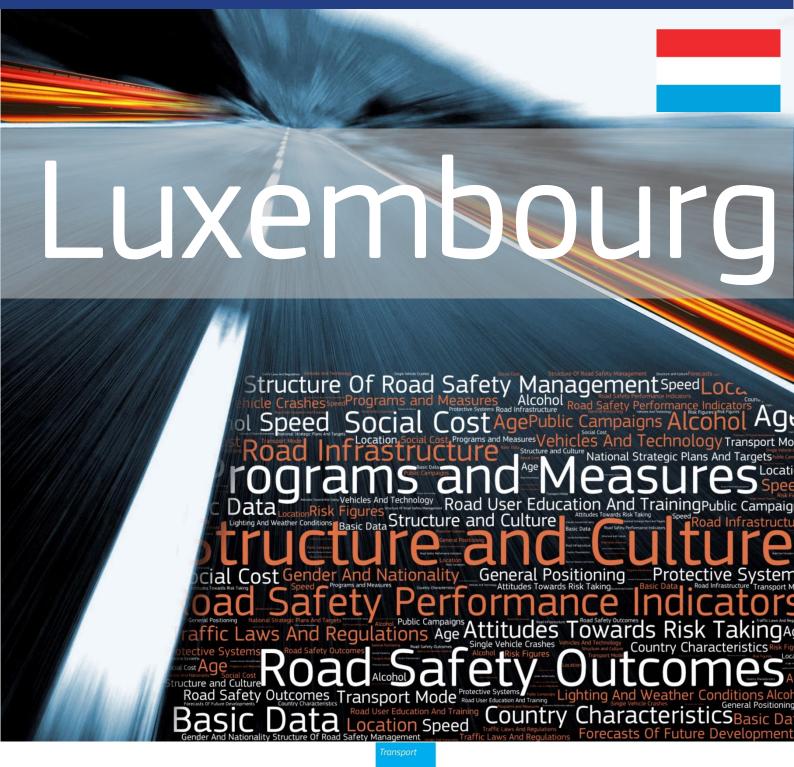




Road Safety Country Overview





Structure and Culture

Basic Data

Table 1: Basic data of Luxembourg in relation to the EU average

Basic data of Luxembourg	EU average
- Population: 0,56 million inhabitants (2015)[2]	18,1 million (2015)
- Area: 2.589 km ² (2015)[2]	159.663 km ² (2015)
(0% water) (2015)[4]	2,94% water (2015)
- Climate and weather conditions (capital city; 2015) [3]:	(2015)
Average winter temperature (Nov. to April): 5,5°C	6,5°C
 Average summer temperature (May to Oct.): 15,3°C 	17,8°C
- Annual precipitation level: 1.000 mm	651 mm
- Exposure: 0.6 billion vehicle km (2014) [1]	122,4 billion vehicle km (2014) ¹
- 0,79 vehicles per person (2014) [1]	0,62 (2014)
Sources: [1] IRTAD; [2] EUROSTAT; [3] national sources ; [4] CIA	

Luxembourg has one of the highest GDPs per capita in the world.

Country characteristics

Table 2: Characteristics of Luxembourg in comparison to the EU average

Characteristics of Luxembourg	EU average
- Population density: 218 inhabitants/km² (2015)	114 inhabitants/km ²
[2]	(2015)
- Population composition (2015) [2]	
16,7% children (0-14 years)	15,6% children
69,1% adults (15-64 years)	65,5% adults
14,2% elderly (65 years and over)	18,9% elderly (2015)
- Gross Domestic Product (GDP) per capita:	
€80.500 (2015) [2]	€26.300 (2015)
- 90,2% of population lives inside urban area	73,3% (2015)
(2015)[4]	
- Special characteristics [4]: mostly gently rolling	
uplands with broad, shallow valleys; uplands to	
slightly mountainous in the north	
Sources: [1] IRTAD: [2] EUROSTAT: [3] national sources : [4] CIA	

¹ Based on the average of 24 EU countries.



Structure of road safety management

In Luxembourg the policy making is centralised. Luxembourg adopted the EU Target to halve the number of road fatalities by 2020.

The following key-actors are responsible for road safety (RS) policy making:

Table 3: Key actors per function in Luxembourg			
Key functions	Key actors		
 Formulation of national RS strategy Setting targets Development of the RS programme 	- The Ministry of Sustainable Development and Infrastructure (Department of Transport)		
Monitoring of the RS development in the country	The Ministry of Sustainable Development and Infrastructure (Department of Transport)Police		
3. Improvements in road infrastructure	- The Ministry of Sustainable Development and Infrastructure (Direction de la circulation et de la sécurité routières)		
4. Vehicle improvement	 The Ministry of Sustainable Development and Infrastructure (Department of Transport) The Vehicle Inspection Centre (SNCT) 		
5. Improvement in road user education	 The Ministry of Sustainable Development and Infrastructure (Direction de la circulation et de la sécurité routières) Centre de formation pour conducteurs à Colmar- Berg SNCT 		
6. Publicity campaigns	 The Ministry of Sustainable Development and Infrastructure (The Department of Transport) Sécurité Routière (Road Safety prevention Association) 		
7. Enforcement of road traffic laws	- Ministry of Sustainable Development and Infrastructure - Police grand-ducale		
8. Other relevant actors	Other (non-profit) organisations are active on road safety awareness, education and prevention: e.g. - The Association of Road Victims (AVR) - Responsible Young Drivers (awareness for young drivers)		

The Department of Transport of the Ministry of Sustainable Development and Infrastructure is leading road safety issues.

Attitudes towards risk taking

Sources: national sources

As Luxembourg is not part of the ESRA survey, there is no information on attitudes that is comparable to other European countries.



Programmes and measures

National strategic plans and targets

Luxembourg adopted the EU target to half the number of fatalities by 2020. Moreover, the targets were defined according to an action plan bringing together all stakeholders in road safety. The 2014-2018 road safety action plan is launched under the concept of Vision Zero, zero deaths and zero serious injuries.

The 2014-2018 road safety action plan in Luxembourg is launched under the concept of Vision Zero, zero deaths and zero serious injuries.

Table 5: Road safety targets for Luxembourg

Year	Fatalities	
2020	-50%	
Source IRTAD 2016		

- Priority topics:
 - reducing speeding
 - safety of vulnerable road users
 - strengthening the demerit point system introduced in 2002
 - road safety campaigns to raise awareness of pollution and dangerous behaviour
 - implementation of automatic speed controls
 - improvement in road infrastructure

(Sources: IRTAD, 2016)

Road infrastructure

Table 6: Description of the road categories and their characteristics in Luxembourg

Road type	General speed limits for passenger cars (km/h)
Urban roads	50
Rural roads	90
Motorways	130

Source: IRTAD, 2016

- Special rules for:
 - 110 km/h in case of rain on motorways
 - Light motorcycle (A1; until 18 years): 80 km/h
- Guidelines and strategic plans for infrastructure are available in Luxembourg.

Table 7: Obligatory parts of infrastructure management in Luxembourg and other EU countries

Obligatory parts in Luxembourg:	EU countries with obligation
Safety impact assessment: yes	32%
Road safety audits: no	81%
Road safety inspections: yes	89%
High risk site treatment: no	74%

Sources: IRTAD, 2015



Luxembourg has recently paid attention to the improvement of infrastructure for pedestrians and cyclists.

Drink-driving and speed law enforcement are assessed as less effective in Luxembourg than in other EU countries.

- Recent activities of road infrastructure improvement have been addressing:
 - A new working group to analyse and improve cycling networks was created within the Ministry of Sustainable Development and Infrastructure.
 - new guidelines on pedestrian crossing in urban areas

(Sources: IRTAD, 2016)

Traffic laws and regulations

Table 8: Description of the regulations in Luxembourg in relation to the most common regulations in other EU countries

common regulations in other to countries			
Regulations in Luxembourg [1]	Most common in EU (% of countries)		
Allowed BAC ² levels:			
General population: 0,5‰Novice drivers: 0,2‰Professional drivers: 0,2‰	0,5% (61%) 0,2% (39%) and 0,0% (36%) 0,2% (36%) and 0,0% (36%)		
Phoning:			
- Hand held: not allowed - Hands free: allowed	Not allowed (all countries) Allowed (all countries)		
Use of restraint systems:			
Driver: obligatoryFront passenger: obligatoryRear passengers: obligatoryChildren: obligatory	Obligatory (all countries) Obligatory (all countries) Obligatory (all countries) Obligatory (all countries)		
Helmet wearing:			
Motor riders: ObligatoryMoped riders: ObligatoryCyclists: not obligatory	Obligatory (all countries) Obligatory (all countries) Not obligatory (46%)		
- A demerit point system is in place. [2]			

Sources: [1] EC DG-Move, 2016; [2] WHO, 2013

Enforcement

Table 9: Effectiveness of enforcement effort in Luxembourg according to an international respondent consensus (scale = 0-10)

Issue	Score for Luxembourg	Most common in EU (% of countries)
Speed legislation enforcement	6	7 (43%)
Seat-belt law enforcement	7	7 (25%) and 8 (25%)
Child restraint law enforcement	8	8 (39%)
Helmet legislation enforcement	9	9 (50%)
Drink-driving law enforcement	6	8 (43%)

Source: WHO, 2015

² Blood Alcohol Concentration



Road safety education at school is compulsory within the curriculum of health education.

Road User Education and Training

Table 10: Road user education and training in Luxembourg compared to the situation in other EU countries

<u> </u>	
Education and training in Luxembourg	Most common in EU (% of countries)
General education programmes:	
 Primary school: compulsory within the curriculum of health education Secondary school: compulsory within the curriculum of health education Other groups: young drivers within 2 years after driving license [1,3] 	Compulsory (71%) Compulsory (43%) -
Driving licences thresholds:	
 Passenger car: 18 years Motorised two wheeler: 16 years (max. power 11 kw max. 125 cc) 21 years (power >25 kw, 2 first years max power 11kw max 125 cc) Buses and coaches: 21 years Lorries and trucks: 21 years [2,3] Sources: [1] ROSE25, 2005; [2] ETSC, 2011; [3] national sources 	18 years (79%) 18 years (low categories) and higher ages (32%) 21 years (86%) 21 years (75%)
30d1cc3. [1] NO3L23, 2003, [2] L13C, 2011, [3] Hatiorial 30d1cc3	,

Public Campaigns

Table 11: Public campaigns in Luxembourg compared to the situation in other EU countries

Campaigns in Luxembourg	Most common issues in EU (% of countries)
Organisation:	
 Ministry of Sustainable Development and Infrastructure (Department of Transport) 'La Sécurité Routière' 	
Main themes:	
- Drink-driving - Speeding	Drink-driving (96%) Speeding (86%) Seat-belt (79%)

Sources: [1] SUPREME, 2005; [2] ETSC, 2011; [3] national sources

Vehicles and technology (national developments)

Table 12: Developments of vehicles and technology in Luxembourg, compared to the situation in other EU countries

Mandatory technical inspections:	Most common in EU (% of countries)
Passenger cars: every 12 months	Every 12 months (39%)
Motorcycles: every 12 months	Every 24 months (32%)
Buses or coaches: every 12 months	Every 12 months (61%)
Lorries or trucks: every 12 months	Every 12 months (68%)

Sources: EC website, national sources

Mandatory vehicle inspection periods in Luxembourg are similar to the most common periods in the EU.



The number of speed tickets per population decreased somewhat between 2006 and 2011.

Road Safety Country Overview - LUXEMBOURG

Road Safety Performance Indicators

Speed

Table 13: Number of speed tickets per population in Luxembourg versus the EU average

Meas		2006	2011	Average annual change	EU average (2011)	
	ber of speed ts/1.000 population	48	42	-2,6%	89	

Sources: [1] ETSC, 2010; [2] ETSC, 2015

Table 14: Percentage of speed offenders per road type in Luxembourg compared to the EU average

Road type	2004	2006	Average annual change	EU average
Motorways	n/a	5%	-	n/a
Rural roads	n/a	n/a	-	n/a
Urban roads	n/a	n/a	-	n/a
Caaa [1] FTCC 20	10			

Sources: [1] ETSC, 2010

Table 15: Mean speed per road type in Luxembourg compared to the EU average

Road type	2004	2006	Average annual change	EU average
Motorways	n/a	115	-	n/a
Rural roads	n/a	n/a	-	n/a
Urban roads	n/a	n/a	-	n/a

Sources: [1] ETSC, 2010; [2] ETSC, 2015

Alcohol

Table 16: Road side surveys for drink-driving in Luxembourg compared to the EU average

Measure	2006	2015	Average annual change	EU average (2015)
Amount of tests/1.000 population	n/a	n/a	-	209
% tested over the limit	n/a	n/a	-	2,2%

Sources: [1] ETSC, 2010; [2] ETSC, 2016

The rate of alcohol offenders is not available in Luxembourg.



The vehicle fleet in Luxembourg is newer than the EU average.

Seat-belt wearing rates are somewhat higher than the EU average.

Vehicles

Table 17: State of the vehicle fleet in Luxembourg compared to the EU average

average	
Vehicles	EU average
Cars per age group (2012) [1]:	Passenger cars (2012)
- ≤ 2 years: 14%	≤ 2 years: 9%
- 3 to 5 years: 37%	3 to 5 years: 13%
- 6 to 10 years: 30%	6 to 10 years: 28%
- > 10 years: 19%	>10 years: 49%
EuroNCAP occupant protection score of cars	
(new cars sold in 2013) [2]:	
- 5 stars: no information	5 stars: 52,5%
- 4 stars: no information	4 stars: 4,5%
- 3 stars: no information	3 stars: 2,9%
- 2 stars: no information	2 stars 0,5%
- not tested: no information	not tested: 39,6% ³
Source: [1] EUROSTAT, 2015; [2] ETSC, 2016	

Protective systems

Table 18: Protective system use in Luxembourg versus the average in EU

Protective systems	EU average ⁴
Daytime seat-belt wearing in cars and vans (2015):	(2015)
 90% front 81% driver no information on % front passenger 76% rear no information on % child restraints Helmet use (2015): 	89,7% front not available not available 69,5% rear not available
almost 100% motorcyclists (estimated)no information on % cyclists	not available

Source: IRTAD, 2016

³ Based on data of 25 EU countries (excl. HR, LU and MT).

 $^{^4}$ Based on data of 15 EU countries; data of AT, BE, IE, IT, LU, HU, FI, SE (2015); data of CZ, DE, DK, HR, LT, PL, UK (2014); data of PT (2013)

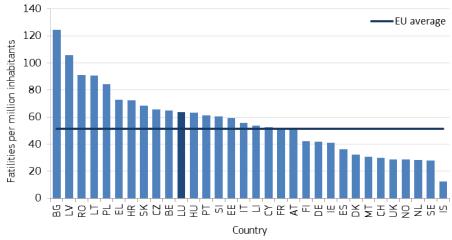


Road Safety Outcomes

General positioning

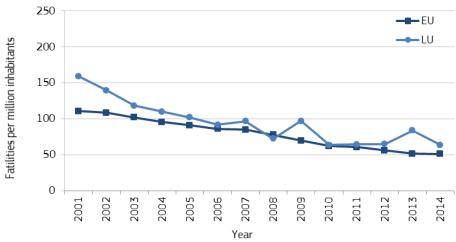
The fatality rate of Luxembourg is higher than the EU average (around 64 fatalities per million population in 2014). The development has been similar to the EU average rate between 2001 and 2014 with the exception of the years 2007, 2009 and 2013.

Figure 1: Fatalities per million inhabitants in 2014 with EU average



Sources: CARE, Eurostat

Figure 2: Development of fatalities per million inhabitants between 2001 and 2014 for Luxembourg and the EU average



Sources: CARE, Eurostat

The fatality rate of Luxembourg is higher than the EU average. The development has been similar to the EU average rate between 2001 and 2014, with the exception of the years 2007, 2009 and 2013.



The share of lorry and truck fatalities is much higher than the EU average.

Transport mode

The share of lorry and truck occupant fatalities is higher than the EU average. While there was no average annual reduction of motorcyclist fatalities between 2001 and 2015, it was 8% for car occupants. In the same period. The annual reduction rate of pedestrian fatalities was 3%.

Table 19: Reported fatalities by mode of road transport in Luxembourg compared to the EU average

Transport mode	2001	2015	Average annual change	Share in 2015	EU average (2015)
Pedestrians	11	7	-3%	19%	21%
Car occupants	51	16	-8%	44%	45%
Motorcyclists	6	6	0%	17%	14%
Mopeds	0	0	0%	0%	3%
Cyclists	1	0	-100%	0%	8%
Bus/coach occupants	0	0	0%	0%	0%
Lorries or truck occupants	1	7	15%	19%	5%

Sources: CARE, national sources

Age, gender and nationality

Table 20: Reported fatalities by age, gender and nationality in Luxembourg versus the EU average

Age and gender	2001	2015	Average annual change	Share in 2015	EU average (2015)	
Females						
0 - 14 years	2	0	-100%	0%	2%	
15 - 17 years	3	0	-100%	0%	1%	
18 - 24 years	4	0	-100%	0%	2%	
25 – 49 years	5	4	-2%	11%	7%	
50 - 64 years	2	1	-5%	3%	4%	
65+ years	1	2	5%	6%	8%	
Males						
0 - 14 years	2	0	-100%	0%	2%	
15 – 17 years	0	2	-	6%	1%	
18 - 24 years	12	5	-6%	14%	10%	
25 - 49 years	22	7	-8%	19%	28%	
50 - 64 years	10	9	-1%	25%	16%	
65+ years	6	6	0%	17%	14%	
Nationality of driver or rider killed						
National	38	16	-6%	44%	n/a	
Non-national	32	20	-3%	56%	n/a	

Sources: CARE, national sources

Luxembourg has a somewhat higher share of male road fatalities than the EU average. More than half of all fatalities are non-nationals.



Location

Fatalities in rural areas are over-represented in Luxembourg compared to the EU average.

Table 21: Reported fatalities by location in Luxembourg compared to the EU average

Location	2001	2015	Average annual change	Share in 2015	EU average (2015)
Built-up areas	17	5	-8%	14%	37%
Rural areas	46	28	-3%	78%	53%
Motorways	7	3	-6%	8%	7%
Junctions	8	1	-14%	3%	20%

Sources: CARE, national sources

Fatalities in rural areas are over-represented in Luxembourg.

Lighting and weather conditions

Table 22: Reported fatalities by lighting and weather conditions in

Luxembourg compared to the EU average

Conditions	2001	2015	Average annual change	Share in 2015	EU average (2015)
Lightning conditions					
During daylight	15	25	4%	69%	50%
During night-time	26	9	-7%	25%	30%
Weather conditions					
While raining	9	7	-2%	19%	10%

Sources CARE, national sources

Single vehicle accidents

Table 23: Reported fatalities by type in Luxembourg compared to the EU average

Accident Type	2001	2015	Average annual change	Share in 2015	EU average (2015)
Single vehicle	30	17	-4%	47%	24%

Sources: CARE, national sources

Under-reporting of casualties

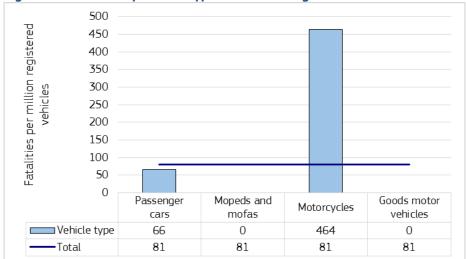
- Fatalities: 100%, due to improvements of the data recording systems.
- Hospitalised: no studies with quantitative information exist.

The share of fatal single vehicle accidents in Luxembourg is much higher than the EU average.



Risk Figures

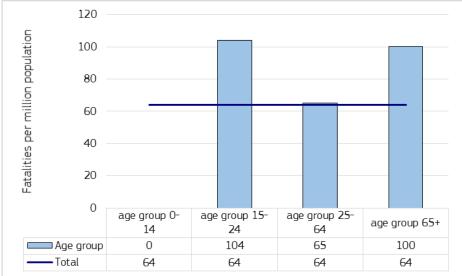
Figure 3: Fatalities by vehicle type in Luxembourg in 2014



Sources CARE, IRTAD

In Luxembourg, risk is highest for motorcyclists, youngsters and the elderly.

Figure 4: Fatalities per million inhabitants in Luxembourg in 2015



Sources: CARE, EUROSTAT



Social Cost

- The total cost of road accident casualties (fatalities and injuries) is estimated at 48,5 billion euros (2014).
- The following costs are an update of the values in Table 5.3 of the HEATCO Deliverable D5 (2006) to base year 2010. Each figure includes the value of safety per se (VSL⁵ for fatality, 13% of VSL for severe, 1% for light injury) and the value of direct and indirect economic costs (10% of VSL for fatality, severe and slight injury based on HEATCO (2005)). EU average based on the VSL of €1,7 million.
- The costs per casualty for 2010 are as follows:

Table 24: Cost (€) per injury type in Luxembourg versus the EU average

Country	Fatality	Severe injury	Slight injury
Austria	2.395.000	327.000	25.800
Belgium	2.178.000	330.400	21.300
Bulgaria	984.000	127.900	9.800
Croatia	1.333.000	173.300	13.300
Cyprus	1.234.000	163.100	11.900
Czech Republic	1.446.000	194.300	14.100
Denmark	2.364.000	292.600	22.900
Estonia	1.163.000	155.800	11.200
Finland	2.213.000	294.300	22.000
France	2.070.000	289.200	21.600
Germany	2.220.000	307.100	24.800
Greece	1.518.000	198.400	15.100
Hungary	1.225.000	164.400	11.900
Ireland	2.412.000	305.600	23.300
Italy	1.916.000	246.200	18.800
Latvia	1.034.000	140.000	10.000
Lithuania	1.061.000	144.900	10.500
Luxembourg	3.323.000	517.700	31.200
Malta	2.122.000	269.500	20.100
Netherlands	2.388.000	316.400	25.500
Poland	1.168.000	156.700	11.300
Portugal	1.505.000	201.100	13.800
Romania	1.048.000	136.200	10.400
Slovakia	1.593.000	219.700	15.700
Slovenia	1.989.000	258.300	18.900
Spain	1.913.000	237.800	17.900
Sweden	2.240.000	328.700	23.500
Great Britain	2.170.000	280.300	22.200
EU average	1.870.000	243.100	18.700

Source: Update of the Handbook on External Costs of Transport. Final Report. Report for the European Commission: DG MOVE. Ricardo-AEA/R/ ED57769 Issue Number 1; 8th January 2014

Road safety cost in Luxembourg is the highest among the EU countries.

⁵ Value of Statistical Life



Synthesis

Safety position

- Despite the overall decrease in the last decade, the fatality rate is currently higher than the EU average.

Scope of problem

- Given the small size of the country, the absolute number of fatalities is also relatively small.
- By far the majority of fatalities in Luxembourg are car occupants, but the risk is highest for motorcycles.
- More than half of the fatal victims were non-national road users; a lot of road users in Luxembourg are transit users.
- Fatalities in rural areas are over-represented in Luxembourg.
- Road safety cost in Luxembourg is the highest among the EU countries.

Recent progress

- The development of the fatality rate of Luxembourg has been similar to the EU average rate between 2001 and 2014 with the exception of the years 2007, 2009 and 2013. The fatality rate of Luxembourg is subject to fluctuation due to the country's small accident figures.
- Traffic enforcement is improving in Luxembourg.

Remarkable road safety policy issues

- Luxembourg has a 0,2‰ drink-driving limit for novice and professional drivers.
- The vehicle fleet in Luxembourg is newer than the EU average.

Road casualties in Luxembourg are very much dominated by the transit traffic through the country.

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Notes

1. Country abbreviations



Sources: CARE (Community database on road accidents), EUROSTAT, ITF-IRTAD, National sources.

The full glossary of definitions of variables used in this Report is available at: http://ec.europa.eu/transport/road/safety/pdf/statistics/cadas/glossary.pdf

- 3. Data available in September 2016.
- 4. Average annual change is calculated with the power function between the first and last years:

[aac = $(b/a)^{1/n}$ -1, where aac: annual average change, a: first year value, b: last year value, n: number of years].

5. Explanation of symbols in Tables:

n/a: not available

- "-": not applicable (e.g. calculation cannot be performed)
- 6. This 2016 edition of Road Safety Country Overviews updates the previous version produced in 2012 within the EU co-funded research project <u>DaCoTA</u>.

7. Disclaimer

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8. Please refer to this Report as follows:

European Commission, Road Safety Country Overview - Luxembourg, European Commission, Directorate General for Transport, September 2016.



