Luxembourg





Structure and Culture

Basic data

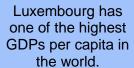
Table 1: Basic data of Luxembourg in relation to the European average. (Sources: [1] OECD/ITF, 2011; [2] Eurostat; [3] DG-TREN, 2005; [4] CIA)

Basic data of Luxembourg	European average
Population: 502 066 inhabitants (2010)	17.1 million (2010) [1,2]
 Area: 2 586 km² (2010) 	156 225 km ² (2010) [1,3]
Water: 0.6% (2010)	3% water (2010) [4]
 Climate and weather conditions (capital city; 2010): 	(2010)
Average winter temperature (Nov. to April): 5°C	6°C
Average summer temperature (May to Oct.): 15°C	16°C
Annual precipitation level: 733 mm	747 mm
 Exposure: vehicle km not available 	168 billion vehicle km
	(2010") [1]
0.4 million vehicles (2010)	12 million vehicles (2010")
(81% cars, 4% motorcycles, 2% lorries, 0.4% busses)	[1, 2]
 0.8 motorised vehicles per person (2010) 	0.7(2010 ^{1, III}) [1,2]

Country characteristics

Table 2: Characteristics of Luxembourg in comparison to the European average. (Sources: [1] OECD/ITF, 2011; [2] Eurostat; [3] national sources)

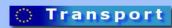
Characteristics of Luxembourg	European average
 Population density: 194 inhabitants/km² (2010) 	110 inhabitants km ² (2010 ¹) [1,2,3]
 Population composition (2010): 18% children (0-14 years), 68% adults (15-64 years), 14% elderly (65 years and over) 	16% children, 67% adults, 17% elderly (2009 ^{iv}) [1,2]
 Gross Domestic Product (GDP) per capita: €79 500 (2010) 	€26 100 (2010) [1,2]
 35% of population lives inside urban area (2010) 	42% (2010 ^v) [1,2]
 Special characteristics: Luxembourg has a lot of transit traffic, also due to workers from neighbouring countries and cheaper fuel. 	





Based on 30 European countries; data of HU = 2009.

^v Based on 29 European countries (excl. IS).



ii Based on 15 European countries (excl. BG, CY, EE, EL, ES, HU, IT, LT, LU, LV, MT, PL, PT, RO, SK); data of CZ, IE, SE, NO (2009); data of AT, BE, DK (2008); Data of UK (2006); data of NL (2003).

Based on 28 European countries (excl. CY and LT); data of EL, IT, PL, PT and UK = 2009; data of BE, EE, ES, RO and NO = 2008; data of IE = 2007; data of MT and SK (2002)

iv Based on 27 European countries (excl. LT, NO, PL); data of BE, UK (2008).

- Structure of road safety management
- Policy making is centralized in Luxembourg.

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

Table 3: Key actors per function in Luxembourg. (Sources: DG-TREN, 2005; 2010)

Table 3: Key actors per function in Luxembourg. (Sources: DG-TREN, 2005; 2010)		
Key functions	Key actors	
1.Formulation of national RS strategy	The Ministry of Sustainable Development and Infrastructure (Department of Transport):	
Setting targets	overall responsibility for road safety.	
Development of the RS programme		
2. Monitoring of the RS development in the country	 Ministry of Sustainable Development and Infrastructure (Department of Transport) The police (Police Grand-Ducale) 	
3. Improvements in road infrastructure	 The Ministry of Sustainable Development and Infrastructure(Department of civil engineering) 	
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 The Ministry of Education: awareness courses on road safety in primary and secondary schools. The SNCT: provides driving training. The "Centre de Formation pour conducteurs": provides driving training and education programs in schools 	
6. Publicity campaigns	 The Ministry of Sustainable Development and Infrastructure (The Department of Transport) La Securité Routière 	
7. Enforcement of road traffic laws	The policePublic prosecutor's department	
8. Other relevant actors	 The Ministry of the Interior: co-ordination of legislation and regulations. The Ministry of Public Health: responsible for emergency aid for traffic accident victims. 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). 	

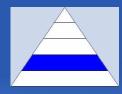


Responsibility is assigned to the Transport
Department within the Ministry of Sustainable
Development and Infrastructure.

Attitudes towards risk taking

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











Programs and measures

National strategic plans and targets

- In April 2012, the Department of Transport has released their Global Strategy for a sustainable Mobility. Road safety is not mentioned in it and no road safety plan is available.
- Target:

Table 4: Road safety targets for Luxembourg

Year	Fatalities
2020	-50%

Luxembourg follows the European road safety target.

- Priority issues (without reference to concrete actions):
 - Vulnerable road users,
 - o Traffic laws.
 - o Drivers licence,
 - Transport of goods and travellers,
 - o Campaigns,
 - o Accidentology.

(Sources: national sources)

Road infrastructure

In Luxembourg, roads are categorized in the following classes with corresponding speed limits and design guidelines:

Table 5: Description of the road categories and their characteristics in Luxembourg (Source: TiS.PT, 2003; national sources).

Road type	Speed limit (km/h)
Urban roads	50
Rural roads	90
Motorways	130/110

- Special rules for:
 - Light motorcycles (A1; until 18 years): 80 km/h
- Guidelines and strategic plans for infrastructure are available in Luxembourg.

Table 6: Obligatory parts of infrastructure management in Luxembourg and other European countries. (Sources: DG-TREN, 2010)

Countines: Courses: DO TREN, 2010		
Obligatory parts in Luxembourg:	European countries with obligation	
Safety impact assessment: -	-	
Road safety audits: no	50%	
Road safety inspections: no	60%	
Black spot treatment: no	47% ^{vi}	

- Recent activities of road infrastructure improvement have been addressing:
 - Improvement of level crossings (railroad crossing)
 - New guidelines for protection barriers
 - o Improve intersections

vi Based on data of 18 countries (excl. AT, BE, CH, CZ, FI, FR, HU, IE, MT, NO, RO, SE).



Traffic laws and regulations

Table 7: Description of the regulations in Luxembourg in relation to the most common regulations in other European countries. (Sources: [1] DG-TREN, 2005; [2] national sources: [3] DG-TREN. 2010)

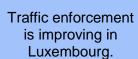
Regulations in Luxembourg	Most common in Europe (% of countries)
Allowed BAC level: 0.5%;	0.5‰ (60%)
Novice drivers: 0.2‰;	0.5‰ and 0.2‰ (both 30%)
Professional drivers: 0.2‰ [2]	0.5% (30%) [1,2]
Phoning not allowed since:	
 Hand held: prohibited 	Not allowed (97%) [2,3]
 Hands free: allowed [3] 	-
Use of restraint systems:	
 Drivers: obligatory 	Obligatory (all countries)
 Front passengers: obligatory 	Obligatory (all countries)
 Rear passengers: obligatory 	Obligatory (all countries)
Children: obligatory [2, 3]	Obligatory on all seats (73%) [2,3]
Helmet wearing:	
 Motor riders: obligatory 	Obligatory (all countries)
 Moped riders: obligatory 	Obligatory (all countries)
Cyclists: not obligatory [3]	Recommended (25% ^{vii}) [2,3]
 New cars don't have to be fitted with 	
dedicated day time running lights, but	
according to EU requirements, it will be	
obligatory in the future. [2]	

Enforcement

Table 8: Effectiveness of enforcement effort in Luxembourg according to an international respondent consensus (scale = 0-10) (Source: DG-TREN, 2010)

Issue	Score for Luxembourg	Most common in Europe (% of countries)
Speed legislation enforcement	Not available	7 (35%)
Seat-belt law enforcement	Not available	7 (43%) ^{viii}
Child restraint law enforcement	Not available	6 (27% ^{ix})
Helmet legislation enforcement	Not available	9 (39% ^{ix})

Luxembourg has a 0.2 drink-driving limit for novice and professional drivers, which is lower than in most countries.





vii Based on data of 24 countries (excl. CH, CY, HU, LU, NO, PT).

ix Based on data of 22 countries (excl. DE, DK, IE, IS, LU, NL, RO and UK).



viii Based on data of 23 countries (excl. DE, DK, IE, IS, LU, NL and UK).

Table 9: Performance of enforcement effort in Luxembourg according to an international respondent consensus (scale = is good, is improving, needs to do more) (Source: DG-TREN, 2010)

Issue	Score for Luxembourg	Most common in Europe (% of countries)
Speeding	Is improving	Is improving (50%)
Drink driving	Is improving	Is improving (79%) ^x
Seat belt use	Is improving	Is improving (52% ^{xi})

Road user education and training

Table 10: Road user education and training in Luxembourg, compared to the situation in other European countries. (Sources: [1] ROSE25, 2005; [2] ETSC, 2011; [3] national

sources)	
Education and training in Luxembourg	Most common in Europe (% of countries)
General education programmes:	
Primary school: compulsory within the curriculum of health education	Compulsory (65% ^{XII})
 Secondary school: compulsory within 	Compulsory (50% xiii) [1,2]
the curriculum of health education	
 Other groups: young drivers within 2 	-
years after driving license [3]	
Driving licences thresholds:	
 Passenger car: 18 years 	18 years (79%)
 Motorised two wheeler: 16 years (max. 	18 years (low categories) and higher ages for
power 11 kw max 125 ccm)	faster vehicles (66%)
21 years (power >25 kw, 2 first years	
max power 11kw max 125 ccm)	
 Busses and coaches: 21 years 	21 years (76%) ^{xiv}
 Lorries and trucks: 21 years 	21 years (79% ^{xv}) [2,3]

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

Public campaigns

Table 11: Public campaigns in Luxembourg, compared to the situation in other European countries. (Sources: SUPREME, 2007; national sources)

Campaigns in Luxembourg	Most common issues in Europe (% of countries)
Organisation:	
 The Ministry of Sustainable Development and 	
Infrastructure (Department of Transport);	
 'La Sécurité Routière'. 	
Main themes:	
Drink-driving	Drink-driving (83%)
_	Seat-belt (73%)
- Speeding	Speeding (53%)



Based on data of 24 countries (excl. BG, CH, IS, NO, PL and RO).

xv Based on data of 28 countries (excl. IE and NO).



xii Based on data of 25 countries (excl. BG, CH, IS, NO and RO). xii Based on data of 26 countries (excl. BG, CH, NO and RO).

xiii Based on data of 24 countries (excl. BG, CH, MT, NO, RO and SK).

xiv Based on data of 29 countries (excl. NO).

For buses and trucks, mandatory inspection periods are shorter in Luxembourg than the most common period in Europe.

Vehicles and technology (national developments)

Table 12: Developments of vehicles and technology in Luxembourg, compared to the situation in other European countries. (Sources: TiS.PT, 2003; national sources)

Mandatory technical inspections	Most common in Europe (% of countries)
Passenger cars: Every 12 months	Every 12 months (41%)
Motorcycles: Every 12 months	Every 12 months (35%)
Busses or coaches: Every 6 months	Every 12 months (41%)
Lorries or trucks: Every 6 months	Every 12 months (41%) ^{xvi}



xvi Based on data of 17 countries (excl.BG, CH, CY, CZ, EE, HU,LT, MT, NO, RO, SI, SK).





The number of speed checks per inhabitants increased somewhat between 2006 and 2008.

The number of alcohol tests per inhabitants have decreased between 2006 and 2008, but the rate of offenders was not found to change.



Road Safety Performance Indicators

Speed

Table 13: Number of speed checks in Luxembourg versus the European average (Source: ETSC. 2010: national sources)

Measure	2006	2008	% change	European average (2008)
Number of tests/1000 inhabitants	24	26	8%	90.8 ^{xvii}

Table 14: Percentage of speed offenders per road type in Luxembourg compared to the European average (Source: ETSC. 2010)

Road type	2001	2010	Average annual change	European average
Motorways	No information	No information	No information	Not available
Rural roads	No information	No information	No information	Not available
Urban roads	No information	No information	No information	Not available

Table 15: Mean speed per road type in Luxembourg compared to the European average (Source: ETSC, 2010)

Road type	2001	2010	Average annual change	European average
Motorways	No information	No information	No information	Not available
Rural roads	No information	No information	No information	Not available
Urban roads	No information	No information	No information	Not available

Alcohol

Table 16: Road side surveys for drink-driving in Luxembourg compared to the European average (Source: ETSC, 2010). This includes only tests that are ordered by the public department of the prosecutor.

Measure	2006	2008	% change	European average (2008)
Number of tests/1000 inhabitants	52	35	33%	145.8 ^{xviii}
% tested over the limit	2%	2%	0%	Not available

Based on data of 17 countries (excl. BE, BG, CH, CZ, DE, IS, LU, LV, MT, NL, RO, SK and UK.).



^{xvii} Based on data of 21 countries (excl. BE, CH, DE, EE, IE, IS, MT, PT and UK).

The quality of cars in Luxembourg is somewhat higher than the European average.

Seat-belt wearing rates are already some years old but seem to be about the European average.

Vehicles

Table 17: State of the vehicle fleet in Luxembourg compared to the European average (Source: ETSC, 2009: national sources)

Todardo. E100, 2003, Hatiorial Godings)	
Vehicle fleet in Luxembourg	European average
Cars per age group (2009):	Total vehicle fleet (2008) ^{xix}
28 % ≤ 2 years,	16% ≤ 2 years,
- 32 % 2 to 5 years,	15% 2 to 5 years,
 25 % 6 to 10 years, 	21 % 6 to 10 years,
- 15 % > 10 year.	33% >10 years
EuroNCAP occupant protection score of cars (new cars	
sold in 2008):	
 5 stars: unknown 	49%
 4 stars: unknown 	35%
 3 stars: unknown 	6%
2 stars: unknown	1% ^{xx}
Average score: 31.9 points (91.3% of the maximum of	of
35 points). This is 1 point higher than the average	
score for the EU-27 countries.	

Protective systems

Table 18: Protective system use in Luxembourg versus the average in Europe (Source: Vis & Eksler, 2008, national sources)

Use of protective systems in Luxembourg	European average
Daytime seat belt wearing in cars and vans: - 78% front (2003) - 81 % driver - No information % front passenger - 60% rear (2003) - 57% child restraint systems (2005)	(2007) 85% front ^{xxi} , Not available Not available 60% rear ^{xxii} , Not available
 Helmet use: 99% motor riders(estimation) 99% moped riders (estimation) No information % cyclists 	Not available Not available Not available



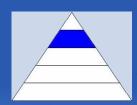
xix Based on data of 22 countries (excl. CH, CY, DE, EL, IS, LT, NO and SK).

Based on data of 22 countries (excl. CY, EL, ES, IS, IT, LT, RO and SK); data of BE, CH, DK, IE, MT, NL (2006); data of HU, NO, PT (2005); data of LU (2003).



xx Based on data of 27 countries (excl. CY, IS and MT).

^{xxi} Based on data of 25 countries (excl. AT, EL, IS, LT and RO); data of SK (2008); data of BE, CH, DK, IE, MT, NL (2006); data of HU, IT, NO, PT (2005); data of LU (2003)



The amount of fatalities per population in Luxembourg is about average, but the decrease of fatalities has gone faster last decades than the European average.

DaCoTA

Road Safety Outcomes

General positioning

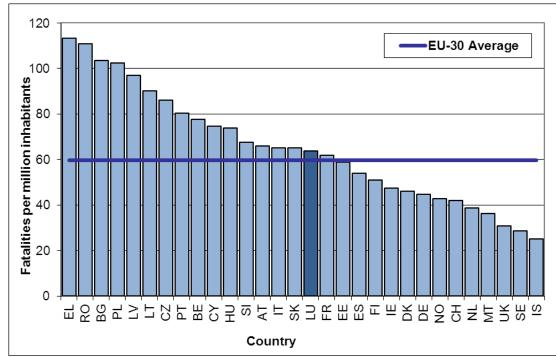


Figure 1: Fatalities per million inhabitants (2010). (Source: CARE, Eurostat).

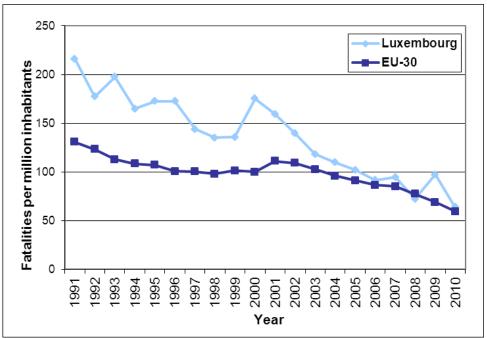


Figure 2: Development of fatalities per million inhabitants between 1991 and 2010. (Source: CARE, Eurostat).

By far the majority of fatalities in Luxembourg are car occupants.

More than one third of the fatal victims were non-national road users; a lot of road users in Luxembourg are transit users.

Most fatal crashes in Luxembourg occur on rural roads and motorways.



• Transport mode

Table 19: Reported fatalities by mode of road transport in Luxembourg compared to the European average of the last year available (Source: CARE, national sources).

Transport mode	2001	2010	Average annual change	% in 2010	European average (2009 ^{xxiii})
Pedestrians	11	1	-	3%	18%
Car occupants	51	27	-	84%	47%
Motorcyclists	6	1	-	3%	13%
Mopeds	0	0	1	0%	2%
Cyclists	1	1	1	3%	5%
Bus/coach occupants	0	0	-	0%	<1%
Lorries or truck occupants	1	1	-	3%	4%
Agricultural vehicles	0	1	-	3 %	

Age, gender and nationality

Table 20: Reported fatalities by age, gender and nationality in Luxembourg versus the European average of the last year available (Source: CARE, national sources).

Age and gender	2001	2010	Average annual change	% in 2010	European average (2009 ^{VIII})	
Females	17	8	-1%	25%	24%	
0-14 years	2	0	-	0%	1%	
15 – 17 years	3	0		0%	1%	
18 – 24 years	4	2	38%	6%	4%	
25 – 49 years	5	4	11%	13%	7%	
50 – 64 years	2	1	-	3%	3%	
65+ years	1	1	67%	3%	7%	
Males	52	24	-6%	75%	75%	
0-14 years	2	0		0%	2%	
15 – 17 years	0	0		0%	2%	
18 – 24 years	12	8	1%	25%	13%	
25 – 49 years	22	9	-5%	28%	31%	
50 – 64 years	10	5	6%	16%	12%	
65+ years	6	2	29%	6%	12%	
Nationality of driver ki	Nationality of driver killed					
National	23	8	-	32%	Not available	
Non-national	21	14	-2%	56%	Not available	

Location

Table 21: Reported fatalities by location in Luxembourg compared to the European average of the last year available (Source: CARE, national sources).

Location	2001	2010	Average annual change	% in 2010	European average (2009 ^{VIII})
Built-up areas	17	3	-11%	9%	33%
Rural areas	46	22	-	69%	49%
Motorways	7	7	20%	22%	5%
Junctions	9	1	-3%	3%	12%

xxiii Based on data of 28 countries (excl. NO, LT); data of FR, IE, MT, SE (2008).



A relative low amount of fatal crashes occur during daylight, and relative many fatal crashes are single vehicle crashes in Luxembourg.

Lighting and weather conditions

Table 22: Reported fatalities by lighting and weather conditions in Luxembourg compared to the European average of the last year available (Source: CARE, national sources).

Conditions	2001	2010	Average annual change	% in 2010	European average (2009 ^{xxiv})
Lightning conditions					
During daylight	15	8	45%	25%	55%
During nighttime	26	13	-5%	41%	39%
Weather condition					
While raining	9	4	15%	13%	10%

Single vehicle crashes

Table 23: Reported fatalities by type in Luxembourg compared to the European average of the last year available (Source: CARE, national sources).

Crash type	2001	2010	Average annual change	% in 2010	European average (2009 ^{xxv})
Single vehicle crash	30	18	-2%	56%	40%

Under-reporting of casualties

- Fatalities: 100% (2010). Data about fatalities are from the reports of the policemen and checked with newspaper messages.
- Hospitalised: no information.

(Source: national sources)



xxiv Based on 25 countries (excl. IE, IT, LT, NO, SI); data of AT, BE, DK, EE, FI, FR, MT, SE (2008).

xxv Based on 27 countries (excl. IE, LT, NO); data of AT, BE, DK, EE, FI, FR, MT, SE (2008).



Risk figures

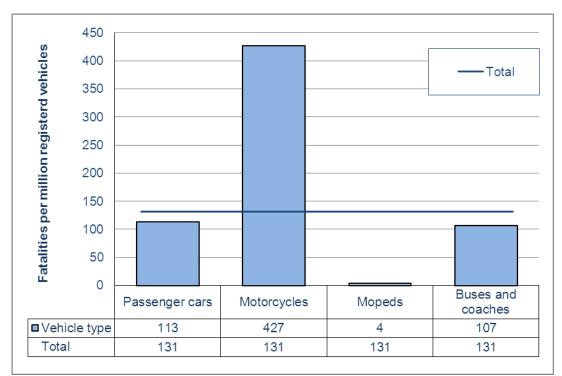


Figure 3: Fatalities by vehicle type for Luxembourg 2001 - 2010 (Sources: CARE, Eurostat).

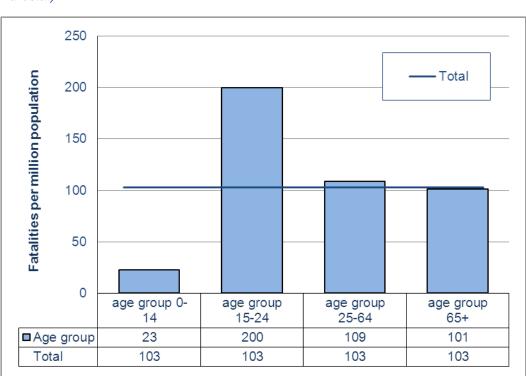
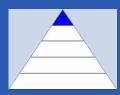


Figure 4: Average of fatalities in Luxembourg by age group 2001-2010 (Sources: CARE, OECD/ITF, 2011).

The risks on motorcycles and youngsters are highest in Luxembourg, but due to the transit position of the country, the risk of cars and trucks may be inflated.





Estimated road safety costs in Luxembourg are higher than the European average for severe injuries.

Social Cost

- Total costs of road crashes: no information
- Percentage of GDP: no information

Table 24: Cost (in million Euro) per injury type in Luxembourg versus the European average (Source: Bickel et al., 2006).

Injury type	Value	European average ^{xxvi}
Fatal	2.33	1.28
Hospitalised	0.36	0.18
Slightly injured	0.02	0.02



xxvi Based on data of 20 countries (excl. BG, DE, FI, FR, HU, IS, LT, NO, RO and SK).





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

Synthesis

Safety position

 The road safety position of Luxembourg within Europe is about the European average. With 64 fatalities per million inhabitants, it is at rank 15 within the European countries.

• Scope of problem

- Given the small size of the country, the absolute number of fatalities is also relatively small and has been ranging between 30 and 70 in the last 10 years.
- By far the majority of fatalities in Luxembourg are car occupants, but the risk is highest for motorcycles.
- More than one third of the fatal victims were non-national road users, which is understandable from the fact that Luxembourg has a lot of transit traffic.
- Most fatal crashes in Luxembourg occur on rural roads and motorways.

Recent progress

- From 2001 to 2010 the number of fatalities has been halved and the decrease of fatalities has gone faster last decades than the European average.
- Traffic enforcement is improving in Luxembourg.

Remarkable road safety policy issues

- Luxembourg has a 0.2 drink-driving limit for novice and professional drivers, which is lower than in most countries.
- For buses and trucks, mandatory inspection periods are shorter in Luxembourg than the most common period in Europe.







Literature

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