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Global Resources Use and Pollution, Volume 1 / Production, Consumption and Trade (1995-2008)

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Introduction

In recent decades, the increase in world population, economic expansion, and the globalisation of the economy have led to a dramatic growth in the use of some natural resources and an increase in the levels of pollution. These trends have coincided with growing concern about some critical questions for the future of humankind such as resource scarcity and depletion, climate change, environmental degradation, the limits of growth, and the inequalities with respect to access to natural resources across countries.

In this context, the need has arisen to develop a comprehensive dataset of reliable and comparable economic and environmental information that contributes to a better understanding of the complexity of these issues, and to supporting evidence-based policymaking.

In order to comply with this need, this Pocketbook presents a series of indicators describing the evolution of the use of natural resources and the emission of air pollutants around the world, in relation to production, consumption, and trade activities. Based on different analyses derived from the World Input-Output Database (WIOD), this publication includes information on six environmental dimensions: land use, material extraction, water use, and emission of acid substances, greenhouse gases and ozone precursors. The time frame covered is the period between 1995 and 2008, and the geographical scope includes the EU-27 Member States, Brazil, China, India, Japan, Russia, the United States of America, and the Rest of the World.

The information presented in this publication can be classified into three different groups of indicators:

1. The 'production' or 'domestic' side indicators report for each country the use of resources as primary inputs (i.e. domestic extraction of materials or land cultivated) and the emissions directly generated by national economic activities.

2. The 'consumption' or 'footprint' indicators show the resources or pollution embodied in the domestic final demand of one country, regardless of where these resources/emissions were used/emitted.

3. The 'Trade' indicators account for the resources/pollution-embodied international trade.

More information on the WIOD can be found at http://www.wiod.org

Symbols and abbreviations

Units of measurement

cap	capita
EUR	euro
g	gram
ha	hectare
k	kilo (10^3)
l	litre
M	million (10^6)
m	metre
m^2	square metre
m^3	cubic metre
t	metric tonne

Chemical and related symbols

acid-e	Acid equivalent
CH_4	Methane
CO	Carbon monoxide
CO_2	Carbon dioxide
$CO_{2\text{-}e}$	CO_2 equivalent
GHG	Greenhouse gases
N_2O	Nitrous oxide
NH_3	Ammonia
NMVOC	Non-methane volatile organic compounds
NMVOC-e	Non-methane volatile organic compounds equivalent
NO_x	Nitrogen oxides
Ozone prec.	Ozone precursors
SO_x	Sulphur oxides

Abbreviations of countries

EU-27	*The twenty seven Member States of the European Union*
AT	Austria
BE	Belgium
BG	Bulgaria
CY	Cyprus
CZ	Czech Republic
DE	Germany
DK	Denmark
EE	Estonia
EL	Greece
ES	Spain
FI	Finland
FR	France
HU	Hungary
IE	Ireland
IT	Italy
LT	Lithuania
LU	Luxembourg
LV	Latvia
MT	Malta
NL	Netherlands
PL	Poland
PT	Portugal
RO	Romania
SE	Sweden
SI	Slovenia
SK	Slovakia
UK	United Kingdom

Non-member countries

BR	Brazil
CN	China
IN	India
JP	Japan
RU	Russia
US	United States of America

RW Rest of the World

Table of Contents

A. Land

Basic concepts

This chapter assesses the use of land by economic activities carried out across the world. Due to lack of information, built-up land has been kept out of the analysis and only 4 main categories of land use have been taken into account:

- Arable land: the land under temporary agricultural crops (multiple-cropped areas are counted only once), temporary meadows for mowing or pasture, land under market and kitchen gardens and land temporarily fallow (less than five years). The abandoned land resulting from shifting cultivation is not included in this category. Data for arable land are not meant to indicate the amount of land that is potentially cultivable.

- Permanent crops land: the land cultivated with long-term crops which do not have to be replanted for several years (such as cocoa and coffee); land under trees and shrubs producing flowers, such as roses and jasmine; and nurseries (except those for forest trees, which should be classified under 'forest'). Permanent meadows and pastures are excluded from land under permanent crops.

- Permanent meadows and pastures: the land used permanently (five years or more) to grow herbaceous forage crops, either cultivated or growing wild (wild prairie or grazing land).

- Productive forest area: the forest area actually used for productive purposes.

The land use intensity of Gross Value Added is a measure of the area used to produce one unit worth of goods and services in a specific country. It is calculated as the quotient between the land use and the Gross Value Added at constant prices of 2008.

The concept of land footprint refers to the land used to produce the goods and services devoted to satisfy the domestic final demand of a country (i.e. households consumption, government consumption and investment), regardless of the country where this land was actually used.

The household footprint is the part of the land footprint related to household consumption. It distinguishes up to 9 categories of consumption.

The land use intensity of the final demand is a measure of the area used to produce one unit worth of the goods and services demanded by households, government consumption and investment activities. It is calculated as the quotient between the land footprint and the domestic final demand at constant prices of 2008.

The land footprint domestic coverage ratio is the relation between the land footprint and the land use of a country. It represents the share of the land footprint of a country that is covered by its own use of land.

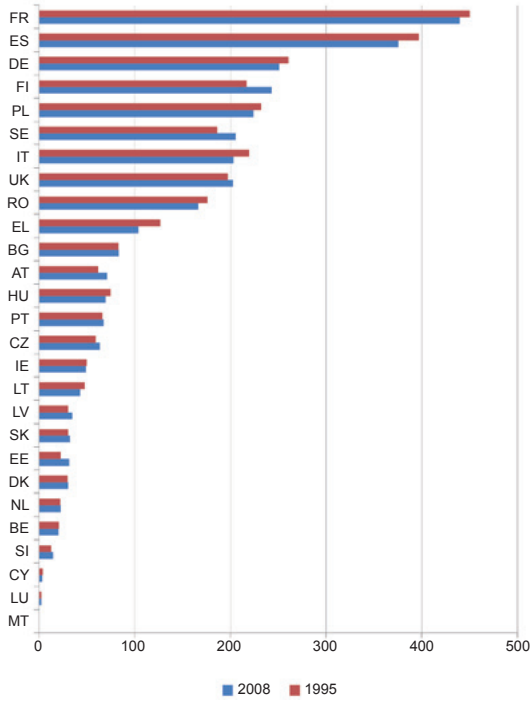
Embodied land in exports and imports accounts for the land directly or indirectly used to produce internationally traded goods and services. The difference between the land embodied in exports and imports gives the land trade balance. A deficit/surplus in the land trade balance indicates that the land embodied in imports is greater/less than the land exported. Moreover, a deficit in the land trade balance indicates that with the domestic land use is not possible to satisfy the domestic final demand (the contrary applies to a surplus). From this assertion, it follows that the land footprint equals the land use minus the land trade balance.

A.1. Land use

Land use (1 000 km²)

	1995	2000	2005	2006	2007	2008	2008 / 1995	2008 / 1995
AT	61.6	60.0	65.0	67.5	71.1	70.5	8.9	14%
BE	20.2	20.1	20.5	20.6	20.4	20.1	-0.2	-1%
BG	82.6	76.6	83.0	83.2	81.1	82.9	0.2	0%
CY	3.1	3.1	3.1	2.8	3.2	2.9	-0.2	-7%
CZ	58.9	61.4	62.5	65.1	66.0	63.1	4.2	7%
DE	260.3	246.9	252.3	260.7	279.7	250.5	-9.8	-4%
DK	29.9	31.2	30.9	30.2	30.0	30.1	0.2	1%
EE	22.5	32.3	25.2	27.5	29.9	31.3	8.8	39%
EL	126.1	121.3	75.4	96.9	67.7	103.1	-23.0	-18%
ES	396.7	381.9	380.5	382.9	362.8	374.9	-21.7	-5%
FI	216.6	234.5	231.3	227.2	244.5	243.1	26.5	12%
FR	449.5	450.6	446.3	446.0	448.0	439.5	-10.0	-2%
HU	74.3	71.3	71.4	70.8	70.2	69.3	-4.9	-7%
IE	49.3	50.5	49.6	49.2	49.5	48.6	-0.8	-2%
IT	219.1	218.9	206.0	200.5	198.0	202.7	-16.4	-7%
LT	47.4	49.1	44.8	43.8	43.8	42.6	-4.8	-10%
LU	2.2	2.1	2.2	2.2	2.2	2.2	0.0	1%
LV	30.0	41.7	40.6	41.7	40.2	34.2	4.2	14%
MT	0.1	0.1	0.1	0.1	0.1	0.1	-0.0	-15%
NL	21.7	22.1	22.1	21.9	21.7	22.1	0.3	2%
PL	231.8	234.1	217.4	218.7	226.8	223.8	-7.9	-3%
PT	66.1	70.2	67.6	67.5	67.7	67.0	0.9	1%
RO	175.6	178.3	174.5	172.3	169.5	166.1	-9.6	-5%
SE	186.0	187.7	273.5	190.6	223.7	205.1	19.1	10%
SI	12.3	12.4	13.5	14.8	14.0	14.3	2.0	16%
SK	30.0	33.0	31.9	30.1	30.3	31.8	1.8	6%
UK	196.6	193.2	195.3	203.8	203.7	202.3	5.8	3%
EU-27	**3 070**	**3 085**	**3 086**	**3 038**	**3 066**	**3 044**	**-26**	**-1%**
BR	4 572	4 825	5 048	4 898	5 097	5 054	482	11%
CN	6 618	6 693	6 587	6 571	6 456	6 460	-158	-2%
IN	2 218	2 214	2 229	2 231	2 230	2 231	12	1%
JP	304	301	296	296	296	296	-8	-3%
RU	4 703	5 740	6 282	6 400	6 759	6 203	1 500	32%
US	6 861	6 595	6 486	6 389	6 254	6 048	-813	-12%
RW	42 197	43 061	43 200	43 130	43 474	42 477	281	1%
World	**70 543**	**72 514**	**73 214**	**72 954**	**73 632**	**71 814**	**1 271**	**2%**

Land use, EU-27 (1 000 km²)



Between 1995 and 2008, land use increased worldwide by 1.3 Mkm² to 71.8 Mkm² (+2 %). The growth in the use of land was predominantly driven by Russia (+1.5 Mkm²), Brazil (+0.48 Mkm²) and the Rest of the World (+0.28 Mkm²). In 2008, 59 % of the land use was located in the Rest of the World, 9 % in China and in Russia, 8 % in the US, 7 % in Brazil and 4% in the EU-27. Within the EU-27, in 2008, France used 14 % of the European land, Spain 12 %, Germany and Finland 8 % each, and Poland, Sweden, Italy and United Kingdom 7 % each.

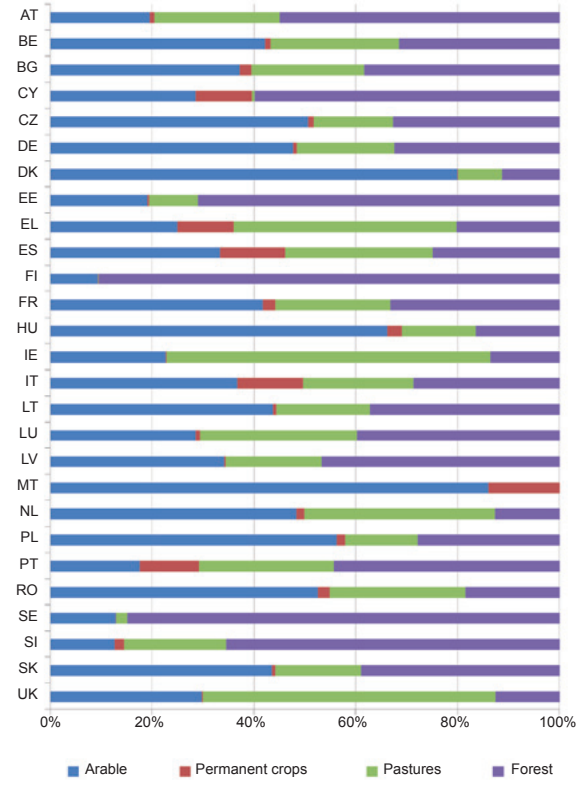
During the same period, the land use in the EU-27 slightly decreased by 1% to 3 Mkm². The largest reductions in absolute terms were reported by Greece and Spain (-0.02 Mkm²). On the other hand, Finland (+0.03 Mkm²) and Sweden (+0.02 Mkm²) showed the highest growths.

A.2. Land use by type

Land use by type in the EU-27, 2008 (1 000 km²)

	Arable	Permanent crops	Pastures	Forest	Total
AT	13.7	0.7	17.3	38.8	70.5
BE	8.5	0.2	5.1	6.3	20.1
BG	30.8	1.9	18.3	31.8	82.9
CY	0.8	0.3	0.0	1.7	2.9
CZ	31.9	0.8	9.8	20.6	63.1
DE	119.3	2.0	47.9	81.3	250.5
DK	24.0	0.1	2.6	3.4	30.1
EE	6.0	0.1	3.0	22.2	31.3
EL	25.7	11.4	45.2	20.9	103.1
ES	124.9	47.8	108.7	93.5	374.9
FI	22.6	0.1	0.3	220.1	243.1
FR	183.4	10.7	99.1	146.4	439.5
HU	45.9	2.0	10.1	11.4	69.3
IE	11.0	0.0	31.0	6.6	48.6
IT	74.4	26.0	44.1	58.2	202.7
LT	18.6	0.3	7.8	15.9	42.6
LU	0.6	0.0	0.7	0.9	2.2
LV	11.7	0.1	6.5	16.0	34.2
MT	0.1	0.0	0.0	0.0	0.1
NL	10.7	0.3	8.3	2.8	22.1
PL	125.7	4.0	31.8	62.3	223.8
PT	11.8	7.8	17.8	29.7	67.0
RO	87.2	3.8	44.5	30.6	166.1
SE	26.3	0.1	4.6	174.1	205.1
SI	1.8	0.3	2.9	9.4	14.3
SK	13.8	0.2	5.3	12.4	31.8
UK	60.1	0.5	116.3	25.5	202.3
EU-27	**1 091**	**121**	**689**	**1 143**	**3 044**
BR	612	75	1 960	2 407	5 054
CN	1 086	139	4 000	1 234	6 460
IN	1 580	113	104	434	2 231
JP	43	3	0	250	296
RU	1 216	18	921	4 048	6 203
US	1 637	27	2 380	2 004	6 048
RW	6 500	1 004	23 630	11 344	42 477
World	**13 766**	**1 500**	**33 683**	**22 865**	**71 814**

Land use by type, EU-27, 2008 (%)



In 2008, pastures accounted for 47 % of the global use of land. Forest area was the second category of land with 32 %, followed by arable area (19 %) and permanent crops (2 %). In the EU-27, forests represented 38 % of the land used, arable area stood for 36 %, pastures 23 %, and permanent crops 4 %.

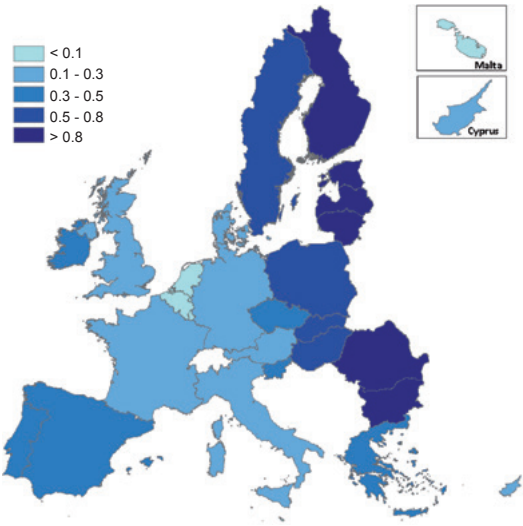
Forest area was the main use of land in countries like Finland (91 %), Sweden (85 %), Estonia (71 %), Slovenia (66 %) or Cyprus (60 %). Arable land dominated in Malta (86 %), Denmark (80 %), Hungary (66 %), Poland (56 %) and Romania (53 %). In Ireland, the United Kingdom, and Greece pastures constituted the main category of land use.

A.3. Land use intensity of Gross Value Added

Land use intensity of Gross Value Added (m²/EUR)

	1995	2000	2005	2006	2007	2008	2008 / 1995	2008 / 1995
AT	0.33	0.28	0.28	0.28	0.28	0.27	-0.06	-18%
BE	0.09	0.08	0.07	0.07	0.07	0.07	-0.02	-25%
BG	4.05	3.95	3.46	3.30	3.05	2.99	-1.06	-26%
CY	0.33	0.27	0.23	0.20	0.22	0.19	-0.14	-42%
CZ	0.67	0.65	0.55	0.53	0.51	0.47	-0.19	-29%
DE	0.14	0.12	0.12	0.12	0.13	0.11	-0.03	-22%
DK	0.19	0.17	0.16	0.15	0.15	0.15	-0.04	-20%
EE	3.52	3.67	1.98	1.96	2.00	2.19	-1.34	-38%
EL	0.95	0.78	0.39	0.49	0.33	0.49	-0.46	-48%
ES	0.61	0.49	0.42	0.40	0.37	0.38	-0.24	-39%
FI	2.13	1.82	1.60	1.50	1.53	1.51	-0.63	-29%
FR	0.34	0.29	0.27	0.26	0.26	0.25	-0.08	-25%
HU	1.25	0.99	0.83	0.79	0.78	0.76	-0.49	-39%
IE	0.67	0.44	0.34	0.32	0.30	0.30	-0.37	-55%
IT	0.18	0.17	0.15	0.14	0.14	0.14	-0.04	-21%
LT	3.61	3.01	1.88	1.71	1.56	1.47	-2.14	-59%
LU	0.11	0.08	0.07	0.07	0.06	0.06	-0.05	-44%
LV	3.30	3.57	2.34	2.14	1.90	1.66	-1.64	-50%
MT	0.03	0.02	0.02	0.02	0.02	0.02	-0.01	-44%
NL	0.06	0.05	0.05	0.04	0.04	0.04	-0.02	-29%
PL	1.27	1.01	0.81	0.77	0.75	0.70	-0.57	-45%
PT	0.61	0.54	0.49	0.47	0.46	0.45	-0.16	-26%
RO	2.16	2.32	1.73	1.59	1.46	1.33	-0.83	-38%
SE	0.93	0.78	1.00	0.67	0.76	0.70	-0.23	-25%
SI	0.65	0.54	0.48	0.50	0.44	0.44	-0.22	-33%
SK	0.95	0.88	0.68	0.58	0.53	0.52	-0.42	-45%
UK	0.17	0.14	0.12	0.13	0.12	0.12	-0.04	-27%
EU-27	**0.37**	**0.32**	**0.30**	**0.28**	**0.28**	**0.27**	**-0.10**	**-27%**
BR	7.15	6.60	6.05	5.67	5.58	5.28	-1.87	-26%
CN	7.39	4.94	3.05	2.69	2.31	2.10	-5.29	-72%
IN	6.61	4.92	3.49	3.17	2.88	2.68	-3.93	-59%
JP	0.11	0.10	0.09	0.09	0.09	0.09	-0.02	-16%
RU	7.93	9.62	7.96	7.52	7.32	6.39	-1.54	-19%
US	1.04	0.81	0.70	0.67	0.64	0.62	-0.42	-41%
RW	7.32	6.49	6.02	5.83	5.71	5.55	-1.77	-24%
World	**2.73**	**2.39**	**2.12**	**2.04**	**1.98**	**1.90**	**-0.82**	**-30%**

Land use intensity of Gross Value Added, EU-27, 2008 (m^2/EUR)



Between 1995 and 2008, the world's land use intensity of the Gross Value Added decreased by 30 % to 1.9 m^2/EUR; in the EU-27 it fell by 27 % to 0.27 m^2/EUR. In China and India, the reductions of the land intensity amounted 5.3 and 3.9 m^2/EUR respectively. In 2008, the regions with the highest land use intensity per unit of Gross Value Added were Russia (6.4 m^2/EUR), the Rest of the World (5.6 m^2/EUR), Brazil (5.3 m^2/EUR), India (2.7 m2/EUR) and China (2.1 m^2/EUR). Japan showed the lowest land use intensity (0.09 m^2/EUR), followed by the EU-27 (0.27 m^2/EUR) and the US (0.62 m2/EUR).

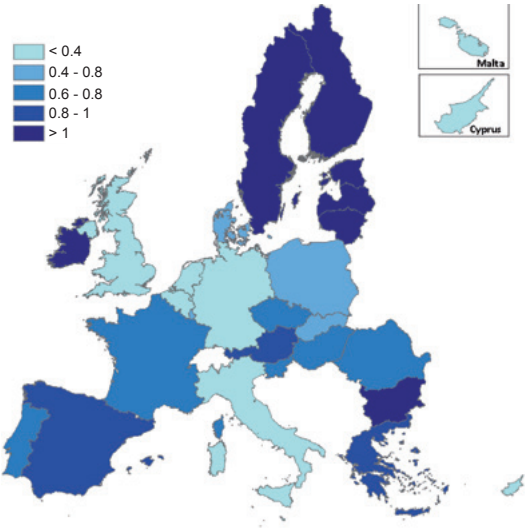
In this period, all EU-27 Member States reduced their land use intensity; Lithuania, Latvia, Estonia, Bulgaria, and Romania were the countries with the highest reductions in absolute terms. Bulgaria, Estonia, Latvia, Finland, and Lithuania turned out to be the top countries with the highest land use intensities in 2008. Malta, the Netherlands and Luxembourg were the Member States with the lowest intensities in the same year.

A.4. Land use per capita

Land use per capita (ha/cap)

	1995	2000	2005	2006	2007	2008	2008 / 1995	2008 / 1995
AT	0.78	0.75	0.79	0.82	0.86	0.85	0.07	9%
BE	0.20	0.20	0.20	0.20	0.19	0.19	-0.01	-6%
BG	0.98	0.94	1.07	1.08	1.06	1.08	0.10	11%
CY	0.48	0.45	0.42	0.36	0.41	0.37	-0.12	-24%
CZ	0.57	0.60	0.61	0.64	0.64	0.61	0.04	7%
DE	0.32	0.30	0.31	0.32	0.34	0.30	-0.01	-5%
DK	0.57	0.58	0.57	0.56	0.55	0.55	-0.02	-4%
EE	1.55	2.35	1.87	2.04	2.23	2.33	0.78	50%
EL	1.19	1.11	0.68	0.87	0.61	0.92	-0.27	-23%
ES	1.01	0.95	0.88	0.88	0.82	0.83	-0.18	-18%
FI	4.25	4.53	4.42	4.32	4.63	4.59	0.34	8%
FR	0.76	0.74	0.71	0.71	0.70	0.69	-0.07	-9%
HU	0.72	0.70	0.71	0.70	0.70	0.69	-0.03	-4%
IE	1.37	1.34	1.21	1.17	1.15	1.10	-0.27	-20%
IT	0.39	0.38	0.35	0.34	0.33	0.34	-0.05	-12%
LT	1.30	1.40	1.31	1.29	1.29	1.27	-0.03	-3%
LU	0.53	0.50	0.47	0.46	0.46	0.45	-0.08	-15%
LV	1.20	1.75	1.76	1.82	1.76	1.51	0.31	26%
MT	0.03	0.02	0.02	0.02	0.02	0.02	-0.01	-24%
NL	0.14	0.14	0.14	0.13	0.13	0.13	-0.01	-5%
PL	0.60	0.61	0.57	0.57	0.59	0.59	-0.01	-2%
PT	0.66	0.69	0.64	0.64	0.64	0.63	-0.03	-4%
RO	0.77	0.79	0.81	0.80	0.79	0.77	-0.00	-0%
SE	2.11	2.12	3.04	2.11	2.45	2.23	0.12	6%
SI	0.62	0.62	0.68	0.74	0.70	0.71	0.09	15%
SK	0.56	0.61	0.59	0.56	0.56	0.59	0.03	5%
UK	0.34	0.33	0.33	0.34	0.34	0.33	-0.01	-3%
EU-27	**0.64**	**0.64**	**0.63**	**0.62**	**0.62**	**0.61**	**-0.03**	**-5%**
BR	2.82	2.77	2.71	2.61	2.69	2.64	-0.19	-7%
CN	0.55	0.53	0.50	0.50	0.49	0.49	-0.06	-11%
IN	0.23	0.21	0.20	0.19	0.19	0.19	-0.04	-19%
JP	0.24	0.24	0.23	0.23	0.23	0.23	-0.01	-4%
RU	3.16	3.91	4.37	4.46	4.72	4.33	1.17	37%
US	2.58	2.33	2.19	2.13	2.07	1.98	-0.59	-23%
RW	1.78	1.66	1.53	1.51	1.49	1.44	-0.35	-19%
World	**1.23**	**1.18**	**1.13**	**1.11**	**1.11**	**1.07**	**-0.17**	**-14%**

Land use per capita, EU-27, 2008 (ha/cap)



The global use of land per inhabitant between 1995 and 2008 decreased by 0.17 ha/cap to 1.1 ha/cap (-14 %), in the EU-27 it fell by 0.03 ha/cap to 0.61 ha/cap (-5 %). In Russia the use of land grew by 1.2 ha/cap, while in the US, the Rest of the World, and Brazil it reduced by 0.59, 0.35, and 0.19 ha/cap respectively.

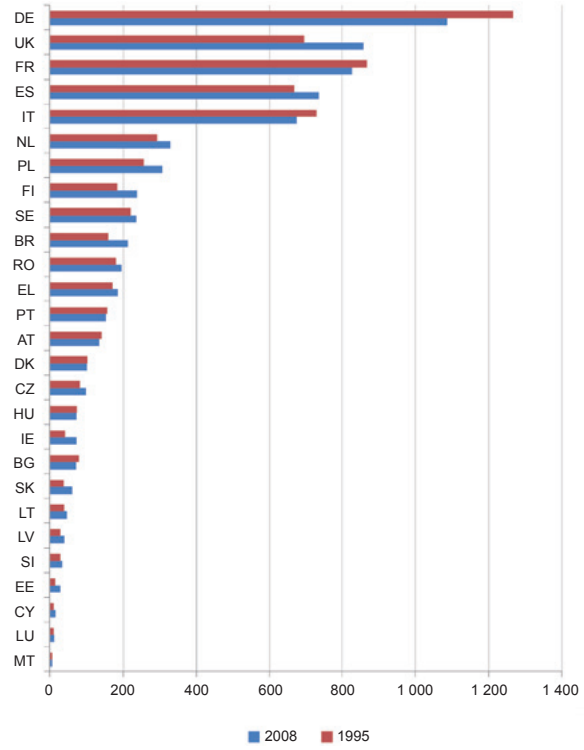
In 2008, the regions with the highest land use per capita were Russia (4.3 ha/cap), Brazil (2.6 ha/cap), the US (1.9 ha/cap), the Rest of the World (1.4 ha/cap) and the EU-27 (0.6 ha/cap). Concerning the EU-27, Finland, Estonia, Sweden, Latvia, and Lithuania were the top five countries in terms of land use per capita. In contrast, Malta, the Netherlands, Belgium, Germany, and the United Kingdom reported the lowest land use per capita.

A.5. Land footprint

Land footprint (1 000 km²)

	1995	2000	2005	2006	2007	2008	2008 / 1995	2008 / 1995
AT	139.8	121.9	131.1	132.2	136.2	132.6	-7.2	-5%
BE	158.4	171.8	218.5	218.8	222.4	211.8	53.5	34%
BG	76.7	66.1	71.5	72.6	72.2	69.0	-7.7	-10%
CY	9.2	10.4	11.5	11.2	11.9	14.0	4.8	51%
CZ	80.3	82.2	93.4	95.5	95.4	96.8	16.5	21%
DE	1 265.4	1 121.2	1 068.3	1 090.5	1 150.1	1 085.4	-180.0	-14%
DK	100.5	89.3	100.1	97.8	102.6	98.8	-1.7	-2%
EE	13.3	26.2	18.1	26.6	29.6	26.0	12.7	96%
EL	169.9	174.8	145.3	168.0	153.3	183.5	13.6	8%
ES	667.2	625.5	720.0	720.3	752.1	734.8	67.5	10%
FI	182.7	190.0	224.0	225.5	232.3	236.3	53.6	29%
FR	865.6	786.7	849.9	824.7	849.0	825.4	-40.1	-5%
HU	72.8	78.0	77.2	74.4	71.7	71.7	-1.1	-1%
IE	39.6	55.7	60.3	65.7	72.1	71.0	31.4	79%
IT	728.0	679.9	703.2	705.1	694.3	674.3	-53.6	-7%
LT	36.5	49.1	49.0	48.0	44.4	45.0	8.5	23%
LU	9.1	7.6	9.4	9.2	9.5	9.7	0.6	7%
LV	26.1	37.3	39.9	43.4	44.6	37.3	11.2	43%
MT	4.0	4.1	3.5	3.5	4.4	4.5	0.6	14%
NL	291.5	281.7	304.5	300.5	313.6	328.4	36.9	13%
PL	255.5	282.1	268.4	276.2	291.8	305.8	50.3	20%
PT	155.6	150.9	145.3	138.9	150.2	151.0	-4.6	-3%
RO	178.9	181.3	197.8	201.5	204.4	194.0	15.2	8%
SE	218.3	226.8	273.1	223.8	252.0	234.0	15.8	7%
SI	27.2	25.0	26.1	27.2	28.4	32.1	4.9	18%
SK	36.1	40.1	51.3	51.7	58.0	59.1	23.0	64%
UK	694.6	779.0	950.7	935.8	931.1	857.0	162.4	23%
EU-27	**6 503**	**6 345**	**6 811**	**6 789**	**6 977**	**6 789**	**287**	**4%**
BR	4 087	4 113	3 731	3 696	3 885	3 907	-181	-4%
CN	6 282	6 739	6 577	6 474	6 460	6 708	426	7%
IN	2 178	2 167	2 304	2 335	2 412	2 297	119	5%
JP	2 773	2 319	1 929	1 824	1 671	1 736	-1 037	-37%
RU	4 651	5 288	6 333	6 362	6 917	6 554	1 902	41%
US	7 984	8 879	8 893	8 678	8 134	7 308	-675	-8%
RW	36 086	36 665	36 634	36 797	37 176	36 515	429	1%
World	**70 543**	**72 514**	**73 214**	**72 954**	**73 632**	**71 814**	**1 271**	**2%**

Land footprint, EU-27 (1 000 km²)



The global land footprint in 2008 amounted to 71.8 Mkm² (2 % increase compared to 1995). Russia was the region with the largest growth (+1.9 Mkm²), followed by China and the Rest of the World (+0.43 Mkm²), and the EU-27 (+0.29 Mkm²). On the contrary, Japan reduced its land footprint by 1 Mkm², the US by 0.68 and Brazil by 0.18 Mkm². In 2008, the Rest of the World was responsible for 51 % of global land footprint, the US held 10 %, and China, Russia, and the EU-27 9 %.

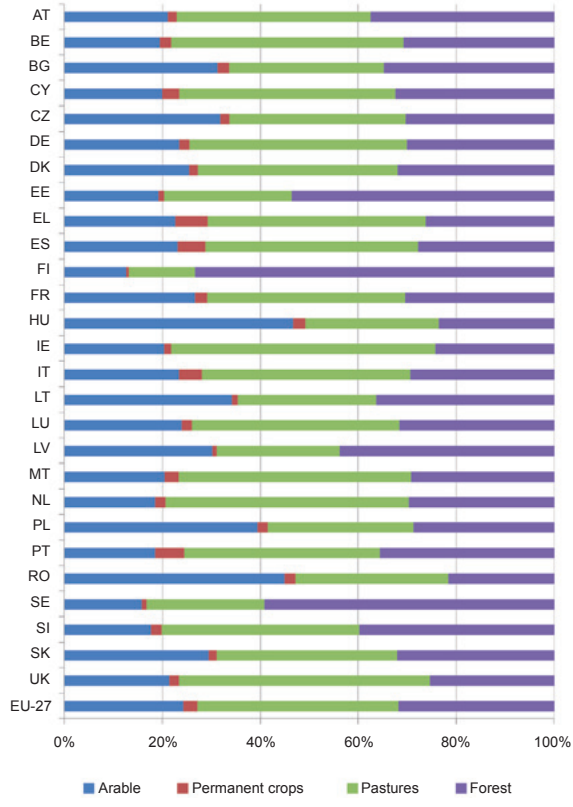
Regarding the EU-27, in 2008, Germany (16 %), the United Kingdom (13 %), France (12 %), Spain (11 %), and Italy (10 %) summed up almost 60 % of the EU-27 total land footprint. Between 1995 and 2008, the land footprint of the EU-27 grew by 4 %. This indicator also followed a growing trend in most Member States. The three largest contributors to the increase of the European land footprint were the United Kingdom (+0.16 Mkm²), Spain (+0.07 Mkm²), and Finland (+0.05 Mkm²).

A.6. Land footprint by type

Land footprint by type, 2008 (1 000 km²)

	Arable	Permanent crops	Pastures	Forest	Total
AT	27.9	2.5	52.5	49.7	132.6
BE	41.2	4.8	100.6	65.2	211.8
BG	21.6	1.6	21.8	24.1	69.0
CY	2.8	0.5	6.2	4.5	14.0
CZ	30.8	1.8	34.8	29.4	96.8
DE	253.5	23.6	481.0	327.3	1 085.4
DK	25.1	1.8	40.2	31.7	98.8
EE	5.0	0.3	6.8	13.9	26.0
EL	41.4	12.1	81.8	48.2	183.5
ES	169.1	42.0	319.1	204.7	734.8
FI	29.4	1.4	32.2	173.3	236.3
FR	219.7	20.6	333.0	252.2	825.4
HU	33.4	1.8	19.5	16.9	71.7
IE	14.4	1.0	38.3	17.3	71.0
IT	157.1	31.7	287.0	198.6	674.3
LT	15.4	0.6	12.7	16.4	45.0
LU	2.3	0.2	4.1	3.1	9.7
LV	11.3	0.3	9.4	16.3	37.3
MT	0.9	0.1	2.2	1.3	4.5
NL	60.6	7.0	163.0	97.7	328.4
PL	120.6	6.3	90.8	88.1	305.8
PT	27.9	8.9	60.4	53.8	151.0
RO	87.1	4.4	60.4	42.1	194.0
SE	36.7	2.4	56.2	138.7	234.0
SI	5.6	0.7	12.9	12.8	32.1
SK	17.3	1.0	21.8	19.0	59.1
UK	183.4	16.2	439.3	218.0	857.0
EU-27	**1 642**	**196**	**2 788**	**2 164**	**6 789**
BR	483	60	1 546	1 818	3 907
CN	1 121	138	3 970	1 479	6 708
IN	1 466	109	249	473	2 297
JP	293	28	724	691	1 736
RU	1 261	33	1 281	3 979	6 554
US	1 709	80	3 035	2 484	7 308
RW	5 791	857	20 091	9 776	36 515
World	**13 766**	**1 500**	**33 683**	**22 865**	**71 814**

Land footprint by type, EU-27, 2008 (%)



In 2008, 47 % of the global land footprint corresponded to pastures. Forest areas constituted the second source of land footprint at the global level (32 %), followed by arable land (19 %) and permanent crops (2 %). Regarding the EU-27, pastures represented 41 % of the European total land footprint, forests 32 %, arable area 24 %, and permanent crops 3 %.

The pastures component of the EU-27 land footprint was the most important in 19 out of 27 Member States, with a share ranging from 36 % to 54 %. Hungary, Romania, and Poland showed the highest shares of arable area, while in Finland, Sweden, and Estonia forest area is the main category of the land footprint.

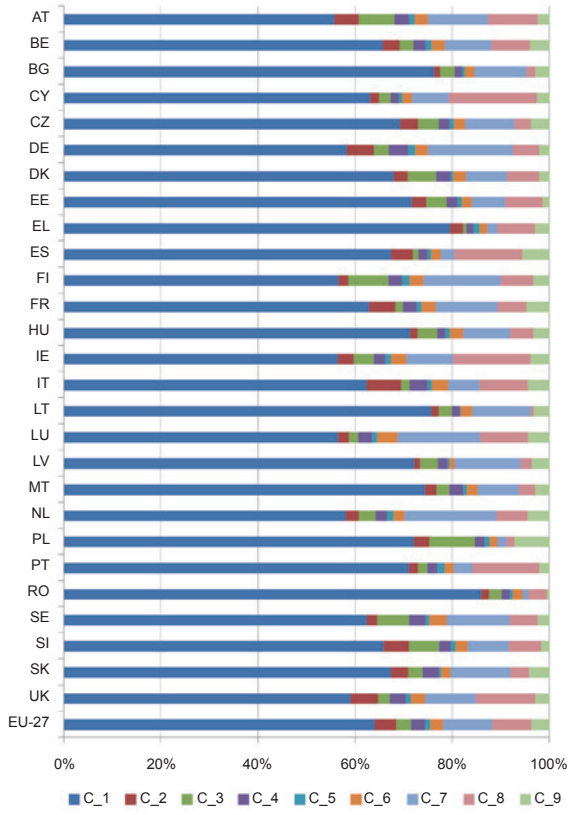
A.7. Household land footprint by consumption category

Household land footprint by consumption category, 2008 (1 000 km²)

	C_1	C_2	C_3	C_4	C_5	C_6	C_7	C_8	C_9
AT	61.8	5.6	8.2	3.3	1.3	3.0	13.7	11.3	2.8
BE	118.5	6.3	4.9	4.6	2.2	5.0	17.4	14.2	7.4
BG	41.5	0.6	1.7	0.8	0.3	1.1	5.8	1.0	1.6
CY	8.1	0.3	0.3	0.2	0.1	0.3	1.0	2.4	0.3
CZ	56.1	2.9	3.5	1.9	0.6	2.0	8.2	2.8	3.1
DE	532.6	51.2	28.5	35.9	13.9	23.7	160.6	49.6	19.2
DK	54.4	2.3	4.7	2.3	0.5	2.1	6.7	5.3	1.8
EE	14.3	0.6	0.8	0.5	0.2	0.4	1.4	1.5	0.3
EL	137.0	4.6	1.3	2.6	2.0	2.7	3.6	13.5	5.1
ES	443.3	29.7	7.5	12.5	4.6	12.8	19.0	91.9	37.2
FI	91.7	3.0	13.5	4.5	2.4	4.6	25.8	10.9	5.4
FR	446.5	37.9	11.2	20.2	6.3	21.4	90.3	42.8	33.6
HU	41.2	0.9	2.3	1.0	0.6	1.5	5.6	2.7	2.0
IE	35.2	2.0	2.6	1.4	0.8	2.0	5.9	10.0	2.4
IT	375.2	42.4	10.5	21.7	5.8	20.1	38.5	59.9	27.2
LT	30.4	0.6	1.1	0.6	0.1	0.9	4.9	0.2	1.3
LU	4.5	0.2	0.1	0.2	0.1	0.3	1.3	0.8	0.4
LV	23.8	0.4	1.2	0.6	0.2	0.3	4.5	0.7	1.2
MT	3.1	0.1	0.1	0.1	0.0	0.1	0.4	0.1	0.1
NL	157.1	7.2	9.3	6.4	3.5	6.1	51.2	17.2	12.5
PL	191.6	8.4	24.9	5.1	2.8	4.5	4.9	4.1	19.5
PT	95.1	2.7	2.6	2.7	2.0	2.4	5.2	18.5	2.9
RO	151.3	2.8	4.7	2.8	1.3	3.6	2.2	6.5	1.1
SE	113.6	3.9	12.1	6.1	1.5	6.5	23.8	10.4	4.5
SI	17.4	1.4	1.6	0.6	0.3	0.7	2.2	1.8	0.5
SK	32.8	1.7	1.5	1.6	0.3	0.9	6.1	1.8	2.1
UK	445.4	42.3	18.6	24.2	7.9	22.4	79.0	91.9	22.4
EU-27	**3 723**	**262**	**179**	**165**	**61**	**151**	**589**	**474**	**218**
BR	2 405	51	53	33	27	89	323	263	106
CN	3 244	167	94	53	102	60	501	278	178
IN	1 488	43	43	21	9	23	306	89	78
JP	998	66	30	33	16	33	98	150	49
RU	4 382	83	107	42	24	35	803	49	227
US	4 320	254	122	157	197	119	488	577	338
RW	23 584	493	636	316	269	364	4 180	1 581	1 181
World	**44 146**	**1 419**	**1 264**	**821**	**706**	**874**	**7 288**	**3 460**	**2 375**

NB: C_1: Food, drinks and tobacco; C_2: Clothing and footwear; C_3: Housing, fuel, and power; C_4: Household goods and services; C_5: Health and education; C_6: Transport and Communications; C_7: Recreation and culture; C_8: Restaurants and hotels; C_9: Miscellaneous goods and services.

Household land footprint by consumption category, EU-27, 2008 (%)



In 2008, food, drinks and tobacco drove more than two thirds of the global land footprint of households. Recreation and culture activities were responsible for 12 % of the land footprint, and restaurants and hotels for 6%.

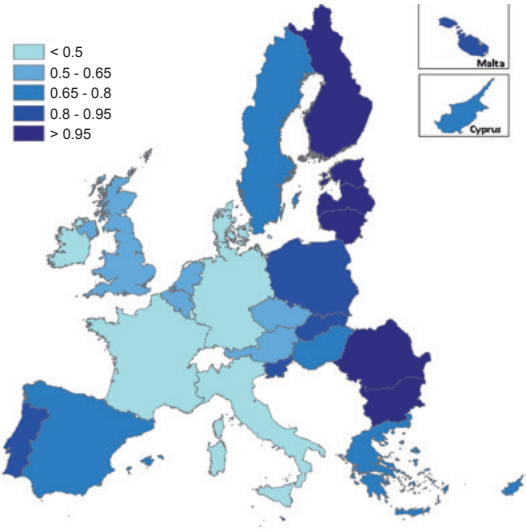
In the EU-27, food, drinks, and tobacco (64 %), recreation and culture (10 %), restaurants and hotels (8 %), and clothing and footwear (4 %) were the consumption activities that caused most of the land footprint.

A.8. Land footprint intensity of final demand

Land footprint intensity of final demand, 2008 (m²/EUR)

	1995	2000	2005	2006	2007	2008	2008 / 1995	2008 / 1995
AT	0.70	0.55	0.54	0.53	0.53	0.51	-0.19	-27%
BE	0.62	0.59	0.70	0.68	0.68	0.63	0.02	3%
BG	3.28	3.07	2.67	2.42	2.25	2.04	-1.24	-38%
CY	0.87	0.83	0.77	0.72	0.72	0.79	-0.07	-9%
CZ	0.93	0.81	0.74	0.69	0.65	0.64	-0.29	-31%
DE	0.67	0.54	0.51	0.50	0.52	0.49	-0.18	-27%
DK	0.60	0.47	0.48	0.46	0.47	0.46	-0.14	-23%
EE	1.85	2.69	1.30	1.70	1.83	1.74	-0.10	-5%
EL	1.13	0.97	0.68	0.74	0.65	0.77	-0.36	-32%
ES	0.93	0.71	0.71	0.68	0.68	0.66	-0.27	-29%
FI	1.65	1.39	1.44	1.43	1.40	1.42	-0.23	-14%
FR	0.64	0.49	0.48	0.45	0.45	0.44	-0.20	-31%
HU	1.16	0.86	0.77	0.70	0.66	0.66	-0.50	-43%
IE	0.46	0.44	0.38	0.39	0.41	0.41	-0.05	-10%
IT	0.55	0.47	0.46	0.45	0.44	0.44	-0.12	-21%
LT	2.46	2.66	1.93	1.74	1.49	1.43	-1.03	-42%
LU	0.58	0.33	0.32	0.31	0.29	0.30	-0.28	-48%
LV	2.36	2.83	2.09	2.02	1.89	1.66	-0.70	-30%
MT	0.98	0.84	0.72	0.68	0.83	0.82	-0.16	-16%
NL	0.74	0.58	0.59	0.57	0.57	0.59	-0.14	-19%
PL	1.40	1.12	0.92	0.87	0.86	0.85	-0.55	-39%
PT	1.17	0.97	0.90	0.85	0.89	0.88	-0.29	-25%
RO	2.49	2.28	1.76	1.65	1.55	1.38	-1.11	-45%
SE	0.99	0.87	0.96	0.76	0.83	0.78	-0.21	-21%
SI	1.25	0.94	0.83	0.82	0.79	0.87	-0.37	-30%
SK	1.37	1.17	1.03	0.92	0.92	0.87	-0.50	-36%
UK	0.58	0.55	0.58	0.56	0.55	0.50	-0.08	-13%
EU-27	**0.74**	**0.62**	**0.61**	**0.59**	**0.59**	**0.57**	**-0.17**	**-23%**
BR	5.55	5.08	4.20	3.98	3.93	3.76	-1.79	-32%
CN	7.34	5.28	3.00	2.60	2.23	2.08	-5.27	-72%
IN	5.61	4.13	3.18	2.91	2.75	2.50	-3.11	-55%
JP	0.89	0.71	0.58	0.54	0.49	0.53	-0.36	-40%
RU	10.37	11.48	9.57	8.77	8.50	7.68	-2.69	-26%
US	1.15	1.03	0.91	0.87	0.81	0.73	-0.41	-36%
RW	7.77	6.95	6.35	6.11	5.90	5.58	-2.19	-28%
World	**2.73**	**2.39**	**2.12**	**2.04**	**1.98**	**1.90**	**-0.82**	**-30%**

Land footprint intensity of final demand, EU-27, 2008 (m^2/EUR)



The world's land footprint intensity of final demand totaled 1.9 m^2/EUR in 2008, a 30 % decrease from 1995. In the EU-27, the intensity reduced by 23 % to reach 0.57 m^2/EUR. China, India, and Russia registered the highest absolute decreases. In 2008, the top five regions with the largest land intensity per unit of final demand were Russia (7.7 m^2/EUR), the Rest of the World (5.6 m^2/EUR), Brazil (3.8 m^2/EUR) and India (2.5 m^2/EUR). Japan showed the lowest land intensity (0.53 m^2/EUR), followed by the EU-27 (0.57 m^2/EUR) and the US (0.73 m^2/EUR).

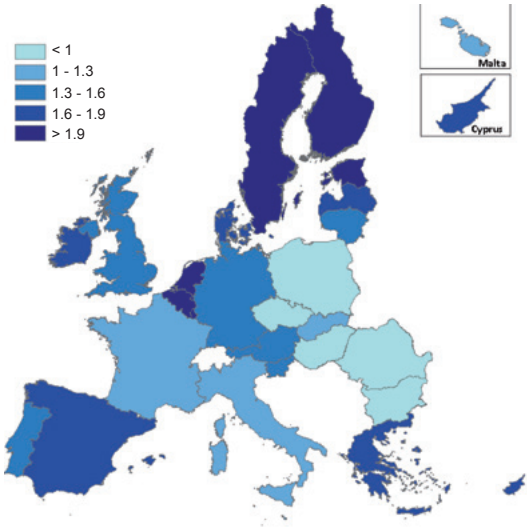
Regarding the EU-27, all the Member States except Belgium reduced their land footprint intensity. Bulgaria (-1.2 m^2/EUR), Romania (-1.1 m^2/EUR) and Lithuania (-1 m^2/EUR) showed the largest drops. In 2008, Bulgaria (2 m^2/EUR), and Estonia and Latvia (1.7 m^2/EUR each) ranked the top in terms of the land footprint intensities, while Luxembourg (0.3 m^2/EUR), Ireland (0.41 m^2/EUR), France and Italy (0.44 m^2/EUR each) ranked the lowest.

A.9. Land footprint per capita

Land footprint per capita (ha/cap)

	1995	2000	2005	2006	2007	2008	2008 / 1995	2008 / 1995
AT	1.76	1.52	1.60	1.60	1.64	1.59	-0.17	-9%
BE	1.56	1.68	2.09	2.08	2.10	1.99	0.42	27%
BG	0.91	0.81	0.92	0.94	0.94	0.90	-0.01	-1%
CY	1.43	1.50	1.53	1.47	1.53	1.77	0.34	24%
CZ	0.78	0.80	0.91	0.93	0.93	0.93	0.16	20%
DE	1.55	1.36	1.29	1.32	1.40	1.32	-0.23	-15%
DK	1.93	1.68	1.85	1.80	1.88	1.80	-0.12	-6%
EE	0.92	1.91	1.34	1.98	2.20	1.94	1.02	111%
EL	1.60	1.60	1.31	1.51	1.37	1.64	0.03	2%
ES	1.70	1.56	1.67	1.65	1.69	1.62	-0.07	-4%
FI	3.58	3.67	4.28	4.29	4.40	4.46	0.88	24%
FR	1.46	1.30	1.35	1.30	1.33	1.29	-0.17	-12%
HU	0.70	0.76	0.76	0.74	0.71	0.71	0.01	1%
IE	1.10	1.47	1.47	1.56	1.67	1.61	0.51	46%
IT	1.28	1.19	1.20	1.20	1.17	1.13	-0.15	-12%
LT	1.00	1.40	1.43	1.41	1.31	1.34	0.33	33%
LU	2.24	1.75	2.04	1.96	1.99	2.01	-0.23	-10%
LV	1.04	1.57	1.73	1.89	1.96	1.64	0.60	57%
MT	1.08	1.07	0.87	0.87	1.07	1.11	0.03	3%
NL	1.89	1.78	1.87	1.84	1.92	2.00	0.11	6%
PL	0.66	0.73	0.70	0.72	0.77	0.80	0.14	21%
PT	1.55	1.48	1.38	1.31	1.42	1.42	-0.13	-8%
RO	0.79	0.81	0.91	0.93	0.95	0.90	0.11	14%
SE	2.48	2.56	3.03	2.47	2.77	2.55	0.07	3%
SI	1.37	1.26	1.31	1.36	1.41	1.60	0.23	17%
SK	0.67	0.74	0.95	0.96	1.07	1.09	0.42	62%
UK	1.20	1.33	1.58	1.55	1.53	1.40	0.20	17%
EU-27	**1.36**	**1.31**	**1.39**	**1.38**	**1.41**	**1.36**	**0.01**	**0%**
BR	2.53	2.36	2.01	1.97	2.05	2.04	-0.49	-19%
CN	0.52	0.53	0.50	0.49	0.49	0.50	-0.01	-2%
IN	0.23	0.21	0.20	0.20	0.21	0.19	-0.03	-15%
JP	2.23	1.84	1.53	1.44	1.32	1.37	-0.86	-38%
RU	3.13	3.60	4.40	4.43	4.83	4.58	1.45	46%
US	3.00	3.14	3.00	2.90	2.69	2.40	-0.60	-20%
RW	1.52	1.42	1.30	1.29	1.28	1.24	-0.29	-19%
World	**1.23**	**1.18**	**1.13**	**1.11**	**1.11**	**1.07**	**-0.17**	**-14%**

Land footprint per capita, EU-27, 2008 (ha/cap)



Between 1995 and 2008, the world's land footprint per capita decreased from 1.2 ha/cap to 1.1 ha/cap (-14 %). Most regions experimented a reduction in the land footprint per capita, particularly Japan (-0.86 ha/cap), the US (-0.6 ha/cap), and Brazil (-0.49 ha/cap). In contrast, the land footprint of Russia increased by 1.5 ha/cap and in the EU-27 by 0.01 ha/cap.

In 2008, the regions with the highest land footprint per capita were Russia (4.6 ha/cap), the US (2.4 ha/cap), Brazil (2 ha/cap), and Japan and the EU-27 (1.4 ha/cap each). In the EU-27, Finland (4.5 ha/cap), Sweden (2.6 ha/cap), and Luxembourg (2 ha/cap) were the Member States with the highest land footprint per capita. Hungary (0.71 ha/cap), Poland (0.8 ha/cap) and Romania (0.9 ha/cap) showed the lowest land use per capita.

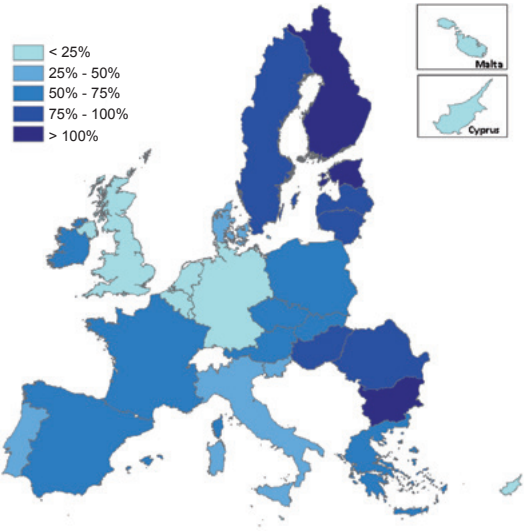
Between 1995 and 2008, Estonia, Finland, and Latvia led the growth of the land footprint per capita within the EU-27, while Germany, Luxembourg, France, and Austria showed the highest reductions in absolute terms.

A.10. Land footprint domestic coverage ratio

Land footprint domestic coverage ratio (%)

	1995	2000	2005	2006	2007	2008	2008 / 1995	2008 / 1995
AT	44%	49%	50%	51%	52%	53%	9%	21%
BE	13%	12%	9%	9%	9%	9%	-3%	-26%
BG	108%	116%	116%	115%	112%	120%	12%	11%
CY	34%	30%	27%	25%	27%	21%	-13%	-39%
CZ	73%	75%	67%	68%	69%	65%	-8%	-11%
DE	21%	22%	24%	24%	24%	23%	3%	12%
DK	30%	35%	31%	31%	29%	30%	1%	2%
EE	169%	123%	139%	103%	101%	121%	-49%	-29%
EL	74%	69%	52%	58%	44%	56%	-18%	-24%
ES	59%	61%	53%	53%	48%	51%	-8%	-14%
FI	119%	123%	103%	101%	105%	103%	-16%	-13%
FR	52%	57%	53%	54%	53%	53%	1%	3%
HU	102%	91%	92%	95%	98%	97%	-5%	-5%
IE	125%	91%	82%	75%	69%	68%	-56%	-45%
IT	30%	32%	29%	28%	29%	30%	-0%	-0%
LT	130%	100%	91%	91%	99%	95%	-35%	-27%
LU	24%	28%	23%	23%	23%	22%	-1%	-6%
LV	115%	112%	102%	96%	90%	92%	-23%	-20%
MT	3%	2%	3%	3%	2%	2%	-1%	-26%
NL	7%	8%	7%	7%	7%	7%	-1%	-10%
PL	91%	83%	81%	79%	78%	73%	-18%	-19%
PT	42%	46%	46%	49%	45%	44%	2%	5%
RO	98%	98%	88%	85%	83%	86%	-13%	-13%
SE	85%	83%	100%	85%	89%	88%	2%	3%
SI	45%	49%	52%	54%	49%	44%	-1%	-1%
SK	83%	82%	62%	58%	52%	54%	-29%	-35%
UK	28%	25%	21%	22%	22%	24%	-5%	-17%
EU-27	**47%**	**49%**	**45%**	**45%**	**44%**	**45%**	**-2%**	**-5%**
BR	112%	117%	135%	133%	131%	129%	18%	16%
CN	105%	99%	100%	101%	100%	96%	-9%	-9%
IN	102%	102%	97%	96%	92%	97%	-5%	-5%
JP	11%	13%	15%	16%	18%	17%	6%	56%
RU	101%	109%	99%	101%	98%	95%	-6%	-6%
US	86%	74%	73%	74%	77%	83%	-3%	-4%
RW	117%	117%	118%	117%	117%	116%	-1%	-1%
World	**100%**	**100%**	**100%**	**100%**	**100%**	**100%**	**0%**	**0%**

Land footprint domestic coverage ratio, EU-27, 2008 (%)



In 2008, the share of the land footprint covered with domestic land use was below 100 % in all the regions except Brazil and the Rest of the World. Japan, the EU-27, and the US showed the lowest coverage ratios (17 %, 45 % and 83 % respectively). During the period 1995 – 2008, the coverage ratios of China, India, and Russia turned to figures below 100 %.

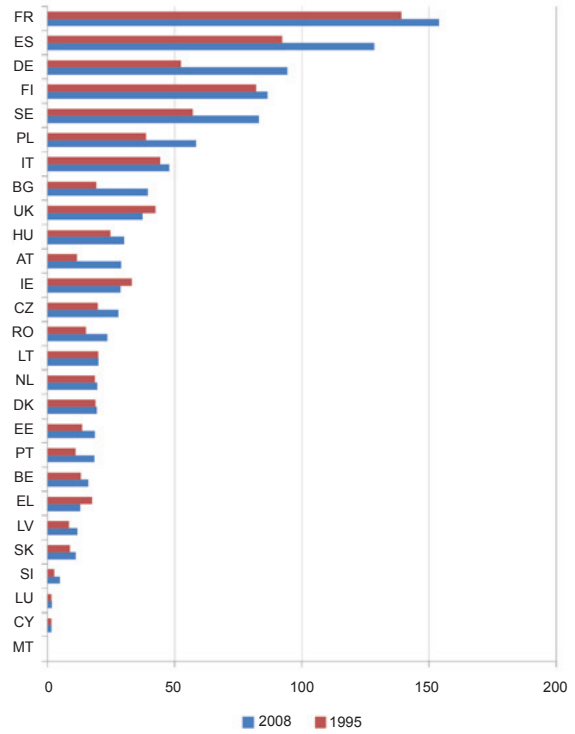
Between 1995 and 2008, the share of the land footprint of the EU-27 covered by domestic land fell from 47 % to 45 %. In this period, most Member States reduced their domestic coverage ratios. In 2008, only Estonia (121 %), Bulgaria (120 %) and Finland (103 %) showed a domestic coverage ratio above 100 %. Malta (2 %), the Netherlands (7 %) and Belgium (9 %) were the countries with the lowest figures, followed by Cyprus (21%) Luxembourg (22 %), Germany (23 %) and the United Kingdom (24 %).

A.11. Embodied land in exports

Embodied land in exports (1 000 km²)

	1995	2000	2005	2006	2007	2008	2008 / 1995	2008 / 1995
AT	11.4	16.9	22.8	25.1	28.1	28.8	17.4	153%
BE	12.8	14.0	15.7	16.0	16.6	15.8	3.1	24%
BG	19.1	19.3	24.2	29.3	29.1	39.2	20.1	106%
CY	1.4	1.1	1.0	1.2	1.7	1.4	0.0	1%
CZ	19.6	20.6	25.9	27.2	29.9	27.7	8.1	41%
DE	52.4	66.0	81.9	88.5	97.5	94.0	41.7	80%
DK	18.5	19.9	18.7	21.2	18.6	19.1	0.6	3%
EE	13.4	16.7	20.4	16.7	16.1	18.4	5.0	37%
EL	17.2	17.5	10.0	13.1	8.0	12.7	-4.6	-27%
ES	92.1	114.5	121.7	131.0	120.5	128.3	36.3	39%
FI	81.8	104.8	87.5	78.6	87.9	86.3	4.4	5%
FR	138.9	145.8	138.5	141.5	143.7	153.9	14.9	11%
HU	24.6	20.6	22.1	24.1	29.2	30.1	5.6	23%
IE	32.8	28.8	31.5	30.5	29.4	28.5	-4.3	-13%
IT	44.1	43.7	42.6	43.2	44.9	47.7	3.6	8%
LT	19.7	14.7	12.3	14.1	17.8	19.9	0.2	1%
LU	1.3	1.7	1.6	1.6	1.9	1.6	0.3	22%
LV	8.3	11.8	12.0	10.8	10.9	11.5	3.2	38%
MT	0.0	0.0	0.0	0.0	0.0	0.0	0.0	216%
NL	18.4	18.4	18.7	18.5	18.5	19.4	1.0	5%
PL	38.5	33.7	52.0	53.8	58.8	58.3	19.7	51%
PT	10.8	14.6	15.7	16.6	17.6	18.2	7.4	69%
RO	14.9	19.1	17.6	18.0	17.4	23.4	8.5	57%
SE	56.9	63.4	105.0	71.5	86.2	82.9	26.0	46%
SI	2.5	2.9	3.2	4.0	3.9	4.7	2.2	90%
SK	8.5	8.5	10.6	11.0	11.0	10.9	2.4	28%
UK	42.2	33.5	36.1	38.2	37.4	37.3	-4.9	-12%
EU-27	**802**	**873**	**949**	**945**	**983**	**1 020**	**218**	**27%**
BR	734	919	1 451	1 360	1 398	1 366	631	86%
CN	869	681	1 157	1 302	1 291	1 575	706	81%
IN	168	212	209	228	228	228	61	36%
JP	8	9	13	14	14	15	7	94%
RU	353	697	545	575	548	425	71	20%
US	1 437	1 068	1 030	1 111	1 213	1 385	-52	-4%
RW	9 212	9 845	10 380	10 352	10 479	10 548	1 336	15%
World	**13 583**	**14 304**	**15 734**	**15 886**	**16 155**	**16 561**	**2 978**	**22%**

Embodied land in exports, EU-27 (1 000 km²)



Between 1995 and 2008 the land embodied in global exports increased by 22 % to 16.6 Mkm². Growth in the exports of land was led by the Rest of the World (+1.3 Mkm²), China (+0.71 Mkm²), and Brazil (+0.63 Mkm²). Most of the EU-27 Member States increased the amount of land embodied in exports; the largest growths in absolute terms were registered in Germany and Spain (+0.04 Mkm²), and Sweden (+0.03 Mkm²).

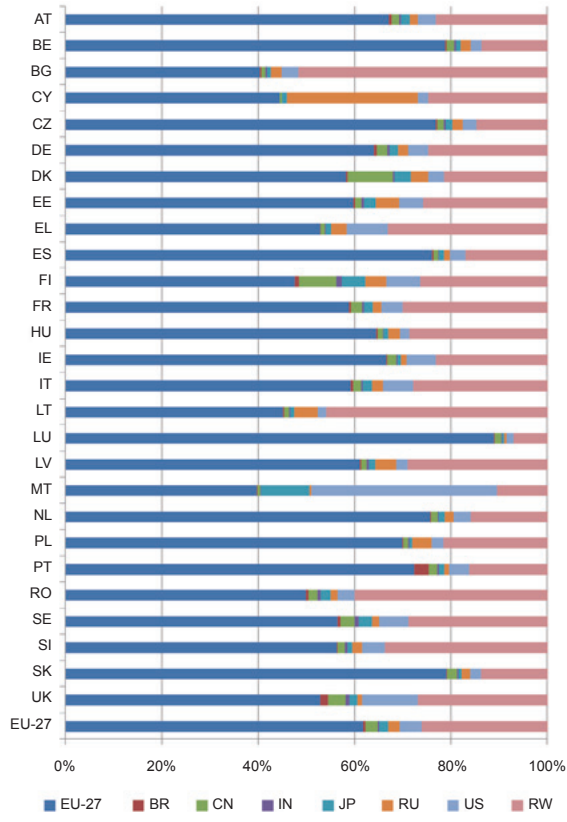
In 2008, 64 % of the land embodied in global exports was related to the exports of the Rest of the World, 10 % to China, 8 % to the US, 8 % to Brazil, and 6 % to the EU-27. Within the EU-27, France was the country with the highest amount of land embodied in exports (0.15 Mkm²), followed by Spain (0.13 Mkm²) and Germany (0.09 Mkm²).

A.12. Embodied land in exports by main partner countries

Embodied land in exports by main partner countries, 2008 (1 000 km²)

	EU-27	BR	CN	IN	JP	RU	US	RW	Total exports
AT	19.3	0.1	0.5	0.1	0.5	0.5	1.0	6.7	28.8
BE	12.5	0.0	0.2	0.1	0.2	0.3	0.4	2.2	15.8
BG	15.8	0.1	0.3	0.1	0.3	0.9	1.4	20.3	39.2
CY	0.6	0.0	0.0	0.0	0.0	0.4	0.0	0.4	1.4
CZ	21.3	0.1	0.4	0.1	0.4	0.6	0.8	4.1	27.7
DE	60.2	0.5	2.1	0.4	1.7	2.0	3.9	23.2	94.0
DK	11.1	0.1	1.8	0.0	0.7	0.7	0.6	4.1	19.1
EE	11.0	0.0	0.3	0.1	0.5	0.9	0.9	4.7	18.4
EL	6.7	0.0	0.1	0.0	0.1	0.4	1.1	4.2	12.7
ES	97.6	0.4	1.2	0.2	1.3	1.7	4.1	21.9	128.3
FI	41.0	0.8	6.7	1.0	4.3	3.7	6.1	22.8	86.3
FR	90.5	0.6	3.6	0.5	2.9	2.8	6.7	46.2	153.9
HU	19.4	0.1	0.3	0.1	0.3	0.7	0.6	8.6	30.1
IE	19.0	0.1	0.5	0.1	0.2	0.3	1.7	6.6	28.5
IT	28.2	0.2	0.8	0.2	0.9	1.1	3.0	13.3	47.7
LT	9.0	0.0	0.2	0.0	0.2	1.0	0.3	9.1	19.9
LU	1.5	0.0	0.0	0.0	0.0	0.0	0.0	0.1	1.6
LV	7.0	0.0	0.1	0.0	0.2	0.5	0.3	3.3	11.5
MT	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
NL	14.6	0.1	0.3	0.0	0.2	0.3	0.7	3.1	19.4
PL	40.7	0.1	0.6	0.1	0.4	2.3	1.4	12.6	58.3
PT	13.1	0.5	0.3	0.0	0.2	0.2	0.8	2.9	18.2
RO	11.7	0.1	0.4	0.2	0.5	0.4	0.8	9.4	23.4
SE	46.8	0.4	2.4	0.7	2.3	1.3	5.0	23.9	82.9
SI	2.7	0.0	0.1	0.0	0.0	0.1	0.2	1.6	4.7
SK	8.6	0.0	0.2	0.0	0.1	0.2	0.2	1.5	10.9
UK	19.7	0.6	1.4	0.3	0.6	0.4	4.3	10.0	37.3
EU-27	**630**	**5**	**25**	**4**	**19**	**24**	**46**	**267**	**1 020**
BR	402	2	208	8	59	45	104	539	1 366
CN	364	15	6	33	152	70	316	617	1 575
IN	60	2	17	0	7	6	42	95	228
JP	2	0	3	0	0	0	3	7	15
RU	104	3	69	7	60	2	29	152	425
US	189	11	167	10	231	19	35	724	1 385
RW	**3 014**	**181**	**1 329**	**232**	**928**	**609**	**2 070**	**2 186**	**10 548**

Embodied land in exports by main partner countries, EU-27, 2008 (%)



In 2008, 29 % of the land embodied in the exports of the Rest of the World was conveyed to the European market, 20 % to the US and 13 % to China. Up to 21 % of the land embodied in the exports of the Rest of the World was traded within the region. In the case of China, 39 % of the embodied land in Chinese exports was delivered to the Rest of the World, 23 % to the EU-27, 20 % to the US and 10 % to Japan.

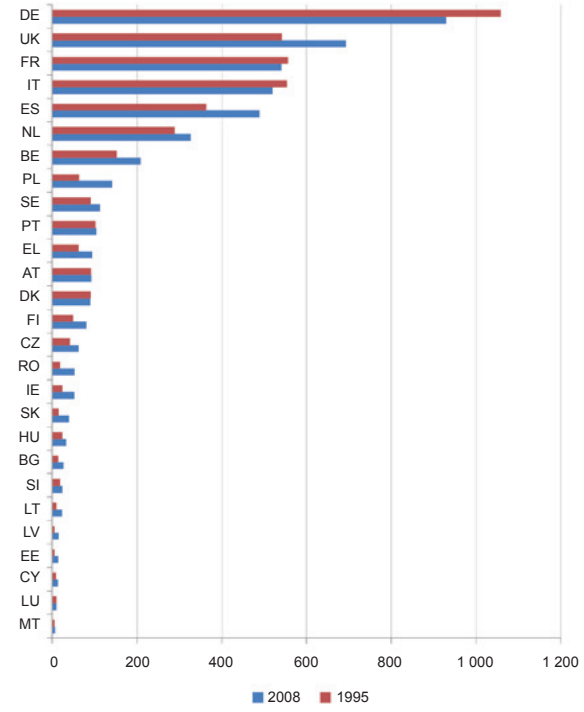
The EU-27 countries delivered most of the land embodied in exports to other Member States (62 %), 26 % to the Rest of the World, and 5 % to the US.

A.13. Embodied land in imports

Embodied land in imports (1 000 km²)

	1995	2000	2005	2006	2007	2008	2008 / 1995	2008 / 1995
AT	89.7	78.8	88.9	89.8	93.2	90.9	1.2	1%
BE	150.9	165.7	213.6	214.3	218.6	207.6	56.7	38%
BG	13.2	8.8	12.7	18.7	20.2	25.4	12.2	93%
CY	7.5	8.4	9.4	9.6	10.4	12.5	5.0	66%
CZ	41.0	41.4	56.7	57.6	59.3	61.4	20.4	50%
DE	1 057.5	940.3	897.9	918.4	967.9	928.9	-128.5	-12%
DK	89.1	78.1	87.9	88.8	91.2	87.9	-1.2	-1%
EE	4.2	10.7	13.3	15.8	15.8	13.1	8.9	211%
EL	61.0	71.1	79.8	84.2	93.6	93.0	32.0	53%
ES	362.6	358.1	461.3	468.4	509.8	488.2	125.5	35%
FI	47.9	60.4	80.2	76.9	75.7	79.5	31.6	66%
FR	555.0	481.9	542.1	520.1	544.8	539.8	-15.2	-3%
HU	23.1	27.3	28.0	27.7	30.7	32.5	9.5	41%
IE	23.1	34.1	42.3	47.1	52.1	51.0	27.8	120%
IT	552.9	504.6	539.8	547.9	541.2	519.3	-33.6	-6%
LT	8.8	14.7	16.6	18.4	18.4	22.3	13.4	152%
LU	8.3	7.1	8.8	8.6	9.1	9.2	0.9	11%
LV	4.4	7.4	11.3	12.5	15.3	14.5	10.2	233%
MT	3.9	4.0	3.5	3.5	4.3	4.5	0.6	15%
NL	288.1	278.0	301.0	297.1	310.4	325.6	37.6	13%
PL	62.3	81.8	103.0	111.3	123.8	140.2	78.0	125%
PT	100.3	95.4	93.5	88.0	100.1	102.1	1.8	2%
RO	18.1	22.1	40.9	47.3	52.2	51.3	33.3	184%
SE	89.2	102.4	104.5	104.7	114.6	111.8	22.6	25%
SI	17.4	15.5	15.8	16.4	18.4	22.6	5.1	30%
SK	14.6	15.6	30.0	32.6	38.6	38.2	23.6	161%
UK	540.2	619.4	791.6	770.2	764.8	691.9	151.7	28%
EU-27	**4 234**	**4 133**	**4 674**	**4 696**	**4 894**	**4 765**	**531**	**13%**
BR	250	207	135	157	185	218	-32	-13%
CN	533	727	1 147	1 205	1 295	1 823	1 290	242%
IN	127	166	284	332	411	295	167	132%
JP	2 477	2 026	1 646	1 542	1 389	1 455	-1 022	-41%
RU	302	244	596	536	706	775	473	157%
US	2 560	3 352	3 438	3 399	3 093	2 646	85	3%
RW	3 101	3 449	3 814	4 019	4 181	4 585	1 484	48%
World	**13 583**	**14 304**	**15 734**	**15 886**	**16 155**	**16 561**	**2 978**	**22%**

Embodied land in imports, EU-27 (1 000 km²)



Between 1995 and 2008, the land embodied in global imports increased by 22 % to 16.6 Mkm². This growth was mainly driven by the Rest of the World (+1.5 Mkm²), China (+1.3 Mkm²), and the EU-27 (+0.53 Mkm²). In 2008, the EU-27 imported 29 % of the land embodied in global imports, the Rest of the World 28 %, the US 16 %, and China 11 %.

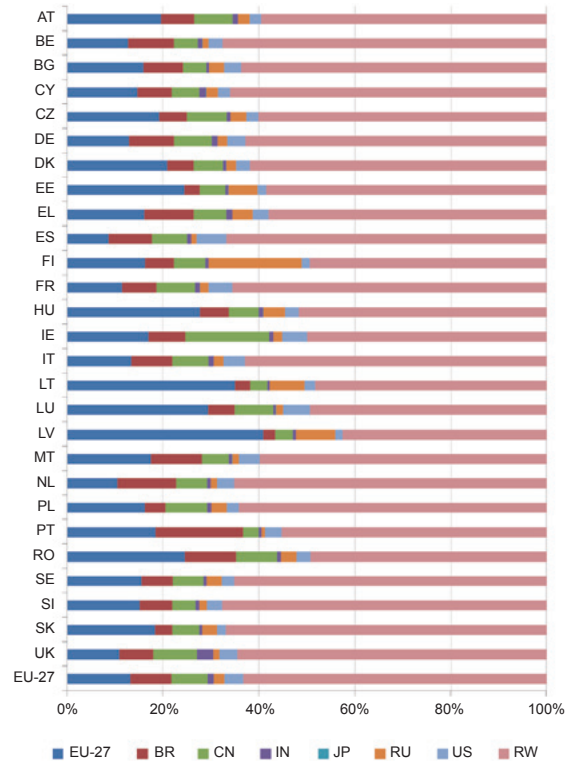
In most EU-27 Member States the land embodied in imports increased, the largest growth in absolute terms being reported by the United Kingdom (+0.15 Mkm²), Spain (+0.13 Mkm²), and Poland (+0.08 Mkm²). Within the EU-27, in 2008, Germany was the country with the highest level of land embodied in imports (0.93 Mkm²), followed by the United Kingdom (0.69 Mkm²), France (0.54 Mkm²), Italy (0.52 Mkm²), and Spain (0.49 Mkm²).

A.14. Embodied land in imports by main partner countries

Embodied land in imports by main partner countries, 2008 (1 000 km²)

	EU-27	BR	CN	IN	JP	RU	US	RW	Total imports
AT	17.8	6.3	7.2	1.0	0.0	2.2	2.2	54.1	90.9
BE	26.5	19.6	10.4	2.0	0.1	2.5	6.2	140.4	207.6
BG	4.0	2.1	1.2	0.2	0.0	0.8	0.9	16.2	25.4
CY	1.8	0.9	0.7	0.2	0.0	0.3	0.3	8.3	12.5
CZ	11.8	3.5	5.1	0.4	0.0	2.0	1.5	37.0	61.4
DE	119.7	86.4	74.2	10.6	0.5	18.7	34.8	584.1	928.9
DK	18.3	4.9	5.3	0.6	0.0	1.8	2.5	54.4	87.9
EE	3.2	0.4	0.7	0.1	0.0	0.8	0.2	7.6	13.1
EL	14.9	9.6	6.3	1.1	0.0	4.0	3.1	54.0	93.0
ES	42.1	44.2	36.0	3.7	0.1	5.5	30.3	326.2	488.2
FI	12.9	4.8	5.2	0.6	0.0	15.4	1.3	39.3	79.5
FR	61.5	38.5	43.8	5.0	0.2	9.7	26.6	354.3	539.8
HU	9.0	1.9	2.1	0.3	0.0	1.5	0.9	16.8	32.5
IE	8.6	3.9	8.9	0.4	0.0	0.9	2.7	25.4	51.0
IT	69.1	44.6	39.3	5.7	0.2	9.9	23.5	327.1	519.3
LT	7.8	0.7	0.8	0.1	0.0	1.6	0.5	10.7	22.3
LU	2.7	0.5	0.7	0.0	0.0	0.1	0.5	4.5	9.2
LV	5.9	0.4	0.5	0.1	0.0	1.2	0.2	6.2	14.5
MT	0.8	0.5	0.3	0.0	0.0	0.1	0.2	2.7	4.5
NL	34.2	39.6	21.2	2.3	0.1	4.3	11.6	212.4	325.6
PL	22.6	6.1	12.2	1.2	0.1	4.4	3.5	90.1	140.2
PT	18.8	18.6	3.4	0.6	0.0	0.8	3.5	56.5	102.1
RO	12.6	5.5	4.4	0.4	0.0	1.7	1.5	25.3	51.3
SE	17.4	7.2	7.2	0.7	0.0	3.4	2.9	73.0	111.8
SI	3.4	1.5	1.1	0.1	0.0	0.4	0.7	15.3	22.6
SK	7.0	1.4	2.1	0.2	0.0	1.2	0.7	25.6	38.2
UK	75.1	48.3	63.8	22.7	0.3	9.0	25.8	446.8	691.9
EU-27	**630**	**402**	**364**	**60**	**2**	**104**	**189**	**3 014**	**4 765**
BR	5	2	15	2	0	3	11	181	218
CN	25	208	6	17	3	69	167	1 329	1 823
IN	4	8	33	0	0	7	10	232	295
JP	19	59	152	7	0	60	231	928	1 455
RU	24	45	70	6	0	2	19	609	775
US	46	104	316	42	3	29	35	2 070	2 646
RW	**267**	**539**	**617**	**95**	**7**	**152**	**724**	**2 186**	**4 585**

Embodied land in imports by main partner countries, EU-27, 2008 (%)



In 2008, almost half of the land embodied in the imports of the Rest of the World were originated in the region, 16 % in the US, 13 % in China, 12 % in Brazil, and 6 % in the EU-27. The Rest of the World and China were the main sources of land embodied in the imports of the US (78 % and 12 % respectively); while 73 % of the land embodied in Chinese imports came from the Rest of the World and 11 % from Brazil.

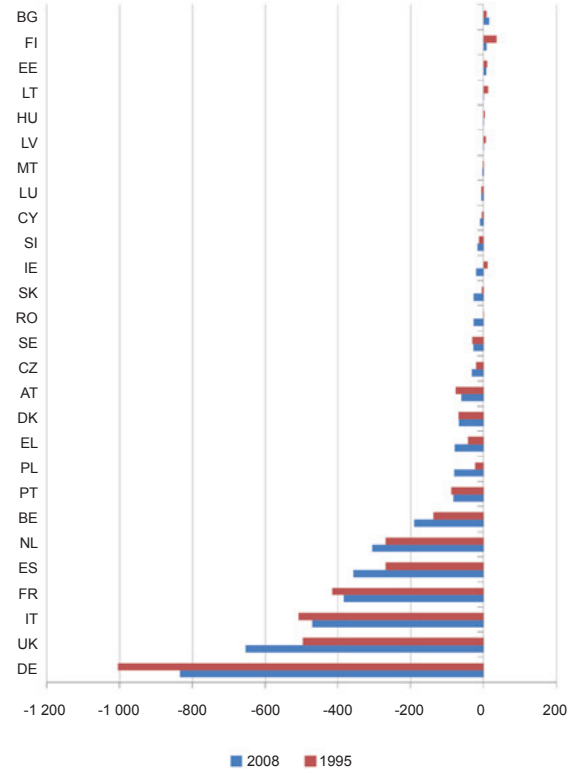
In the year 2008, 63 % of the land embodied in the imports of the EU-27 countries came from the Rest of the World, 13 % from other Member States, 8 % from Brazil, 8 % China, and 4 % from the US.

A.15. Land trade balance

Land trade balance (1 000 km²)

	1995	2000	2005	2006	2007	2008	2008 / 1995	2008 / 1995
AT	-78.3	-61.9	-66.1	-64.7	-65.1	-62.1	16.1	-21%
BE	-138.1	-151.7	-197.9	-198.2	-202.0	-191.8	-53.6	39%
BG	5.9	10.6	11.6	10.6	9.0	13.8	7.9	135%
CY	-6.1	-7.2	-8.3	-8.5	-8.7	-11.1	-5.0	81%
CZ	-21.4	-20.8	-30.9	-30.4	-29.4	-33.8	-12.3	57%
DE	-1 005.1	-874.3	-816.0	-829.9	-870.4	-834.9	170.2	-17%
DK	-70.6	-58.1	-69.2	-67.6	-72.6	-68.7	1.9	-3%
EE	9.2	6.1	7.1	0.9	0.3	5.3	-3.9	-42%
EL	-43.8	-53.5	-69.8	-71.1	-85.6	-80.3	-36.6	84%
ES	-270.6	-243.6	-339.6	-337.4	-389.3	-359.8	-89.3	33%
FI	33.9	44.4	7.3	1.7	12.2	6.8	-27.1	-80%
FR	-416.1	-336.1	-403.5	-378.7	-401.0	-385.9	30.2	-7%
HU	1.5	-6.8	-5.8	-3.7	-1.5	-2.4	-3.9	-258%
IE	9.7	-5.2	-10.7	-16.6	-22.7	-22.4	-32.1	-331%
IT	-508.9	-460.9	-497.2	-504.6	-496.2	-471.6	37.2	-7%
LT	10.9	0.1	-4.2	-4.3	-0.6	-2.4	-13.2	-122%
LU	-6.9	-5.4	-7.2	-7.0	-7.3	-7.5	-0.6	9%
LV	4.0	4.5	0.7	-1.7	-4.4	-3.0	-7.0	-177%
MT	-3.9	-4.0	-3.4	-3.4	-4.3	-4.5	-0.6	15%
NL	-269.7	-259.6	-282.3	-278.6	-291.9	-306.3	-36.6	14%
PL	-23.7	-48.0	-51.0	-57.5	-64.9	-82.0	-58.2	245%
PT	-89.5	-80.8	-77.8	-71.5	-82.5	-84.0	5.5	-6%
RO	-3.2	-3.0	-23.3	-29.3	-34.8	-28.0	-24.7	767%
SE	-32.3	-39.1	0.4	-33.2	-28.4	-29.0	3.4	-10%
SI	-14.9	-12.7	-12.6	-12.4	-14.4	-17.8	-2.9	19%
SK	-6.1	-7.1	-19.5	-21.6	-27.6	-27.3	-21.2	347%
UK	-498.0	-585.8	-755.5	-732.0	-727.3	-654.6	-156.6	31%
EU-27	**-3 432**	**-3 260**	**-3 725**	**-3 750**	**-3 911**	**-3 745**	**-313**	**9%**
BR	485	712	1 317	1 202	1 213	1 148	663	137%
CN	336	-46	10	97	-3	-248	-584	-174%
IN	40	46	-75	-104	-183	-66	-106	-264%
JP	-2 469	-2 017	-1 634	-1 528	-1 375	-1 440	1029	-42%
RU	52	452	-51	39	-159	-350	-402	-778%
US	-1 123	-2 284	-2 408	-2 288	-1 880	-1 260	-138	12%
RW	**6 111**	**6 396**	**6 566**	**6 333**	**6 298**	**5 962**	**-149**	**-2%**

Land trade balance, EU-27 (1 000 km²)



Between 1995 and 2008 the land trade deficit increased by 0.58 Mkm² in China, by 0.4 Mkm² in Russia and by 0.31 Mkm² in the EU-27. In 2008, the EU-27 showed the largest deficit in terms of land embodied in trade (3.7 Mkm²), followed by Japan (1.4 Mkm²) and the US (1.3 Mkm²). The only regions with surplus in terms of land embodied in trade were the Rest of the World (5.9 Mkm²) and Brazil (1.1 Mkm²).

In 2008, all the EU-27 countries (excluding Bulgaria, Finland, and Estonia) showed a deficit in the land trade balance. The largest deficits were those of Germany (0.83 Mkm²), the United Kingdom (0.65 Mkm²), Italy (0.47 Mkm²), France (0.39 Mkm²), and Spain (0.36 Mkm²). Between 1995 and 2008, Germany was the Member State with the greatest reduction in the land deficit.

A.16. Land trade balance by main partner countries

Land trade balance by main partner countries, 2008 (1 000 km²)

	EU-27	BR	CN	IN	JP	RU	US	RW	Trade Balance
AT	1.5	-6.2	-6.8	-0.9	0.5	-1.7	-1.2	-47.5	-62.1
BE	-14.0	-19.5	-10.2	-2.0	0.1	-2.1	-5.9	-138.2	-191.8
BG	11.8	-2.0	-0.9	-0.0	0.3	0.1	0.5	4.0	13.8
CY	-1.2	-0.9	-0.7	-0.2	0.0	0.1	-0.3	-7.9	-11.1
CZ	9.5	-3.5	-4.7	-0.3	0.3	-1.4	-0.8	-32.9	-33.8
DE	-59.5	-85.9	-72.2	-10.2	1.2	-16.7	-30.8	-560.9	-834.9
DK	-7.2	-4.8	-3.5	-0.5	0.6	-1.1	-1.9	-50.3	-68.7
EE	7.8	-0.4	-0.4	0.0	0.5	0.1	0.7	-2.9	5.3
EL	-8.3	-9.6	-6.2	-1.1	0.1	-3.5	-2.0	-49.8	-80.3
ES	55.5	-43.8	-34.8	-3.5	1.1	-3.9	-26.2	-304.3	-359.8
FI	28.1	-4.0	1.4	0.4	4.2	-11.6	4.7	-16.5	6.8
FR	28.9	-37.9	-40.3	-4.5	2.7	-6.9	-19.8	-308.1	-385.9
HU	10.4	-1.9	-1.7	-0.2	0.3	-0.7	-0.3	-8.2	-2.4
IE	10.4	-3.9	-8.4	-0.4	0.2	-0.6	-1.0	-18.8	-22.4
IT	-41.0	-44.4	-38.5	-5.5	0.8	-8.9	-20.5	-313.8	-471.6
LT	1.2	-0.7	-0.6	-0.0	0.2	-0.6	-0.2	-1.6	-2.4
LU	-1.2	-0.5	-0.7	-0.0	0.0	-0.1	-0.5	-4.4	-7.5
LV	1.1	-0.3	-0.4	-0.0	0.2	-0.7	0.0	-2.8	-3.0
MT	-0.8	-0.5	-0.2	-0.0	0.0	-0.1	-0.2	-2.7	-4.5
NL	-19.6	-39.6	-20.9	-2.2	0.1	-3.9	-10.9	-209.3	-306.3
PL	18.1	-6.0	-11.6	-1.1	0.3	-2.1	-2.1	-77.5	-82.0
PT	-5.6	-18.1	-3.0	-0.5	0.2	-0.6	-2.8	-53.5	-84.0
RO	-0.9	-5.4	-4.0	-0.2	0.4	-1.3	-0.7	-15.9	-28.0
SE	29.5	-6.8	-4.7	-0.0	2.2	-2.2	2.1	-49.1	-29.0
SI	-0.7	-1.5	-1.0	-0.1	0.0	-0.3	-0.5	-13.7	-17.8
SK	1.6	-1.4	-1.9	-0.2	0.1	-1.0	-0.5	-24.1	-27.3
UK	-55.4	-47.7	-62.4	-22.4	0.3	-8.6	-21.5	-436.7	-654.6
EU-27	**0**	**-397**	**-339**	**-56**	**17**	**-80**	**-142**	**-2 747**	**-3 745**
BR	397	0	192	6	59	42	94	358	1148
CN	339	-192	0	16	149	2	149	-711	-248
IN	56	-6	-16	0	6	-1	32	-137	-66
JP	-17	-59	-149	-6	0	-59	-228	-922	-1 440
RU	80	-42	-2	1	59	0	10	-457	-350
US	142	-94	-149	-32	228	-10	0	-1 346	-1 260
RW	**2 747**	**-358**	**711**	**137**	**922**	**457**	**1 346**	**0**	**5 962**

Land trade balance by main partner countries, EU-27, 2008 (%)

In 2008, the land trade balance of the EU-27 showed a deficit with all the other regions except with Japan. The largest deficits of the EU-27 were with the Rest of the World (2.7 Mkm^2), Brazil (0.4 Mkm^2), and China (0.34 Mkm^2). Brazil presented a land trade surplus against all the other regions, and the Rest of the World showed a surplus with all the other regions except Brazil.

Within the EU-27 counties, the largest deficits in the land trade balance were with the Rest of the World. Some EU-27 countries showed a surplus in the land trade balance, mostly with other Member States.

B. Materials

Basic concepts

This chapter assesses the use of materials during economic activities across the world from different perspectives.

The chapter begins with an analysis of the domestic extraction of materials at the country level. The domestic extraction covers the annual amount of solid, liquid, and gaseous raw materials (except for water and air) extracted from the natural environment by humans or human-controlled means of technology insofar as they are considered resident units. This domestic extraction refers to the 'used extraction', i.e. the amount of extracted resources which enters the economic system for further processing or direct consumption. These materials are classified into four types: biomass, fossil fuels, metals, and non-metals.

The material extraction intensity of Gross Value Added is a measure of the materials extracted to produce one unit worth of goods and services in a specific country. It is calculated as the quotient between the material extraction and the Gross Value Added at constant prices of 2008.

The concept of material footprint refers to the materials extracted to produce the goods and services devoted to satisfy the domestic final demand of a country (i.e. households consumption, government consumption, and investment), regardless of the country where these materials were actually used.

The household footprint is the part of the material footprint related to household consumption. It distinguishes up to 9 categories of consumption.

The material intensity of the final demand is a measure of the materials extracted to produce one unit worth of the goods and services demanded by households, government consumption, and investment activities. It is calculated as the quotient between the material footprint and the domestic final demand at constant prices of 2008.

The material footprint domestic coverage ratio is the relation between the material footprint and the material extraction of a country. It represents the share of the material footprint of a country that is covered by its own material extraction.

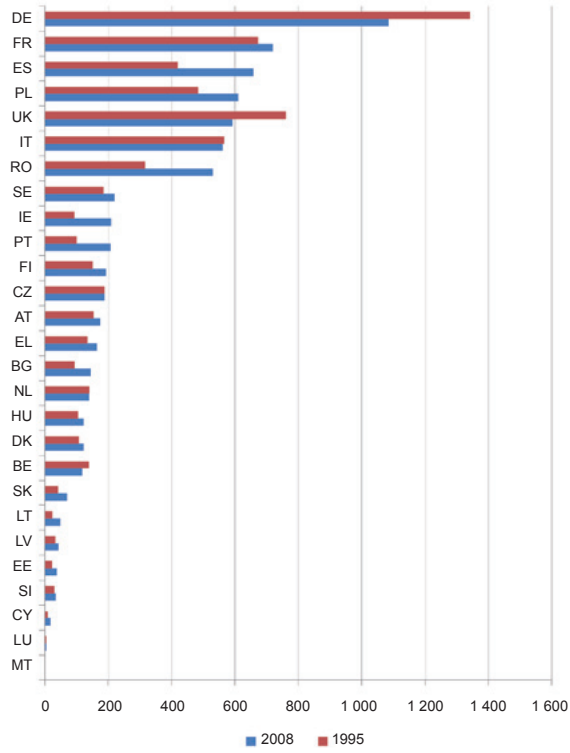
Embodied materials in exports and imports are the materials directly or indirectly extracted to produce internationally traded goods and services. The difference between the materials embodied in exports and imports gives the material trade balance. A deficit/surplus in the material trade balance indicates that the materials embodied in imports are greater/less than those exported. Moreover, a deficit in the material trade balance indicates that with the domestic material extraction is not possible to satisfy the domestic final demand (the contrary applies to a surplus). From this assertion it follows that the material footprint equals the material use minus the material trade balance.

B.1. Material extraction

Material extraction (Mt)

	1995	2000	2005	2006	2007	2008	2008 / 1995	2008 / 1995
AT	152.8	158.6	167.3	170.6	173.8	173.2	20.4	13%
BE	137.9	130.1	125.3	116.7	120.4	117.2	-20.6	-15%
BG	94.2	96.6	118.4	127.3	129.8	143.8	49.6	53%
CY	8.9	12.5	15.0	14.9	16.0	16.9	8.0	91%
CZ	187.0	175.4	180.6	184.0	188.9	187.4	0.4	0%
DE	1 340.0	1 204.9	1 073.8	1 093.1	1 101.6	1 082.6	-257.4	-19%
DK	106.1	127.4	136.7	137.5	132.1	122.0	15.8	15%
EE	20.8	22.3	29.3	31.9	37.6	35.7	14.9	72%
EL	133.3	134.2	154.3	151.9	151.9	163.1	29.8	22%
ES	418.7	562.4	701.8	744.5	763.5	657.5	238.7	57%
FI	149.5	157.8	179.8	194.3	195.3	192.4	42.9	29%
FR	671.6	730.1	685.2	700.3	736.9	719.2	47.6	7%
HU	104.6	108.1	166.1	138.6	108.8	122.2	17.6	17%
IE	92.2	146.2	180.3	196.3	204.6	207.1	114.8	125%
IT	564.3	699.5	606.4	598.8	573.6	560.3	-4.0	-1%
LT	22.0	24.5	36.6	35.9	44.1	47.6	25.6	116%
LU	3.0	2.9	2.5	2.8	2.9	2.7	-0.4	-12%
LV	32.4	37.7	44.0	46.7	48.9	42.8	10.4	32%
MT	0.1	0.1	0.1	0.1	0.1	0.1	0.0	19%
NL	139.8	141.8	135.9	133.5	131.6	138.3	-1.5	-1%
PL	482.3	553.1	548.9	553.1	600.7	608.9	126.5	26%
PT	98.9	154.6	153.8	184.1	192.0	206.6	107.6	109%
RO	314.7	166.6	319.3	342.5	402.9	528.9	214.2	68%
SE	184.7	180.6	213.2	203.0	219.8	218.3	33.6	18%
SI	27.9	30.1	31.2	36.8	38.5	34.5	6.6	24%
SK	41.9	44.5	61.6	60.5	59.5	68.9	27.0	64%
UK	760.3	741.6	643.6	628.3	622.2	590.9	-169.4	-22%
EU-27	**6 290**	**6 544**	**6 711**	**6 828**	**6 998**	**6 989**	**699**	**11%**
BR	2 012	2 230	2 612	2 733	2 920	3 097	1 085	54%
CN	7 899	8 998	14 234	15 978	17 261	18 121	10 222	129%
IN	2 720	3 102	3 769	3 981	4 303	4 413	1 692	62%
JP	879	838	702	711	685	629	-250	-28%
RU	2 029	1 972	2 413	2 501	2 602	2 637	608	30%
US	8 380	9 396	8 442	8 594	8 380	7 962	-418	-5%
RW	17 805	19 837	23 053	23 839	24 510	24 958	7 154	40%
World	**48 013**	**52 917**	**61 935**	**65 165**	**67 657**	**68 806**	**20 794**	**43%**

Material extraction, EU-27 (Mt)



Between 1995 and 2008, the world's extraction of materials increased by 20 794 Mt to 68 806 Mt (+43 %). The growth in materials extraction was predominantly driven by China (+10 222 Mt), the Rest of the World (+7.154 Mt), and India (+1.692 Mt). In 2008, 36 % of materials were extracted in the Rest of the World, 26 % in China, 12 % in the US, and 10 % in the EU-27. Within the EU-27, Germany extracted in 2008 15% of the total materials, France 10%, and Spain and Poland 9 % each.

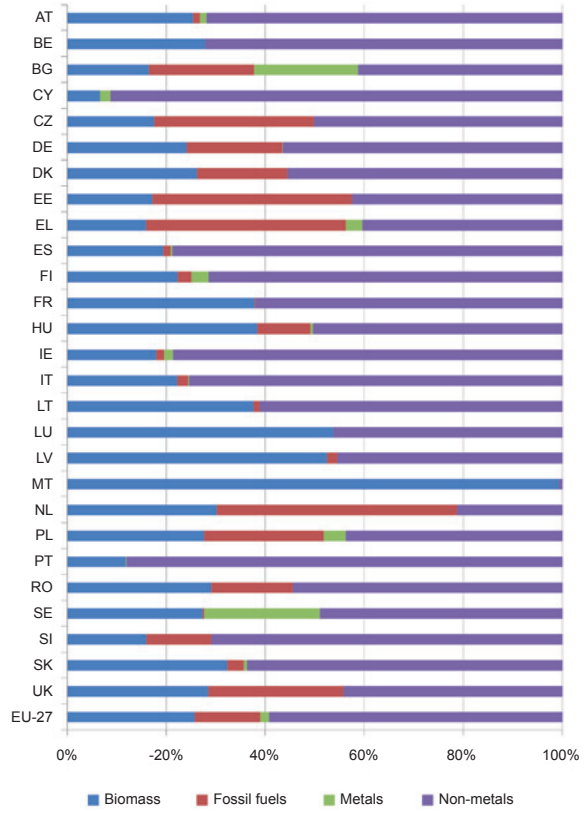
During the period 1995 – 2008, the material extraction in the EU-27 increased by 11 % to 6 989 Mt. Most of the Member States increased their material extraction; the largest growths in absolute terms were reported by Spain (+239 Mt), Romania (+214 Mt), and Poland (+127 Mt). In contrast, Germany (-257 Mt), United Kingdom (-169 Mt), Belgium (-21 Mt), Italy (-4 Mt), the Netherlands (-2 Mt) and Luxembourg (-0.4 Mt) showed reductions.

B.2. Material extraction by type

Material extraction by type, 2008 (Mt)

	Biomass	Fossil fuels	Metals	Non-metals	Total
AT	44.1	2.3	2.5	124.4	173.2
BE	32.5	0.0	0.0	84.7	117.2
BG	23.7	30.5	30.3	59.4	143.8
CY	1.1	0.0	0.3	15.4	16.9
CZ	32.8	60.4	0.1	94.0	187.4
DE	261.2	209.1	0.5	612.0	1 082.6
DK	31.9	22.3	0.0	67.7	122.0
EE	6.1	14.4	0.0	15.2	35.7
EL	25.9	65.8	5.5	65.9	163.1
ES	127.0	10.5	2.0	518.0	657.5
FI	42.8	5.4	6.7	137.5	192.4
FR	272.0	1.9	0.1	445.1	719.2
HU	46.9	13.1	0.6	61.6	122.2
IE	37.0	3.4	3.7	162.9	207.1
IT	124.2	12.7	0.7	422.7	560.3
LT	17.9	0.6	0.0	29.1	47.6
LU	1.4	0.0	0.0	1.2	2.7
LV	22.5	0.9	0.0	19.5	42.8
MT	0.1	0.0	0.0	0.0	0.1
NL	41.8	67.0	0.0	29.5	138.3
PL	168.5	146.5	27.3	266.6	608.9
PT	24.4	0.0	0.5	181.8	206.6
RO	153.6	87.1	0.1	288.0	528.9
SE	59.7	0.6	50.8	107.1	218.3
SI	5.5	4.5	0.0	24.5	34.5
SK	22.3	2.3	0.4	43.9	68.9
UK	168.2	161.0	0.0	261.7	590.9
EU-27	**1 795**	**922**	**132**	**4 140**	**6 989**
BR	2 053	112	459	474	3 097
CN	2 833	2 866	1 189	11 234	18 121
IN	1 979	575	248	1 610	4 413
JP	67	4	1	558	629
RU	495	1 240	216	687	2 637
US	1 571	1 753	483	4 155	7 962
RW	8 427	5 316	3 852	7 364	24 958
World	**19 220**	**12 788**	**6 578**	**30 220**	**68 806**

Material extraction by type, EU-27, 2008 (%)



In 2008, the extraction of non-metals accounted for 44 % of the global material extraction. Biomass was the second most extracted material with 28 %, followed by fossil fuels (19 %) and metals (10 %). In the EU-27, the extraction of non-metals represented 59 % of total material extraction while biomass amounted for 26 %, fossil fuels 13 %, and metals 2 %.

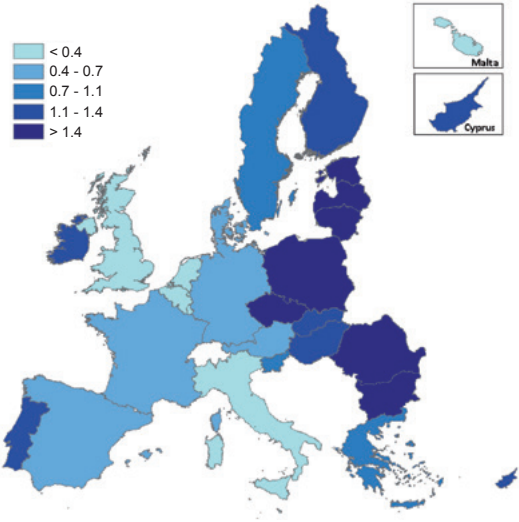
Non-metals were the type of material that was mostly extracted by Member States being only under 40 % in the Netherlands, and Malta. The Netherlands mainly extracted fossil fuels (due to the extraction natural gas), while in Luxembourg, Latvia, and Malta the material extraction was dominated by biomass.

B.3. Material extraction intensity of Gross Value Added

Material extraction intensity of Gross Value Added (kg/EUR)

	1995	2000	2005	2006	2007	2008	2008 / 1995	2008 / 1995
AT	0.83	0.74	0.72	0.71	0.69	0.68	-0.15	-19%
BE	0.59	0.49	0.43	0.39	0.40	0.38	-0.21	-35%
BG	4.62	4.98	4.93	5.04	4.88	5.19	0.57	12%
CY	0.93	1.08	1.11	1.06	1.08	1.11	0.18	19%
CZ	2.12	1.87	1.60	1.51	1.47	1.41	-0.72	-34%
DE	0.74	0.61	0.52	0.51	0.50	0.49	-0.26	-35%
DK	0.67	0.70	0.71	0.70	0.66	0.61	-0.06	-9%
EE	3.26	2.53	2.30	2.28	2.51	2.50	-0.77	-23%
EL	1.00	0.87	0.81	0.77	0.74	0.78	-0.23	-23%
ES	0.65	0.72	0.77	0.79	0.77	0.66	0.01	2%
FI	1.47	1.22	1.24	1.29	1.22	1.19	-0.28	-19%
FR	0.50	0.48	0.41	0.41	0.42	0.41	-0.09	-18%
HU	1.76	1.50	1.92	1.55	1.21	1.34	-0.41	-24%
IE	1.25	1.29	1.23	1.27	1.25	1.30	0.04	3%
IT	0.47	0.53	0.44	0.43	0.40	0.40	-0.07	-15%
LT	1.68	1.50	1.54	1.40	1.57	1.64	-0.03	-2%
LU	0.15	0.11	0.08	0.08	0.08	0.07	-0.08	-51%
LV	3.56	3.22	2.54	2.40	2.30	2.07	-1.49	-42%
MT	0.03	0.03	0.03	0.03	0.02	0.02	-0.01	-21%
NL	0.38	0.32	0.28	0.27	0.25	0.26	-0.12	-31%
PL	2.65	2.38	2.04	1.94	1.98	1.91	-0.74	-28%
PT	0.91	1.19	1.12	1.29	1.30	1.38	0.47	52%
RO	3.86	2.17	3.17	3.16	3.47	4.24	0.38	10%
SE	0.92	0.75	0.78	0.71	0.75	0.74	-0.18	-19%
SI	1.49	1.31	1.12	1.24	1.22	1.05	-0.43	-29%
SK	1.32	1.19	1.31	1.17	1.04	1.13	-0.19	-14%
UK	0.64	0.53	0.41	0.39	0.37	0.35	-0.29	-45%
EU-27	**0.76**	**0.69**	**0.64**	**0.63**	**0.63**	**0.62**	**-0.14**	**-18%**
BR	3.15	3.05	3.13	3.16	3.20	3.24	0.09	3%
CN	8.82	6.64	6.59	6.55	6.19	5.89	-2.92	-33%
IN	8.11	6.89	5.91	5.65	5.56	5.30	-2.81	-35%
JP	0.31	0.29	0.22	0.22	0.21	0.19	-0.12	-39%
RU	3.42	3.30	3.06	2.94	2.82	2.72	-0.71	-21%
US	1.27	1.15	0.91	0.90	0.86	0.82	-0.46	-36%
RW	3.09	2.99	3.21	3.22	3.22	3.26	0.17	6%
World	**1.85**	**1.74**	**1.80**	**1.82**	**1.82**	**1.82**	**-0.03**	**-2%**

Material extraction intensity of Gross Value Added, EU-27, 2008 (kg/EUR)



Between 1995 and 2008, the world's materials intensity of the Gross Value Added decreased by 2 % to 1.8 kg/EUR in 2008, while in the EU-27 it fell by 18 % to 0.62 kg/EUR. In China and India, the reductions of the material intensity amounted 2.9 and 2.8 kg/EUR respectively. In 2008, the regions with the highest material intensity per unit of Gross Value Added were China (5.9 kg/EUR), India (5.3 kg/EUR), the Rest of the World (3.3 kg/EUR), Brazil (3.2 kg/EUR), and Russia (2.7 kg/EUR). Japan showed the lowest material intensity (0.19 kg/EUR), followed by the EU-27 (0.62 kg/EUR) and the US (0.82 kg/EUR).

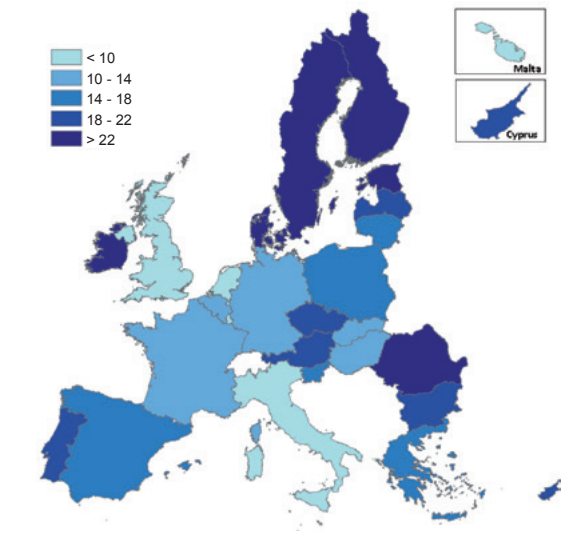
In this period, all EU-27 Member States except Bulgaria, Cyprus, Spain, Portugal, and Romania reduced their material intensity. Regarding the EU-27, Bulgaria, Romania, Estonia, Latvia, and Poland turned out to be the top countries with the highest material intensities in 2008. Malta, Luxembourg, the Netherlands, the United Kingdom, and Belgium were the Member States with the lowest material intensities in the same year.

B.4. Material extraction per capita

Material extraction per capita (t/cap)

	1995	2000	2005	2006	2007	2008	2008 / 1995	2008 / 1995
AT	19.2	19.8	20.4	20.7	21.0	20.8	1.6	8%
BE	13.6	12.7	12.0	11.1	11.4	11.0	-2.6	-19%
BG	11.2	11.8	15.3	16.5	16.9	18.8	7.6	68%
CY	13.7	18.0	20.0	19.4	20.5	21.4	7.7	56%
CZ	18.1	17.1	17.7	18.0	18.4	18.1	-0.0	-0%
DE	16.4	14.7	13.0	13.3	13.4	13.2	-3.3	-20%
DK	20.3	23.9	25.3	25.3	24.2	22.3	1.9	9%
EE	14.4	16.2	21.8	23.7	28.0	26.7	12.3	85%
EL	12.6	12.3	13.9	13.7	13.6	14.5	2.0	16%
ES	10.6	14.0	16.3	17.0	17.2	14.5	3.9	36%
FI	29.3	30.5	34.3	37.0	37.0	36.3	7.0	24%
FR	11.3	12.1	10.9	11.1	11.6	11.2	-0.1	-1%
HU	10.1	10.6	16.4	13.8	10.8	12.2	2.0	20%
IE	25.6	38.7	43.8	46.6	47.4	47.0	21.4	84%
IT	9.9	12.3	10.4	10.2	9.7	9.4	-0.5	-5%
LT	6.0	7.0	10.7	10.6	13.0	14.1	8.1	134%
LU	7.5	6.6	5.4	5.9	6.2	5.5	-2.0	-26%
LV	12.9	15.8	19.1	20.3	21.4	18.8	5.9	46%
MT	0.3	0.4	0.3	0.3	0.3	0.3	0.0	7%
NL	9.1	8.9	8.3	8.2	8.0	8.4	-0.6	-7%
PL	12.5	14.3	14.4	14.5	15.8	16.0	3.5	28%
PT	9.9	15.2	14.6	17.4	18.1	19.5	9.6	97%
RO	13.9	7.4	14.7	15.8	18.7	24.6	10.7	77%
SE	20.9	20.4	23.7	22.4	24.1	23.8	2.8	14%
SI	14.0	15.2	15.6	18.4	19.1	17.2	3.1	22%
SK	7.8	8.2	11.4	11.2	11.0	12.8	4.9	63%
UK	13.1	12.6	10.7	10.4	10.2	9.7	-3.5	-26%
EU-27	**13.1**	**13.6**	**13.7**	**13.8**	**14.1**	**14.0**	**0.9**	**7%**
BR	12.4	12.8	14.0	14.5	15.4	16.2	3.7	30%
CN	6.5	7.1	10.9	12.2	13.1	13.6	7.1	110%
IN	2.8	2.9	3.3	3.4	3.7	3.7	0.9	31%
JP	7.1	6.7	5.6	5.6	5.4	5.0	-2.1	-30%
RU	13.6	13.4	16.8	17.4	18.2	18.4	4.8	35%
US	31.5	33.3	28.4	28.7	27.7	26.1	-5.4	-17%
RW	7.5	7.7	8.2	8.3	8.4	8.4	0.9	12%
World	**8.4**	**8.6**	**9.5**	**9.9**	**10.2**	**10.2**	**1.8**	**22%**

Material extraction per capita, EU-27, 2008 (t/cap)



The global use of materials per inhabitant between 1995 and 2008 increased by 1.8 t/cap to 10.2 t/cap (+22 %), while in the EU-27, it increased by 0.9 t/cap to 14 t/cap (+7 %). In China, Russia, and Brazil the extraction of materials grew by 7.1, 4.8, and 3.7 t/cap respectively. The US and Japan reduced the material extraction by 5.4 and 2.1 t/cap respectively.

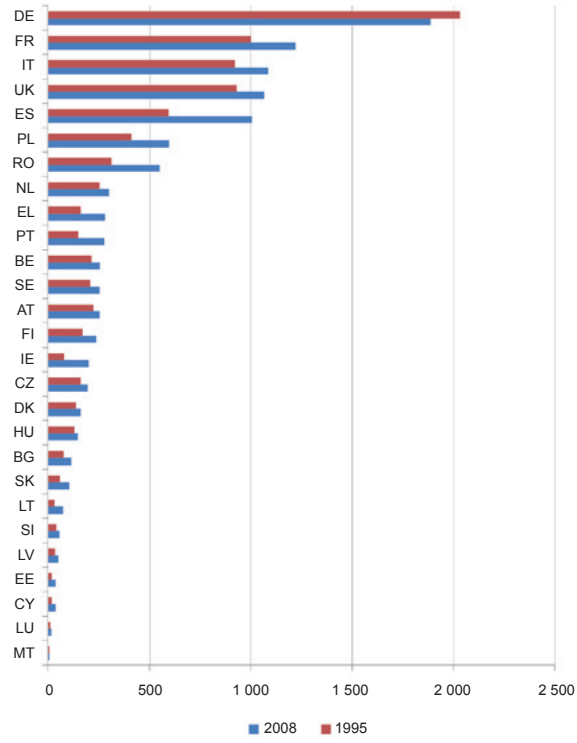
In 2008, the regions with the highest material extraction per capita were the US (26.1 t/cap), Russia (18.4 t/cap), Brazil (16.2 t/cap), the EU-27 (14 t/cap), and China (13.6 t/cap). In the EU-27, Ireland, Finland, Estonia, Romania, and Sweden were the top five countries in terms of material extraction per capita. In contrast, Malta, Luxembourg, the Netherlands, Italy, and the United Kingdom reported the lowest materials extraction per capita.

B.5. Material footprint

Material footprint (Mt)

	1995	2000	2005	2006	2007	2008	2008 / 1995	2008 / 1995
AT	219.0	224.4	248.8	243.6	246.1	248.8	29.8	14%
BE	211.9	209.1	232.3	233.6	238.5	251.0	39.1	18%
BG	73.9	70.7	91.7	89.3	104.3	111.3	37.4	51%
CY	15.7	21.9	26.0	28.5	28.2	34.0	18.3	116%
CZ	157.9	171.8	174.0	185.0	182.3	192.0	34.1	22%
DE	2 028.5	1 957.5	1 792.8	1 857.8	1 846.8	1 882.8	- 145.7	-7%
DK	133.9	136.6	157.9	163.7	161.9	158.0	24.0	18%
EE	15.9	16.9	28.0	31.7	36.0	34.0	18.1	114%
EL	157.7	184.5	237.1	245.8	258.2	277.1	119.4	76%
ES	593.2	780.6	1 024.6	1 083.1	1 111.0	1 003.4	410.2	69%
FI	167.8	187.6	211.1	228.2	232.5	233.8	66.0	39%
FR	997.7	1 096.9	1 162.6	1 171.5	1 215.1	1 218.5	220.8	22%
HU	128.6	137.1	193.5	166.3	137.2	143.4	14.8	11%
IE	76.1	133.4	175.2	187.1	201.1	196.2	120.1	158%
IT	918.9	1 158.2	1 125.1	1 143.2	1 105.8	1 084.2	165.3	18%
LT	29.1	38.9	55.4	57.3	66.4	72.3	43.2	149%
LU	8.6	10.0	12.3	12.0	13.3	12.8	4.1	48%
LV	30.9	34.8	42.8	48.1	51.2	46.6	15.7	51%
MT	2.6	3.3	3.2	3.4	3.8	4.0	1.4	54%
NL	250.2	260.0	275.3	275.1	281.3	297.3	47.1	19%
PL	407.6	540.3	488.1	504.5	560.5	594.4	186.8	46%
PT	144.7	210.7	219.9	247.2	256.9	273.9	129.2	89%
RO	309.1	170.5	339.2	366.4	416.5	549.1	240.0	78%
SE	203.6	209.3	235.1	226.3	248.1	248.9	45.2	22%
SI	37.5	41.6	43.1	48.8	52.3	51.5	14.0	37%
SK	56.5	65.0	84.3	88.0	90.5	101.1	44.6	79%
UK	925.6	995.8	1 105.9	1 118.4	1 127.2	1 064.2	138.6	15%
EU-27	**8 303**	**9 067**	**9 785**	**10 054**	**10 273**	**10 384**	**2 082**	**25%**
BR	1 843	1 971	2 012	2 132	2 289	2 464	621	34%
CN	7 317	8 706	13 507	15 035	16 344	17 071	9 754	133%
IN	2 608	3 021	3 629	3 871	4 195	4 229	1 621	62%
JP	2 282	2 317	2 154	2 147	2 032	2 175	-108	-5%
RU	1 314	912	1 388	1 528	1 699	1 727	412	31%
US	8 943	11 023	10 831	11 003	10 579	10 033	1 089	12%
RW	15 402	15 901	18 629	19 396	20 246	20 723	5 322	35%
World	**48 013**	**52 917**	**61 935**	**65 165**	**67 657**	**68 806**	**20 794**	**43%**

Material footprint, EU-27 (Mt)



The global material footprint in 2008 amounted to 68 806 Mt (43 % increase compared to 1995). China was the country with the largest variation (+9 754 Mt) followed by the Rest of the World (+5 322 Mt), the EU-27 (+2 082 Mt), and India (+1 621 Mt). In 2008, the Rest of the World was responsible for 30 % of global material footprint, China held 25 %, and the EU-27 15 % and the US 15 % each.

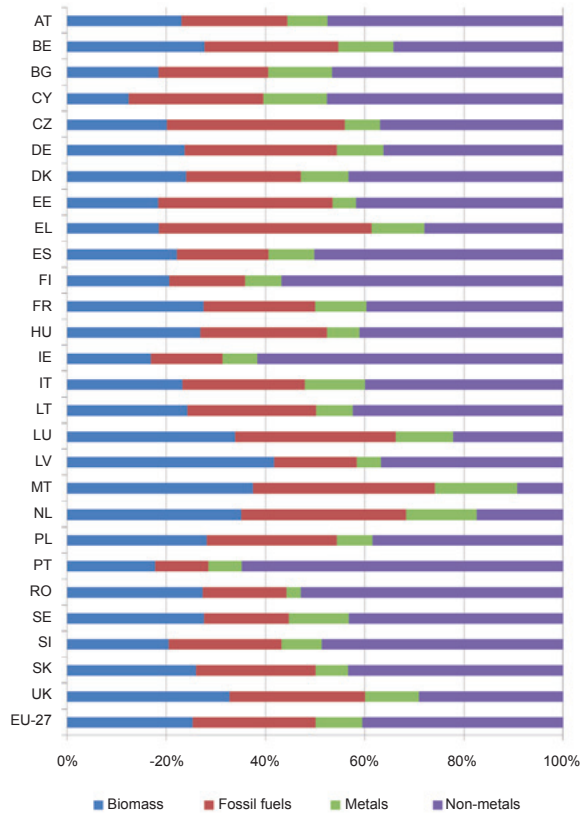
Regarding the EU-27, in 2008 Germany and France made up together almost 30 % of the EU-27 total material footprint. Adding up Italy, the United Kingdom, and Spain to the list, it then makes up almost to two-thirds. Between 1995 and 2008, the material footprint of the EU-27 grew by 25 %. This indicator also followed a growing trend in most of the Member States. The three largest contributors to the increase of the European material footprint in this period were Spain (+410 Mt), Romania (+240 Mt), and France (+221 Mt). Germany was the only country that reduced its material footprint (-146 Mt).

B.6. Material footprint by type

Material footprint by type, 2008 (Mt)

	Biomass	Fossil fuels	Metals	Non-metals	Total
AT	57.2	53.2	20.2	118.2	248.8
BE	69.4	67.8	27.9	85.9	251.0
BG	20.4	24.6	14.3	51.9	111.3
CY	4.2	9.2	4.4	16.2	34.0
CZ	38.5	69.0	13.5	70.9	192.0
DE	444.6	578.1	177.3	682.7	1 882.8
DK	37.8	36.5	15.2	68.4	158.0
EE	6.2	12.0	1.6	14.2	34.0
EL	51.2	118.7	29.7	77.5	277.1
ES	222.0	185.2	92.9	503.3	1 003.4
FI	48.0	35.8	17.0	133.0	233.8
FR	334.0	275.3	125.3	483.9	1 218.5
HU	38.4	36.6	9.5	58.9	143.4
IE	33.0	28.3	13.8	121.1	196.2
IT	251.3	267.8	132.2	432.9	1 084.2
LT	17.5	18.7	5.4	30.7	72.3
LU	4.3	4.1	1.5	2.8	12.8
LV	19.4	7.8	2.3	17.1	46.6
MT	1.5	1.5	0.7	0.4	4.0
NL	104.0	99.1	42.2	52.0	297.3
PL	166.8	156.0	43.2	228.5	594.4
PT	48.4	29.4	18.5	177.6	273.9
RO	149.6	92.6	16.2	290.7	549.1
SE	68.5	42.5	30.4	107.5	248.9
SI	10.5	11.8	4.1	25.1	51.5
SK	26.2	24.4	6.6	43.9	101.1
UK	347.9	291.1	116.1	309.1	1 064.2
EU-27	**2 621**	**2 577**	**982**	**4 204**	**10 384**
BR	1 550	160	284	470	2 464
CN	2 559	2 275	1 159	11 077	17 071
IN	1 847	545	266	1 571	4 229
JP	388	679	506	602	2 175
RU	659	324	86	657	1 727
US	1 825	2 776	1 164	4 267	10 033
RW	7 770	3 451	2 131	7 371	20 723
World	**19 220**	**12 788**	**6 578**	**30 220**	**68 806**

Material footprint by type, EU-27, 2008 (%)



In 2008, 44 % of the global material footprint corresponded to non-metals. Biomass constituted the second source of materials at the global level (28 %) followed by fossil fuels (19 %) and metals (10 %). Regarding the EU-27, non-metals represented 40 % of the material footprint. Biomass and fossil fuels made up together 50 % (equally distributed), and metals 8 %.

The non-metals component of the EU-27 material footprint was the most important in 22 Member States, with a share ranging from 34 % to 65 %. Greece, Malta, the Czech Republic and Estonia showed the highest shares of fossil fuels. In Malta, the Netherlands, and Luxembourg biomass was the main component of the material footprint.

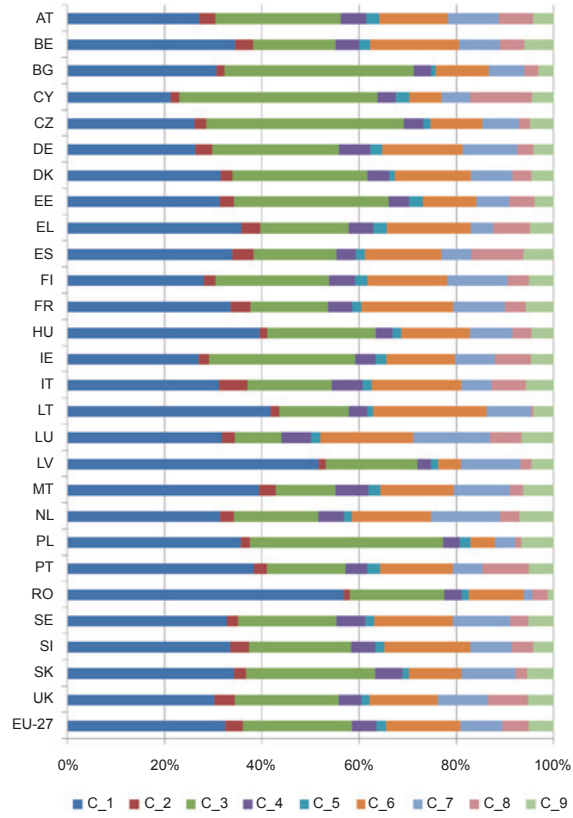
B.7. Household material footprint by consumption category

Household material footprint by consumption category, 2008 (Mt)

	C_1	C_2	C_3	C_4	C_5	C_6	C_7	C_8	C_9
AT	34.5	4.1	32.8	6.7	3.4	18.1	13.2	8.9	5.5
BE	45.3	4.9	22.2	6.5	2.8	24.3	11.0	6.6	8.0
BG	16.4	0.9	20.9	1.9	0.6	5.9	3.9	1.5	1.7
CY	3.3	0.3	6.4	0.6	0.4	1.0	0.9	2.0	0.7
CZ	29.0	2.7	45.3	4.4	1.7	11.8	8.4	2.5	5.5
DE	260.5	35.4	258.3	63.2	25.0	164.4	111.1	33.1	42.0
DK	24.7	1.9	21.8	3.5	0.9	12.3	6.8	3.0	3.6
EE	4.6	0.4	4.7	0.6	0.4	1.6	1.0	0.8	0.6
EL	50.6	5.5	25.7	7.2	4.1	24.3	6.6	10.6	7.1
ES	160.5	20.3	80.9	19.1	8.7	74.5	29.5	50.6	29.5
FI	23.4	2.1	19.6	4.4	2.2	13.8	10.3	3.8	4.3
FR	215.3	26.1	102.8	31.8	12.1	121.6	67.9	27.8	37.4
HU	27.8	1.1	15.6	2.4	1.3	9.8	6.2	2.7	3.3
IE	21.5	1.7	24.0	3.3	1.8	11.2	6.6	5.8	3.9
IT	185.3	34.9	103.7	37.2	11.6	109.9	36.7	42.1	34.3
LT	14.7	0.6	5.0	1.4	0.4	8.2	3.2	0.2	1.5
LU	2.4	0.2	0.7	0.5	0.1	1.5	1.2	0.5	0.5
LV	14.2	0.4	5.2	0.8	0.4	1.3	3.4	0.6	1.3
MT	1.3	0.1	0.4	0.2	0.1	0.5	0.4	0.1	0.2
NL	59.2	5.5	32.9	9.8	3.3	30.8	26.9	7.5	13.4
PL	131.5	6.9	146.2	12.9	8.1	18.7	15.0	4.9	24.7
PT	37.0	2.6	15.7	4.3	2.6	14.4	6.0	9.2	5.0
RO	136.3	3.0	46.6	8.7	3.4	27.3	3.9	7.8	3.0
SE	38.9	2.8	24.2	7.0	2.2	19.3	14.1	4.4	6.3
SI	7.1	0.8	4.5	1.1	0.4	3.7	1.8	0.9	0.9
SK	17.4	1.3	13.5	2.8	0.7	5.5	5.7	1.2	2.8
UK	206.1	28.9	146.8	32.3	11.1	95.5	71.6	55.9	36.8
EU-27	**1 769**	**195**	**1 226**	**275**	**110**	**831**	**473**	**295**	**284**
BR	991	31	80	31	29	165	160	112	78
CN	1 430	106	277	63	168	118	287	136	162
IN	1 318	55	154	43	21	141	299	84	90
JP	288	49	192	54	38	246	81	66	76
RU	467	49	74	33	12	64	105	14	52
US	1 251	162	621	201	215	890	318	241	446
RW	5 412	276	977	299	239	859	1 213	440	519
World	**12 926**	**924**	**3 600**	**999**	**833**	**3 314**	**2 936**	**1 388**	**1 707**

NB: C_1: Food, drinks, and tobacco; C_2: Clothing and footwear; C_3: Housing, fuel, and power; C_4: Household goods and services; C_5: Health and education; C_6: Transport and communications; C_7: Recreation and culture; C_8: Restaurants and hotels; C_9: Miscellaneous goods and services.

Household material footprint by consumption category, EU-27, 2008 (%)



In 2008, food, drinks, and tobacco drove 45 % of the global material footprint of households. Housing, fuel, and power represented 13 %, transport and communication activities 12 %, and recreation and culture activities 10 %.

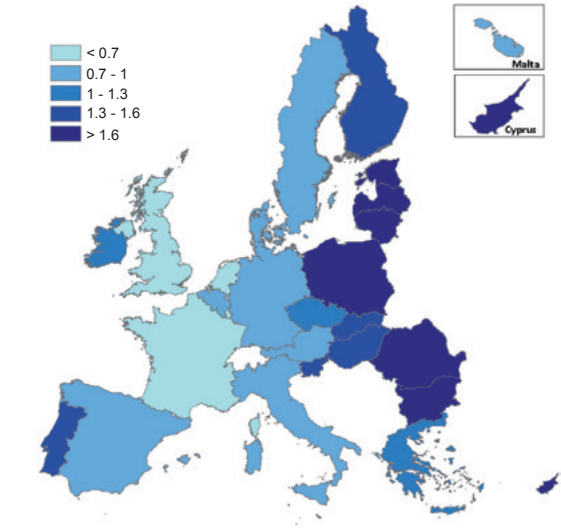
In the EU-27, food, drinks, and tobacco (32 %), housing, fuel, and power (22 %), and transport and communication activities (15 %) add up to almost two-thirds of the total material footprint. This was followed by recreation and culture activities (9 %).

B.8. Material footprint intensity of final demand

Material footprint intensity of final demand (kg/EUR)

	1995	2000	2005	2006	2007	2008	2008 / 1995	2008 / 1995
AT	1.10	1.01	1.02	0.97	0.95	0.96	-0.14	-13%
BE	0.83	0.72	0.74	0.73	0.73	0.75	-0.08	-9%
BG	3.16	3.29	3.42	2.98	3.25	3.28	0.12	4%
CY	1.48	1.75	1.74	1.82	1.70	1.93	0.45	30%
CZ	1.83	1.69	1.37	1.34	1.24	1.27	-0.55	-30%
DE	1.08	0.95	0.85	0.86	0.83	0.84	-0.23	-21%
DK	0.79	0.72	0.76	0.76	0.74	0.74	-0.06	-7%
EE	2.21	1.74	2.02	2.02	2.22	2.29	0.08	4%
EL	1.05	1.02	1.11	1.08	1.09	1.16	0.11	10%
ES	0.83	0.88	1.01	1.02	1.00	0.90	0.08	9%
FI	1.52	1.37	1.36	1.45	1.40	1.40	-0.12	-8%
FR	0.73	0.68	0.66	0.64	0.65	0.64	-0.09	-12%
HU	2.05	1.51	1.94	1.57	1.27	1.32	-0.73	-36%
IE	0.88	1.06	1.11	1.12	1.14	1.14	0.26	29%
IT	0.70	0.80	0.74	0.73	0.70	0.70	0.00	0%
LT	1.96	2.11	2.18	2.07	2.22	2.30	0.34	17%
LU	0.55	0.44	0.42	0.40	0.42	0.39	-0.16	-28%
LV	2.80	2.64	2.24	2.25	2.17	2.07	-0.73	-26%
MT	0.64	0.67	0.66	0.67	0.73	0.73	0.09	13%
NL	0.63	0.53	0.54	0.52	0.51	0.54	-0.09	-15%
PL	2.23	2.15	1.68	1.59	1.66	1.65	-0.58	-26%
PT	1.09	1.35	1.36	1.51	1.53	1.59	0.51	47%
RO	4.30	2.14	3.01	3.01	3.17	3.90	-0.40	-9%
SE	0.92	0.80	0.83	0.77	0.81	0.83	-0.09	-10%
SI	1.72	1.57	1.36	1.48	1.45	1.40	-0.32	-19%
SK	2.15	1.90	1.69	1.57	1.44	1.50	-0.66	-31%
UK	0.77	0.70	0.68	0.67	0.66	0.62	-0.15	-19%
EU-27	**0.95**	**0.89**	**0.88**	**0.87**	**0.87**	**0.87**	**-0.08**	**-8%**
BR	2.50	2.43	2.26	2.30	2.31	2.37	-0.13	-5%
CN	8.56	6.82	6.16	6.04	5.65	5.28	-3.27	-38%
IN	6.71	5.76	5.00	4.82	4.79	4.61	-2.11	-31%
JP	0.73	0.71	0.64	0.64	0.60	0.67	-0.07	-9%
RU	2.93	1.98	2.10	2.11	2.09	2.02	-0.91	-31%
US	1.29	1.28	1.11	1.10	1.05	1.01	-0.28	-22%
RW	3.31	3.02	3.23	3.22	3.21	3.16	-0.15	-5%
World	**1.85**	**1.74**	**1.80**	**1.82**	**1.82**	**1.82**	**-0.03**	**-2%**

Material footprint intensity of final demand, EU-27, 2008 (kg/EUR)



The world's material footprint intensity of final demand totalled 1.8 kg/EUR in 2008, a decrease of 2 % from 1995; in the EU-27 it decreased by 8 % to reach 0.87 kg/EUR in the same year. China and India had the highest reductions in the material intensity (-3.3 and -2.1 kg/EUR respectively). This was significantly higher compared to the country that followed, i.e. Russia (-0.91 kg/EUR). In 2008, the top five regions with the largest material intensity per unit of final demand were China (5.3 kg/EUR), India (4.6 kg/EUR), the Rest of the World (3.2 kg/EUR), Brazil (2.4 kg/EUR), and Russia (2 kg/EUR). Japan showed the lowest material intensity (0.67 kg/EUR), followed by the EU-27 (0.87 kg/EUR) and the US (1 kg/EUR).

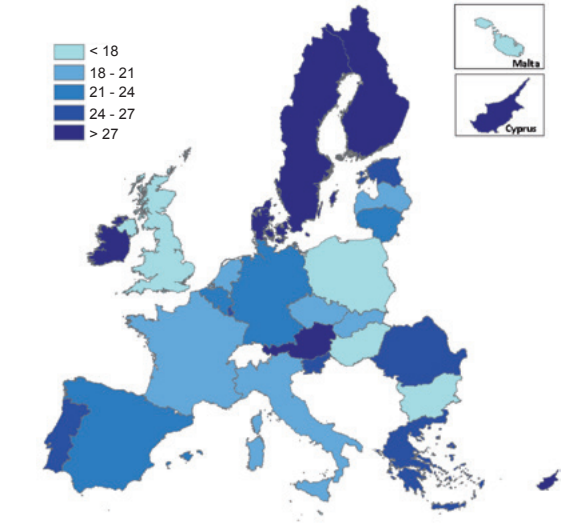
Regarding the EU-27 Member States, the countries with the highest growth in the material footprint intensity of the final demand were Portugal (47 %), Cyprus (30 %), Ireland (29 %), Lithuania (17 %), and Malta (13 %). Conversely, Hungary (-36 %), Slovakia (-31 %) and the Czech Republic (-30 %) showed the highest reductions in their material footprint intensities. In 2008, Romania (3.9 kg/EUR), and Bulgaria (3.3 kg/EUR), and Lithuania (2.3 kg/EUR), ranked the top in terms of the material footprint intensities, while Luxembourg (0.39 kg/EUR), the Netherlands (0.54 kg/EUR), and the United Kingdom (0.62 kg/EUR), ranked the lowest.

B.9. Material footprint per capita

Material footprint per capita (t/cap)

	1995	2000	2005	2006	2007	2008	2008 / 1995	2008 / 1995
AT	27.6	28.0	30.3	29.5	29.7	29.9	2.3	8%
BE	20.9	20.4	22.2	22.2	22.5	23.5	2.6	12%
BG	8.8	8.6	11.8	11.6	13.6	14.6	5.8	66%
CY	24.4	31.7	34.7	37.2	36.3	43.1	18.7	77%
CZ	15.3	16.7	17.0	18.0	17.7	18.5	3.2	21%
DE	24.9	23.8	21.7	22.5	22.4	22.9	-2.0	-8%
DK	25.7	25.6	29.2	30.2	29.7	28.8	3.2	12%
EE	11.0	12.3	20.8	23.6	26.8	25.4	14.4	131%
EL	14.9	16.9	21.4	22.1	23.1	24.7	9.8	66%
ES	15.1	19.5	23.8	24.8	25.0	22.2	7.1	47%
FI	32.9	36.3	40.3	43.4	44.1	44.1	11.2	34%
FR	16.8	18.1	18.5	18.5	19.1	19.0	2.2	13%
HU	12.4	13.4	19.2	16.5	13.6	14.3	1.8	15%
IE	21.1	35.3	42.6	44.5	46.6	44.6	23.4	111%
IT	16.2	20.3	19.2	19.5	18.7	18.2	2.0	12%
LT	8.0	11.1	16.2	16.8	19.6	21.5	13.5	169%
LU	21.3	23.1	26.8	25.6	28.0	26.4	5.1	24%
LV	12.4	14.6	18.5	21.0	22.4	20.5	8.2	66%
MT	7.1	8.6	8.0	8.5	9.4	9.8	2.7	38%
NL	16.2	16.4	16.9	16.8	17.2	18.1	1.9	12%
PL	10.6	14.0	12.8	13.2	14.7	15.6	5.0	48%
PT	14.4	20.7	20.9	23.4	24.2	25.8	11.4	79%
RO	13.6	7.6	15.7	17.0	19.3	25.5	11.9	87%
SE	23.1	23.6	26.1	25.0	27.2	27.1	4.0	17%
SI	18.8	20.9	21.6	24.3	26.0	25.6	6.8	36%
SK	10.6	12.0	15.6	16.3	16.8	18.7	8.2	77%
UK	16.0	16.9	18.4	18.5	18.5	17.4	1.4	9%
EU-27	**17.3**	**18.8**	**19.9**	**20.4**	**20.7**	**20.9**	**3.5**	**20%**
BR	11.4	11.3	10.8	11.3	12.1	12.9	1.5	13%
CN	6.0	6.9	10.3	11.4	12.4	12.9	6.8	113%
IN	2.7	2.9	3.2	3.3	3.6	3.6	0.8	31%
JP	18.3	18.4	17.0	17.0	16.1	17.2	-1.1	-6%
RU	8.8	6.2	9.7	10.6	11.9	12.1	3.2	36%
US	33.6	39.0	36.5	36.7	35.0	32.9	-0.7	-2%
RW	6.5	6.1	6.6	6.8	7.0	7.0	0.5	8%
World	**8.4**	**8.6**	**9.5**	**9.9**	**10.2**	**10.2**	**1.8**	**22%**

Material footprint per capita, EU-27, 2008 (t/cap)



The world's material footprint per capita showed a 22 % increase between 1995 and 2008, reaching 10 t/cap in 2008. The China (+6.8 t/cap), the EU-27 (+3.5 t/cap), and Russia (+3.2 t/cap) were the regions with the largest increase in the material footprint per capita, while in Japan (-1 t/cap) and the US (-0.7 t/cap) reduced the material footprint per capita.

In 2008, the regions with the highest material footprint per capita were the US (33 t/cap), the EU-27 (21 t/cap), Japan (17 t/cap), and Brazil and China (13 t/cap each). In the EU-27, Ireland (45 t/cap), Finland (44 t/cap), Cyprus(33 t/cap), Austria (30 t/cap) and Denmark (29 t/cap) were the Member States with the highest material footprint per capita. Malta (10 t/cap), Hungary (14 t/cap), Bulgaria (15 t/cap), Poland (16 t/cap), and the United Kingdom (17 t/cap) showed the lowest material extraction per capita.

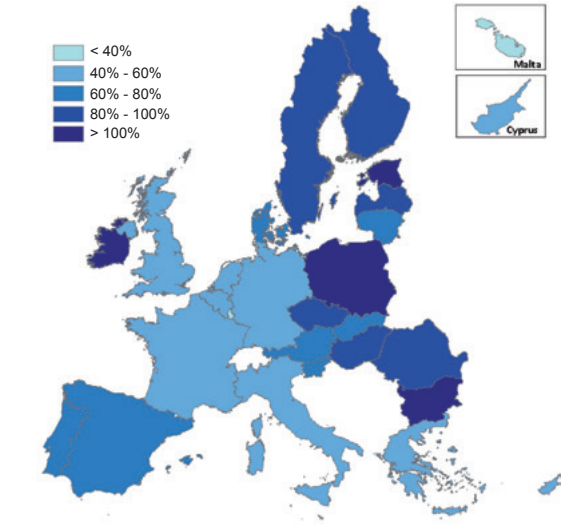
Between 1995 and 2008, all the Member States except Germany increased their material footprint, being Lithuania (+179 %), Estonia (+131 %), and Ireland (+111 %) the countries with the highest increase.

B.10. Material footprint domestic coverage ratio

Material footprint domestic coverage ratio (%)

	1995	2000	2005	2006	2007	2008	2008 / 1995	2008 / 1995
AT	70%	71%	67%	70%	71%	70%	-0%	-0%
BE	65%	62%	54%	50%	50%	47%	-18%	-28%
BG	128%	137%	129%	142%	124%	129%	2%	1%
CY	56%	57%	58%	52%	57%	50%	-7%	-12%
CZ	118%	102%	104%	99%	104%	98%	-21%	-18%
DE	66%	62%	60%	59%	60%	58%	-9%	-13%
DK	79%	93%	87%	84%	82%	77%	-2%	-3%
EE	131%	132%	105%	101%	105%	105%	-26%	-20%
EL	85%	73%	65%	62%	59%	59%	-26%	-30%
ES	71%	72%	68%	69%	69%	66%	-5%	-7%
FI	89%	84%	85%	85%	84%	82%	-7%	-8%
FR	67%	67%	59%	60%	61%	59%	-8%	-12%
HU	81%	79%	86%	83%	79%	85%	4%	5%
IE	121%	110%	103%	105%	102%	106%	-16%	-13%
IT	61%	60%	54%	52%	52%	52%	-10%	-16%
LT	76%	63%	66%	63%	66%	66%	-10%	-13%
LU	35%	29%	20%	23%	22%	21%	-14%	-41%
LV	105%	108%	103%	97%	95%	92%	-13%	-12%
MT	4%	4%	4%	4%	3%	3%	-1%	-23%
NL	56%	55%	49%	49%	47%	47%	-9%	-17%
PL	118%	102%	112%	110%	107%	102%	-16%	-13%
PT	68%	73%	70%	74%	75%	75%	7%	10%
RO	102%	98%	94%	93%	97%	96%	-5%	-5%
SE	91%	86%	91%	90%	89%	88%	-3%	-3%
SI	74%	73%	72%	75%	74%	67%	-7%	-10%
SK	74%	68%	73%	69%	66%	68%	-6%	-8%
UK	82%	74%	58%	56%	55%	56%	-27%	-32%
EU-27	**76%**	**72%**	**69%**	**68%**	**68%**	**67%**	**-8%**	**-11%**
BR	109%	113%	130%	128%	128%	126%	17%	15%
CN	108%	103%	105%	106%	106%	106%	-2%	-2%
IN	104%	103%	104%	103%	103%	104%	0%	0%
JP	38%	36%	33%	33%	34%	29%	-10%	-25%
RU	154%	216%	174%	164%	153%	153%	-2%	-1%
US	94%	85%	78%	78%	79%	79%	-14%	-15%
RW	116%	125%	124%	123%	121%	120%	5%	4%
World	**100%**	**100%**	**100%**	**100%**	**100%**	**100%**	**0%**	**0%**

Material footprint domestic coverage ratio, EU-27, 2008 (%)



In 2008, the share of the material footprint covered with domestic materials was below 100 % in Japan (21 %), the EU-27 (67 %), and the US (79 %). On the contrary, Russia presented one of the highest coverage ratios (153 %), followed by Brazil (126 %), the Rest of the World (120 %), and China (106 %).

During the period 1995 – 2008, the US reduced its domestic coverage ratio from 94 % to 79 %, being the largest decrease among the non-EU countries. It was followed by Japan with a reduction from 38 % to 29 %. Brazil's material footprint coverage ratio had the largest increase.

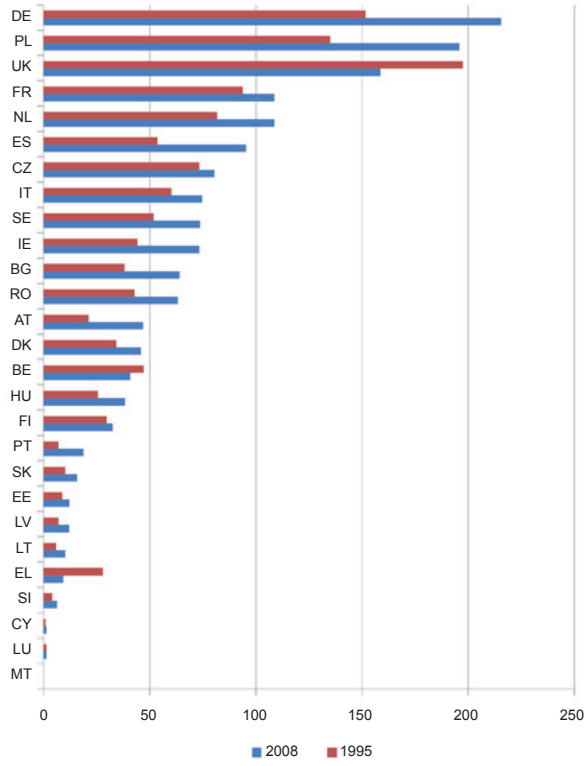
The share of the material footprint of the EU-27 covered by domestic extraction fell from 76 % to 67 %. In this period, all the countries (excluding Austria, Hungary, Portugal, and Bulgaria) reduced their domestic coverage ratios. In 2008, only Bulgaria (129 %), Ireland (106 %), Estonia (105 %), and Poland (102 %) showed a domestic coverage ratio of the material footprint above 100 %, while Malta (3 %) and Luxembourg (21 %) were the countries with the lowest figures, followed by the Netherlands and Belgium (47 % each).

B.11. Embodied material in exports

Embodied material in exports (Mt)

	1995	2000	2005	2006	2007	2008	2008 / 1995	2008 / 1995
AT	21.0	28.5	37.1	44.2	45.1	46.8	25.9	123%
BE	46.9	49.7	50.4	41.9	43.3	40.5	-6.4	-14%
BG	38.0	45.3	47.3	57.0	58.0	63.8	25.8	68%
CY	0.7	1.0	1.0	1.1	1.4	1.2	0.5	79%
CZ	73.2	65.8	75.1	73.2	79.7	80.3	7.1	10%
DE	151.6	183.1	215.9	197.4	212.3	215.3	63.7	42%
DK	33.9	47.4	47.9	49.9	44.2	45.4	11.5	34%
EE	8.8	11.2	11.3	11.0	12.6	12.1	3.3	37%
EL	27.8	32.0	9.7	12.6	9.2	9.1	-18.7	-67%
ES	53.5	84.4	87.5	95.4	101.3	95.1	41.6	78%
FI	29.7	27.4	34.7	35.1	32.3	32.5	2.8	9%
FR	93.6	107.1	92.2	92.9	99.5	108.5	14.9	16%
HU	25.4	25.4	34.9	35.9	33.4	38.2	12.8	51%
IE	43.8	46.8	57.1	65.8	65.4	73.1	29.3	67%
IT	60.1	66.8	65.6	65.6	70.4	74.5	14.4	24%
LT	5.7	4.8	5.8	5.9	8.6	9.8	4.1	72%
LU	1.0	1.2	1.0	1.0	1.3	1.2	0.1	12%
LV	6.9	10.4	11.9	11.1	11.8	11.8	4.9	71%
MT	0.0	0.0	0.0	0.0	0.0	0.1	0.0	342%
NL	81.6	86.6	95.7	94.8	95.1	108.5	26.9	33%
PL	135.0	141.6	180.6	189.8	197.0	195.7	60.6	45%
PT	6.9	11.0	13.0	15.9	17.9	18.4	11.6	169%
RO	42.9	31.9	39.8	42.0	62.7	63.0	20.1	47%
SE	51.7	56.5	73.2	72.9	71.6	73.5	21.8	42%
SI	4.0	4.6	5.3	6.0	6.3	6.1	2.1	53%
SK	10.0	11.2	15.8	13.8	13.8	15.7	5.7	57%
UK	197.2	217.4	173.3	163.1	150.7	158.6	-38.6	-20%
EU-27	**1 251**	**1 399**	**1 483**	**1 496**	**1 545**	**1 599**	**348**	**28%**
BR	322	410	739	759	818	862	540	168%
CN	831	765	1 637	1 918	2 020	2 645	1 813	218%
IN	231	343	490	506	542	565	334	144%
JP	14	16	20	23	24	24	10	76%
RU	857	1 171	1 257	1 219	1 217	1 282	424	49%
US	913	721	544	572	649	771	-142	-16%
RW	4 689	6 346	7 763	8 077	8 026	8 644	3 955	84%
World	**9 108**	**11 170**	**13 935**	**14 570**	**14 841**	**16 391**	**7 283**	**80%**

Embodied material in exports, EU-27 (Mt)



Between 1995 and 2008, the materials embodied in global exports increased by 7.203 Mt to 16 391 Mt (+80 %). Growth in material exports was led by the Rest of the World (+3.955 Mt), China (+1.813 Mt), Brazil (+540 Mt), Russia (+424 Mt), and the EU-27 (+348 Mt). Most of the EU-27 Member States increased the amount of materials embodied in exports; the largest growths in absolute terms were registered in Germany (+64 Mt), Poland (+61 Mt), and Spain (+42 Mt). In contrast, the United Kingdom (-39 Mt), Greece (-19 Mt) and Belgium (-6 Mt) reduced the materials embodied in exports.

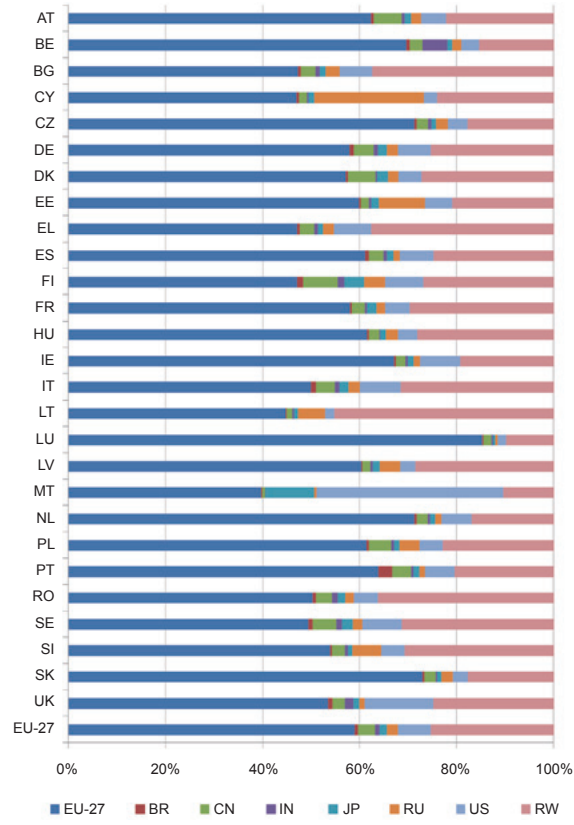
In 2008, 53% of the materials embodied in global exports were related to exports from the Rest of the World, 16 % from China, 10 % from the EU-27, and 8 % from Russia. Within the EU-27, Germany was the country with the highest amount of materials embodied in exports (315 Mt), followed by Poland (196 Mt), the United Kingdom (159 Mt), and France and the Netherlands (108 Mt each).

B.12. Embodied material in exports by main partner countries

Embodied material in exports by main partner countries, 2008 (Mt)

	EU-27	BR	CN	IN	JP	RU	US	RW	Total exports
AT	29.2	0.3	2.7	0.3	0.7	0.9	2.4	10.4	46.8
BE	28.2	0.3	1.1	2.0	0.4	0.8	1.5	6.2	40.5
BG	30.1	0.4	1.9	0.6	0.7	1.9	4.3	23.9	63.8
CY	0.6	0.0	0.0	0.0	0.0	0.3	0.0	0.3	1.2
CZ	57.2	0.4	1.9	0.5	0.8	1.9	3.3	14.3	80.3
DE	124.6	1.9	8.9	1.7	4.1	4.7	14.7	54.7	215.3
DK	25.9	0.2	2.6	0.2	1.0	0.9	2.2	12.4	45.4
EE	7.2	0.0	0.2	0.1	0.2	1.1	0.7	2.5	12.1
EL	4.3	0.1	0.3	0.1	0.1	0.2	0.7	3.4	9.1
ES	58.1	0.7	2.9	0.6	1.3	1.3	6.6	23.6	95.1
FI	15.3	0.4	2.3	0.5	1.3	1.4	2.6	8.7	32.5
FR	62.8	0.5	2.8	0.5	2.1	2.0	5.4	32.3	108.5
HU	23.5	0.2	0.8	0.1	0.4	0.9	1.5	10.8	38.2
IE	49.1	0.2	1.4	0.4	0.8	1.0	6.0	14.1	73.1
IT	37.2	0.8	2.9	0.7	1.4	1.7	6.2	23.5	74.5
LT	4.4	0.0	0.1	0.0	0.1	0.5	0.2	4.4	9.8
LU	1.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	1.2
LV	7.1	0.0	0.2	0.1	0.2	0.5	0.4	3.4	11.8
MT	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1
NL	77.3	0.6	2.4	0.5	1.2	1.3	6.8	18.5	108.5
PL	120.0	1.1	8.9	1.3	2.1	8.1	9.4	44.8	195.7
PT	11.8	0.5	0.7	0.1	0.2	0.2	1.1	3.8	18.4
RO	31.7	0.4	2.1	0.7	0.9	1.2	3.1	22.8	63.0
SE	36.3	0.6	3.6	0.8	1.7	1.5	5.9	23.1	73.5
SI	3.3	0.0	0.2	0.0	0.1	0.4	0.3	1.9	6.1
SK	11.4	0.1	0.4	0.1	0.1	0.4	0.5	2.8	15.7
UK	84.8	1.5	4.0	2.7	2.0	1.7	22.5	39.5	158.6
EU-27	**942**	**11**	**55**	**15**	**24**	**37**	**108**	**406**	**1 599**
BR	227	1	141	6	37	21	120	308	862
CN	632	34	18	70	210	98	518	1 065	2 645
IN	131	6	57	1	25	9	102	235	565
JP	4	0	5	0	0	1	4	11	24
RU	713	9	86	11	48	7	107	302	1 282
US	144	12	70	11	83	9	25	415	771
RW	**2 201**	**155**	**1 163**	**267**	**1 144**	**190**	**1 857**	**1 668**	**8 644**

Embodied material in exports by main partner countries, EU-27, 2008 (%)



In 2008, 25 % of the materials embodied in the exports of the Rest of the World were conveyed to the EU-27, while 21 % went to the US, 13 % to Japan, and 13 % to China. Almost 20 % of the materials embodied in the exports of the Rest of the World were traded within the own region. On the other hand, 40 % of the embodied materials in Chinese exports were to meet the Rest of the World markets, while 24 % and 20 % satisfied respectively the EU-27's and the US's demand.

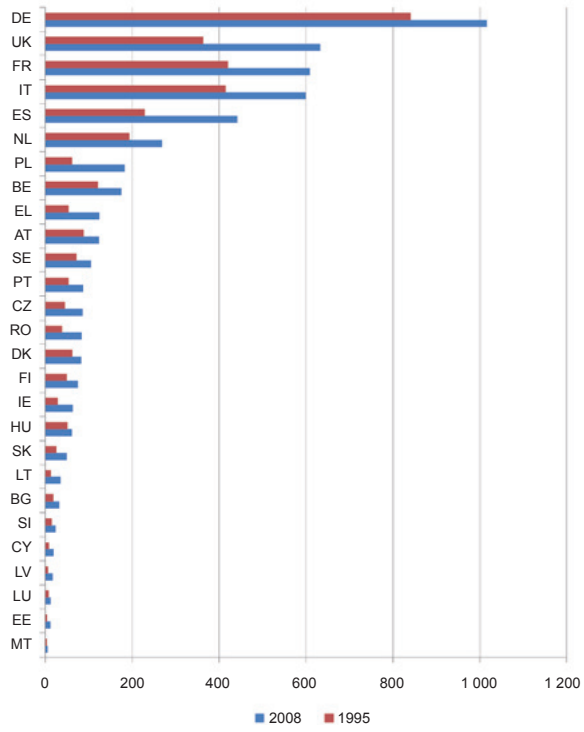
The EU-27 countries delivered most of the materials embodied in exports to other Member States (59 %), 25 % to the Rest of the World, and 7 % to the US.

B.13. Embodied material in imports

Embodied material in imports (Mt)

	1995	2000	2005	2006	2007	2008	2008 / 1995	2008 / 1995
AT	87.2	94.3	118.5	117.2	117.5	122.4	35.2	40%
BE	121.0	128.8	157.4	158.8	161.4	174.3	53.3	44%
BG	17.7	19.4	20.5	19.1	32.6	31.3	13.6	77%
CY	7.6	10.5	12.0	14.8	13.7	18.3	10.8	143%
CZ	44.0	62.3	68.5	74.2	73.0	84.8	40.8	93%
DE	840.1	935.7	934.9	962.1	957.5	1 015.5	175.4	21%
DK	61.7	56.5	69.1	76.1	74.0	81.4	19.7	32%
EE	3.9	5.9	9.9	10.7	11.0	10.4	6.5	167%
EL	52.1	82.3	92.5	106.5	115.5	123.0	70.9	136%
ES	228.0	302.6	410.3	434.1	448.8	441.0	213.1	93%
FI	48.0	57.2	66.1	68.9	69.6	74.0	25.9	54%
FR	419.7	473.9	569.7	564.1	577.7	607.9	188.1	45%
HU	49.4	54.4	62.3	63.6	61.7	59.4	10.0	20%
IE	27.7	34.0	52.0	56.6	62.0	62.2	34.5	125%
IT	414.7	525.6	584.3	610.1	602.6	598.3	183.7	44%
LT	12.8	19.1	24.7	27.3	30.9	34.5	21.7	170%
LU	6.6	8.3	10.8	10.3	11.7	11.3	4.6	70%
LV	5.4	7.5	10.6	12.6	14.2	15.6	10.2	187%
MT	2.5	3.1	3.2	3.4	3.7	3.9	1.4	57%
NL	192.0	204.8	235.1	236.4	244.8	267.5	75.4	39%
PL	60.3	128.8	119.8	141.2	156.7	181.2	120.9	201%
PT	52.6	67.2	79.1	79.0	82.8	85.8	33.2	63%
RO	37.3	35.8	59.7	66.0	76.2	83.2	45.9	123%
SE	70.7	85.2	95.1	96.1	99.9	104.1	33.4	47%
SI	13.6	16.0	17.2	18.0	20.1	23.1	9.5	70%
SK	24.6	31.7	38.5	41.3	44.8	47.9	23.3	95%
UK	362.5	471.7	635.6	653.2	655.7	631.9	269.4	74%
EU-27	**3 264**	**3 922**	**4 558**	**4 721**	**4 820**	**4 994**	**1 731**	**53%**
BR	153	151	139	158	186	229	76	49%
CN	250	473	910	974	1 103	1 594	1 345	538%
IN	119	262	350	395	434	381	262	221%
JP	1 418	1 494	1 472	1 460	1 371	1 570	152	11%
RU	143	111	232	246	315	371	229	160%
US	1 476	2 348	2 934	2 981	2 849	2 841	1 365	93%
RW	2 286	2 409	3 340	3 634	3 762	4 409	2 123	93%
World	**9 108**	**11 170**	**13 935**	**14 570**	**14 841**	**16 391**	**7 283**	**80%**

Embodied material in imports, EU-27 (Mt)



Between 1995 and 2008, the materials embodied in global imports increased by 7.283 Mt (+80 %) to 16.391 Mt. This growth was mainly driven by the Rest of the World (+2.123 Mt), the EU-27 (+1 731 Mt), the US (+1.365 Mt), and China (+1.345 Mt). In 2008, the EU-27 imported 30 % of the materials embodied in global imports, 27 % the Rest of the World, and 30 % the US.

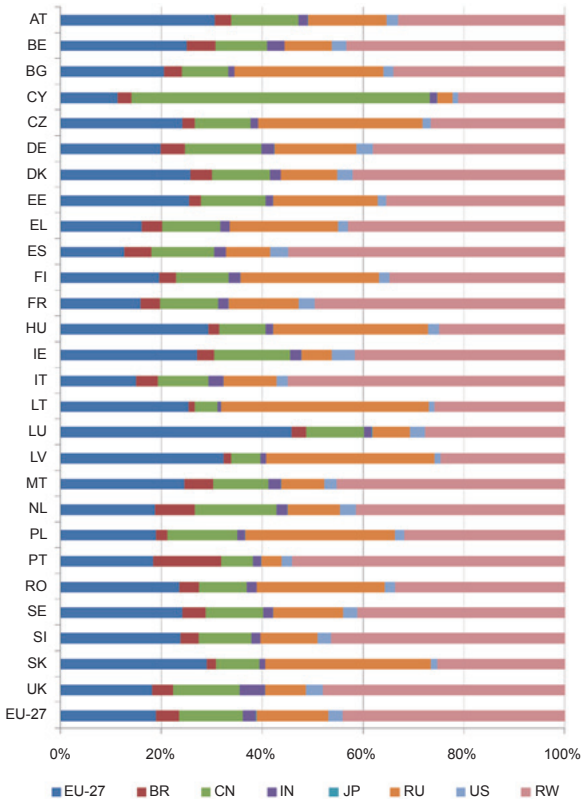
In all EU-27 Member States the materials embodied in imports increased, the largest positive growth in absolute terms being reported by the United Kingdom (+269 Mt), Spain (+213 Mt), France (+188 Mt), Italy (+184 Mt), and Germany (+175 Mt). Within the EU-27, in 2008, Germany was the country with the highest level of materials embodied in imports (1 015 Mt), followed by the United Kingdom (632 Mt), France (608 Mt), Italy (598 Mt), and Spain (441 Mt).

B.14. Embodied material in imports by main partner countries

Embodied material in imports by main partner countries, 2008 (Mt)

	EU-27	BR	CN	IN	JP	RU	US	RW	Total imports
AT	37.3	3.9	16.4	2.3	0.1	19.0	2.8	40.5	122.4
BE	43.4	10.1	17.7	6.1	0.1	16.2	5.0	75.6	174.3
BG	6.4	1.1	2.9	0.4	0.0	9.2	0.6	10.7	31.3
CY	2.1	0.5	10.8	0.3	0.0	0.5	0.2	3.9	18.3
CZ	20.5	2.1	9.3	1.3	0.1	27.6	1.3	22.7	84.8
DE	201.2	48.4	154.5	25.6	0.9	164.3	33.4	387.2	1 015.5
DK	20.9	3.5	9.3	1.7	0.1	9.1	2.5	34.3	81.4
EE	2.6	0.2	1.3	0.1	0.0	2.1	0.2	3.7	10.4
EL	19.8	4.9	14.2	2.3	0.1	26.3	2.5	52.9	123.0
ES	55.6	23.7	54.7	10.1	0.3	38.5	16.2	242.0	441.0
FI	14.4	2.5	7.6	1.8	0.0	20.3	1.5	25.8	74.0
FR	96.2	23.3	69.9	12.5	0.5	84.7	18.7	302.1	607.9
HU	17.4	1.3	5.5	0.8	0.1	18.2	1.3	14.8	59.4
IE	16.8	2.1	9.4	1.3	0.1	3.8	2.8	25.9	62.2
IT	89.7	25.3	60.0	17.7	0.4	62.8	13.9	328.5	598.3
LT	8.7	0.4	1.5	0.3	0.0	14.2	0.4	8.9	34.5
LU	5.2	0.3	1.3	0.2	0.0	0.8	0.3	3.1	11.3
LV	5.0	0.2	0.9	0.2	0.0	5.2	0.2	3.9	15.6
MT	1.0	0.2	0.4	0.1	0.0	0.3	0.1	1.8	3.9
NL	49.9	21.0	43.5	5.8	0.2	27.7	8.4	111.0	267.5
PL	34.2	4.0	25.2	2.7	0.1	53.8	3.4	57.8	181.2
PT	15.7	11.6	5.3	1.4	0.0	3.4	1.8	46.5	85.8
RO	19.5	3.3	7.9	1.5	0.0	21.1	1.7	28.1	83.2
SE	25.1	4.7	11.9	2.0	0.1	14.4	2.9	42.9	104.1
SI	5.5	0.8	2.4	0.4	0.0	2.6	0.6	10.7	23.1
SK	13.9	0.9	4.1	0.6	0.0	15.7	0.6	12.1	47.9
UK	114.4	26.2	83.5	31.6	0.5	50.7	21.1	303.8	631.9
EU-27	**942**	**227**	**632**	**131**	**4**	**713**	**144**	**2 201**	**4 994**
BR	11	1	34	6	0	9	12	155	229
CN	55	141	18	57	5	86	70	1 163	1 594
IN	15	6	70	1	0	11	11	267	381
JP	24	37	210	25	0	48	83	1 144	1 570
RU	37	21	98	9	1	7	9	190	371
US	108	120	518	102	4	107	25	1 857	2 841
RW	**406**	**308**	**1 065**	**235**	**11**	**302**	**415**	**1 668**	**4 409**

Embodied material in imports by main partner countries, EU-27, 2008 (%)



In 2008, 24 % of the materials embodied in the imports of the Rest of the World were originated in China, 9 % in the EU-27 and in the US, and 38 % in other Rest of the World countries. The Rest of the World was also the main source of materials embodied in Chinese imports (73 %), while 65 % of the materials embodied in US imports came from the Rest of the World and 18 % from China.

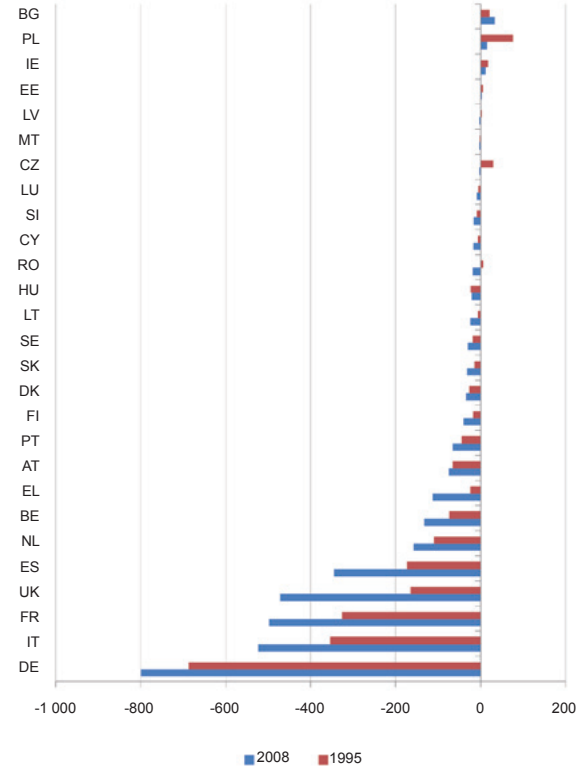
Almost 45 % of the materials embodied in the imports of the EU-27 countries came from the Rest of the World, 19 % from other Member States, 14 % from Russia, and 13 % from China.

B.15. Material trade balance

Material trade balance (Mt)

	1995	2000	2005	2006	2007	2008	2008 / 1995	2008 / 1995
AT	-66.2	-65.7	-81.5	-72.9	-72.3	-75.6	-9.4	14%
BE	-74.1	-79.1	-107.0	-116.9	-118.1	-133.8	-59.7	81%
BG	20.3	25.9	26.8	38.0	25.4	32.6	12.2	60%
CY	-6.9	-9.4	-11.0	-13.6	-12.3	-17.1	-10.2	149%
CZ	29.1	3.5	6.6	-0.9	6.6	-4.6	-33.7	-116%
DE	-688.4	-752.5	-719.0	-764.7	-745.3	-800.2	-111.7	16%
DK	-27.8	-9.1	-21.2	-26.2	-29.9	-36.0	-8.2	30%
EE	4.9	5.3	1.4	0.3	1.6	1.7	-3.2	-65%
EL	-24.3	-50.3	-82.8	-93.9	-106.2	-113.9	-89.6	369%
ES	-174.5	-218.2	-322.8	-338.6	-347.5	-346.0	-171.5	98%
FI	-18.4	-29.7	-31.4	-33.8	-37.3	-41.5	-23.1	126%
FR	-326.2	-366.8	-477.4	-471.2	-478.2	-499.4	-173.2	53%
HU	-24.0	-29.0	-27.4	-27.7	-28.4	-21.2	2.8	-12%
IE	16.1	12.9	5.1	9.2	3.4	10.9	-5.3	-33%
IT	-354.6	-458.7	-518.6	-544.5	-532.2	-523.9	-169.3	48%
LT	-7.1	-14.3	-18.8	-21.4	-22.3	-24.7	-17.6	249%
LU	-5.6	-7.1	-9.8	-9.2	-10.4	-10.1	-4.5	81%
LV	1.5	2.9	1.3	-1.5	-2.3	-3.8	-5.3	-362%
MT	-2.5	-3.1	-3.1	-3.3	-3.7	-3.9	-1.4	55%
NL	-110.4	-118.2	-139.4	-141.6	-149.7	-159.0	-48.6	44%
PL	74.8	12.8	60.7	48.6	40.2	14.5	-60.3	-81%
PT	-45.8	-56.2	-66.1	-63.1	-65.0	-67.4	-21.6	47%
RO	5.6	-3.9	-19.9	-23.9	-13.5	-20.2	-25.8	-461%
SE	-19.0	-28.7	-21.9	-23.2	-28.3	-30.6	-11.6	61%
SI	-9.6	-11.4	-11.9	-12.0	-13.8	-17.0	-7.4	77%
SK	-14.6	-20.5	-22.7	-27.5	-31.1	-32.2	-17.6	120%
UK	-165.3	-254.3	-462.3	-490.1	-505.0	-473.3	-308.0	186%
EU-27	**-2 013**	**-2 523**	**-3 074**	**-3 226**	**-3 275**	**-3 396**	**-1 383**	**69%**
BR	168	259	600	601	632	633	464	276%
CN	581	292	727	944	917	1 050	469	81%
IN	112	81	140	111	108	184	71	64%
JP	-1 404	-1 479	-1 452	-1 436	-1 347	-1 546	-142	10%
RU	715	1 060	1 025	973	902	910	195	27%
US	-563	-1 628	-2 389	-2 410	-2 200	-2 070	-1 507	268%
RW	**2 403**	**3 937**	**4 423**	**4 443**	**4 264**	**4 235**	**1 832**	**76%**

Material trade balance, EU-27 (Mt)



In 2008, the EU-27 showed the largest deficit in terms of materials embodied in trade (3.396 Mt), followed by the US (2.070 Mt) and Japan (1.546 Mt). Between 1995 and 2008 the material trade deficit increased by 1.507 Mt in the US, by 1 383 in the EU-27, and by 142 Mt in Japan. The countries with the largest surplus in terms of materials embodied in trade were the Rest of the World (4 235 Mt), China (1 050 Mt), and Russia (910 Mt).

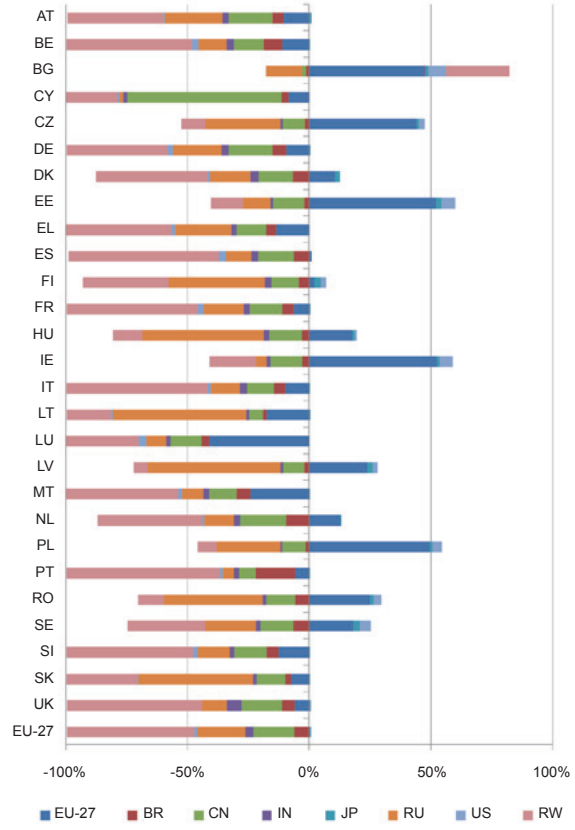
All the EU-27 countries (excluding Bulgaria, Poland, Ireland and Estonia) showed in 2008 a deficit in their material trade balance. The largest deficits were those of Germany (800 Mt), Italy (524 Mt), France (499 Mt), the United Kingdom (473 Mt), and Spain (346 Mt). Between 1995 and 2008, Bulgaria and Hungary were the only Member States that improved their material trade balance.

B.16. Material trade balance by main partner countries

Material trade balance by main partner countries, 2008 (Mt)

	EU-27	BR	CN	IN	JP	RU	US	RW	Trade Balance
AT	-8.2	-3.7	-13.7	-2.0	0.6	-18.1	-0.4	-30.1	-75.6
BE	-15.2	-9.9	-16.7	-4.0	0.3	-15.5	-3.4	-69.4	-133.8
BG	23.7	-0.7	-1.0	0.2	0.7	-7.4	3.7	13.2	32.6
CY	-1.5	-0.5	-10.8	-0.3	0.0	-0.3	-0.2	-3.6	-17.1
CZ	36.8	-1.7	-7.4	-0.8	0.7	-25.7	2.0	-8.4	-4.6
DE	-76.6	-46.4	-145.6	-24.0	3.2	-159.6	-18.7	-332.6	-800.2
DK	5.0	-3.3	-6.7	-1.6	1.0	-8.1	-0.3	-21.9	-36.0
EE	4.6	-0.2	-1.1	-0.1	0.2	-1.0	0.5	-1.1	1.7
EL	-15.5	-4.8	-14.0	-2.2	0.0	-26.1	-1.8	-49.5	-113.9
ES	2.6	-23.1	-51.8	-9.5	1.0	-37.2	-9.6	-218.4	-346.0
FI	0.9	-2.1	-5.4	-1.3	1.3	-18.9	1.1	-17.0	-41.5
FR	-33.3	-22.8	-67.1	-12.0	1.6	-82.7	-13.3	-269.8	-499.4
HU	6.1	-1.1	-4.7	-0.7	0.4	-17.3	0.3	-4.1	-21.2
IE	32.2	-1.9	-8.0	-0.9	0.8	-2.8	3.2	-11.8	10.9
IT	-52.5	-24.6	-57.1	-17.0	1.1	-61.0	-7.7	-305.0	-523.9
LT	-4.4	-0.4	-1.4	-0.2	0.1	-13.7	-0.2	-4.5	-24.7
LU	-4.2	-0.3	-1.3	-0.2	-0.0	-0.8	-0.3	-3.0	-10.1
LV	2.1	-0.2	-0.7	-0.1	0.2	-4.7	0.2	-0.5	-3.8
MT	-0.9	-0.2	-0.4	-0.1	0.0	-0.3	-0.1	-1.8	-3.9
NL	27.3	-20.4	-41.1	-5.3	1.0	-26.4	-1.6	-92.5	-159.0
PL	85.9	-2.9	-16.3	-1.4	1.9	-45.7	6.0	-13.0	14.5
PT	-3.9	-11.1	-4.6	-1.3	0.2	-3.2	-0.7	-42.7	-67.4
RO	12.2	-2.9	-5.7	-0.8	0.9	-20.0	1.4	-5.2	-20.2
SE	11.2	-4.1	-8.4	-1.1	1.6	-12.9	2.9	-19.8	-30.6
SI	-2.2	-0.8	-2.3	-0.4	0.0	-2.2	-0.3	-8.8	-17.0
SK	-2.4	-0.8	-3.7	-0.5	0.1	-15.3	-0.1	-9.4	-32.2
UK	-29.7	-24.7	-79.5	-28.9	1.5	-49.0	1.4	-264.4	-473.3
EU-27	**0**	**-216**	**-577**	**-116**	**20**	**-676**	**-36**	**-1 795**	**-3 396**
BR	216	0	107	1	37	12	107	153	633
CN	577	-107	0	13	206	12	448	-98	1 050
IN	116	-1	-13	0	24	-2	91	-32	184
JP	-20	-37	-206	-24	0	-47	-79	-1 133	-1 546
RU	676	-12	-12	2	47	0	97	112	910
US	36	-107	-448	-91	79	-97	0	-1 442	-2 070
RW	**1 795**	**-153**	**98**	**32**	**1133**	**-112**	**1 442**	**0**	**4 235**

Material trade balance by main partner countries, EU-27, 2008 (%)



In 2008, the material trade balance of the EU-27 showed a deficit with all the other regions except with Japan. The largest deficits of the EU-27 were with the Rest of the World (1 795 Mt), Russia (676 Mt), and China (577 Mt). Brazil presented a material trade surplus against all the other regions, and China showed a trade surplus against all the other regions except the Rest of the World and Brazil.

Some EU-27 countries showed a surplus in the material trade balance, mostly with other Member States.

C. Water

Basic concepts

This chapter assesses the global use of water by economic activities (including water use by households). Conventional national water use accounts are restricted to statistics on water withdrawals within their own territories. This would include the use of surface and ground water by the different economic activities and final users (the 'blue water'). In this chapter, this approach has been extended by including data on rainwater use (green water), an estimation of the water evaporated from artificial reservoirs to produce electricity and the volumes of water used for waste assimilation (grey water), giving a broader perspective of humans' appropriation of fresh water.

Therefore, three different types of water are distinguished:

- Blue water: refers to the consumption of surface and ground water.
- Green water: is the volume of rainwater consumed, mainly in crop production.
- Grey water: is the volume of fresh water that is required to assimilate the load of pollutants based on existing ambient water quality standards.

The water use intensity of Gross Value Added is a measure of the water used to produce one unit worth of goods and services in a specific country. It is calculated as the quotient between the water use and the Gross Value Added at constant prices of 2008.

The concept of water footprint refers to the water used to produce the goods and services devoted to satisfy the domestic final demand of a country (i.e. household consumption, government consumption, and investment), regardless of the country where this water was actually used. It also includes the water directly used by households.

The household water footprint is the part of the water footprint related to household consumption of good and services plus the water used by households. It distinguishes up to 9 categories of consumption.

The water use intensity of the final demand is a measure of the water used to produce one unit worth of the goods and services demanded by households, government consumption, and investment activities. It is calculated as the quotient between the water footprint and the domestic final demand at constant prices of 2008.

The water footprint domestic coverage ratio is the relation between the water footprint and the water use of a country. It represents the share of the water footprint of a country that is covered by its own use of water.

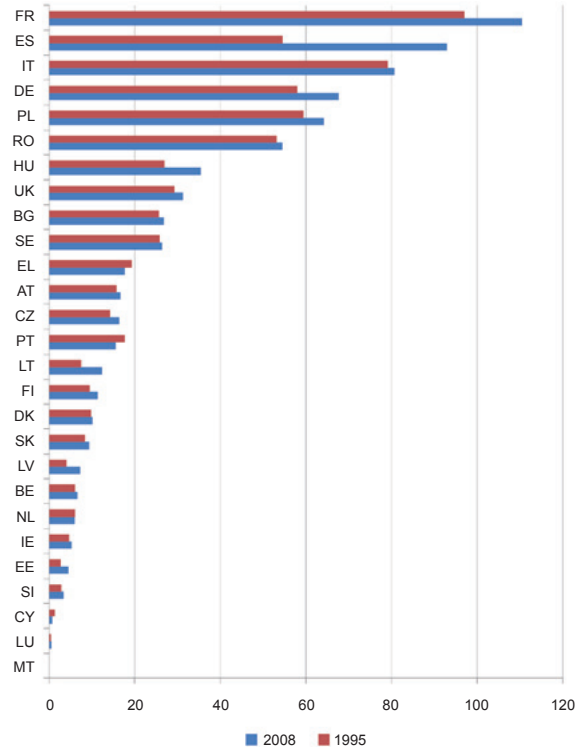
Embodied water in exports and imports accounts for the water directly or indirectly used to produce internationally traded goods and services. The difference between the water embodied in exports and imports gives the water trade balance. A deficit/surplus in the water trade balance indicates that the water embodied in imports is greater/less than the water exported. Moreover, a deficit in the water trade balance indicates that with the domestic water use it is not possible to satisfy the domestic final demand (the contrary applies to a surplus). From this assertion it follows that the water footprint equals the water use minus the water trade balance.

C.1. Water use

Water use (km³)

	1995	2000	2005	2006	2007	2008	2008 / 1995	2008 / 1995
AT	15.6	16.5	15.6	15.0	15.4	16.6	1.1	7%
BE	6.0	6.7	6.3	6.4	6.5	6.6	0.5	9%
BG	25.6	18.6	22.8	23.3	17.9	26.7	1.1	4%
CY	1.1	0.9	0.8	0.8	0.7	0.7	-0.4	-38%
CZ	14.1	14.2	15.3	14.0	14.9	16.3	2.1	15%
DE	57.9	64.0	64.6	62.5	61.0	67.6	9.7	17%
DK	9.7	9.9	9.8	9.4	9.4	10.1	0.4	4%
EE	2.7	3.5	4.1	3.4	4.7	4.4	1.7	61%
EL	19.2	19.9	19.5	18.4	16.9	17.5	-1.7	-9%
ES	54.5	96.3	70.2	88.8	95.9	92.9	38.3	70%
FI	9.3	10.6	10.3	9.6	10.6	11.2	1.9	20%
FR	96.9	108.2	103.6	101.7	100.9	110.5	13.5	14%
HU	26.9	24.0	32.2	30.6	25.4	35.3	8.4	31%
IE	4.6	5.3	5.0	4.9	4.8	5.2	0.6	12%
IT	79.0	81.4	81.2	77.7	75.6	80.6	1.6	2%
LT	7.4	9.5	10.5	7.4	11.2	12.3	4.9	66%
LU	0.3	0.3	0.3	0.4	0.3	0.4	0.1	21%
LV	4.0	4.4	6.4	5.5	6.7	7.2	3.2	80%
MT	0.1	0.1	0.1	0.1	0.1	0.1	-0.0	-8%
NL	6.0	6.1	5.6	5.5	5.5	5.9	-0.1	-2%
PL	59.3	54.3	58.9	53.2	62.8	64.0	4.7	8%
PT	17.5	17.7	11.8	17.0	14.3	15.5	-2.0	-12%
RO	53.1	37.3	56.6	52.1	35.3	54.5	1.4	3%
SE	25.7	29.1	27.2	23.2	25.4	26.4	0.7	3%
SI	2.8	3.0	3.1	3.0	3.2	3.3	0.5	19%
SK	8.3	6.2	8.5	7.8	7.3	9.3	1.0	12%
UK	29.1	30.7	29.4	28.7	27.6	31.1	2.0	7%
EU-27	**637**	**678**	**680**	**670**	**660**	**732**	**95**	**15%**
BR	479	523	650	674	713	762	283	59%
CN	1 108	1 229	1 446	1 521	1 590	1 697	588	53%
IN	1 137	1 186	1 292	1 359	1 494	1 469	332	29%
JP	65	64	61	63	60	61	-4	-7%
RU	416	413	487	498	510	606	190	46%
US	1 017	1 119	1 170	1 123	1 179	1 193	176	17%
RW	3 881	4 226	5 068	5 160	5 240	5 479	1 597	41%
World	**8 741**	**9 439**	**10 855**	**11 068**	**11 445**	**11 998**	**3 258**	**37%**

Water use, EU-27 (km³)



Between 1995 and 2008, water use increased worldwide by 3.258 km³ to 11.998 km³ (+37 %). The growth in the use of water was predominantly driven by the Rest of the World (+1.597 km³), China (+588 km³), and India (332 Mkm²). In 2008, 46 % of the water use was located in the Rest of the World, 14 % in China, 12 % in India, 10 % in the US, 6 % in Brazil, and 6 % in the EU-27. Within the EU-27, France used 15 % of the European water while Spain used 13 %, Italy 11 %, and Germany and Poland 9 % each.

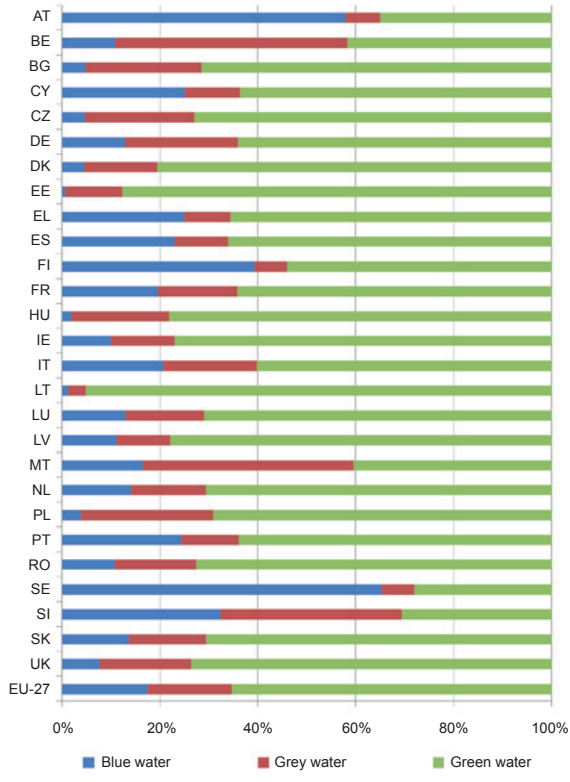
During the same period, the water use in the EU-27 grew by 95 km3 (+15%) to 732 km³. All the Member States (excluding Portugal, Greece, Cyprus, the Netherlands and Malta) increased the use of water; the largest growths in absolute terms were reported by Spain (38 km³), France (14 km³), and Germany (10 km³).

C.2. Water use by type

Water use by type, 2008 (km³)

	Blue water	Grey Water	Green water	Total
AT	9.6	1.2	5.8	16.6
BE	0.7	3.1	2.7	6.6
BG	1.3	6.3	19.1	26.7
CY	0.2	0.1	0.5	0.7
CZ	0.8	3.6	11.9	16.3
DE	8.7	15.6	43.3	67.6
DK	0.5	1.5	8.1	10.1
EE	0.0	0.5	3.9	4.4
EL	4.4	1.7	11.5	17.5
ES	21.3	10.3	61.4	92.9
FI	4.4	0.7	6.1	11.2
FR	21.6	17.9	70.9	110.5
HU	0.7	7.0	27.6	35.3
IE	0.5	0.7	4.0	5.2
IT	16.7	15.4	48.5	80.6
LT	0.2	0.4	11.7	12.3
LU	0.0	0.1	0.3	0.4
LV	0.8	0.8	5.6	7.2
MT	0.0	0.0	0.0	0.1
NL	0.8	0.9	4.2	5.9
PL	2.5	17.3	44.3	64.0
PT	3.8	1.8	9.9	15.5
RO	5.8	9.1	39.5	54.5
SE	17.2	1.8	7.4	26.4
SI	1.1	1.2	1.0	3.3
SK	1.3	1.5	6.5	9.3
UK	2.4	5.8	22.9	31.1
EU-27	**127**	**126**	**479**	**732**
BR	108	43	611	762
CN	310	556	830	1 697
IN	322	230	917	1 469
JP	23	16	21	61
RU	64	85	458	606
US	183	221	790	1 193
RW	829	527	4 122	5 479
World	**1 968**	**1 804**	**8 227**	**11 998**

Water use by type, EU-27, 2008 (km^3)



In 2008, green water accounted for 69 % of the global use of water. Blue water is the second category of water use with 16 % followed by grey water (15 %). In the EU-27, green water represents 65 % of the water used while blue and grey water represent 17 %.

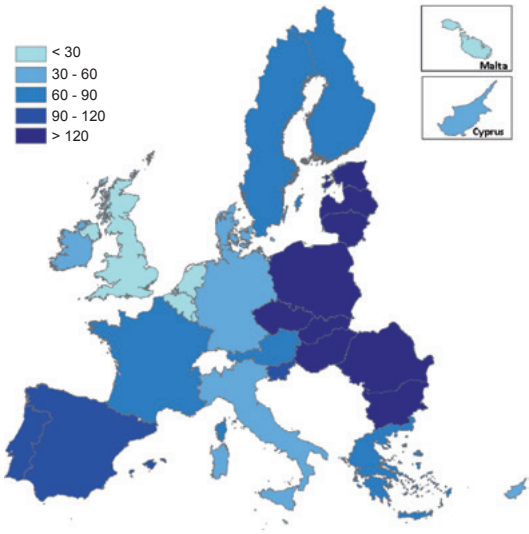
Green water was the type of water that was mostly used by Member States being only under 40 % in Malta, Sweden, Slovenia, and Austria. In Sweden and Austria blue water is the main category due to the size of the hydropower generation sector. Grey water dominates in countries like Belgium and Slovenia (due to the industry), and Malta (due to households).

C.3. Water use intensity of Gross Value Added

Water use intensity of Gross Value Added (l/EUR)

	1995	2000	2005	2006	2007	2008	2008 / 1995	2008 / 1995
AT	85	78	67	62	62	65	- 20	-23%
BE	26	25	22	21	21	21	- 4	-17%
BG	1 254	956	949	925	674	963	- 291	-23%
CY	120	77	61	57	50	47	- 74	-61%
CZ	160	151	135	115	116	122	- 38	-24%
DE	32	32	31	29	28	30	- 2	-5%
DK	61	54	51	48	47	51	- 10	-17%
EE	430	399	318	242	314	308	- 122	-28%
EL	145	128	102	92	82	83	- 61	-42%
ES	85	123	77	94	97	93	9	10%
FI	92	82	71	64	66	69	- 22	-24%
FR	72	71	62	60	58	63	- 9	-13%
HU	452	334	373	341	282	387	- 64	-14%
IE	63	46	34	32	29	32	- 30	-48%
IT	66	62	59	55	53	57	- 8	-13%
LT	564	582	443	290	398	424	- 141	-25%
LU	16	13	11	11	10	11	- 5	-33%
LV	442	373	369	281	317	350	- 92	-21%
MT	27	20	19	20	18	17	- 11	-39%
NL	16	14	12	11	11	11	- 5	-32%
PL	326	234	219	187	207	201	- 126	-38%
PT	161	136	86	119	96	104	- 58	-36%
RO	651	486	563	480	304	437	- 215	-33%
SE	129	122	100	81	86	90	- 39	-30%
SI	150	130	111	103	100	102	- 48	-32%
SK	261	166	181	151	128	152	- 109	-42%
UK	25	22	19	18	17	19	- 6	-24%
EU-27	**77**	**71**	**65**	**62**	**59**	**65**	**-12**	**-15%**
BR	750	715	779	780	780	797	47	6%
CN	1 238	907	669	624	570	552	-686	-55%
IN	3 388	2 634	2 026	1 928	1 929	1 764	-1 625	-48%
JP	23	22	19	19	18	19	-5	-20%
RU	701	693	617	584	552	624	-77	-11%
US	155	137	126	117	121	122	-32	-21%
RW	673	637	707	698	688	716	43	6%
World	**338**	**311**	**315**	**309**	**307**	**318**	**-20**	**-6%**

Water use intensity of Gross Value Added, EU-27, 2008 (l/EUR)



Between 1995 and 2008, global water use intensity of the Gross Value Added decreased by 6 % to 318 l/EUR in 2008, while in the EU-27 it fell by 15 % to 65 l/EUR. In China and India the reductions of the water intensity amounted 55 % and 48 % respectively. In 2008, the regions with the highest water use intensity per unit of Gross Value Added were India (1.764 l/EUR), Brazil (797 l/EUR), the Rest of the World (716 l/EUR), Russia (624 l/EUR), and China (552 l/EUR). Japan showed the lowest water use intensity (19 l/EUR), followed by the EU-27 (65 l/EUR) and the US (122 l/EUR).

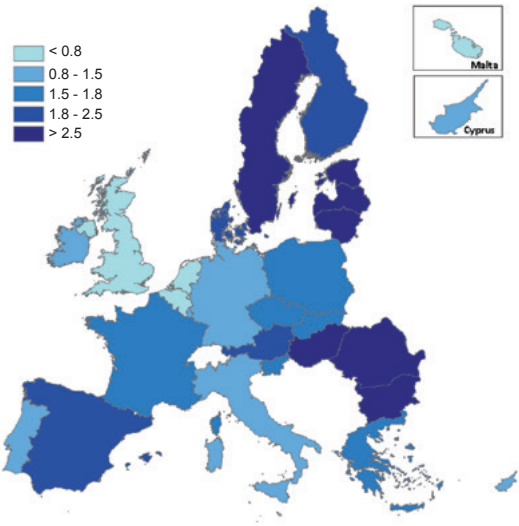
In this period, all the EU-27 Member States except Spain reduced their water use intensity; Bulgaria, Romania, Lithuania, Poland, and Estonia were the countries with the highest reductions in absolute terms. Bulgaria, Romania, Lithuania, Hungary, and Latvia turned out to be the top countries with the highest water intensities in 2008. Luxembourg, the Netherlands, Malta, the United Kingdom, and Belgium were the Member States with the lowest intensities.

C.4. Water use per capita

Water use per capita (Ml/cap)

	1995	2000	2005	2006	2007	2008	2008 / 1995	2008 / 1995
AT	1.96	2.07	1.91	1.82	1.86	2.00	0.04	2%
BE	0.59	0.66	0.60	0.60	0.61	0.61	0.02	4%
BG	3.04	2.27	2.94	3.02	2.33	3.50	0.46	15%
CY	1.78	1.28	1.09	1.04	0.96	0.90	-0.88	-49%
CZ	1.37	1.38	1.49	1.37	1.45	1.57	0.20	15%
DE	0.71	0.78	0.78	0.76	0.74	0.82	0.11	16%
DK	1.86	1.85	1.81	1.73	1.72	1.84	-0.02	-1%
EE	1.89	2.56	3.01	2.53	3.49	3.29	1.39	74%
EL	1.81	1.82	1.76	1.65	1.52	1.56	-0.25	-14%
ES	1.39	2.40	1.63	2.03	2.16	2.05	0.66	48%
FI	1.83	2.04	1.98	1.83	2.01	2.12	0.29	16%
FR	1.63	1.79	1.65	1.61	1.58	1.73	0.09	6%
HU	2.60	2.35	3.19	3.03	2.53	3.51	0.91	35%
IE	1.29	1.39	1.23	1.16	1.11	1.18	-0.11	-8%
IT	1.39	1.43	1.39	1.32	1.28	1.35	-0.04	-3%
LT	2.03	2.70	3.07	2.19	3.31	3.64	1.61	79%
LU	0.79	0.79	0.74	0.76	0.71	0.80	0.01	1%
LV	1.61	1.83	2.78	2.39	2.95	3.18	1.57	98%
MT	0.26	0.22	0.21	0.22	0.21	0.21	-0.04	-17%
NL	0.39	0.39	0.35	0.33	0.34	0.36	-0.03	-8%
PL	1.54	1.41	1.54	1.39	1.65	1.68	0.14	9%
PT	1.75	1.74	1.12	1.61	1.35	1.46	-0.29	-17%
RO	2.34	1.66	2.61	2.41	1.63	2.53	0.19	8%
SE	2.92	3.29	3.02	2.56	2.79	2.87	-0.04	-1%
SI	1.41	1.51	1.55	1.52	1.57	1.66	0.25	18%
SK	1.54	1.15	1.58	1.44	1.35	1.72	0.17	11%
UK	0.50	0.52	0.49	0.48	0.45	0.51	0.01	1%
EU-27	**1.33**	**1.41**	**1.38**	**1.36**	**1.33**	**1.47**	**0.14**	**10%**
BR	2.96	3.00	3.49	3.59	3.75	3.98	1.02	34%
CN	0.91	0.97	1.11	1.16	1.20	1.28	0.36	40%
IN	1.18	1.13	1.13	1.17	1.27	1.23	0.05	5%
JP	0.52	0.51	0.48	0.49	0.47	0.48	-0.04	-8%
RU	2.80	2.82	3.39	3.47	3.56	4.23	1.44	51%
US	3.82	3.96	3.94	3.75	3.90	3.91	0.09	2%
RW	1.64	1.63	1.80	1.80	1.80	1.85	0.21	13%
World	**1.53**	**1.54**	**1.67**	**1.68**	**1.72**	**1.78**	**0.25**	**17%**

Water use per capita, EU-27, 2008 (Ml/cap)



In 2008, food, drinks, and tobacco drove almost two-thirds of the global water footprint of households. Recreation and culture activities were responsible for 11 % of the water footprint, housing, fuel, and power for 8 % and restaurants and hotels for 5 %.

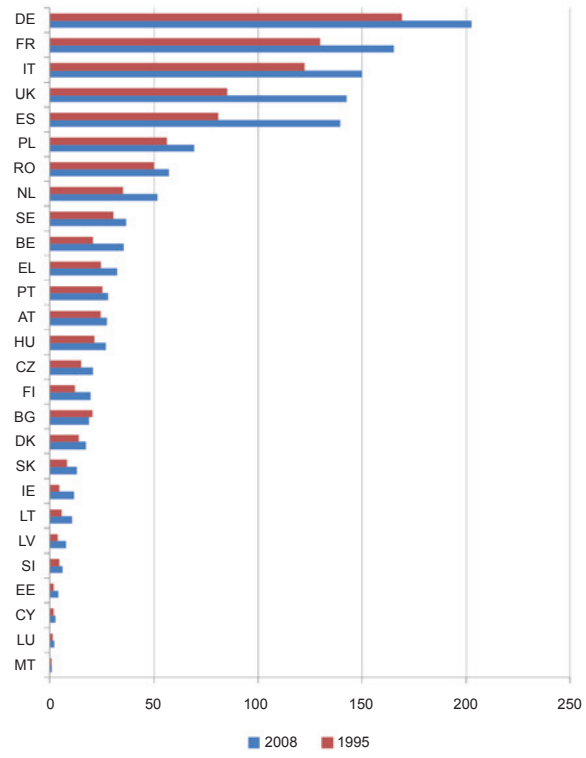
In the EU-27, food, drinks, and tobacco (56 %), recreation and culture activities (10 %), housing, fuel, and power (9 %) and restaurants and hotels for (8 %) were the consumption activities that caused most of the water footprint.

C.5. Water footprint

Water footprint (km³)

	1995	2000	2005	2006	2007	2008	2008 / 1995	2008 / 1995
AT	24	24	25	25	25	27	3	13%
BE	20	24	33	34	34	35	15	73%
BG	20	14	18	17	14	19	-2	-9%
CY	2	2	2	2	2	2	1	54%
CZ	15	15	18	18	18	20	6	38%
DE	169	172	181	185	194	202	34	20%
DK	14	13	16	15	16	17	4	27%
EE	2	3	2	3	4	4	2	136%
EL	24	27	30	30	30	32	8	32%
ES	81	111	113	128	140	139	59	73%
FI	12	13	17	16	17	19	8	64%
FR	130	138	153	151	156	165	35	27%
HU	21	21	27	25	21	27	5	26%
IE	4	7	8	9	10	11	7	158%
IT	122	128	144	144	143	150	28	23%
LT	5	8	10	8	10	10	5	91%
LU	1	1	2	2	2	2	1	46%
LV	4	4	6	6	7	8	4	112%
MT	1	1	1	1	1	1	0	49%
NL	35	36	43	44	46	52	17	47%
PL	56	57	59	55	64	69	13	23%
PT	25	26	22	26	26	28	3	11%
RO	50	35	56	53	39	57	7	14%
SE	30	35	34	32	35	37	6	21%
SI	4	4	5	5	5	6	2	39%
SK	8	7	10	10	11	13	5	60%
UK	85	105	139	142	144	143	58	68%
EU-27	**963**	**1 029**	**1 172**	**1 186**	**1 215**	**1 295**	**332**	**34%**
BR	435	456	498	526	563	610	176	40%
CN	1 004	1 157	1 294	1 326	1 386	1 468	464	46%
IN	1 063	1 090	1 209	1 262	1 391	1 363	299	28%
JP	295	260	257	248	234	259	-36	-12%
RU	407	372	501	506	548	659	253	62%
US	1 084	1 318	1 444	1 405	1 397	1 364	280	26%
RW	3 490	3 757	4 479	4 608	4 710	4 980	1 490	43%
World	**8 741**	**9 439**	**10 855**	**11 068**	**11 445**	**11 998**	**3 258**	**37%**

Water footprint, EU-27 (km³)



The global water footprint in 2008 amounted to 11.998 km³ (37 % increase compared to 1995). The Rest of the World was the region with the largest growth (+1.490 km³), followed by China (+464 km³), the EU-27 (+332 km³), India (+299 km³), and the US (+280 km³). In contrast, Japan reduced its water footprint by 36 km³. In 2008, the Rest of the World was responsible for 42 % of the global water footprint, while China held 12 %, and the US, India, and the EU-27 11 % each.

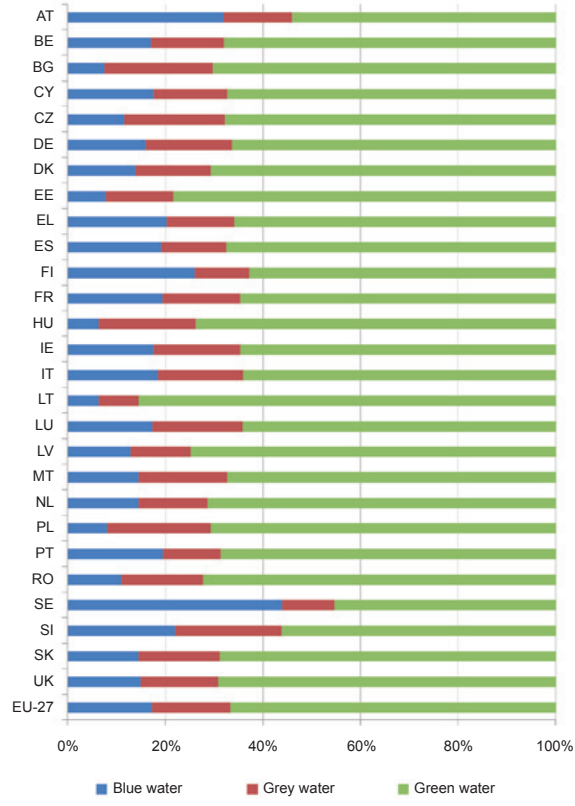
Regarding the EU-27, in 2008, Germany (16 %), France (13 %), Italy (12 %), the United Kingdom (11 %), and Spain (11 %) summed up more than 60 % of the EU-27 total water footprint. Between 1995 and 2008, the water footprint of the EU-27 grew by 34 %. This indicator also followed a growing trend in all the Member States except Bulgaria. The four largest contributors to the increase of the European water footprint were Spain (+59 km³), the United Kingdom (+58 km³), France (+35 km³) and Germany (+34 km³).

C.6. Water footprint by type

Water footprint by type, 2008 (km³)

	Blue water	Grey Water	Green water	Total
AT	9	4	15	27
BE	6	5	24	35
BG	1	4	13	19
CY	0	0	2	2
CZ	2	4	14	20
DE	32	36	134	202
DK	2	3	12	17
EE	0	1	3	4
EL	7	4	21	32
ES	27	19	94	139
FI	5	2	12	19
FR	32	26	107	165
HU	2	5	20	27
IE	2	2	7	11
IT	28	26	96	150
LT	1	1	9	10
LU	0	0	1	2
LV	1	1	6	8
MT	0	0	1	1
NL	7	7	37	52
PL	6	15	49	69
PT	5	3	19	28
RO	6	10	41	57
SE	16	4	17	37
SI	1	1	3	6
SK	2	2	9	13
UK	21	23	99	143
EU-27	**222**	**209**	**864**	**1 295**
BR	101	41	469	610
CN	246	413	810	1 468
IN	296	212	854	1 363
JP	50	47	162	259
RU	65	86	508	659
US	233	257	874	1 364
RW	755	539	3 686	4 980
World	**1 968**	**1 804**	**8 227**	**11 998**

Water footprint by type, EU-27, 2008 (km^3)



In 2008, 69 % of the global water footprint corresponded to green water. Blue water constituted the second source of water footprint at the global level (16 %), followed by grey water (15 %). Regarding the EU-27, green water represented 67% of the European total water footprint, 17 % blue water and grey water 16 %.

The green water component of the EU-27 water footprint was the most important in all the Member States, with a share ranging from 45 % to 86 %. Lithuania, Estonia, and Latvia showed the highest shares of green water. Sweden and Austria reported the highest shares of blue water due to the water footprint of hydropower generation.

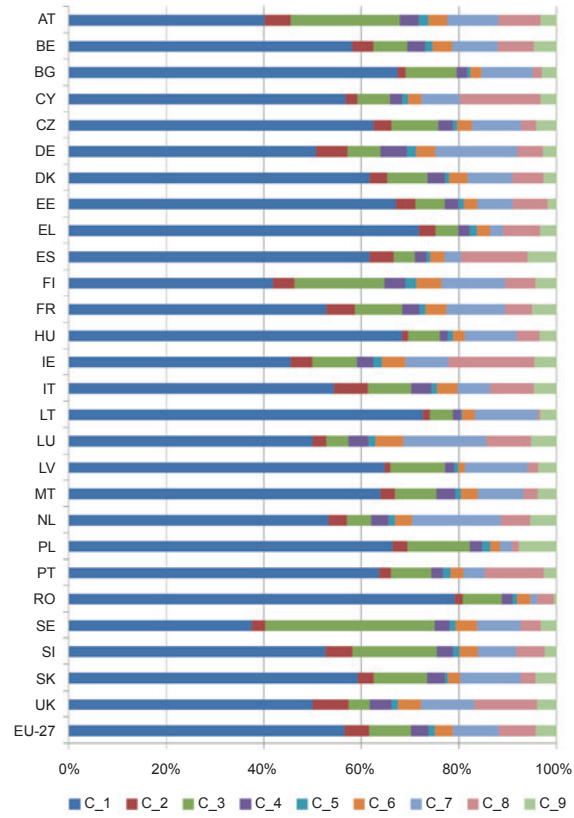
C.7. Household water footprint by consumption category

Household water footprint by consumption category, 2008 (km^3)

	C_1	C_2	C_3	C_4	C_5	C_6	C_7	C_8	C_9
AT	8.6	1.1	4.8	0.8	0.4	0.8	2.3	1.8	0.7
BE	16.6	1.3	2.0	1.1	0.4	1.1	2.7	2.1	1.4
BG	9.5	0.2	1.5	0.3	0.1	0.3	1.5	0.3	0.4
CY	1.2	0.1	0.1	0.1	0.0	0.1	0.2	0.4	0.1
CZ	10.3	0.6	1.6	0.5	0.2	0.5	1.7	0.5	0.7
DE	82.1	10.5	11.0	8.7	3.1	6.5	27.4	8.3	4.7
DK	8.3	0.5	1.1	0.5	0.1	0.5	1.2	0.8	0.4
EE	2.0	0.1	0.2	0.1	0.0	0.1	0.2	0.2	0.1
EL	21.0	1.0	1.4	0.7	0.5	0.8	0.8	2.2	1.0
ES	74.2	6.0	5.2	2.9	1.1	3.4	4.2	16.3	7.3
FI	5.6	0.6	2.5	0.6	0.3	0.7	1.7	0.8	0.6
FR	72.5	7.9	13.3	4.9	1.7	5.8	16.6	7.5	7.0
HU	14.3	0.2	1.4	0.4	0.2	0.5	2.2	1.0	0.7
IE	4.3	0.4	0.9	0.3	0.2	0.4	0.8	1.7	0.4
IT	70.4	9.0	11.5	5.4	1.6	5.4	8.7	11.6	6.1
LT	6.7	0.1	0.4	0.1	0.0	0.2	1.2	0.0	0.3
LU	0.7	0.0	0.1	0.1	0.0	0.1	0.2	0.1	0.1
LV	4.3	0.1	0.7	0.1	0.1	0.1	0.9	0.1	0.2
MT	0.5	0.0	0.1	0.0	0.0	0.0	0.1	0.0	0.0
NL	21.7	1.5	2.1	1.4	0.6	1.4	7.4	2.4	2.2
PL	38.9	1.8	7.5	1.4	1.0	1.2	1.4	0.8	4.6
PT	15.3	0.6	2.0	0.6	0.4	0.6	1.0	2.9	0.6
RO	39.8	0.8	4.0	1.1	0.5	1.3	0.7	1.7	0.4
SE	10.6	0.8	9.8	0.9	0.3	1.2	2.5	1.1	0.9
SI	2.5	0.3	0.8	0.2	0.1	0.2	0.4	0.3	0.1
SK	6.1	0.3	1.1	0.4	0.1	0.2	1.3	0.3	0.5
UK	60.4	8.7	5.3	5.3	1.7	5.6	13.1	15.7	4.9
EU-27	**608**	**54**	**92**	**39**	**15**	**39**	**102**	**81**	**46**
BR	316	10	55	7	7	18	46	36	19
CN	592	33	92	12	26	15	97	50	38
IN	841	24	87	12	5	13	175	47	45
JP	117	13	22	7	3	7	14	18	9
RU	391	17	30	9	4	8	73	5	24
US	692	50	90	37	41	32	89	95	70
RW	2 897	88	332	59	52	73	533	194	165
World	**6 453**	**290**	**800**	**182**	**153**	**205**	**1 131**	**527**	**416**

NB: C_1: Food, drinks, and tobacco; C_2: Clothing and footwear; C_3: Housing, fuel, and power; C_4: Household goods and services; C_5: Health and education; C_6: Transport and communications; C_7: Recreation and culture; C_8: Restaurants and hotels; C_9: Miscellaneous goods and services.

Household Water footprint by consumption category, EU-27, 2008 (%)



In 2008, food, drinks, and tobacco drove almost two-thirds of the global water footprint of households. Recreation and culture activities were responsible for 12 % of the water footprint, housing, fuel, and power for 8 % and restaurants and hotels for 6 %.

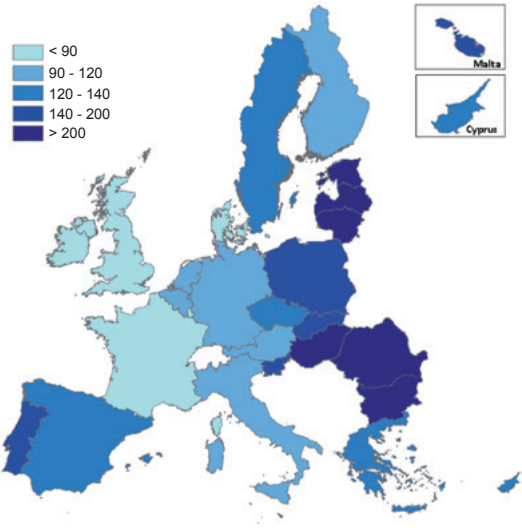
In the EU-27, food, drinks, and tobacco (53 %), recreation and culture activities (10 %), housing, fuel, and power (9 %) and restaurants and hotels for (8 %) were the consumption activities that caused most of the water footprint.

C.8. Water footprint intensity of final demand

Water footprint intensity of final demand (l/EUR)

	1995	2000	2005	2006	2007	2008	2008 / 1995	2008 / 1995
AT	120	107	103	99	98	104	-16	-13%
BE	80	82	105	105	104	106	26	33%
BG	866	668	655	576	442	546	-320	-37%
CY	150	133	130	120	119	139	-11	-7%
CZ	170	147	142	127	124	135	-35	-21%
DE	89	83	86	86	87	91	1	1%
DK	81	66	75	71	75	80	-0	-0%
EE	225	291	179	210	262	258	32	14%
EL	161	147	138	130	127	134	-27	-17%
ES	113	125	112	121	126	126	13	12%
FI	106	95	106	103	103	116	10	9%
FR	95	86	86	83	83	87	-8	-8%
HU	337	231	274	239	191	245	-92	-27%
IE	51	53	51	54	59	66	15	29%
IT	93	88	94	93	91	97	4	4%
LT	369	455	397	282	325	333	-36	-10%
LU	80	56	55	54	51	56	-23	-29%
LV	323	323	332	278	312	336	12	4%
MT	133	119	122	124	143	146	13	10%
NL	88	74	84	82	84	93	5	6%
PL	307	225	202	175	190	192	-114	-37%
PT	187	166	136	160	154	161	-26	-14%
RO	697	442	496	434	300	404	-292	-42%
SE	137	133	121	108	116	122	-15	-11%
SI	197	160	149	140	141	162	-34	-17%
SK	307	202	209	180	173	190	-117	-38%
UK	71	74	85	86	84	83	13	18%
EU-27	**110**	**101**	**105**	**103**	**102**	**109**	**-2**	**-1%**
BR	590	564	560	567	569	587	-3	-1%
CN	1 174	907	590	533	479	454	-719	-61%
IN	2 738	2 079	1 667	1 571	1 587	1 485	-1 253	-46%
JP	95	80	77	74	69	79	-15	-16%
RU	907	808	757	698	674	773	-134	-15%
US	156	153	148	141	138	137	-19	-12%
RW	751	712	776	765	748	760	9	1%
World	**338**	**311**	**315**	**309**	**307**	**318**	**-20**	**-6%**

Water footprint intensity of final demand, EU-27, 2008 (l/EUR)



The world's water footprint intensity of final demand totalled 318 l/EUR in 2008, a decrease of 6 % from 1995. In the EU-27, the intensity slightly reduced by 1 % to reach 109 l/EUR. India, China, and Russia registered the highest decreases in water intensity. In 2008, the top five regions with the largest water intensity per unit of final demand were India (1 485 l/EUR), Russia (773 l/EUR), the Rest of the World (760 l/EUR), Brazil (587 l/EUR), and China (454 l/EUR). Japan showed the lowest water intensity (79 l/EUR), followed by the EU-27 (109 l/EUR) and the US (137 l/EUR).

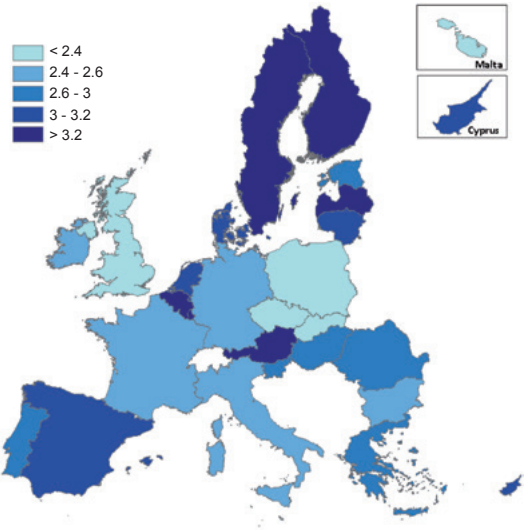
Regarding the EU-27, most Member States reduced their water footprint intensity. Bulgaria (-320 l/EUR), Romania (-292 l/EUR), and Slovakia (-117 l/EUR) showed the largest drops. In 2008, Bulgaria (546 l/EUR), Romania (404 l/EUR), and Latvia (336 l/EUR) ranked the top in terms of the water footprint intensities, while Luxembourg (56 l/EUR), Ireland (66 l/EUR), and Denmark (80 l/EUR) ranked the lowest.

C.9. Water footprint per capita

Water footprint per capita (Ml/cap)

	1995	2000	2005	2006	2007	2008	2008 / 1995	2008 / 1995
AT	3.02	2.96	3.05	3.00	3.05	3.26	0.25	8%
BE	2.02	2.33	3.16	3.20	3.22	3.31	1.30	64%
BG	2.40	1.76	2.26	2.24	1.85	2.42	0.02	1%
CY	2.47	2.42	2.60	2.46	2.53	3.10	0.63	26%
CZ	1.43	1.46	1.75	1.71	1.76	1.97	0.54	38%
DE	2.07	2.09	2.19	2.25	2.36	2.46	0.39	19%
DK	2.60	2.36	2.87	2.81	3.02	3.15	0.54	21%
EE	1.12	2.06	1.84	2.44	3.16	2.86	1.74	155%
EL	2.29	2.44	2.67	2.65	2.69	2.87	0.58	25%
ES	2.05	2.77	2.64	2.93	3.15	3.08	1.03	50%
FI	2.31	2.51	3.16	3.08	3.26	3.65	1.34	58%
FR	2.19	2.27	2.43	2.39	2.44	2.58	0.39	18%
HU	2.04	2.05	2.71	2.51	2.05	2.64	0.60	29%
IE	1.23	1.76	1.96	2.16	2.39	2.59	1.36	111%
IT	2.15	2.24	2.47	2.46	2.41	2.51	0.36	17%
LT	1.50	2.39	2.95	2.29	2.87	3.10	1.60	107%
LU	3.09	2.96	3.47	3.44	3.46	3.79	0.69	22%
LV	1.43	1.79	2.75	2.60	3.23	3.32	1.90	133%
MT	1.47	1.52	1.49	1.58	1.84	1.97	0.50	34%
NL	2.27	2.28	2.65	2.68	2.81	3.14	0.88	39%
PL	1.45	1.47	1.54	1.45	1.69	1.81	0.36	25%
PT	2.49	2.54	2.10	2.48	2.44	2.61	0.12	5%
RO	2.20	1.57	2.57	2.45	1.83	2.64	0.44	20%
SE	3.42	3.90	3.80	3.54	3.87	3.99	0.56	16%
SI	2.16	2.13	2.35	2.31	2.52	2.98	0.82	38%
SK	1.50	1.28	1.94	1.88	2.01	2.38	0.87	58%
UK	1.47	1.79	2.31	2.35	2.36	2.33	0.86	59%
EU-27	**2.01**	**2.13**	**2.39**	**2.40**	**2.45**	**2.60**	**0.59**	**29%**
BR	2.68	2.62	2.68	2.80	2.97	3.19	0.50	19%
CN	0.83	0.91	0.99	1.01	1.05	1.11	0.28	34%
IN	1.10	1.03	1.06	1.09	1.18	1.14	0.04	4%
JP	2.37	2.07	2.03	1.96	1.85	2.05	-0.32	-14%
RU	2.73	2.54	3.48	3.53	3.83	4.61	1.87	68%
US	4.07	4.67	4.87	4.69	4.62	4.47	0.40	10%
RW	1.47	1.45	1.59	1.61	1.62	1.68	0.21	14%
World	**1.53**	**1.54**	**1.67**	**1.68**	**1.72**	**1.78**	**0.25**	**17%**

Water footprint per capita, EU-27, 2008 (Ml/cap)



Between 1995 and 2008, the world's water footprint per capita grew from 1.5 Ml/cap to 1.8 Ml/cap (+17 %). Most regions experimented an increase in the water footprint per capita, particularly Russia (+1.9 Ml/cap), the EU-27 (+0.59 Ml/cap), and Brazil (+0.5 Ml/cap). On the other hand, the water footprint of Japan decreased by 0.32 Ml/cap.

In 2008, the regions with the highest water footprint per capita were Russia (4.6 Ml/cap), the US (4.5 Ml/cap), Brazil (3.2 Ml/cap), and the EU-27 (2.6 Ml/cap). In the EU-27, Sweden (4 Ml/cap), Luxembourg (3.8 Ml/cap), and Finland (3.7 Ml/cap) were the Member States with the highest water footprint per capita. Poland (1.8 Ml/cap), the Czech Republic, and Malta (2 Ml/cap each) showed the lowest water use per capita.

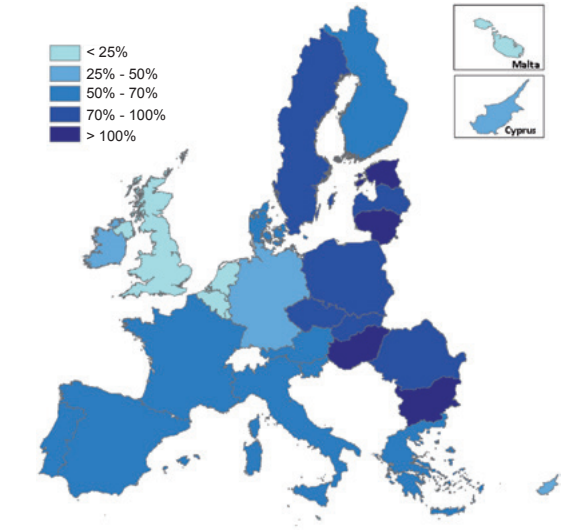
Between 1995 and 2008, the water footprint per capita increased in all the Member States. Latvia, Estonia, and Lithuania led the growth of the water footprint per capita, while Bulgaria, Portugal, and Austria showed the lowest growths.

C.10. Water footprint domestic coverage ratio

Water footprint domestic coverage ratio (%)

	1995	2000	2005	2006	2007	2008	2008 - 1995	2008 / 1995
AT	65%	70%	63%	61%	61%	61%	-4%	-6%
BE	29%	28%	19%	19%	19%	19%	-11%	-37%
BG	126%	129%	130%	135%	126%	144%	18%	14%
CY	72%	53%	42%	42%	38%	29%	-43%	-60%
CZ	96%	94%	85%	80%	82%	80%	-16%	-17%
DE	34%	37%	36%	34%	31%	33%	-1%	-3%
DK	71%	78%	63%	62%	57%	58%	-13%	-18%
EE	169%	124%	164%	104%	111%	115%	-54%	-32%
EL	79%	75%	66%	62%	56%	54%	-25%	-31%
ES	68%	87%	62%	69%	68%	67%	-1%	-2%
FI	79%	82%	63%	60%	62%	58%	-21%	-27%
FR	75%	79%	68%	67%	65%	67%	-8%	-10%
HU	128%	115%	118%	121%	123%	133%	6%	4%
IE	105%	79%	62%	54%	47%	45%	-59%	-57%
IT	65%	64%	56%	54%	53%	54%	-11%	-17%
LT	135%	113%	104%	95%	115%	117%	-18%	-13%
LU	26%	27%	21%	22%	20%	21%	-4%	-17%
LV	113%	102%	101%	92%	91%	96%	-17%	-15%
MT	17%	15%	14%	14%	11%	11%	-7%	-38%
NL	17%	17%	13%	12%	12%	11%	-6%	-34%
PL	106%	96%	100%	96%	98%	93%	-13%	-13%
PT	70%	68%	54%	65%	55%	56%	-15%	-21%
RO	106%	106%	102%	99%	89%	96%	-10%	-10%
SE	85%	84%	79%	72%	72%	72%	-13%	-15%
SI	65%	71%	66%	66%	62%	56%	-10%	-15%
SK	103%	90%	81%	77%	67%	72%	-30%	-30%
UK	34%	29%	21%	20%	19%	22%	-12%	-36%
EU-27	**66%**	**66%**	**58%**	**57%**	**54%**	**57%**	**-10%**	**-15%**
BR	110%	115%	130%	128%	127%	125%	15%	13%
CN	110%	106%	112%	115%	115%	116%	5%	5%
IN	107%	109%	107%	108%	107%	108%	1%	1%
JP	22%	25%	24%	25%	26%	23%	1%	6%
RU	102%	111%	97%	98%	93%	92%	-10%	-10%
US	94%	85%	81%	80%	84%	88%	-6%	-7%
RW	111%	112%	113%	112%	111%	110%	-1%	-1%
World	**100%**	**100%**	**100%**	**100%**	**100%**	**100%**	**0%**	**0%**

Water footprint domestic coverage ratio, EU-27, 2008 (%)



In 2008, the share of the water footprint covered with domestic water use was below 100 % in Japan (23 %), the EU-27 (57 %), the US (88 %), and Russia (92 %). On the other hand, Brazil (with a coverage ratio of 125 %), China (116 %), the Rest of the World (110 %), and India (108 %) used more water than the amount required to satisfy their domestic final demand.

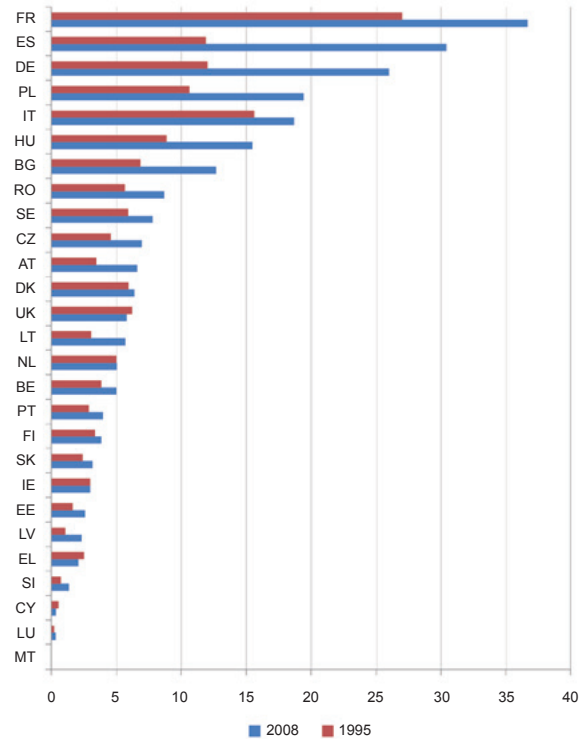
Between 1995 and 2008, the share of the water footprint of the EU-27 covered by domestic water fell from 66 % to 57 %. In this period, all Member States (excluding Bulgaria and Hungary) worsened their domestic coverage ratios. In 2008, only Bulgaria (144 %), Hungary (133 %), Lithuania (117 %), and Estonia (115 %) showed a domestic coverage ratio of the water footprint above 100%. Malta (11 %), the Netherlands (11 %), and Belgium (19 %) were the countries with the lowest figures, followed by Luxembourg (21 %), the United Kingdom (22 %), and Cyprus (29 %).

C.11. Embodied water in exports

Embodied water in exports (km³)

	1995	2000	2005	2006	2007	2008	2008 / 1995	2008 / 1995
AT	3.4	4.7	5.5	5.6	6.0	6.6	3.1	92%
BE	3.8	4.7	4.6	4.7	5.0	5.0	1.1	29%
BG	6.8	5.4	7.3	8.9	7.0	12.6	5.8	86%
CY	0.5	0.3	0.3	0.3	0.4	0.3	-0.2	-36%
CZ	4.5	4.6	6.1	5.6	6.5	6.9	2.4	53%
DE	12.0	17.5	21.6	22.0	22.1	26.0	14.0	117%
DK	5.9	6.2	5.8	6.5	5.7	6.3	0.4	7%
EE	1.6	1.8	3.2	2.0	2.5	2.6	1.0	60%
EL	2.5	2.7	2.4	2.4	1.9	2.0	-0.4	-17%
ES	11.9	27.6	21.4	28.9	30.4	30.4	18.5	156%
FI	3.3	4.2	3.6	3.3	3.7	3.8	0.5	16%
FR	27.0	33.2	31.4	31.3	31.2	36.6	9.7	36%
HU	8.8	7.1	10.2	10.6	10.7	15.4	6.6	75%
IE	2.9	2.9	3.1	2.9	2.8	3.0	0.0	0%
IT	15.6	16.3	16.8	16.8	17.1	18.7	3.1	20%
LT	3.0	2.8	2.9	2.4	4.5	5.7	2.6	88%
LU	0.2	0.3	0.2	0.3	0.3	0.3	0.1	46%
LV	1.0	1.2	1.8	1.3	1.7	2.3	1.3	123%
MT	0.0	0.0	0.0	0.0	0.0	0.0	0.0	202%
NL	4.9	4.9	4.6	4.5	4.6	5.0	0.1	1%
PL	10.6	8.8	15.6	15.1	18.6	19.3	8.7	83%
PT	2.8	3.5	2.6	3.9	3.4	3.9	1.1	39%
RO	5.6	5.3	7.5	7.0	5.0	8.6	3.0	54%
SE	5.9	6.8	7.7	6.6	7.2	7.8	1.9	32%
SI	0.7	0.9	1.1	1.2	1.2	1.3	0.6	90%
SK	2.4	1.6	2.8	2.8	2.6	3.1	0.8	32%
UK	6.2	5.3	5.4	5.4	5.1	5.8	-0.4	-7%
EU-27	**154**	**181**	**196**	**202**	**207**	**239**	**85**	**56%**
BR	70	90	171	171	178	188	118	170%
CN	148	138	285	338	364	472	324	218%
IN	87	115	125	144	158	156	69	80%
JP	3	4	5	6	6	6	2	73%
RU	43	70	60	63	56	58	15	34%
US	194	171	175	182	216	256	63	32%
RW	710	845	1 125	1 124	1 172	1 276	566	80%
World	**1 408**	**1 614**	**2 142**	**2 229**	**2 356**	**2 651**	**1 242**	**88%**

Embodied water in exports, EU-27 (km³)



Between 1995 and 2008 the water embodied in global exports increased by 88 % to 2 651 km³. Growth in the exports of water was led by the Rest of the World (+566 km³), China (+324 km³), and Brazil (+118 km³). Most of the EU-27 Member States increased the amount of water embodied in exports; the largest growths in absolute terms were registered in Spain (+19 km³), Germany (+14 km³), and France (+9.7 km³). In contrast, the United Kingdom (-0.4 km³), Greece (-0.4 km³), and Cyprus (-0.2 km³) reduced the water embodied in exports.

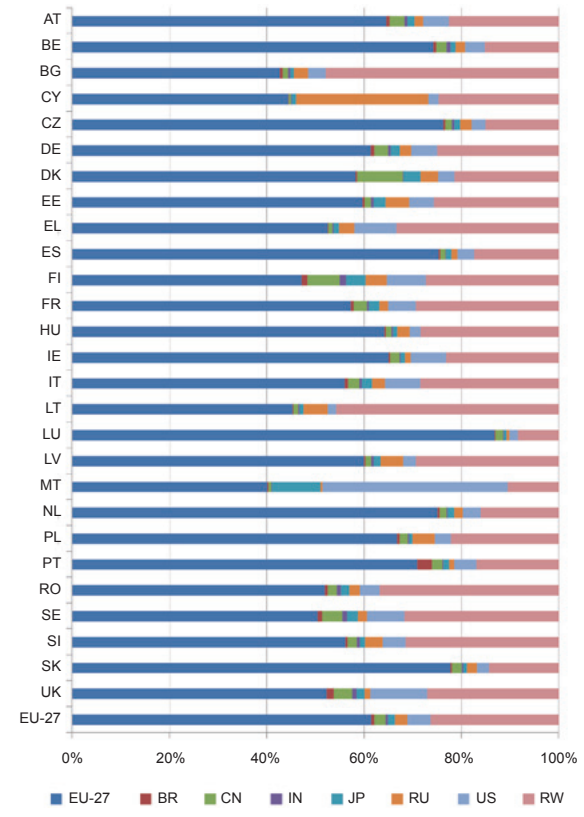
In 2008, 48 % of the water embodied in global exports was related to the exports of the Rest of the World, 18 % to China, 10 % to the US, 9 % to the EU-27, and 7 % to Brazil. Within the EU-27, France was the country with the highest amount of water embodied in exports (37 km³), followed by Spain (30 km³), and Germany (26 km³).

C.12. Embodied water in exports by main partner countries

Embodied water in exports by main partner countries, 2008 (km^3)

	EU-27	BR	CN	IN	JP	RU	US	RW	Total exports
AT	4.2	0.0	0.2	0.0	0.1	0.1	0.3	1.5	6.6
BE	3.7	0.0	0.1	0.0	0.1	0.1	0.2	0.8	5.0
BG	5.4	0.1	0.1	0.1	0.1	0.4	0.5	6.1	12.6
CY	0.1	0.0	0.0	0.0	0.0	0.1	0.0	0.1	0.3
CZ	5.3	0.0	0.1	0.0	0.1	0.2	0.2	1.0	6.9
DE	15.9	0.2	0.7	0.1	0.5	0.6	1.4	6.5	26.0
DK	3.7	0.0	0.6	0.0	0.2	0.2	0.2	1.4	6.3
EE	1.5	0.0	0.0	0.0	0.1	0.1	0.1	0.7	2.6
EL	1.1	0.0	0.0	0.0	0.0	0.1	0.2	0.7	2.0
ES	22.9	0.1	0.3	0.0	0.3	0.4	1.0	5.3	30.4
FI	1.8	0.0	0.3	0.1	0.2	0.2	0.3	1.0	3.8
FR	21.0	0.2	1.0	0.2	0.7	0.7	2.1	10.8	36.6
HU	9.9	0.0	0.2	0.0	0.1	0.4	0.4	4.4	15.4
IE	1.9	0.0	0.1	0.0	0.0	0.0	0.2	0.7	3.0
IT	10.4	0.1	0.4	0.1	0.4	0.5	1.4	5.3	18.7
LT	2.6	0.0	0.1	0.0	0.0	0.3	0.1	2.6	5.7
LU	0.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.3
LV	1.4	0.0	0.0	0.0	0.0	0.1	0.1	0.7	2.3
MT	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
NL	3.8	0.0	0.1	0.0	0.1	0.1	0.2	0.8	5.0
PL	12.9	0.1	0.3	0.1	0.1	0.9	0.6	4.3	19.3
PT	2.8	0.1	0.1	0.0	0.0	0.0	0.2	0.7	3.9
RO	4.5	0.0	0.2	0.1	0.2	0.2	0.3	3.2	8.6
SE	3.9	0.1	0.3	0.1	0.2	0.1	0.6	2.5	7.8
SI	0.7	0.0	0.0	0.0	0.0	0.0	0.1	0.4	1.3
SK	2.4	0.0	0.1	0.0	0.0	0.1	0.1	0.4	3.1
UK	3.0	0.1	0.2	0.0	0.1	0.1	0.7	1.6	5.8
EU-27	**147**	**1**	**6**	**1**	**4**	**6**	**11**	**63**	**239**
BR	55	0	28	1	8	6	15	75	188
CN	109	5	3	11	42	18	98	186	472
IN	41	1	12	0	4	4	29	65	156
JP	1	0	1	0	0	0	1	2	6
RU	18	1	7	1	6	0	5	20	58
US	36	2	30	2	40	4	7	134	256
RW	**396**	**25**	**157**	**33**	**100**	**73**	**260**	**231**	**1 276**

Embodied water in exports by main partner countries, EU-27, 2008 (%)



In 2008, 31 % of the water embodied in the exports of the Rest of the World was conveyed to the European market, 20 % to the US, and 18 % was traded within the region. In the case of China, 39 % of the embodied water in Chinese exports was delivered to the Rest of the World, while 23 % to the EU-27, and 21 % to the US.

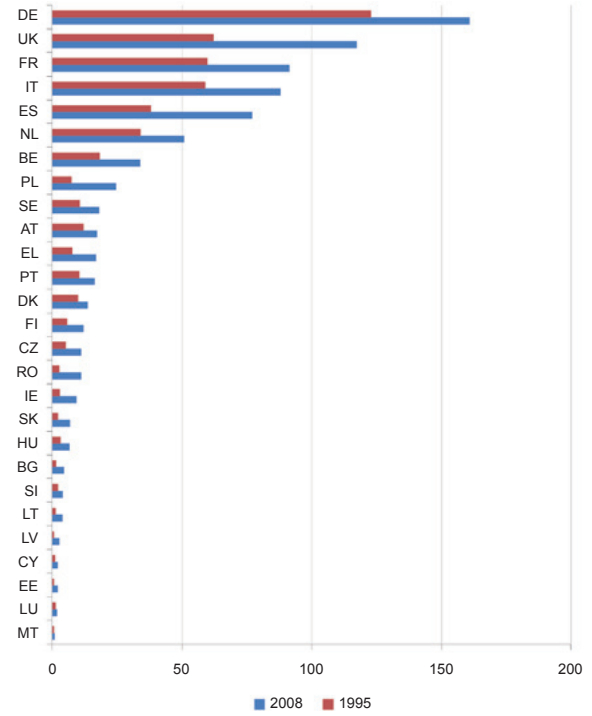
The EU-27 countries delivered most of the water embodied in exports to other Member States (61 %), 26 % to the Rest of the World, and 5 % to the US.

C.13. Embodied water in imports

Embodied water in imports (km³)

	1995	2000	2005	2006	2007	2008	2008 / 1995	2008 / 1995
AT	11.8	11.8	14.9	15.4	15.8	17.1	5.3	45%
BE	18.3	21.8	31.3	32.0	32.6	33.7	15.5	85%
BG	1.5	1.3	2.0	2.9	3.3	4.4	3.0	201%
CY	0.9	1.1	1.4	1.4	1.6	2.1	1.1	118%
CZ	5.1	5.4	8.8	9.1	9.8	11.1	5.9	115%
DE	122.8	125.2	137.9	145.0	155.4	160.7	37.9	31%
DK	9.8	9.0	11.6	12.3	12.8	13.5	3.7	37%
EE	0.5	1.1	1.7	1.9	2.1	2.0	1.5	310%
EL	7.5	9.4	12.5	13.5	15.0	16.8	9.2	122%
ES	37.8	42.1	64.7	68.4	74.7	76.9	39.1	103%
FI	5.7	6.6	9.8	9.9	10.3	11.9	6.2	108%
FR	59.7	62.7	80.3	80.7	86.0	91.2	31.5	53%
HU	3.0	4.0	5.3	5.4	5.9	6.6	3.6	120%
IE	2.7	4.3	6.1	7.1	8.3	9.2	6.4	235%
IT	58.8	62.7	80.0	83.4	84.2	87.9	29.1	49%
LT	1.1	1.7	2.4	2.7	3.0	3.8	2.8	256%
LU	1.1	1.2	1.5	1.5	1.6	1.7	0.6	53%
LV	0.6	1.1	1.7	1.8	2.4	2.6	2.0	353%
MT	0.5	0.5	0.5	0.6	0.7	0.7	0.3	63%
NL	33.9	35.0	42.1	42.8	45.0	50.7	16.8	50%
PL	7.3	11.2	15.4	17.3	20.1	24.5	17.2	235%
PT	10.2	11.7	12.8	13.1	15.1	16.2	6.0	58%
RO	2.6	3.2	6.6	7.8	9.2	11.0	8.4	328%
SE	10.4	12.2	14.7	15.4	17.1	18.0	7.6	74%
SI	2.2	2.1	2.6	2.8	3.1	4.0	1.8	82%
SK	2.2	2.4	4.7	5.1	6.1	6.7	4.5	211%
UK	62.0	79.9	114.6	118.9	121.2	117.1	55.1	89%
EU-27	**480**	**531**	**688**	**718**	**762**	**802**	**322**	**67%**
BR	25	23	19	23	28	36	11	46%
CN	44	66	132	143	160	243	200	456%
IN	13	19	41	47	55	50	37	273%
JP	233	199	201	191	180	204	-29	-12%
RU	34	29	74	71	95	111	77	226%
US	260	370	449	464	434	427	166	64%
RW	319	376	536	572	642	777	458	144%
World	**1 408**	**1 614**	**2 142**	**2 229**	**2 356**	**2 651**	**1 242**	**88%**

Embodied water in imports, EU-27 (km³)



Between 1995 and 2008, the water embodied in global imports increased by 88 % to 2.651 km³. This growth was mainly driven by the Rest of the World (+458 km³), the EU-27 (+322 km³), China (+200 km³), and the US (+166 km³). In contrast, Japan reduced the water embodied in imports by 29 km³. In 2008, the EU-27 imported 30 % of the water embodied in global imports, the Rest of the World 29 %, the US 16 %, China 9 %, and Japan 8 %.

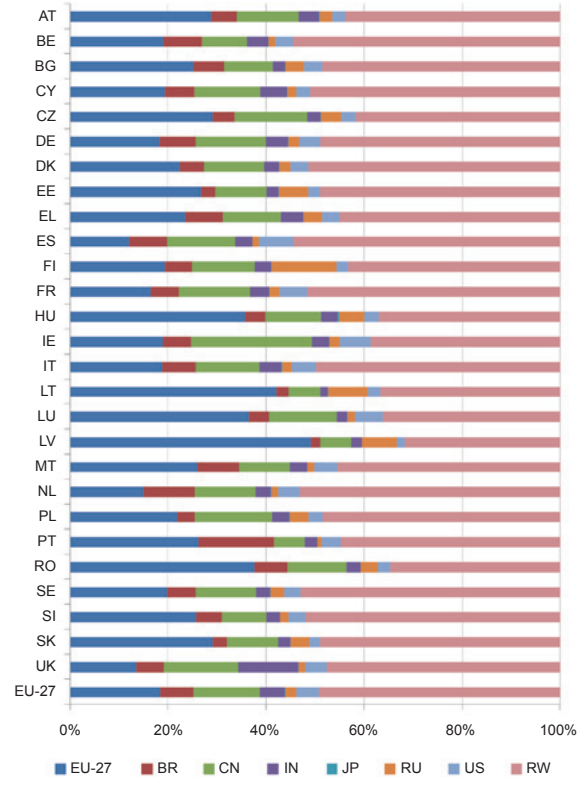
In most EU-27 Member States the water embodied in imports increased, the largest growths in absolute terms being reported by the United Kingdom (+55 km³), Spain (+39 km³), and Germany (+38 km³). Within the EU-27, in 2008, Germany was the country with the highest level of water embodied in imports (161 km³), followed by the United Kingdom (117 km³), France (91 km³), Italy (88 km³), and Spain (77 km³).

C.14. Embodied water in imports by main partner countries

Embodied water in imports by main partner countries, 2008 (km^3)

	EU-27	BR	CN	IN	JP	RU	US	RW	Total imports
AT	4.9	0.9	2.2	0.7	0.0	0.4	0.5	7.5	17.1
BE	6.4	2.7	3.1	1.4	0.0	0.5	1.2	18.4	33.7
BG	1.1	0.3	0.4	0.1	0.0	0.2	0.2	2.2	4.4
CY	0.4	0.1	0.3	0.1	0.0	0.0	0.1	1.0	2.1
CZ	3.2	0.5	1.6	0.3	0.0	0.5	0.3	4.6	11.1
DE	29.2	11.8	23.0	7.3	0.2	3.5	6.9	78.7	160.7
DK	3.0	0.7	1.6	0.4	0.0	0.3	0.5	6.9	13.5
EE	0.5	0.1	0.2	0.0	0.0	0.1	0.0	1.0	2.0
EL	3.9	1.3	2.0	0.8	0.0	0.6	0.6	7.6	16.8
ES	9.3	5.9	10.7	2.6	0.1	1.0	5.5	41.8	76.9
FI	2.3	0.7	1.5	0.4	0.0	1.6	0.3	5.2	11.9
FR	14.9	5.3	13.2	3.6	0.1	1.9	5.1	47.2	91.2
HU	2.4	0.3	0.8	0.2	0.0	0.3	0.2	2.5	6.6
IE	1.7	0.5	2.3	0.3	0.0	0.2	0.6	3.6	9.2
IT	16.4	6.1	11.5	3.9	0.1	1.7	4.4	43.8	87.9
LT	1.6	0.1	0.2	0.1	0.0	0.3	0.1	1.4	3.8
LU	0.6	0.1	0.2	0.0	0.0	0.0	0.1	0.6	1.7
LV	1.3	0.1	0.2	0.1	0.0	0.2	0.0	0.8	2.6
MT	0.2	0.1	0.1	0.0	0.0	0.0	0.0	0.3	0.7
NL	7.6	5.3	6.3	1.6	0.1	0.7	2.2	27.0	50.7
PL	5.4	0.8	3.9	0.9	0.0	0.9	0.7	11.9	24.5
PT	4.2	2.5	1.0	0.4	0.0	0.1	0.6	7.3	16.2
RO	4.1	0.7	1.3	0.3	0.0	0.4	0.3	3.8	11.0
SE	3.5	1.0	2.2	0.5	0.0	0.5	0.6	9.5	18.0
SI	1.0	0.2	0.4	0.1	0.0	0.1	0.1	2.1	4.0
SK	2.0	0.2	0.7	0.2	0.0	0.3	0.1	3.3	6.7
UK	15.8	6.6	17.8	14.4	0.1	1.5	5.1	55.8	117.1
EU-27	**147**	**55**	**109**	**41**	**1**	**18**	**36**	**396**	**802**
BR	1	0	5	1	0	1	2	25	36
CN	6	28	3	12	1	7	30	157	243
IN	1	1	11	0	0	1	2	33	50
JP	4	8	42	4	0	6	40	100	204
RU	6	6	18	4	0	0	4	73	111
US	11	15	98	29	1	5	7	260	427
RW	**63**	**75**	**186**	**65**	**2**	**20**	**134**	**231**	**777**

Embodied water in imports by main partner countries, EU-27, 2008 (%)



In 2008, 30 % of the water embodied in the imports of the Rest of the World originated in the region, 24 % in China, 17 % in the US, 10 % in Brazil, 8 % in India, and 8 % in the EU-27. The Rest of the World and China were the main sources of water embodied in the imports of the US (61 % and 23 % respectively); 65 % of the water embodied in Chinese imports came from the Rest of the World and 11 % from Brazil.

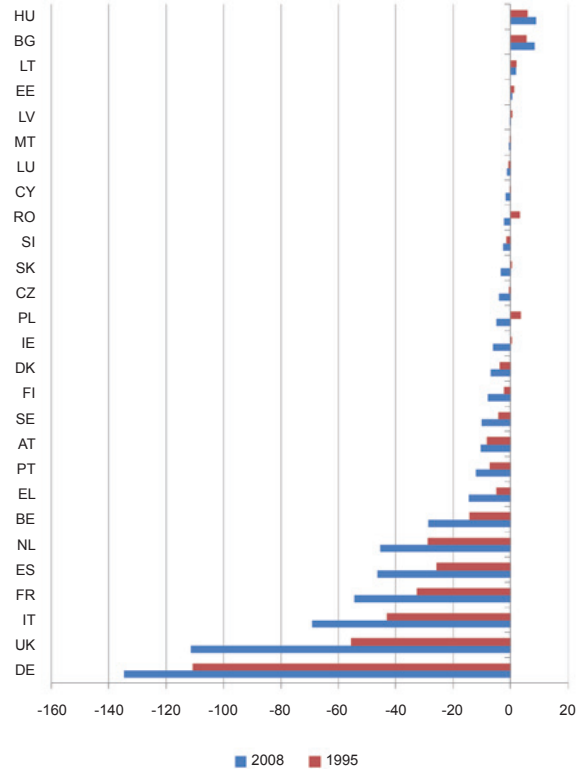
In the year 2008, 49 % of the water embodied in the imports of the EU-27 countries came from the Rest of the World, 18 % from other Member States, 14 % from China, and 7 % from Brazil.

C.15. Water trade balance

Water trade balance (km³)

	1995	2000	2005	2006	2007	2008	2008 / 1995	2008 / 1995
AT	-8.4	-7.2	-9.4	-9.8	-9.8	-10.5	-2.1	25%
BE	-14.4	-17.2	-26.7	-27.3	-27.6	-28.8	-14.3	99%
BG	5.3	4.2	5.2	6.1	3.7	8.2	2.9	54%
CY	-0.4	-0.8	-1.1	-1.1	-1.2	-1.7	-1.3	290%
CZ	-0.6	-0.8	-2.7	-3.5	-3.2	-4.1	-3.5	583%
DE	-110.8	-107.8	-116.3	-123.0	-133.3	-134.7	-23.9	22%
DK	-3.9	-2.7	-5.7	-5.8	-7.1	-7.2	-3.3	84%
EE	1.1	0.7	1.6	0.1	0.4	0.6	-0.5	-49%
EL	-5.1	-6.7	-10.1	-11.2	-13.1	-14.7	-9.6	190%
ES	-26.0	-14.5	-43.3	-39.5	-44.3	-46.5	-20.6	79%
FI	-2.4	-2.4	-6.2	-6.5	-6.6	-8.1	-5.7	233%
FR	-32.7	-29.5	-48.9	-49.4	-54.7	-54.6	-21.9	67%
HU	5.8	3.0	4.8	5.3	4.8	8.8	3.0	51%
IE	0.2	-1.4	-3.0	-4.2	-5.5	-6.2	-6.4	-3107%
IT	-43.2	-46.4	-63.2	-66.5	-67.1	-69.2	-26.0	60%
LT	1.9	1.1	0.4	-0.4	1.5	1.8	-0.1	-6%
LU	-0.9	-0.9	-1.3	-1.3	-1.3	-1.4	-0.5	55%
LV	0.4	0.1	0.1	-0.5	-0.6	-0.3	-0.8	-173%
MT	-0.4	-0.5	-0.5	-0.5	-0.7	-0.7	-0.3	61%
NL	-28.9	-30.0	-37.5	-38.3	-40.4	-45.7	-16.7	58%
PL	3.3	-2.4	0.1	-2.2	-1.5	-5.1	-8.4	-254%
PT	-7.4	-8.2	-10.2	-9.2	-11.6	-12.3	-4.9	66%
RO	3.0	2.1	0.9	-0.8	-4.2	-2.4	-5.4	-178%
SE	-4.5	-5.5	-7.0	-8.8	-9.8	-10.2	-5.7	128%
SI	-1.5	-1.2	-1.6	-1.6	-1.9	-2.6	-1.2	78%
SK	0.2	-0.7	-2.0	-2.4	-3.5	-3.6	-3.8	-1806%
UK	-55.9	-74.5	-109.2	-113.5	-116.2	-111.4	-55.5	99%
EU-27	**-326**	**-350**	**-493**	**-516**	**-555**	**-563**	**-237**	**73%**
BR	45	67	151	148	149	152	107	239%
CN	105	72	153	195	204	228	124	118%
IN	73	96	83	97	103	106	33	45%
JP	-230	-195	-196	-186	-174	-198	32	-14%
RU	9	41	-14	-9	-39	-53	-62	-679%
US	-67	-199	-274	-281	-218	-170	-104	155%
RW	**391**	**469**	**589**	**552**	**530**	**498**	**108**	**28%**

Water trade balance, EU-27 (km³)



In 2008, the EU-27 showed the largest deficit in terms of water embodied in trade (563 km³), followed by Japan (198 km³) and the US (170 km³). Between 1995 and 2008 the water trade deficit increased by 237 km³ in the EU-27, by 104 km³ in the US and by 62 km³ in Russia. The countries with the largest surplus in terms of water embodied in trade were the Rest of the World (498 km³), China (228 km³), and Brazil (152 km³).

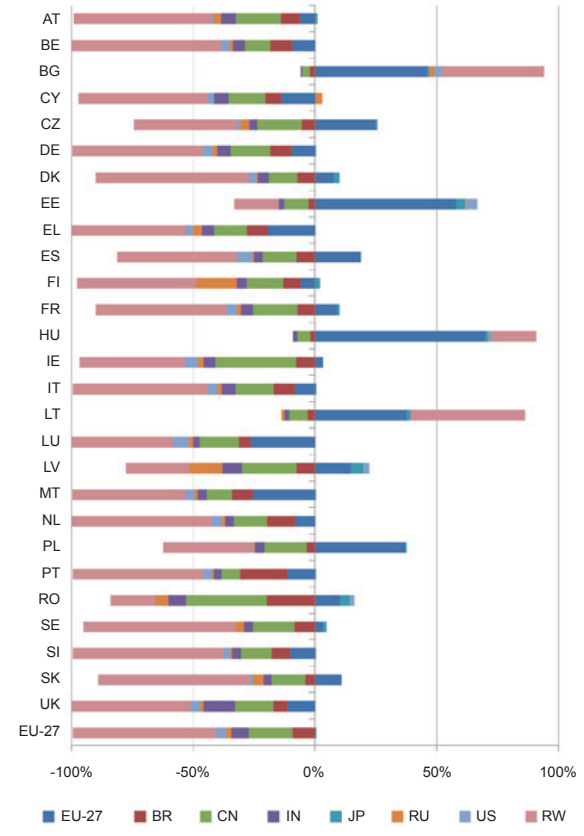
All the EU-27 countries (excluding Hungary, Bulgaria, Lithuania, and Estonia) showed a deficit in the water trade balance. The largest deficits were those of Germany (135 km³), the United Kingdom (111 km³), Italy (69 km³), France (55 km³), and Spain (47 km³). Between 1995 and 2008, all the Member States (excluding Bulgaria and Hungary) worsened their water trade balance.

C.16. Water trade balance by main partner countries

Water trade balance by main partner countries, 2008 (km^3)

	EU-27	BR	CN	IN	JP	RU	US	RW	Trade Balance
AT	-0.7	-0.8	-2.0	-0.7	0.1	-0.3	-0.1	-6.0	-10.5
BE	-2.7	-2.6	-3.0	-1.4	0.0	-0.4	-1.0	-17.6	-28.8
BG	4.3	-0.2	-0.3	-0.1	0.1	0.2	0.3	3.9	8.2
CY	-0.3	-0.1	-0.3	-0.1	0.0	0.0	-0.1	-1.0	-1.7
CZ	2.1	-0.5	-1.5	-0.3	0.1	-0.3	-0.1	-3.6	-4.1
DE	-13.3	-11.6	-22.3	-7.1	0.3	-2.9	-5.5	-72.2	-134.7
DK	0.7	-0.7	-1.0	-0.4	0.2	-0.1	-0.3	-5.6	-7.2
EE	1.0	-0.1	-0.2	-0.0	0.1	0.0	0.1	-0.3	0.6
EL	-2.9	-1.3	-2.0	-0.7	0.0	-0.6	-0.4	-6.9	-14.7
ES	13.6	-5.8	-10.4	-2.6	0.2	-0.6	-4.5	-36.5	-46.5
FI	-0.5	-0.6	-1.3	-0.3	0.1	-1.4	0.0	-4.1	-8.1
FR	6.1	-5.1	-12.2	-3.4	0.6	-1.1	-3.0	-36.4	-54.6
HU	7.5	-0.2	-0.6	-0.2	0.1	0.0	0.2	1.9	8.8
IE	0.2	-0.5	-2.2	-0.3	0.0	-0.2	-0.4	-2.9	-6.2
IT	-5.9	-6.0	-11.1	-3.8	0.3	-1.2	-3.0	-38.5	-69.2
LT	0.9	-0.1	-0.2	-0.0	0.0	-0.0	0.0	1.2	1.8
LU	-0.4	-0.1	-0.2	-0.0	-0.0	-0.0	-0.1	-0.6	-1.4
LV	0.1	-0.0	-0.1	-0.0	0.0	-0.1	0.0	-0.2	-0.3
MT	-0.2	-0.1	-0.1	-0.0	0.0	-0.0	-0.0	-0.3	-0.7
NL	-3.8	-5.3	-6.2	-1.5	0.0	-0.6	-2.0	-26.2	-45.7
PL	7.6	-0.7	-3.5	-0.8	0.1	-0.0	-0.1	-7.6	-5.1
PT	-1.4	-2.4	-0.9	-0.4	0.0	-0.1	-0.5	-6.6	-12.3
RO	0.3	-0.7	-1.1	-0.2	0.1	-0.2	0.1	-0.6	-2.4
SE	0.4	-1.0	-1.9	-0.4	0.2	-0.4	0.0	-7.1	-10.2
SI	-0.3	-0.2	-0.3	-0.1	0.0	-0.0	-0.1	-1.6	-2.6
SK	0.5	-0.2	-0.6	-0.2	0.0	-0.2	-0.1	-2.8	-3.6
UK	-12.8	-6.5	-17.6	-14.4	-0.0	-1.4	-4.5	-54.2	-111.4
EU-27	**0**	**-53**	**-103**	**-40**	**3**	**-12**	**-25**	**-332**	**-563**
BR	53	0	22	-0	8	5	13	50	152
CN	103	-22	0	-0	41	11	67	29	228
IN	40	0	0	0	4	3	27	32	106
JP	-3	-8	-41	-4	0	-5	-39	-98	-198
RU	12	-5	-11	-3	5	0	1	-53	-53
US	25	-13	-67	-27	39	-1	0	-126	-170
RW	**332**	**-50**	**-29**	**-32**	**98**	**53**	**126**	**0**	**498**

Water trade balance by main partner countries, EU-27, 2008 (%)



In 2008, the water trade balance of the EU-27 showed a deficit with all the other regions except with Japan. The largest deficits of the EU-27 were with the Rest of the World (332 km^3), China (103 km^3), and Brazil (53 km^3). Brazil and India presented a water trade surplus against all the other regions, the bilateral trade balance between both countries being balanced. The Rest of the World showed a surplus with all the other regions except Brazil, China, and India.

Within the EU-27 countries, the largest deficits in the water trade balance were with the Rest of the World. Some EU-27 countries showed a surplus in the water trade balance, mostly with other Member States and with the Rest of the World.

D. Acid Emissions

Basic concepts

This chapter assesses the emission of acid pollutants to the atmosphere. The emissions of each country are calculated on the basis of the residence principle. According to this approach, each country reports the emissions generated by the residents in the country (i.e. including the emissions of residents abroad and excluding the emissions of non-residents in the national territory). This accounting framework is different from the one followed by the emissions inventories, which accounts for the emissions generated in the territory of the country, irrespectively of the residence of the polluter.

Acid emissions include the release to the atmosphere of three pollutants: ammonia (NH_3), nitrogen oxides (NOx), and sulphur oxides (SOx). The emissions of these pollutants are aggregated according to their potential fixation of the hydrogen ion ($H+$) and reported in terms of 'acid equivalent'.

The acid emissions intensity of Gross Value Added is a measure of the acid pollutants generated to produce one unit worth of goods and services in a specific country. It is calculated as the quotient between the acid emissions and the Gross Value Added at constant prices of 2008.

The concept of acid footprint refers to the acid emissions generated when producing the goods and services devoted to satisfy the domestic final demand of a country (i.e. household consumption, government consumption, and investment), regardless of the country that actually emitted these substances.

The household footprint is the part of the acid footprint related to household consumption. It distinguishes up to 9 categories of consumption.

The acid emissions intensity of the final demand is a measure of the emissions generated to produce one unit worth of the goods and services demanded by households, government consumption, and investment activities. It is calculated as the quotient between the acid footprint and the domestic final demand at constant prices of 2008.

The acid footprint domestic coverage ratio is the relation between the acid footprint and the acid emissions of a country. It represents the share of the acid footprint of a country that is covered by its own emissions.

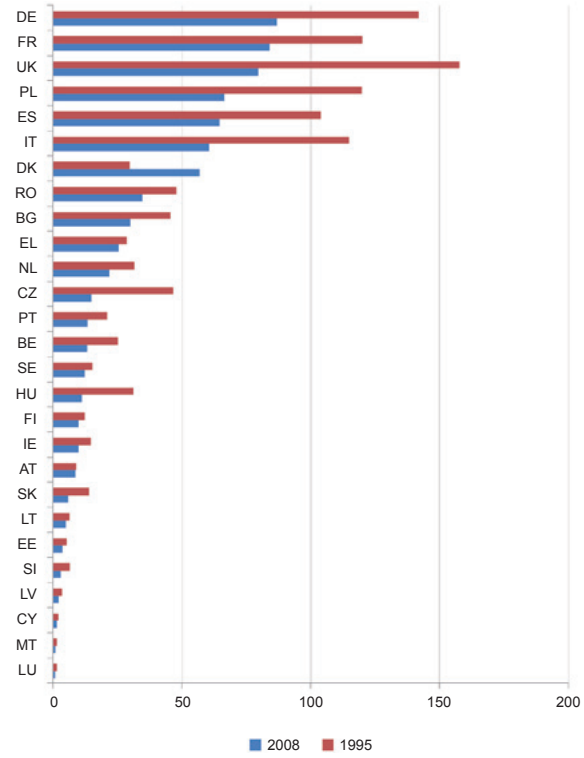
Embodied acid emissions in exports and imports account for the emissions directly or indirectly generated to produce internationally traded goods and services. The difference between the acid emissions embodied in exports and imports gives the acid trade balance. A deficit/surplus in the acid trade balance indicates that the emissions embodied in imports are greater/less than those exported. Moreover, a deficit in the acid trade balance indicates that with the domestic emissions it is not possible to satisfy the domestic final demand (the contrary applies to a surplus). From this assertion it follows that the acid footprint equals the acid emission minus the trade balance.

D.1. Acid emissions

Acid emissions (kt acid-e)

	1995	2000	2005	2006	2007	2008	2008 / 1995	2008 / 1995
AT	9.0	8.5	8.9	8.9	8.7	8.4	-0.6	-6%
BE	24.9	18.8	15.8	14.9	14.4	13.1	-11.8	-47%
BG	45.5	31.7	32.0	31.4	33.4	29.8	-15.7	-35%
CY	2.0	2.2	1.9	1.7	1.6	1.4	-0.5	-28%
CZ	46.3	18.9	17.1	16.4	16.4	14.6	-31.7	-68%
DE	141.9	100.1	89.4	91.4	87.4	86.6	-55.3	-39%
DK	29.6	34.4	43.5	49.5	52.5	56.7	27.1	91%
EE	5.1	4.3	3.7	3.5	4.2	3.5	-1.6	-31%
EL	28.5	26.9	28.3	27.9	28.9	25.5	-3.0	-11%
ES	103.9	98.2	92.3	89.1	90.0	64.4	-39.5	-38%
FI	12.1	11.1	10.9	11.6	10.8	9.9	-2.2	-18%
FR	120.0	106.8	92.7	88.9	87.0	84.0	-36.0	-30%
HU	31.1	23.4	12.8	12.6	11.1	11.1	-20.0	-64%
IE	14.5	14.4	11.4	10.9	10.4	9.9	-4.6	-32%
IT	114.7	87.7	68.3	65.6	63.7	60.5	-54.2	-47%
LT	6.2	5.0	5.4	5.2	5.4	4.7	-1.5	-24%
LU	1.4	0.8	0.8	0.8	0.6	0.8	-0.6	-45%
LV	3.4	2.2	2.1	2.1	2.2	2.1	-1.3	-38%
MT	1.3	1.0	0.9	0.9	0.9	0.8	-0.5	-37%
NL	31.5	27.5	25.3	23.8	24.5	21.6	-9.9	-31%
PL	119.8	83.3	73.9	78.2	74.1	66.3	-53.5	-45%
PT	20.8	20.5	17.3	16.0	15.4	13.3	-7.5	-36%
RO	47.6	42.3	38.3	40.4	36.9	34.7	-12.9	-27%
SE	15.1	13.6	14.0	13.7	12.8	12.3	-2.8	-19%
SI	6.4	5.3	3.4	2.8	2.7	2.7	-3.7	-58%
SK	13.7	8.2	6.7	6.4	5.9	5.7	-8.0	-58%
UK	157.5	113.2	100.2	90.7	85.4	79.5	-78.0	-50%
EU-27	**1 154**	**910**	**817**	**805**	**787**	**724**	**-430**	**-37%**
BR	187	201	223	207	216	220	34	18%
CN	1 314	1 237	1 731	1 855	1 961	2 190	876	67%
IN	391	447	506	534	560	590	199	51%
JP	146	140	143	146	151	146	-1	-0%
RU	188	162	167	171	169	173	-16	-8%
US	1 161	1 070	970	926	901	832	-329	-28%
RW	2 698	2 816	2 949	3 156	3 473	3 207	509	19%
World	**7 240**	**6 982**	**7 506**	**7 802**	**8 218**	**8 082**	**842**	**12%**

Acid emissions, EU-27 (kt acid-e)



Between 1995 and 2008, acid emissions increased worldwide by 842 kt acid-e to 8 082 kt acid-e (+12 %). The growth in the emission of acid substances was predominantly driven by China (+876 kt acid-e), the Rest of the World (+509 kt acid-e), and India (+199 kt acid-e). In 2008, 47 % of the acid substances were emitted in the Rest of the World, 17 % in China, 10 % in the US, 9 % in the EU-27 and 7 % in India. Within the EU-27, Germany (12 %), France (12 %), and the United Kingdom (10 %) emitted in 2008 one-third of the European acid pollutants.

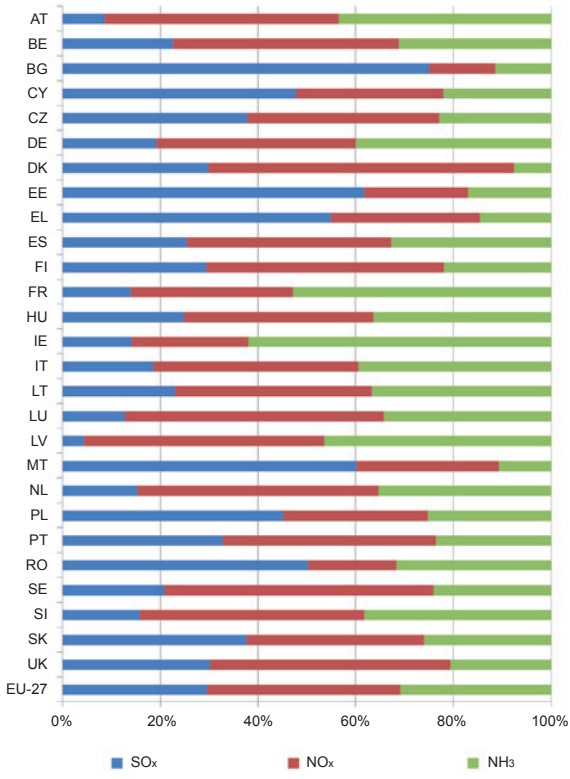
During the same period, acid emissions in the EU-27 decreased by 37 % to 724 kt acid-e. The largest reductions in absolute terms were reported by Germany (-55 kt acid-e), and Italy and Poland (-54 kt acid-e each). Denmark was the only country that showed an increase in acid emissions (+27 kt acid-e) due to the growth of water transport.

D.2. Acid emissions by type

Acid emissions by type, 2008 (kt acid-e)

	SO_X	NO_X	NH_3	Total
AT	0.7	4.0	3.7	8.4
BE	3.0	6.1	4.1	13.1
BG	22.4	4.0	3.4	29.8
CY	0.7	0.4	0.3	1.4
CZ	5.5	5.8	3.4	14.6
DE	16.7	35.2	34.7	86.6
DK	16.9	35.4	4.3	56.7
EE	2.2	0.7	0.6	3.5
EL	14.0	7.8	3.7	25.5
ES	16.3	27.0	21.1	64.4
FI	2.9	4.8	2.2	9.9
FR	11.7	27.9	44.4	84.0
HU	2.8	4.3	4.0	11.1
IE	1.4	2.4	6.1	9.9
IT	11.2	25.4	23.9	60.5
LT	1.1	1.9	1.7	4.7
LU	0.1	0.4	0.3	0.8
LV	0.1	1.0	1.0	2.1
MT	0.5	0.2	0.1	0.8
NL	3.3	10.6	7.6	21.6
PL	29.9	19.6	16.8	66.3
PT	4.3	5.8	3.2	13.3
RO	17.4	6.3	11.0	34.7
SE	2.6	6.7	3.0	12.3
SI	0.4	1.2	1.0	2.7
SK	2.2	2.1	1.5	5.7
UK	24.0	39.0	16.5	79.5
EU-27	**214**	**286**	**223**	**724**
BR	51	65	103	220
CN	1 274	490	426	2 190
IN	267	157	166	590
JP	56	77	13	146
RU	22	120	31	173
US	348	339	145	832
RW	1 376	1 077	754	3 207
World	**3 608**	**2 611**	**1 862**	**8 082**

Acid emissions by type, EU-27, 2008 (%)



In 2008, SO_x was the main acid pollutant around the world (45 % of the global acid emissions), followed by NO_x (32 %), and NH_3 (23 %). In the EU-27, NOx made 40 % of the acid emissions, while NH_3 and SOx represented 30 % each.

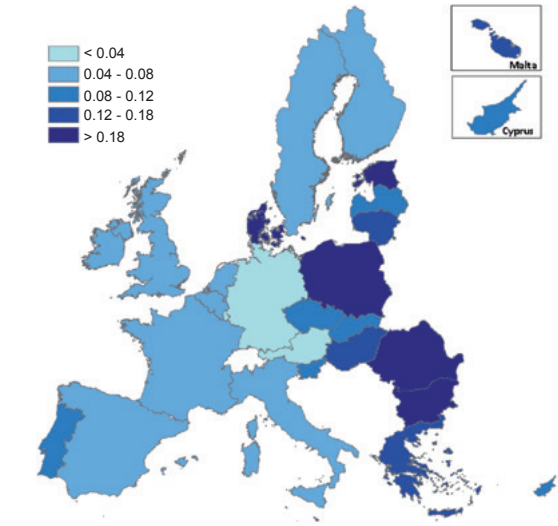
SO_x was the main acid pollutant in countries like Bulgaria, Estonia, Malta, Greece, and Romania. NO_x dominated in Denmark, Sweden, Luxembourg, and the Netherlands. In Ireland and France, NH_3 was the main category of acid emissions.

D.3. Acid emissions intensity of Gross Value Added

Acid emissions intensity of Gross Value Added (g acid-e/EUR)

	1995	2000	2005	2006	2007	2008	2008 / 1995	2008 / 1995
AT	0.05	0.04	0.04	0.04	0.03	0.03	-0.02	-33%
BE	0.11	0.07	0.05	0.05	0.05	0.04	-0.06	-60%
BG	2.23	1.63	1.33	1.24	1.26	1.07	-1.16	-52%
CY	0.20	0.19	0.14	0.12	0.11	0.09	-0.11	-55%
CZ	0.53	0.20	0.15	0.14	0.13	0.11	-0.42	-79%
DE	0.08	0.05	0.04	0.04	0.04	0.04	-0.04	-51%
DK	0.19	0.19	0.23	0.25	0.26	0.28	0.10	52%
EE	0.80	0.49	0.29	0.25	0.28	0.25	-0.55	-69%
EL	0.21	0.17	0.15	0.14	0.14	0.12	-0.09	-43%
ES	0.16	0.13	0.10	0.09	0.09	0.06	-0.10	-60%
FI	0.12	0.09	0.08	0.08	0.07	0.06	-0.06	-48%
FR	0.09	0.07	0.06	0.05	0.05	0.05	-0.04	-46%
HU	0.52	0.33	0.15	0.14	0.12	0.12	-0.40	-77%
IE	0.20	0.13	0.08	0.07	0.06	0.06	-0.14	-69%
IT	0.10	0.07	0.05	0.05	0.04	0.04	-0.05	-55%
LT	0.47	0.31	0.23	0.20	0.19	0.16	-0.31	-66%
LU	0.07	0.03	0.02	0.02	0.02	0.02	-0.05	-69%
LV	0.37	0.18	0.12	0.11	0.10	0.10	-0.27	-73%
MT	0.39	0.25	0.20	0.19	0.18	0.16	-0.23	-59%
NL	0.08	0.06	0.05	0.05	0.05	0.04	-0.04	-52%
PL	0.66	0.36	0.28	0.27	0.24	0.21	-0.45	-68%
PT	0.19	0.16	0.13	0.11	0.10	0.09	-0.10	-54%
RO	0.58	0.55	0.38	0.37	0.32	0.28	-0.31	-52%
SE	0.08	0.06	0.05	0.05	0.04	0.04	-0.03	-45%
SI	0.34	0.23	0.12	0.09	0.08	0.08	-0.26	-76%
SK	0.43	0.22	0.14	0.12	0.10	0.09	-0.34	-78%
UK	0.13	0.08	0.06	0.06	0.05	0.05	-0.09	-64%
EU-27	**0.14**	**0.10**	**0.08**	**0.07**	**0.07**	**0.06**	**-0.07**	**-54%**
BR	0.29	0.27	0.27	0.24	0.24	0.23	-0.06	-21%
CN	1.47	0.91	0.80	0.76	0.70	0.71	-0.75	-51%
IN	1.17	0.99	0.79	0.76	0.72	0.71	-0.46	-39%
JP	0.05	0.05	0.05	0.05	0.05	0.04	-0.01	-14%
RU	0.32	0.27	0.21	0.20	0.18	0.18	-0.14	-44%
US	0.18	0.13	0.10	0.10	0.09	0.09	-0.09	-52%
RW	0.47	0.42	0.41	0.43	0.46	0.42	-0.05	-10%
World	**0.28**	**0.23**	**0.22**	**0.22**	**0.22**	**0.21**	**-0.07**	**-23%**

Acid emissions intensity of Gross Value Added, EU-27, 2008 (g acid-e/EUR)



The world's acid emissions intensity of the Gross Value Added decreased by 23 % to 0.21 g acid-e/EUR between 1995 and 2008, while in the EU-27 it fell by 54 % to 0.06 g acid-e/EUR. In China and India, the reductions amounted to 0.75 and 0.46 g acid-e/EUR respectively. In 2008, China and India were the regions with the highest acid emissions intensity per unit of Gross Value Added (0.71 g acid-e/EUR), followed by the Rest of the World (0.42 g acid-e/EUR), Brazil (0.23 g acid-e/EUR), and Russia (0.18 g acid-e/EUR). Japan, the EU-27, and the US showed the lowest acid emissions intensities.

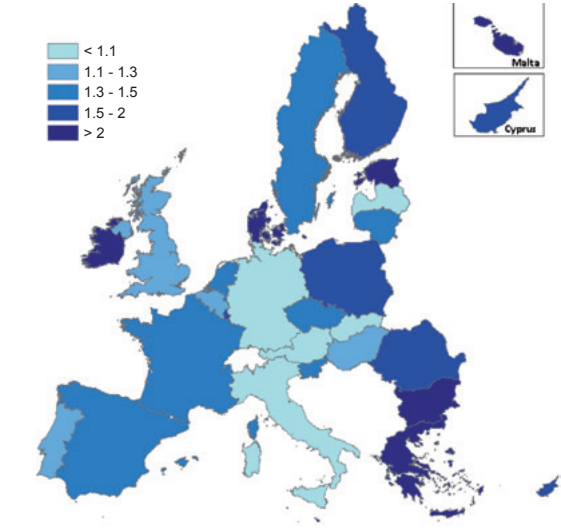
In this period, all EU-27 Member States (excluding Denmark) reduced their acid emissions intensity; Bulgaria, Estonia, Poland, the Czech Republic, and Hungary were the countries with the highest reductions in absolute terms. Bulgaria, Denmark, Romania, Estonia, and Poland turned out to be the top countries with the highest acid emissions intensities in 2008. Luxembourg, Austria, Germany, the Netherlands, and Sweden were the Member States with the lowest intensities in the same year.

D.4. Acid emissions per capita

Acid emissions per capita (kg acid-e/cap)

	1995	2000	2005	2006	2007	2008	2008 / 1995	2008 / 1995
AT	1.13	1.07	1.09	1.08	1.05	1.01	-0.12	-11%
BE	2.46	1.83	1.51	1.42	1.36	1.23	-1.23	-50%
BG	5.40	3.87	4.12	4.06	4.35	3.90	-1.50	-28%
CY	3.04	3.25	2.54	2.18	2.06	1.80	-1.24	-41%
CZ	4.48	1.84	1.67	1.60	1.60	1.41	-3.07	-69%
DE	1.74	1.22	1.08	1.11	1.06	1.05	-0.69	-39%
DK	5.68	6.46	8.03	9.13	9.65	10.35	4.67	82%
EE	3.51	3.13	2.76	2.59	3.09	2.62	-0.89	-25%
EL	2.69	2.47	2.55	2.51	2.59	2.27	-0.42	-15%
ES	2.64	2.45	2.14	2.04	2.02	1.42	-1.22	-46%
FI	2.38	2.14	2.08	2.21	2.05	1.88	-0.50	-21%
FR	2.02	1.76	1.48	1.41	1.37	1.31	-0.71	-35%
HU	3.01	2.29	1.27	1.25	1.11	1.10	-1.90	-63%
IE	4.03	3.82	2.76	2.59	2.42	2.24	-1.79	-44%
IT	2.02	1.54	1.17	1.12	1.08	1.01	-1.00	-50%
LT	1.70	1.43	1.58	1.53	1.60	1.39	-0.31	-18%
LU	3.39	1.93	1.67	1.65	1.36	1.57	-1.82	-54%
LV	1.34	0.91	0.91	0.92	0.96	0.92	-0.42	-31%
MT	3.65	2.76	2.17	2.16	2.18	2.06	-1.60	-44%
NL	2.04	1.73	1.55	1.46	1.50	1.32	-0.73	-36%
PL	3.10	2.15	1.94	2.05	1.94	1.74	-1.37	-44%
PT	2.08	2.01	1.64	1.52	1.46	1.25	-0.83	-40%
RO	2.10	1.88	1.77	1.87	1.71	1.61	-0.49	-23%
SE	1.71	1.53	1.56	1.52	1.41	1.33	-0.37	-22%
SI	3.24	2.67	1.72	1.39	1.33	1.34	-1.90	-59%
SK	2.56	1.52	1.25	1.19	1.09	1.06	-1.50	-59%
UK	2.72	1.92	1.67	1.50	1.40	1.30	-1.42	-52%
EU-27	**2.41**	**1.89**	**1.66**	**1.63**	**1.59**	**1.45**	**-0.96**	**-40%**
BR	1.15	1.15	1.20	1.10	1.14	1.15	-0.00	-0%
CN	1.08	0.97	1.32	1.41	1.48	1.65	0.57	52%
IN	0.41	0.42	0.44	0.46	0.48	0.50	0.09	22%
JP	1.18	1.11	1.13	1.16	1.19	1.15	-0.02	-2%
RU	1.27	1.11	1.16	1.19	1.18	1.21	-0.06	-5%
US	4.36	3.79	3.27	3.09	2.98	2.73	-1.63	-37%
RW	1.14	1.09	1.05	1.10	1.19	1.08	-0.05	-5%
World	**1.26**	**1.14**	**1.15**	**1.18**	**1.23**	**1.20**	**-0.07**	**-5%**

Acid emissions per capita, EU-27, 2008 (kg acid-e/cap)



The global acid emissions per inhabitant between 1995 and 2008 decreased by 0.07 kg acid-e/cap to 1.2 kg acid-e/cap (-5 %). In the EU-27, acid emissions fell by 0.96 kg acid-e/cap to 1.45 kg acid-e/cap (-40 %), while in the US, Russia, and Rest of the World they were reduced by 1.6, 0.06, and 0.05 kg acid-e/cap respectively. In China, acid emissions grew by 0.57 kg acid-e/cap.

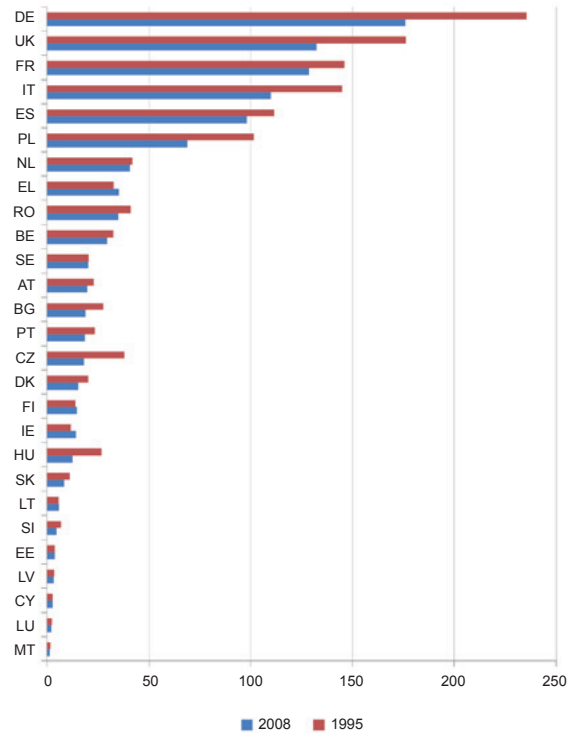
In 2008, the regions with the highest acid emissions per capita were the US (2.7 kg acid-e/cap), China (1.7 kg acid-e/cap), and the EU-27 (1.5 kg acid-e/cap). In the EU-27, Denmark, Bulgaria, Estonia, Greece, and Ireland were the top five countries in terms of acid emissions per capita. In contrast, Latvia, Austria, Italy, Germany, and Slovakia reported the lowest acid emissions per capita.

D.5. Acid footprint

Acid footprint (kt acid-e)

	1995	2000	2005	2006	2007	2008	2008 / 1995	2008 / 1995
AT	22.7	18.7	18.9	19.3	19.6	19.4	-3.3	-14%
BE	32.4	26.9	28.7	29.1	29.0	29.2	-3.2	-10%
BG	27.3	17.9	21.8	18.1	20.1	18.4	-8.8	-32%
CY	2.6	2.9	2.6	2.4	2.5	2.7	0.1	3%
CZ	37.7	18.7	17.7	17.7	17.9	17.8	-19.9	-53%
DE	235.2	183.7	165.1	169.5	175.0	175.7	-59.5	-25%
DK	20.0	14.3	14.8	14.6	15.9	15.0	-4.9	-25%
EE	3.6	3.6	3.8	3.9	4.0	3.4	-0.2	-5%
EL	32.7	32.6	34.2	34.8	37.0	35.1	2.4	7%
ES	111.2	107.0	112.9	113.3	118.8	97.9	-13.3	-12%
FI	13.7	12.6	13.3	14.4	14.3	14.3	0.6	4%
FR	146.0	132.1	129.3	126.5	129.8	128.5	-17.4	-12%
HU	26.5	21.7	14.1	13.5	12.3	12.4	-14.0	-53%
IE	11.3	12.8	11.8	12.5	13.7	13.8	2.5	22%
IT	144.6	126.2	111.5	112.0	111.9	109.8	-34.8	-24%
LT	5.4	5.0	5.5	5.6	6.0	5.7	0.3	6%
LU	2.2	1.8	1.7	1.7	1.7	1.8	-0.3	-16%
LV	3.3	2.5	2.6	2.9	3.2	3.1	-0.3	-8%
MT	1.5	1.3	1.0	1.1	1.1	1.1	-0.4	-30%
NL	41.8	37.3	36.6	37.3	39.0	40.5	-1.3	-3%
PL	101.4	77.2	66.9	71.3	71.0	68.6	-32.7	-32%
PT	23.3	23.6	21.1	19.7	20.3	18.3	-4.9	-21%
RO	40.8	34.3	33.6	36.7	36.1	34.7	-6.1	-15%
SE	20.4	19.8	18.3	19.0	19.9	19.7	-0.6	-3%
SI	6.7	5.7	4.1	3.8	4.1	4.5	-2.2	-33%
SK	10.9	7.2	7.4	7.5	7.9	8.2	-2.8	-25%
UK	175.9	152.6	145.5	147.5	145.4	131.9	-44.0	-25%
EU-27	**1 301**	**1 100**	**1 045**	**1 055**	**1 077**	**1 032**	**-269**	**-21%**
BR	181	187	178	171	182	194	13	7%
CN	1 113	1 089	1 444	1 522	1 613	1 688	575	52%
IN	367	413	493	512	544	569	201	55%
JP	284	254	245	246	235	243	-42	-15%
RU	167	112	158	169	188	190	23	14%
US	1 276	1 292	1 222	1 190	1 139	1 056	-220	-17%
RW	2 550	2 535	2 719	2 936	3 240	3 110	560	22%
World	**7 240**	**6 982**	**7 506**	**7 802**	**8 218**	**8 082**	**842**	**12%**

Acid footprint, EU-27 (kt acid-e)



The global acid footprint in 2008 amounted to 8 082 kt acid-e (+12 % increase compared to 1995). China was the region with the largest growth (+575 kt acid-e), followed by the Rest of the World (+560 kt acid-e) and India (+201 kt acid-e). On the contrary, the EU-27 reduced its acid footprint by 269 kt acid-e, the US by 220 and Japan by 42 kt acid-e. In 2008, the Rest of the World was responsible for 38 % of the global acid footprint, China 21 %, and the EU-27 and the US 13 % each.

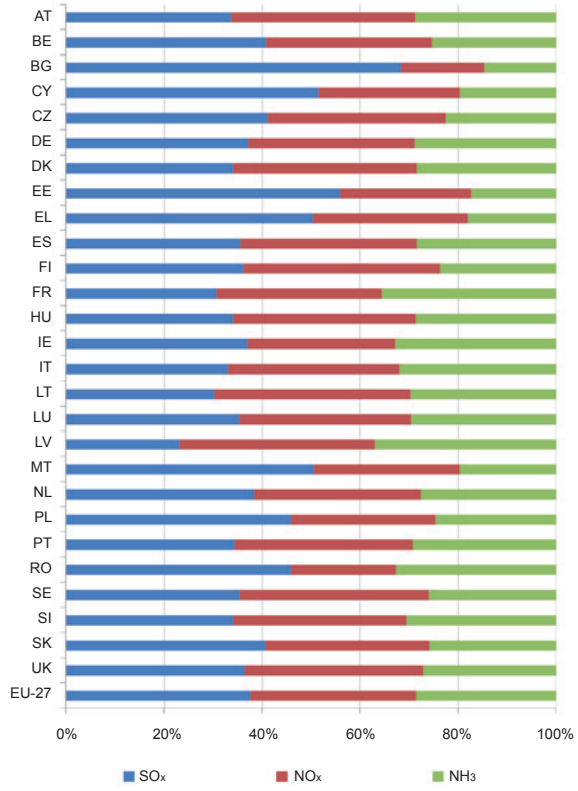
Regarding the EU-27, in 2008, Germany (17 %), the United Kingdom (13 %), France (12 %), Italy (11 %), and Spain (9 %) summed up almost two-thirds of the EU-27 total acid footprint. Between 1995 and 2008, the acid footprint of the EU-27 decreased by 21 %. This indicator also followed a declining trend in most of the Member States. The three largest contributors to the reduction of the European acid footprint were Germany, the United Kingdom, and Italy.

D.6. Acid footprint by type

Acid footprint by type, 2008 (kt acid-e)

	SO_X	NO_X	NH_3	Total
AT	6.5	7.3	5.6	19.4
BE	11.9	9.9	7.4	29.2
BG	12.6	3.1	2.7	18.4
CY	1.4	0.8	0.5	2.7
CZ	7.3	6.5	4.0	17.8
DE	65.2	59.7	50.7	175.7
DK	5.1	5.6	4.3	15.0
EE	1.9	0.9	0.6	3.4
EL	17.6	11.1	6.3	35.1
ES	34.7	35.3	27.8	97.9
FI	5.2	5.7	3.4	14.3
FR	39.4	43.5	45.7	128.5
HU	4.2	4.6	3.6	12.4
IE	5.1	4.2	4.5	13.8
IT	36.2	38.4	35.2	109.8
LT	1.7	2.3	1.7	5.7
LU	0.6	0.6	0.5	1.8
LV	0.7	1.2	1.1	3.1
MT	0.5	0.3	0.2	1.1
NL	15.5	13.8	11.2	40.5
PL	31.4	20.3	16.9	68.6
PT	6.3	6.7	5.4	18.3
RO	15.9	7.5	11.3	34.7
SE	7.0	7.6	5.1	19.7
SI	1.5	1.6	1.4	4.5
SK	3.3	2.7	2.1	8.2
UK	48.0	48.0	35.8	131.9
EU-27	**387**	**349**	**295**	**1 032**
BR	54	61	79	194
CN	936	395	357	1 688
IN	258	154	156	569
JP	104	93	46	243
RU	46	97	47	190
US	478	393	185	1 056
RW	1 346	1 069	696	3 110
World	**3 608**	**2 611**	**1 862**	**8 082**

Acid footprint by type, EU-27, 2008 (%)



In 2008, 45 % of the global acid footprint corresponded to SO_x. Emissions of NO_x comprised the second source of acid footprint at the global level (32 %), followed by NH_3 (23 %). In the EU-27, SO_x represented 38 % of the European total acid footprint, NO_x 34 % and NH_3 23 %.

The SO_x component of the EU-27 acid footprint was the most important in 13 out of 27 Member States, with a share ranging from 37 % to 68 %. Bulgaria (68 %), Estonia (56 %), Cyprus (51 %), and Malta and Greece (50 % each) were the countries with the highest level of SO_x emissions in relation to total acid footprint. Finland, Lithuania, and Latvia showed the highest shares of NO_x.

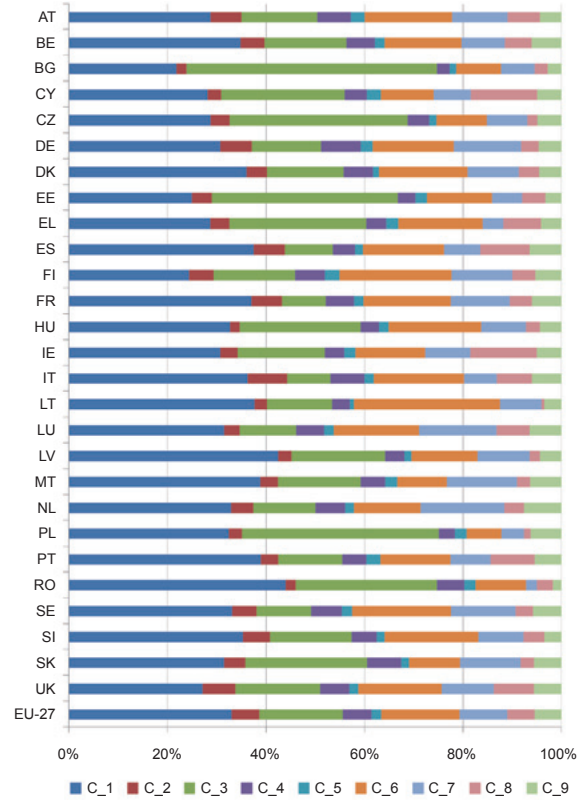
D.7. Household acid footprint by consumption category

Household acid footprint by consumption category, 2008 (kt acid-e)

	C_1	C_2	C_3	C_4	C_5	C_6	C_7	C_8	C_9
AT	4.1	0.9	2.2	1.0	0.4	2.5	1.6	0.9	0.6
BE	7.2	1.0	3.5	1.2	0.4	3.2	1.8	1.1	1.3
BG	2.9	0.3	6.7	0.3	0.2	1.2	0.9	0.3	0.4
CY	0.6	0.1	0.5	0.1	0.1	0.2	0.2	0.3	0.1
CZ	3.8	0.5	4.7	0.6	0.2	1.3	1.1	0.3	0.6
DE	39.4	8.3	17.9	10.3	3.2	21.2	17.5	4.4	6.0
DK	3.8	0.4	1.6	0.6	0.1	1.9	1.1	0.4	0.5
EE	0.6	0.1	0.9	0.1	0.1	0.3	0.1	0.1	0.1
EL	8.2	1.1	7.9	1.2	0.7	4.9	1.2	2.2	1.2
ES	27.1	4.6	7.1	3.2	1.2	11.9	5.3	7.3	4.6
FI	2.3	0.5	1.6	0.6	0.3	2.2	1.2	0.4	0.5
FR	36.5	6.1	8.8	5.7	1.8	17.5	11.8	4.4	6.0
HU	2.9	0.2	2.2	0.3	0.2	1.7	0.8	0.3	0.4
IE	3.2	0.4	1.9	0.4	0.2	1.5	1.0	1.4	0.5
IT	30.8	6.8	7.5	5.8	1.7	15.6	5.6	6.1	5.1
LT	1.7	0.1	0.6	0.2	0.0	1.4	0.4	0.0	0.2
LU	0.4	0.0	0.1	0.1	0.0	0.2	0.2	0.1	0.1
LV	1.0	0.1	0.4	0.1	0.0	0.3	0.2	0.0	0.1
MT	0.3	0.0	0.1	0.0	0.0	0.1	0.1	0.0	0.1
NL	9.2	1.3	3.5	1.7	0.5	3.8	4.8	1.2	2.1
PL	17.5	1.5	21.6	1.8	1.4	3.8	2.5	0.7	3.4
PT	5.3	0.5	1.8	0.7	0.4	2.0	1.1	1.2	0.8
RO	11.0	0.5	7.2	1.4	0.6	2.6	0.6	0.8	0.5
SE	4.4	0.7	1.5	0.8	0.3	2.7	1.7	0.5	0.8
SI	1.1	0.2	0.5	0.2	0.1	0.6	0.3	0.1	0.1
SK	1.9	0.2	1.5	0.4	0.1	0.6	0.7	0.2	0.3
UK	28.1	7.0	17.7	6.2	1.8	17.6	10.9	8.5	5.8
EU-27	**255**	**43**	**132**	**45**	**16**	**123**	**75**	**43**	**42**
BR	84	4	11	3	3	17	15	10	8
CN	470	30	107	15	36	79	88	44	41
IN	260	13	43	8	3	38	57	17	17
JP	49	12	25	9	5	27	13	10	11
RU	66	12	15	6	2	18	16	2	8
US	159	40	200	43	45	152	58	41	75
RW	1 042	71	372	73	53	355	260	96	112
World	**2 385**	**226**	**906**	**203**	**163**	**809**	**581**	**263**	**313**

NB: C_1: Food, drinks, and tobacco; C_2: Clothing and footwear; C_3: Housing, fuel, and power; C_4: Household goods and services; C_5: Health and education; C_6: Transport and communications; C_7: Recreation and culture; C_8: Restaurants and hotels; C_9: Miscellaneous goods and services.

Household acid footprint by consumption category, EU-27, 2008 (%)



In 2008, food, drinks and tobacco caused 41 % of the global acid footprint of households. Housing, fuel and power were responsible for 15 % of the acid footprint; transport and communication activities 14 %, and recreation and culture 10 %.

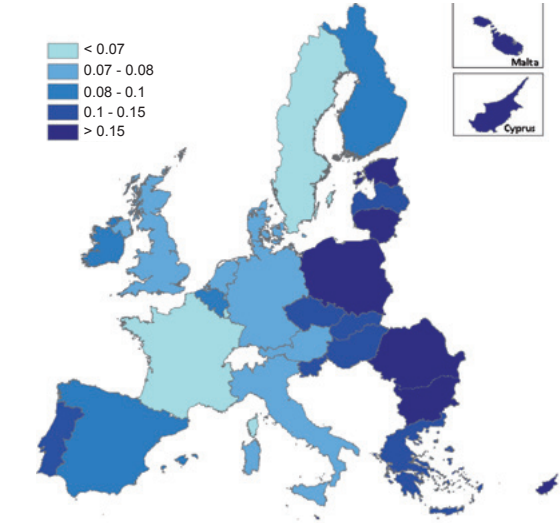
In the EU-27, food, drinks, and tobacco (33 %), housing, fuel, and power (17 %), transport and communication (16 %), and recreation and culture (10 %) were also the consumption activities that caused most of the acid footprint.

D.8. Acid footprint intensity of final demand

Acid footprint intensity of final demand (g acid-e/EUR)

	1995	2000	2005	2006	2007	2008	2008 / 1995	2008 / 1995
AT	0.11	0.08	0.08	0.08	0.08	0.07	-0.04	-34%
BE	0.13	0.09	0.09	0.09	0.09	0.09	-0.04	-31%
BG	1.17	0.83	0.81	0.60	0.63	0.54	-0.62	-53%
CY	0.25	0.23	0.18	0.16	0.15	0.15	-0.09	-38%
CZ	0.44	0.18	0.14	0.13	0.12	0.12	-0.32	-73%
DE	0.12	0.09	0.08	0.08	0.08	0.08	-0.05	-37%
DK	0.12	0.07	0.07	0.07	0.07	0.07	-0.05	-41%
EE	0.49	0.37	0.28	0.25	0.25	0.23	-0.27	-54%
EL	0.22	0.18	0.16	0.15	0.16	0.15	-0.07	-32%
ES	0.16	0.12	0.11	0.11	0.11	0.09	-0.07	-43%
FI	0.12	0.09	0.09	0.09	0.09	0.09	-0.04	-31%
FR	0.11	0.08	0.07	0.07	0.07	0.07	-0.04	-37%
HU	0.42	0.24	0.14	0.13	0.11	0.11	-0.31	-73%
IE	0.13	0.10	0.07	0.07	0.08	0.08	-0.05	-39%
IT	0.11	0.09	0.07	0.07	0.07	0.07	-0.04	-35%
LT	0.36	0.27	0.22	0.20	0.20	0.18	-0.18	-50%
LU	0.14	0.08	0.06	0.06	0.05	0.06	-0.08	-59%
LV	0.30	0.19	0.14	0.13	0.14	0.14	-0.17	-55%
MT	0.37	0.26	0.21	0.21	0.21	0.19	-0.18	-48%
NL	0.11	0.08	0.07	0.07	0.07	0.07	-0.03	-30%
PL	0.55	0.31	0.23	0.23	0.21	0.19	-0.36	-66%
PT	0.17	0.15	0.13	0.12	0.12	0.11	-0.07	-39%
RO	0.57	0.43	0.30	0.30	0.27	0.25	-0.32	-57%
SE	0.09	0.08	0.06	0.06	0.07	0.07	-0.03	-29%
SI	0.31	0.21	0.13	0.12	0.11	0.12	-0.18	-60%
SK	0.42	0.21	0.15	0.13	0.13	0.12	-0.30	-71%
UK	0.15	0.11	0.09	0.09	0.09	0.08	-0.07	-47%
EU-27	**0.15**	**0.11**	**0.09**	**0.09**	**0.09**	**0.09**	**-0.06**	**-42%**
BR	0.25	0.23	0.20	0.18	0.18	0.19	-0.06	-24%
CN	1.30	0.85	0.66	0.61	0.56	0.52	-0.78	-60%
IN	0.95	0.79	0.68	0.64	0.62	0.62	-0.33	-35%
JP	0.09	0.08	0.07	0.07	0.07	0.07	-0.02	-19%
RU	0.37	0.24	0.24	0.23	0.23	0.22	-0.15	-40%
US	0.18	0.15	0.13	0.12	0.11	0.11	-0.08	-42%
RW	0.55	0.48	0.47	0.49	0.51	0.47	-0.07	-13%
World	**0.28**	**0.23**	**0.22**	**0.22**	**0.22**	**0.21**	**-0.07**	**-23%**

Acid footprint intensity of final demand, EU-27, 2008 (g acid-e/EUR)



The world's acid footprint intensity of final demand totalled 0.21 g acid-e/EUR in 2008, decreasing by 23 % from its 1995 level. In the EU-27, the intensity was reduced by 42 % reaching 0.09 g acid-e/EUR. China, India, and Russia registered the largest reductions. In 2008, the top five regions with the largest acid intensity per unit of final demand were India (0.62 g acid-e/EUR), China (0.52 g acid-e/EUR), the Rest of the World (0.47 g acid-e/EUR), Russia (0.22 g acid-e/EUR), and Brazil (0.19 g acid-e/EUR). Japan showed the lowest acid intensity (0.07 g acid-e/EUR), followed by the EU-27 (0.09 g acid-e/EUR), and the US (0.11 g acid-e/EUR).

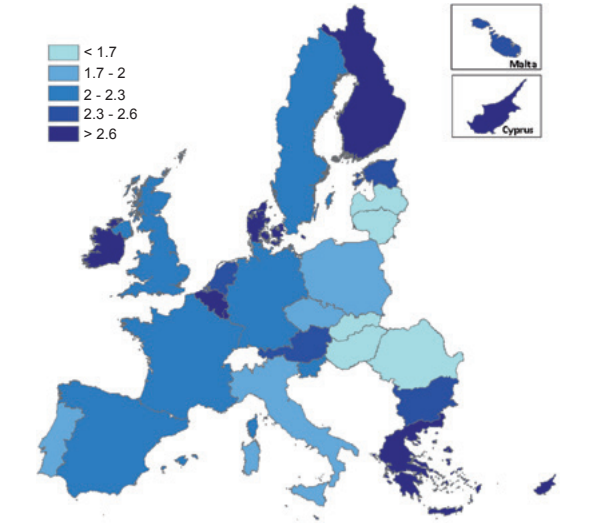
In the EU-27, all the Member States reduced their acid footprint intensity. Bulgaria (-0.62 g acid-e/EUR), Poland (-0.36 g acid-e/EUR), and Romania and the Czech Republic (-0.32 g acid-e/EUR) showed the largest drops. In 2008, Bulgaria (0.54 g acid-e/EUR), Romania (0.25 g acid-e/EUR), and Estonia (0.23 g acid-e/EUR) ranked the top in terms of the acid footprint intensities. Luxembourg, Sweden, France, Denmark, Italy, the Netherlands, and Austria showed an acid intensity of final demand below 0.08 g acid-e/EUR.

D.9. Acid footprint per capita

Acid footprint per capita (kg acid-e/cap)

	1995	2000	2005	2006	2007	2008	2008 / 1995	2008 / 1995
AT	2.86	2.34	2.31	2.33	2.36	2.34	-0.52	-18%
BE	3.20	2.63	2.75	2.76	2.74	2.74	-0.46	-14%
BG	3.24	2.19	2.81	2.35	2.62	2.41	-0.82	-25%
CY	4.06	4.16	3.52	3.17	3.17	3.43	-0.63	-15%
CZ	3.65	1.82	1.73	1.73	1.74	1.71	-1.93	-53%
DE	2.88	2.24	2.00	2.06	2.13	2.14	-0.75	-26%
DK	3.83	2.68	2.73	2.68	2.92	2.74	-1.08	-28%
EE	2.45	2.63	2.84	2.90	2.98	2.53	0.07	3%
EL	3.08	2.99	3.09	3.13	3.32	3.13	0.05	2%
ES	2.83	2.67	2.62	2.59	2.67	2.16	-0.67	-24%
FI	2.69	2.44	2.55	2.74	2.70	2.70	0.00	0%
FR	2.46	2.18	2.06	2.00	2.04	2.01	-0.45	-18%
HU	2.56	2.12	1.39	1.34	1.22	1.24	-1.32	-52%
IE	3.14	3.40	2.87	2.97	3.18	3.14	-0.00	-0%
IT	2.54	2.22	1.91	1.91	1.89	1.84	-0.70	-28%
LT	1.48	1.42	1.60	1.63	1.77	1.69	0.21	14%
LU	5.33	4.07	3.65	3.56	3.50	3.76	-1.57	-30%
LV	1.34	1.03	1.13	1.26	1.42	1.35	0.01	1%
MT	4.05	3.34	2.52	2.61	2.70	2.57	-1.48	-37%
NL	2.71	2.35	2.25	2.28	2.38	2.47	-0.24	-9%
PL	2.63	2.00	1.75	1.87	1.86	1.80	-0.83	-31%
PT	2.32	2.32	2.01	1.87	1.91	1.73	-0.59	-26%
RO	1.80	1.53	1.55	1.70	1.67	1.61	-0.19	-10%
SE	2.31	2.24	2.03	2.10	2.18	2.15	-0.16	-7%
SI	3.38	2.85	2.07	1.90	2.02	2.25	-1.12	-33%
SK	2.04	1.34	1.37	1.38	1.46	1.51	-0.53	-26%
UK	3.04	2.60	2.42	2.44	2.39	2.16	-0.88	-29%
EU-27	**2.72**	**2.28**	**2.13**	**2.14**	**2.18**	**2.07**	**-0.65**	**-24%**
BR	1.12	1.07	0.96	0.91	0.96	1.01	-0.11	-9%
CN	0.92	0.86	1.10	1.16	1.22	1.27	0.35	39%
IN	0.38	0.39	0.43	0.44	0.46	0.48	0.10	25%
JP	2.28	2.02	1.94	1.95	1.85	1.92	-0.37	-16%
RU	1.12	0.76	1.10	1.18	1.31	1.33	0.21	18%
US	4.79	4.58	4.12	3.97	3.77	3.46	-1.33	-28%
RW	1.08	0.98	0.97	1.03	1.11	1.05	-0.02	-2%
World	**1.26**	**1.14**	**1.15**	**1.18**	**1.23**	**1.20**	**-0.07**	**-5%**

Acid footprint per capita, EU-27, 2008 (kg acid-e/cap)



Between 1995 and 2008, the world's acid footprint per capita decreased from 1.3 to 1.2 kg acid-e/cap (-5 %). Most regions experimented a reduction in the acid footprint, particularly the US (-1.3 kg acid-e/cap), the EU-27 (-0.65 kg acid-e/cap), and Japan (-0.37 kg acid-e/cap). In contrast, the acid footprint of China, Russia, and India increased by 0.35, 0.21, and 0.1 kg acid-e/cap respectively.

In 2008, the regions with the highest acid footprint per capita were the US (3.5 kg acid-e/cap), the EU-27 (2.1 kg acid-e/cap), Japan (1.9 kg acid-e/cap), and Russia and China (1.3 kg acid-e/cap each). In the EU-27, Luxembourg (3.8 kg acid-e/cap), Cyprus (3.4 kg acid-e/cap), and Ireland (3.1 kg acid-e/cap) were the Member States with the highest acid footprint. Hungary (1.2 kg acid-e/cap), Latvia (1.4 kg acid-e/cap), and Slovakia (1.5 kg acid-e/cap) showed the lowest acid footprints.

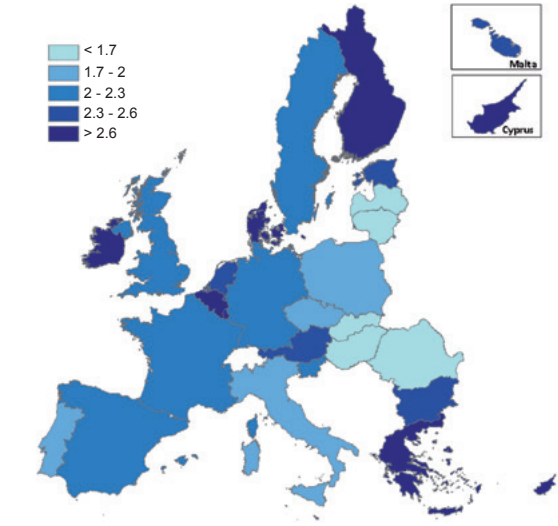
Between 1995 and 2008, Lithuania, Estonia, Greece, and Latvia, were the only Member States that registered an increase in terms of acid footprint per capita. On the other hand, the Czech Republic, Luxembourg, Malta, Hungary, and Slovakia showed the highest reductions.

D.10. Acid footprint domestic coverage ratio

Acid footprint domestic coverage ratio (%)

	1995	2000	2005	2006	2007	2008	2008 / 1995	2008 / 1995
AT	40%	46%	47%	46%	44%	43%	4%	10%
BE	77%	70%	55%	51%	50%	45%	-32%	-42%
BG	167%	177%	147%	173%	166%	162%	-5%	-3%
CY	75%	78%	72%	69%	65%	52%	-22%	-30%
CZ	123%	101%	96%	93%	92%	82%	-41%	-33%
DE	60%	55%	54%	54%	50%	49%	-11%	-18%
DK	148%	241%	294%	340%	330%	377%	229%	154%
EE	143%	119%	97%	89%	104%	104%	-40%	-28%
EL	87%	82%	83%	80%	78%	73%	-15%	-17%
ES	93%	92%	82%	79%	76%	66%	-28%	-30%
FI	88%	88%	82%	81%	76%	70%	-19%	-21%
FR	82%	81%	72%	70%	67%	65%	-17%	-21%
HU	117%	108%	91%	93%	91%	89%	-28%	-24%
IE	128%	113%	96%	87%	76%	71%	-57%	-44%
IT	79%	70%	61%	59%	57%	55%	-24%	-31%
LT	115%	101%	99%	94%	90%	83%	-33%	-28%
LU	64%	47%	46%	46%	39%	42%	-22%	-34%
LV	100%	88%	80%	73%	68%	68%	-32%	-32%
MT	90%	83%	86%	83%	81%	80%	-10%	-11%
NL	75%	74%	69%	64%	63%	53%	-22%	-29%
PL	118%	108%	110%	110%	104%	97%	-22%	-18%
PT	90%	87%	82%	81%	76%	72%	-17%	-19%
RO	117%	123%	114%	110%	102%	100%	-17%	-14%
SE	74%	68%	77%	72%	65%	62%	-12%	-16%
SI	96%	94%	83%	73%	65%	59%	-36%	-38%
SK	126%	113%	91%	86%	75%	70%	-56%	-44%
UK	90%	74%	69%	62%	59%	60%	-29%	-33%
EU-27	**89%**	**83%**	**78%**	**76%**	**73%**	**70%**	**-19%**	**-21%**
BR	103%	107%	125%	122%	118%	114%	10%	10%
CN	118%	114%	120%	122%	122%	130%	12%	10%
IN	107%	108%	103%	104%	103%	104%	-3%	-3%
JP	52%	55%	58%	59%	64%	60%	9%	17%
RU	113%	145%	106%	101%	90%	91%	-22%	-20%
US	91%	83%	79%	78%	79%	79%	-12%	-13%
RW	106%	111%	108%	107%	107%	103%	-3%	-3%
World	**100%**	**100%**	**100%**	**100%**	**100%**	**100%**	**-0%**	**-0%**

Acid footprint domestic coverage ratio, EU-27, 2008 (%)



In 2008, the share of the acid footprint covered with domestic acid emissions was over 100 % in China, Brazil, the Rest of the World, and India. Japan, the EU-27, and the US showed the lowest coverage ratios (60 %, 70 %, and 79 % respectively). During the period 1995 – 2008, China, Brazil, and Japan increased the coverage, while it decreased in the rest of the regions.

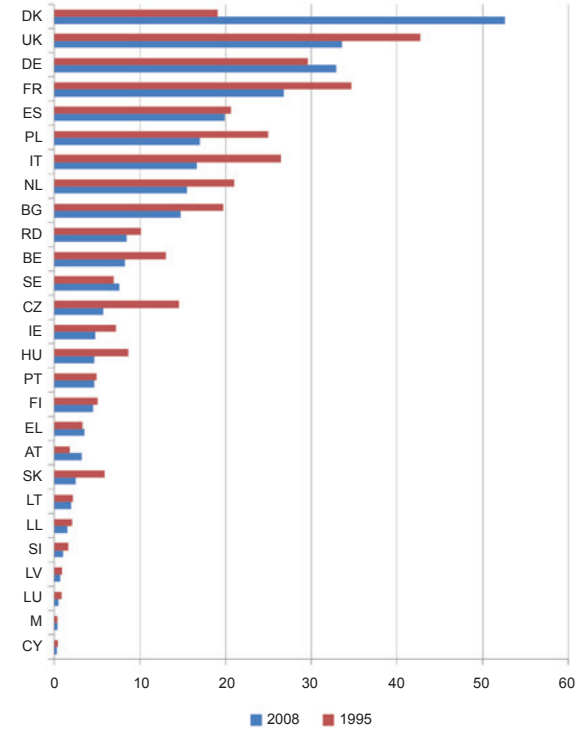
Between 1995 and 2008, the share of the acid footprint of the EU-27 covered by domestic emissions fell from 89 % to 70 %. In this period, only Denmark and Austria increased their domestic coverage ratios. In 2008, Denmark (377 %), Bulgaria (162 %), and Estonia (104 %) showed domestic coverage ratios of the acid footprint above 100 %. Luxembourg (42 %), Austria (43 %), and Belgium (45 %), Germany (49 %), Cyprus (52 %), and the Netherlands (53 %) were the countries with the lowest coverage ratios.

D.11. Embodied acid emissions in exports

Embodied acid emissions in exports (kt acid-e)

	1995	2000	2005	2006	2007	2008	2008 / 1995	2008 / 1995
AT	1.7	2.3	3.0	3.2	3.3	3.2	1.4	83%
BE	13.0	10.7	9.5	9.2	9.1	8.2	-4.7	-37%
BG	19.7	15.3	11.9	15.4	16.0	14.7	-5.0	-25%
CY	0.4	0.4	0.3	0.3	0.3	0.3	-0.1	-19%
CZ	14.5	6.0	6.2	6.1	6.5	5.7	-8.8	-61%
DE	29.5	28.1	30.2	33.7	32.1	32.9	3.3	11%
DK	19.1	27.9	37.8	45.3	47.0	52.6	33.5	176%
EE	2.0	1.6	1.0	0.9	1.6	1.4	-0.6	-28%
EL	3.3	3.5	3.8	4.0	3.9	3.5	0.2	7%
ES	20.6	24.4	23.6	23.9	24.6	19.9	-0.7	-4%
FI	5.0	5.0	5.0	5.0	4.6	4.5	-0.6	-11%
FR	34.6	33.0	27.0	26.4	26.0	26.7	-7.9	-23%
HU	8.6	6.6	4.1	4.5	4.6	4.6	-4.0	-46%
IE	7.2	6.6	5.6	5.4	5.0	4.7	-2.4	-34%
IT	26.4	21.0	17.1	17.2	17.3	16.6	-9.8	-37%
LT	2.1	1.7	1.8	1.9	2.0	1.9	-0.2	-11%
LU	0.8	0.5	0.5	0.5	0.4	0.4	-0.4	-48%
LV	0.9	0.6	0.6	0.6	0.6	0.7	-0.2	-26%
MT	0.3	0.3	0.3	0.3	0.3	0.3	-0.0	-2%
NL	20.9	18.9	17.7	16.3	17.2	15.4	-5.5	-26%
PL	25.0	17.4	18.9	20.5	19.4	16.9	-8.0	-32%
PT	4.9	5.1	4.7	4.9	4.9	4.6	-0.3	-6%
RO	10.1	11.4	10.0	10.0	8.4	8.4	-1.7	-17%
SE	6.9	7.1	8.6	8.4	7.8	7.6	0.7	10%
SI	1.6	1.4	1.2	1.0	1.0	1.0	-0.6	-37%
SK	5.9	3.4	2.9	3.0	2.7	2.4	-3.4	-58%
UK	42.7	33.1	41.0	32.2	31.7	33.5	-9.2	-22%
EU-27	**328**	**293**	**294**	**300**	**298**	**293**	**-35**	**-11%**
BR	24	32	60	55	57	55	31	126%
CN	231	200	372	426	454	645	413	179%
IN	40	57	57	63	64	70	30	76%
JP	24	30	40	43	49	46	22	90%
RU	45	65	45	43	39	45	0	0%
US	134	122	109	107	118	129	-5	-3%
RW	531	686	737	761	826	808	277	52%
World	**1 357**	**1 484**	**1 715**	**1 798**	**1 905**	**2 092**	**734**	**54%**

Embodied acid emissions in exports, EU-27 (kt acid-e)



Between 1995 and 2008, the acid emissions embodied in global exports increased by 54 % to 2 092 kt acid-e. Growth in the exports of acid emissions were led by the China (+413 kt acid-e) and the Rest of the World (+277 kt acid-e). Most of the EU-27 Member States decreased the amount of acid emissions embodied in exports; the largest falls in absolute terms were observed in Italy (-9.8 kt acid-e), the United Kingdom (-9.2 kt acid-e), and the Czech Republic (-8.8 kt acid-e). The exports of acid emissions of Denmark increased by 34 kt acid-e.

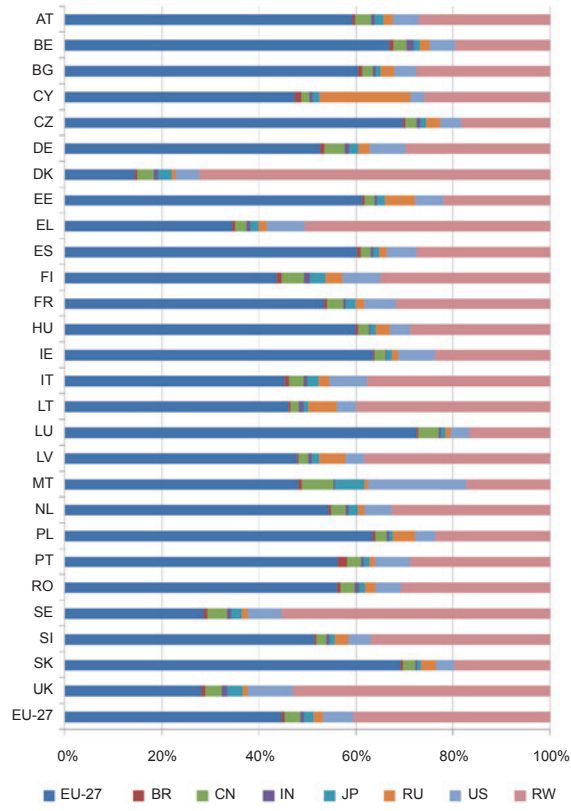
In 2008, 39 % of the acid emissions embodied in global exports were related to the exports of the Rest of the World, 31 % to those of China, 14 % of the EU-27, and 6 % of the US. Within the EU-27, Denmark was the country with the highest amount of acid emissions embodied in exports (53 kt acid-e), followed by the United Kingdom (34 kt acid-e), and Germany (33 kt acid-e).

D.12. Embodied acid emissions in exports by main partner countries

Embodied acid emissions in exports by main partner countries, 2008 (kt acid-e)

	EU-27	BR	CN	IN	JP	RU	US	RW	Total exports
AT	1.86	0.02	0.10	0.02	0.06	0.06	0.17	0.85	3.15
BE	5.50	0.07	0.22	0.13	0.10	0.16	0.44	1.61	8.24
BG	8.89	0.12	0.32	0.10	0.13	0.42	0.66	4.07	14.72
CY	0.14	0.00	0.00	0.00	0.00	0.06	0.01	0.08	0.30
CZ	3.94	0.03	0.13	0.04	0.07	0.16	0.25	1.04	5.66
DE	17.27	0.33	1.37	0.25	0.66	0.72	2.45	9.82	32.88
DK	7.53	0.31	1.79	0.43	1.49	0.43	2.57	38.04	52.59
EE	0.88	0.01	0.03	0.01	0.02	0.09	0.08	0.32	1.44
EL	1.20	0.02	0.08	0.03	0.06	0.06	0.27	1.77	3.49
ES	11.94	0.15	0.41	0.10	0.25	0.30	1.23	5.48	19.86
FI	1.95	0.05	0.21	0.05	0.14	0.16	0.35	1.57	4.47
FR	14.26	0.16	0.88	0.15	0.55	0.47	1.74	8.51	26.70
HU	2.76	0.02	0.10	0.02	0.05	0.13	0.19	1.34	4.62
IE	3.01	0.01	0.11	0.01	0.05	0.06	0.36	1.13	4.74
IT	7.49	0.13	0.52	0.13	0.38	0.36	1.29	6.25	16.55
LT	0.88	0.01	0.03	0.02	0.02	0.11	0.08	0.77	1.91
LU	0.31	0.00	0.02	0.00	0.00	0.00	0.02	0.07	0.43
LV	0.32	0.00	0.01	0.00	0.01	0.04	0.03	0.26	0.67
MT	0.16	0.00	0.02	0.00	0.02	0.00	0.07	0.06	0.34
NL	8.38	0.08	0.47	0.08	0.30	0.21	0.86	5.06	15.43
PL	10.73	0.10	0.40	0.08	0.15	0.75	0.71	4.02	16.94
PT	2.59	0.09	0.13	0.02	0.06	0.05	0.34	1.33	4.60
RO	4.71	0.06	0.24	0.08	0.11	0.18	0.44	2.58	8.40
SE	2.16	0.06	0.30	0.07	0.16	0.09	0.52	4.18	7.55
SI	0.52	0.00	0.02	0.01	0.01	0.03	0.05	0.38	1.01
SK	1.69	0.01	0.06	0.01	0.02	0.07	0.09	0.48	2.45
UK	9.41	0.27	1.16	0.36	1.05	0.36	3.09	17.82	33.52
EU-27	**130.5**	**2.1**	**9.2**	**2.2**	**5.9**	**5.6**	**18.3**	**118.9**	**292.7**
BR	15.7	0.1	8.1	0.4	2.3	1.6	5.6	21.7	55.4
CN	148.2	8.1	4.0	16.3	52.6	21.6	133.0	260.9	644.7
IN	18.4	0.7	5.1	0.1	2.1	1.5	13.0	29.5	70.4
JP	5.8	0.4	4.8	0.5	0.3	0.8	4.9	28.6	46.1
RU	21.2	0.5	3.3	0.6	2.1	0.2	4.1	13.0	45.0
US	23.5	1.8	10.5	1.7	10.1	1.5	4.1	75.9	129.0
RW	**237.3**	**15.6**	**98.5**	**27.1**	**67.4**	**30.0**	**169.9**	**162.6**	**808.4**

Embodied acid emissions in exports by main partner countries, EU-27, 2008 (%)



In 2008, 29 % of the acid emissions embodied in the exports of the Rest of the World were conveyed to the EU-27, 21 % to the US, 12 % to China, and 8 % to Japan. Up to 20 % of the acid emissions embodied in the exports of the Rest of the World were traded within the region. In the case of China, 40 % of the acid emissions embodied in exports were delivered to the Rest of the World, 23 % to the EU-27, 21 % to the US, and 8 % to Japan.

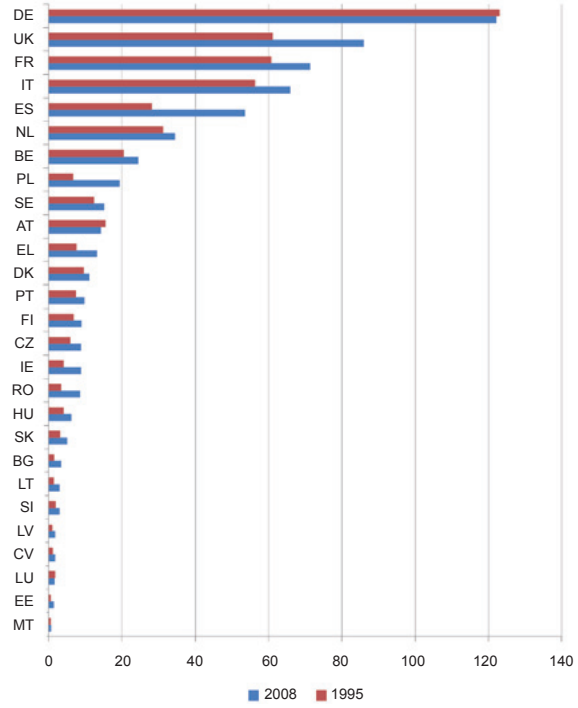
The EU-27 countries delivered most of the acid emissions embodied in exports to other Member States (45 %), 41 % to the Rest of the World, and 6 % to the US.

D.13. Embodied acid emissions in imports

Embodied acid emissions in imports (kt acid-e)

	1995	2000	2005	2006	2007	2008	2008 / 1995	2008 / 1995
AT	15.5	12.5	13.0	13.5	14.1	14.2	-1.3	-8%
BE	20.4	18.8	22.5	23.3	23.6	24.3	3.9	19%
BG	1.4	1.5	1.7	2.2	2.7	3.3	1.9	131%
CY	1.0	1.0	1.0	1.1	1.2	1.6	0.6	55%
CZ	5.8	5.8	6.8	7.4	7.9	8.8	3.0	51%
DE	122.9	111.6	105.9	111.9	119.6	122.0	-0.9	-1%
DK	9.4	7.8	9.1	10.3	10.4	10.9	1.5	16%
EE	0.5	0.9	1.1	1.3	1.4	1.3	0.8	180%
EL	7.5	9.2	9.8	10.9	12.0	13.1	5.7	76%
ES	28.0	33.2	44.2	48.1	53.4	53.4	25.5	91%
FI	6.6	6.5	7.5	7.8	8.1	8.8	2.2	33%
FR	60.6	58.2	63.5	64.1	68.8	71.3	10.7	18%
HU	4.0	4.8	5.4	5.4	5.8	6.0	1.9	48%
IE	4.0	5.0	6.1	7.0	8.3	8.7	4.7	118%
IT	56.3	59.4	60.3	63.5	65.5	65.9	9.6	17%
LT	1.3	1.6	1.9	2.2	2.6	2.9	1.6	122%
LU	1.6	1.4	1.4	1.4	1.4	1.5	-0.1	-7%
LV	0.9	0.9	1.2	1.4	1.7	1.6	0.8	85%
MT	0.5	0.5	0.4	0.5	0.5	0.5	0.1	12%
NL	31.2	28.7	28.9	29.8	31.7	34.3	3.1	10%
PL	6.6	11.3	11.9	13.6	16.3	19.3	12.8	195%
PT	7.3	8.2	8.6	8.6	9.7	9.6	2.3	32%
RO	3.3	3.3	5.3	6.3	7.5	8.4	5.1	155%
SE	12.2	13.3	12.8	13.7	14.9	15.0	2.8	23%
SI	1.9	1.8	1.9	2.1	2.4	2.9	1.0	52%
SK	3.0	2.5	3.6	4.0	4.7	4.9	1.8	60%
UK	61.1	72.6	86.3	89.0	91.8	85.9	24.8	41%
EU-27	**475**	**483**	**522**	**550**	**588**	**601**	**126**	**26%**
BR	19	18	15	18	23	29	10	55%
CN	31	52	86	93	106	143	112	362%
IN	16	24	44	41	48	49	33	204%
JP	162	144	143	143	133	143	-19	-12%
RU	23	14	36	41	58	63	39	167%
US	249	345	361	371	356	353	104	42%
RW	383	405	508	541	593	711	329	86%
World	**1 357**	**1 484**	**1 715**	**1 798**	**1 905**	**2 092**	**734**	**54%**

Embodied acid emissions in imports, EU-27 (kt acid-e)



Between 1995 and 2008, the acid emissions embodied in global imports increased by 54 % to 2 092 kt acid-e. This growth was mainly driven by the Rest of the World (+329 kt acid-e), the EU-27 (+126 kt acid-e), and China (+112 kt acid-e). In 2008, the Rest of the World imported 34 % of the acid emissions embodied in global imports, the EU-27 29 %, the US 17 %, and China 7 %.

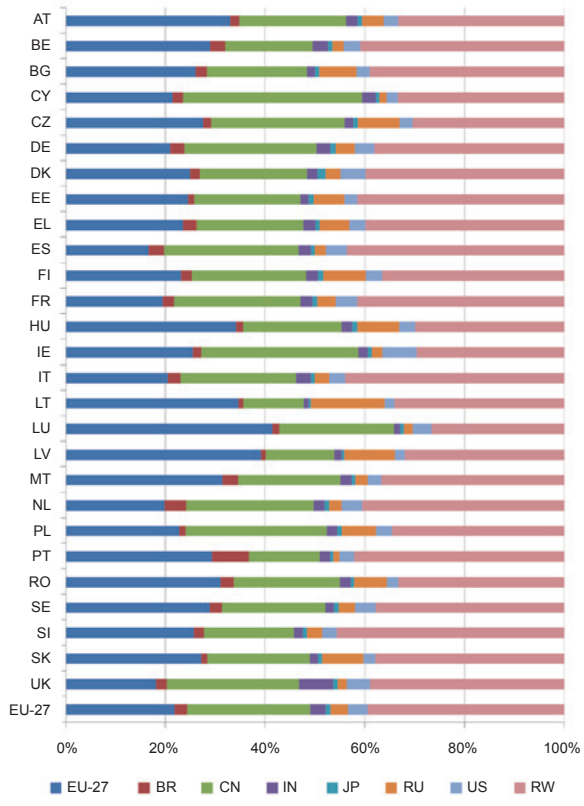
In all EU-27 Member States (excluding Austria, Germany, and Luxembourg) the acid emissions embodied in imports increased, with the largest growth in absolute terms being reported by Spain (+26 kt acid-e), the United Kingdom (+25 kt acid-e), and Poland (+13 kt acid-e). Within the EU-27, in 2008, Germany was the country with the highest level of acid emissions embodied in imports (122 kt acid-e), followed by the United Kingdom (86 kt acid-e), France (71 kt acid-e), Italy (66 kt acid-e), and Spain (53 kt acid-e).

D.14. Embodied acid emissions in imports by main partner countries

Embodied acid emissions in imports by main partner countries, 2008 (kt acid-e)

	EU-27	BR	CN	IN	JP	RU	US	RW	Total imports
AT	4.66	0.26	3.04	0.32	0.13	0.61	0.41	4.73	14.17
BE	7.04	0.74	4.27	0.74	0.22	0.53	0.84	9.94	24.32
BG	0.87	0.08	0.67	0.05	0.03	0.25	0.09	1.31	3.34
CY	0.34	0.03	0.57	0.04	0.01	0.02	0.04	0.53	1.59
CZ	2.42	0.14	2.36	0.15	0.09	0.73	0.22	2.68	8.79
DE	25.58	3.39	32.27	3.35	1.38	4.66	4.88	46.48	121.98
DK	2.72	0.22	2.36	0.23	0.18	0.33	0.55	4.37	10.95
EE	0.32	0.02	0.28	0.02	0.01	0.08	0.03	0.55	1.32
EL	3.08	0.36	2.81	0.33	0.11	0.77	0.43	5.24	13.13
ES	8.88	1.64	14.43	1.26	0.43	1.20	2.24	23.33	53.42
FI	2.04	0.19	2.03	0.21	0.10	0.75	0.29	3.22	8.83
FR	13.85	1.57	18.09	1.73	0.68	2.60	3.10	29.67	71.28
HU	2.04	0.08	1.18	0.12	0.06	0.50	0.19	1.79	5.97
IE	2.21	0.15	2.74	0.16	0.08	0.18	0.60	2.58	8.70
IT	13.46	1.73	15.25	1.88	0.57	1.92	2.12	28.94	65.88
LT	1.01	0.03	0.35	0.03	0.01	0.43	0.06	0.99	2.90
LU	0.61	0.02	0.34	0.02	0.01	0.03	0.06	0.39	1.49
LV	0.64	0.02	0.23	0.02	0.01	0.17	0.03	0.53	1.64
MT	0.17	0.02	0.11	0.01	0.00	0.01	0.01	0.20	0.55
NL	6.80	1.48	8.78	0.75	0.33	0.84	1.42	13.94	34.34
PL	4.39	0.26	5.47	0.40	0.18	1.32	0.61	6.70	19.32
PT	2.83	0.71	1.36	0.20	0.06	0.12	0.28	4.08	9.65
RO	2.60	0.21	1.79	0.18	0.06	0.55	0.19	2.80	8.38
SE	4.34	0.36	3.11	0.27	0.15	0.49	0.61	5.70	15.04
SI	0.73	0.06	0.51	0.05	0.02	0.08	0.09	1.30	2.85
SK	1.33	0.06	1.00	0.08	0.04	0.41	0.11	1.85	4.88
UK	15.49	1.85	22.82	5.80	0.85	1.60	3.96	33.49	85.86
EU-27	**130.5**	**15.7**	**148.2**	**18.4**	**5.8**	**21.2**	**23.5**	**237.3**	**600.6**
BR	2.1	0.1	8.1	0.7	0.4	0.5	1.8	15.6	29.2
CN	9.2	8.1	4.0	5.1	4.8	3.3	10.5	98.5	143.3
IN	2.2	0.4	16.3	0.1	0.5	0.6	1.7	27.1	48.9
JP	5.9	2.3	52.6	2.1	0.3	2.1	10.1	67.4	142.8
RU	5.6	1.6	21.6	1.5	0.8	0.2	1.5	30.0	62.8
US	18.3	5.6	133.0	13.0	4.9	4.1	4.1	169.9	353.0
RW	**118.9**	**21.7**	**260.9**	**29.5**	**28.6**	**13.0**	**75.9**	**162.6**	**711.1**

Embodied acid emissions in imports by main partner countries, EU-27, 2008 (%)



In 2008, almost 40 % of the acid emissions embodied in the imports of the Rest of the World originated in China, 17 % in the EU-27, and 11 % in the US. The Rest of the World and China were the main sources of acid emissions embodied in the imports of the US (48 % and 38 % respectively); 69 % of the acid emissions embodied in Chinese imports came from the Rest of the World, 7 % from the US, 6 % from the EU-27 and 6 % from Brazil.

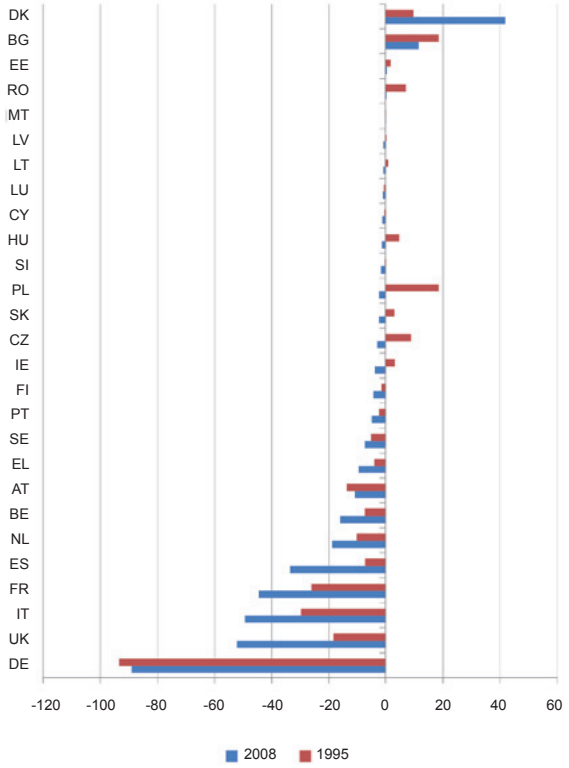
In the year 2008, 40 % of the acid emissions embodied in the imports of the EU-27 countries came from the Rest of the World, 25 % from China, 22 % from other Member States, 4 % from Russia, and 4 % the US.

D.15. Acid trade balance

Acid trade balance (kt acid-e)

	1995	2000	2005	2006	2007	2008	2008 / 1995	2008 / 1995
AT	-13.7	-10.2	-10.0	-10.4	-10.9	-11.0	2.7	-20%
BE	-7.5	-8.2	-13.0	-14.1	-14.6	-16.1	-8.6	116%
BG	18.3	13.8	10.2	13.2	13.3	11.4	-6.9	-38%
CY	-0.7	-0.6	-0.7	-0.8	-0.9	-1.3	-0.6	96%
CZ	8.7	0.2	-0.6	-1.3	-1.4	-3.1	-11.8	-136%
DE	-93.4	-83.5	-75.7	-78.1	-87.5	-89.1	4.2	-5%
DK	9.6	20.1	28.7	35.0	36.6	41.6	32.0	332%
EE	1.5	0.7	-0.1	-0.4	0.2	0.1	-1.4	-92%
EL	-4.2	-5.8	-6.0	-6.9	-8.1	-9.6	-5.4	130%
ES	-7.4	-8.8	-20.6	-24.2	-28.9	-33.6	-26.2	355%
FI	-1.6	-1.5	-2.5	-2.8	-3.5	-4.4	-2.7	169%
FR	-26.0	-25.3	-36.6	-37.7	-42.8	-44.6	-18.6	71%
HU	4.6	1.8	-1.2	-0.9	-1.2	-1.4	-6.0	-129%
IE	3.2	1.6	-0.4	-1.6	-3.3	-4.0	-7.2	-224%
IT	-29.9	-38.5	-43.2	-46.3	-48.1	-49.3	-19.4	65%
LT	0.8	0.0	-0.1	-0.3	-0.6	-1.0	-1.8	-219%
LU	-0.8	-0.9	-0.9	-0.9	-1.0	-1.1	-0.3	35%
LV	0.0	-0.3	-0.5	-0.8	-1.0	-1.0	-1.0	-6113%
MT	-0.1	-0.2	-0.1	-0.2	-0.2	-0.2	-0.1	42%
NL	-10.3	-9.8	-11.3	-13.5	-14.5	-18.9	-8.7	84%
PL	18.4	6.0	7.0	6.9	3.1	-2.4	-20.8	-113%
PT	-2.4	-3.1	-3.9	-3.7	-4.8	-5.0	-2.6	109%
RO	6.8	8.1	4.7	3.7	0.8	0.0	-6.8	-100%
SE	-5.3	-6.3	-4.3	-5.3	-7.1	-7.5	-2.2	41%
SI	-0.3	-0.4	-0.7	-1.0	-1.4	-1.8	-1.6	560%
SK	2.8	1.0	-0.7	-1.0	-2.0	-2.4	-5.3	-186%
UK	-18.4	-39.4	-45.3	-56.7	-60.1	-52.3	-34.0	185%
EU-27	**- 147**	**- 190**	**- 228**	**- 250**	**- 290**	**- 308**	**-161**	**109%**
BR	6	13	45	37	33	26	21	359%
CN	200	148	286	333	348	501	301	150%
IN	24	34	13	22	16	21	-2	-10%
JP	- 138	- 114	- 102	- 100	- 84	- 97	41	-30%
RU	21	50	9	2	- 19	- 18	-39	-183%
US	- 115	- 223	- 253	- 264	- 238	- 224	-109	95%
RW	**148**	**281**	**229**	**220**	**233**	**97**	**-51**	**-34%**

Acid trade balance, EU-27, (kt acid-e)



In 2008, the EU-27 showed the largest deficit in terms of acid emissions embodied in trade (308 kt acid-e), followed by the US (224 kt acid-e), Japan (97 kt acid-e), and Russia (18 kt acid-e). Between 1995 and 2008, the acid emissions trade deficit increased by 161 kt acid-e in the EU-27, by 109 kt acid-e in the US, by 51 kt acid-e in the Rest of the World, and by 39 kt acid-e in Russia. The countries with the largest surplus in terms of acid emissions embodied in trade were China (501 Mt), the Rest of the World (97 Mt), and Brazil (26 Mt).

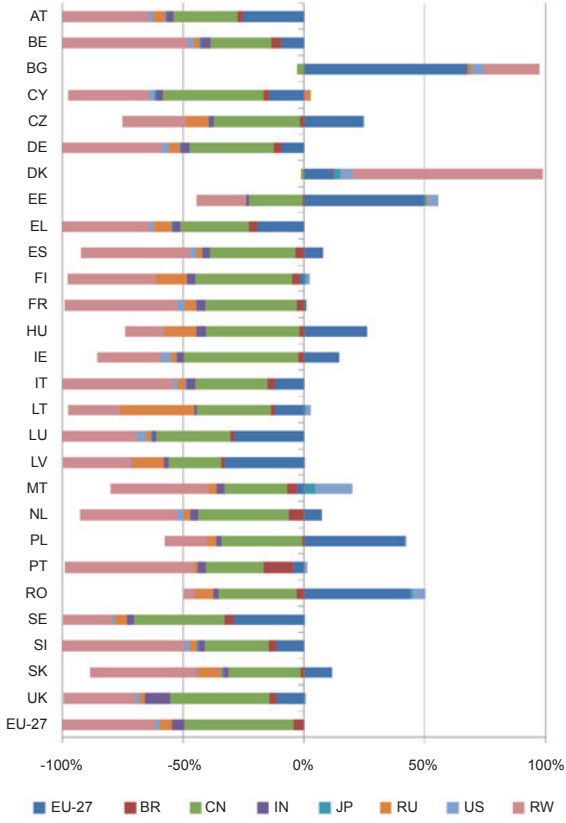
All the EU-27 countries (excluding Denmark, Bulgaria, Estonia, and Romania) showed a deficit in the acid emissions trade balance. The largest deficits were those of Germany (89 kt acid-e), the United Kingdom (52 kt acid-e), and Italy (49 kt acid-e). The largest surpluses were reported by Denmark (42 kt acid-e) and Bulgaria (11 kt acid-e).

D.16. Acid trade balance by main partner countries

Acid trade balance by main partner countries, 2008 (kt acid-e)

	EU-27	BR	CN	IN	JP	RU	US	RW	Trade Balance
AT	-2.80	-0.24	-2.94	-0.30	-0.07	-0.55	-0.24	-3.88	-11.02
BE	-1.54	-0.67	-4.05	-0.62	-0.12	-0.37	-0.40	-8.33	-16.09
BG	8.02	0.04	-0.35	0.05	0.10	0.17	0.58	2.77	11.38
CY	-0.20	-0.03	-0.56	-0.04	-0.01	0.03	-0.03	-0.45	-1.29
CZ	1.52	-0.11	-2.23	-0.11	-0.02	-0.57	0.02	-1.64	-3.13
DE	-8.31	-3.07	-30.89	-3.09	-0.72	-3.94	-2.43	-36.66	-89.11
DK	4.81	0.09	-0.56	0.20	1.31	0.11	2.02	33.67	41.64
EE	0.56	-0.01	-0.25	-0.01	0.01	0.01	0.05	-0.23	0.13
EL	-1.88	-0.34	-2.73	-0.30	-0.05	-0.71	-0.16	-3.48	-9.64
ES	3.06	-1.49	-14.02	-1.16	-0.18	-0.90	-1.01	-17.85	-33.56
FI	-0.09	-0.14	-1.82	-0.16	0.04	-0.59	0.06	-1.65	-4.35
FR	0.40	-1.41	-17.22	-1.57	-0.13	-2.13	-1.36	-21.16	-44.58
HU	0.73	-0.06	-1.08	-0.10	-0.01	-0.37	-0.00	-0.45	-1.35
IE	0.80	-0.14	-2.63	-0.15	-0.03	-0.11	-0.24	-1.46	-3.96
IT	-5.98	-1.60	-14.73	-1.75	-0.19	-1.57	-0.83	-22.68	-49.32
LT	-0.13	-0.02	-0.32	-0.01	0.01	-0.32	0.02	-0.22	-0.99
LU	-0.31	-0.02	-0.32	-0.02	-0.01	-0.02	-0.04	-0.32	-1.06
LV	-0.32	-0.01	-0.21	-0.02	0.00	-0.13	-0.01	-0.27	-0.97
MT	-0.01	-0.01	-0.09	-0.01	0.02	-0.01	0.05	-0.14	-0.21
NL	1.57	-1.40	-8.31	-0.67	-0.04	-0.63	-0.56	-8.88	-18.91
PL	6.34	-0.16	-5.07	-0.32	-0.03	-0.56	0.11	-2.68	-2.38
PT	-0.25	-0.62	-1.23	-0.18	-0.01	-0.07	0.06	-2.75	-5.05
RO	2.11	-0.16	-1.55	-0.10	0.05	-0.37	0.25	-0.22	0.02
SE	-2.18	-0.31	-2.81	-0.20	0.01	-0.40	-0.08	-1.52	-7.49
SI	-0.21	-0.05	-0.49	-0.05	-0.01	-0.05	-0.04	-0.93	-1.84
SK	0.36	-0.05	-0.94	-0.06	-0.02	-0.33	-0.02	-1.37	-2.43
UK	-6.08	-1.58	-21.67	-5.43	0.20	-1.24	-0.88	-15.67	-52.34
EU-27	**0.0**	**-13.6**	**-139.1**	**-16.2**	**0.1**	**-15.6**	**-5.1**	**-118.4**	**-307.9**
BR	13.6	0.0	-0.0	-0.4	1.9	1.1	3.9	6.1	26.2
CN	139.1	0.0	0.0	11.3	47.9	18.3	122.5	162.3	501.4
IN	16.2	0.4	-11.3	0.0	1.6	1.0	11.2	2.4	21.5
JP	-0.1	-1.9	-47.9	-1.6	0.0	-1.3	-5.2	-38.8	-96.7
RU	15.6	-1.1	-18.3	-1.0	1.3	0.0	2.7	-17.0	-17.8
US	5.1	-3.9	-122.5	-11.2	5.2	-2.7	0.0	-94.0	-224.0
RW	**118.4**	**-6.1**	**-162.3**	**-2.4**	**38.8**	**17.0**	**94.0**	**0.0**	**97.4**

Acid trade balance by main partner countries, EU-27, 2008 (%)



In 2008, the acid emissions trade balance of the EU-27 showed a deficit with all the other regions, except with Japan. The largest deficits of the EU-27 were with China (139 kt acid-e), the Rest of the World (118 kt acid-e), and India and Russia (16 kt acid-e each). China presented a trade surplus against all the other regions.

Within the EU-27 countries, the largest deficits in the acid trade balance were with China, the Rest of the World, and Russia. Some EU-27 countries showed a surplus in the acid trade balance, mostly with other Member States.

E. GHG Emissions

Basic concepts

This chapter assesses the emission of GHG to the atmosphere. The emissions of each country are calculated on the basis of the residence principle. According to this approach, each country reports the emissions generated by the residents in the country (i.e. including the emissions of residents abroad and excluding the emissions of non-residents in the national territory). This accounting framework is different from the one followed by the emissions inventories, which account for the emissions generated in the territory of the country, irrespectively of the residence of the polluter.

GHG emissions include the release to the atmosphere of three pollutants: carbon dioxide (CO_2), methane (CH_4), and nitrous oxide (N_2O). The emissions of these pollutants are aggregated according to their global warning potential and reported in terms of 'CO_2 equivalent'.

The GHG emissions intensity of Gross Value Added is a measure of the GHG generated to produce one unit worth of goods and services in a specific country. It is calculated as the quotient between the GHG emissions and the Gross Value Added at constant prices of 2008.

The concept of GHG footprint refers to the GHG generated when producing the goods and services devoted to satisfying the domestic final demand of a country (i.e. household consumption, government consumption, and investment), regardless of the country that actually emitted these substances.

The household footprint is the part of the GHG footprint related to household consumption. It distinguishes up to 9 categories of consumption.

The GHG emissions intensity of the final demand is a measure of the emissions generated to produce one unit worth of the goods and services demanded by households, government consumption, and investment activities. It is calculated as the quotient between the GHG footprint and the domestic final demand at constant prices of 2008.

The GHG footprint domestic coverage ratio shows the relation between the GHG footprint and the GHG emissions of a country. It represents the share of the GHG footprint of a country that is covered by its own emissions.

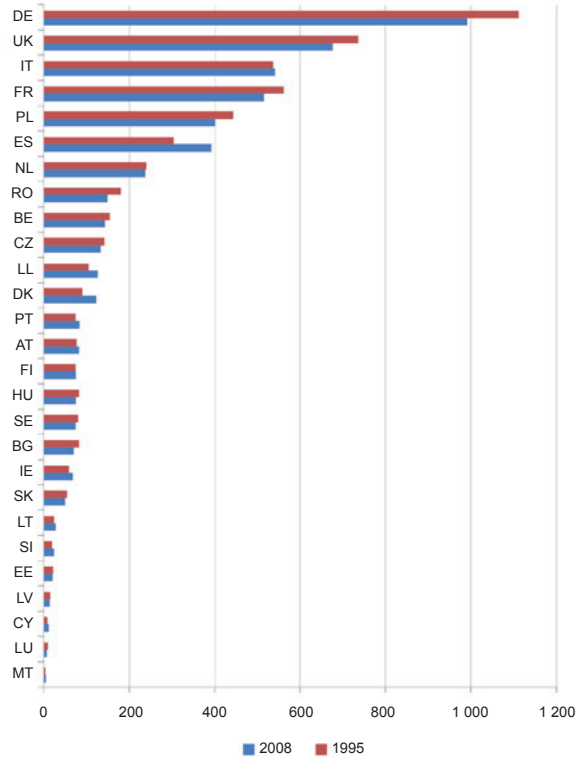
Embodied GHG emissions in exports and imports account for the emissions directly or indirectly generated to produce internationally traded goods and services. The difference between the GHG emissions embodied in exports and imports gives the GHG trade balance. A deficit/surplus in the GHG trade balance indicates that the emissions embodied in imports are greater/less than those exported. Moreover, a deficit in the GHG trade balance indicates that with the domestic emissions it is not possible to satisfy the domestic final demand (the contrary applies to a surplus). From this assertion it follows that the GHG footprint equals the GHG emission minus the trade balance.

E.1. GHG emissions

GHG emissions (Mt CO_2-e)

	1995	2000	2005	2006	2007	2008	2008 / 1995	2008 / 1995
AT	75.6	75.6	86.0	84.4	81.0	81.4	5.8	8%
BE	153.1	152.0	147.6	143.5	138.8	142.3	-10.8	-7%
BG	80.8	63.3	67.0	68.1	71.5	68.7	-12.1	-15%
CY	6.7	9.1	9.5	9.7	9.8	10.1	3.5	52%
CZ	141.0	136.3	137.7	136.8	141.8	132.0	-9.0	-6%
DE	1 110.2	1 040.6	1 007.4	1 015.2	989.2	990.3	-119.9	-11%
DK	89.3	89.4	98.3	115.9	119.2	121.6	32.3	36%
EE	20.8	18.1	19.3	18.8	21.9	20.1	-0.7	-3%
EL	104.5	120.5	129.1	127.0	130.1	124.7	20.2	19%
ES	302.7	363.2	421.3	412.6	423.5	391.4	88.7	29%
FI	73.1	72.4	73.3	84.7	82.5	74.1	1.0	1%
FR	560.1	558.7	548.6	530.0	518.5	515.1	-45.0	-8%
HU	80.5	77.2	81.2	79.5	76.9	73.4	-7.1	-9%
IE	58.3	67.2	68.1	67.6	66.9	66.7	8.5	15%
IT	536.2	557.4	575.5	562.6	551.6	539.7	3.5	1%
LT	23.3	20.7	24.8	25.7	27.7	26.5	3.2	14%
LU	8.7	4.1	5.5	5.5	5.1	4.9	-3.7	-43%
LV	13.3	10.7	12.0	12.6	13.5	13.1	-0.2	-2%
MT	2.4	2.6	2.9	2.9	3.0	2.9	0.5	20%
NL	239.1	237.7	241.2	236.2	236.8	236.5	-2.6	-1%
PL	441.8	391.8	391.5	406.4	403.5	400.0	-41.8	-9%
PT	72.4	83.9	91.0	86.6	83.9	81.8	9.5	13%
RO	179.3	135.4	149.4	154.0	152.6	146.4	-32.9	-18%
SE	78.6	74.6	76.0	75.6	74.8	72.6	-6.0	-8%
SI	18.3	18.7	20.8	21.2	21.5	23.0	4.7	26%
SK	53.1	49.1	49.8	49.6	47.5	48.5	-4.6	-9%
UK	734.5	714.4	710.4	697.2	688.0	675.4	-59.1	-8%
EU-27	**5 258**	**5 145**	**5 245**	**5 230**	**5 181**	**5 083**	**-174**	**-3%**
BR	689	750	880	873	900	930	241	35%
CN	4 511	4 519	6 846	7 365	7 862	8 394	3 883	86%
IN	1 504	1 721	1 961	2 062	2 192	2 292	788	52%
JP	1 204	1 260	1 254	1 254	1 285	1 217	13	1%
RU	2 221	2 124	2 225	2 302	2 316	2 326	105	5%
US	5 967	6 489	6 465	6 414	6 545	6 382	416	7%
RW	9 086	10 037	11 504	12 060	12 723	12 672	3 586	39%
World	**30 440**	**32 043**	**36 379**	**37 560**	**39 004**	**39 298**	**8 858**	**29%**

GHG emissions, EU-27 (Mt CO_2-e)



Between 1995 and 2008, the world's emission of GHG increased by 8.858 Mt CO_2-e to 39.298 Mt CO_2-e (+29 %). The growth in GHG emission was predominantly driven by China (+3.883 Mt CO_2-e), the Rest of the World (+3.586 Mt CO_2-e), and India (+788 Mt CO_2-e). In 2008, 32 % of the GHG were emitted in the Rest of the World, 21 % in China, 16 % in the US, and 13 % in the EU-27. Within the EU-27, in 2008, Germany released to the atmosphere 19 % of the total GHG, the United Kingdom emitted 13 %, Italy 11 %, France 10 %, and Spain and Poland 8 % each.

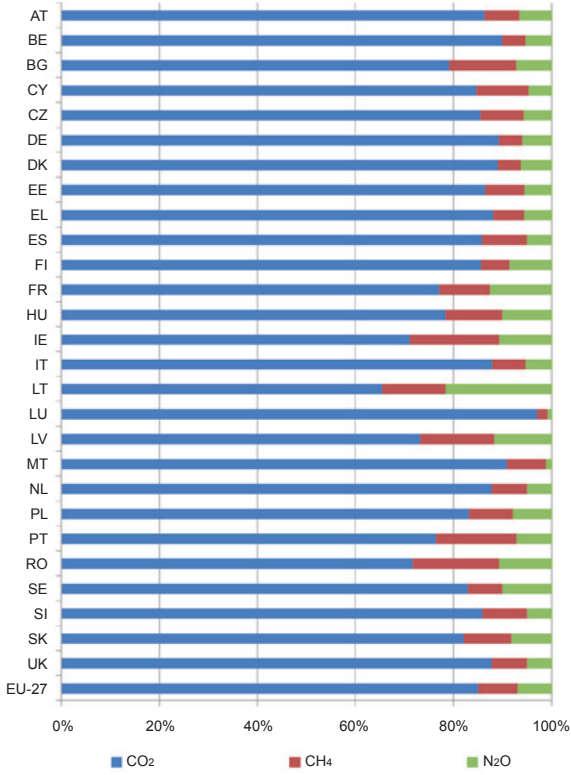
During the period 1995 – 2008, the GHG emissions in the EU-27 decreased by 3 % to 5 083 Mt CO_2-e. The largest falls in absolute terms were reported by Germany (-120 Mt CO_2-e), the United Kingdom (-59 Mt CO_2-e), and France (-45 Mt CO_2-e). In contrast, Spain (+89 Mt CO_2-e), Denmark (+32 Mt CO_2-e), and Greece (+20 Mt CO_2-e) showed the largest growth.

E.2. GHG emissions intensity of Gross Value Added

GHG emissions by type

	CO_2	CH_4	N_2O	Total
AT	70.3	5.7	5.5	81.4
BE	127.9	6.6	7.8	142.3
BG	54.3	9.4	5.0	68.7
CY	8.6	1.1	0.5	10.1
CZ	112.8	11.5	7.7	132.0
DE	882.7	47.8	59.8	990.3
DK	108.2	5.6	7.8	121.6
EE	17.4	1.6	1.1	20.1
EL	109.8	7.9	7.1	124.7
ES	335.5	36.0	19.9	391.4
FI	63.3	4.3	6.5	74.1
FR	396.7	53.4	64.9	515.1
HU	57.5	8.5	7.4	73.4
IE	47.4	12.2	7.2	66.7
IT	474.3	36.0	29.5	539.7
LT	17.4	3.4	5.7	26.5
LU	4.8	0.1	0.0	4.9
LV	9.6	2.0	1.5	13.1
MT	2.7	0.2	0.0	2.9
NL	207.4	17.1	12.0	236.5
PL	332.1	36.1	31.8	400.0
PT	62.5	13.4	6.0	81.8
RO	104.8	25.7	15.8	146.4
SE	60.2	5.1	7.4	72.6
SI	19.7	2.1	1.2	23.0
SK	39.7	4.7	4.0	48.5
UK	592.4	48.6	34.4	675.4
EU-27	**4 320**	**406**	**358**	**5 083**
BR	346	353	231	930
CN	6 398	1 366	631	8 394
IN	1 499	518	276	2 292
JP	1 173	21	23	1 217
RU	1 711	504	112	2 326
US	5 417	665	301	6 382
RW	8 766	2 322	1 584	12 672
World	**29 629**	**6 155**	**3 514**	**39 298**

GHG emissions by type, EU-27, 2008 (%)



In 2008, the emission of CO_2 accounted for 75 % of the global GHG emission. The emissions of CH_4 were the second most emitted GHG in CO_2-e with 16 % followed by N_2O (9 %). In the EU-27, the emission of CO_2 represented 85 % of total GHG, while CH_4 and N_2O amounted for 8 % and 7 % respectively. Brazil was the country in which CH_4 had the highest share in the total GHG emissions, essentially due to the emissions from livestock.

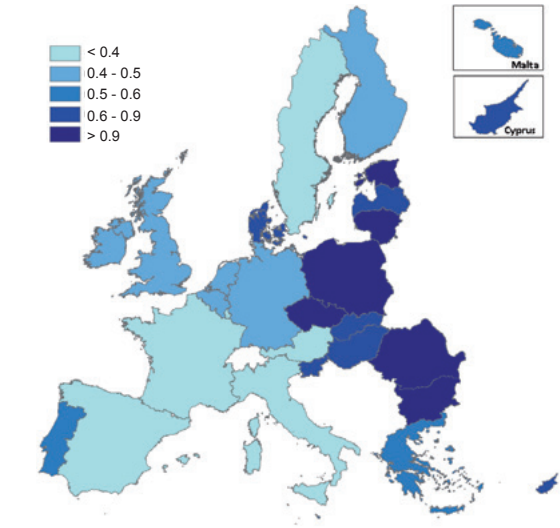
CO_2 was the GHG that was mostly emitted by Member States, being only under 75 % in Lithuania, Ireland, Romania, and Latvia.

E.3. GHG emissions by type

GHG emissions intensity of Gross Value Added

	1995	2000	2005	2006	2007	2008	2008 / 1995	2008 / 1995
AT	0.41	0.35	0.37	0.35	0.32	0.32	-0.09	-23%
BE	0.65	0.57	0.51	0.49	0.46	0.46	-0.19	-29%
BG	3.96	3.26	2.79	2.70	2.69	2.48	-1.48	-37%
CY	0.70	0.79	0.70	0.69	0.67	0.66	-0.03	-5%
CZ	1.60	1.45	1.22	1.12	1.10	0.99	-0.61	-38%
DE	0.62	0.52	0.49	0.48	0.45	0.45	-0.17	-28%
DK	0.56	0.49	0.51	0.59	0.59	0.61	0.05	8%
EE	3.27	2.06	1.51	1.34	1.47	1.41	-1.86	-57%
EL	0.79	0.78	0.68	0.64	0.63	0.59	-0.19	-24%
ES	0.47	0.46	0.46	0.44	0.43	0.39	-0.08	-16%
FI	0.72	0.56	0.51	0.56	0.51	0.46	-0.26	-36%
FR	0.42	0.36	0.33	0.31	0.30	0.29	-0.12	-30%
HU	1.35	1.08	0.94	0.89	0.85	0.81	-0.55	-40%
IE	0.79	0.59	0.46	0.44	0.41	0.42	-0.37	-47%
IT	0.45	0.42	0.42	0.40	0.39	0.38	-0.06	-14%
LT	1.78	1.27	1.04	1.00	0.99	0.92	-0.86	-49%
LU	0.43	0.16	0.18	0.17	0.14	0.14	-0.30	-68%
LV	1.47	0.91	0.69	0.65	0.64	0.63	-0.83	-57%
MT	0.71	0.61	0.64	0.64	0.62	0.56	-0.14	-20%
NL	0.64	0.53	0.50	0.48	0.46	0.45	-0.20	-31%
PL	2.43	1.69	1.46	1.43	1.33	1.25	-1.18	-48%
PT	0.67	0.65	0.66	0.61	0.57	0.55	-0.12	-18%
RO	2.20	1.77	1.48	1.42	1.32	1.17	-1.03	-47%
SE	0.39	0.31	0.28	0.27	0.25	0.25	-0.15	-37%
SI	0.98	0.81	0.75	0.72	0.68	0.70	-0.27	-28%
SK	1.68	1.31	1.06	0.96	0.83	0.80	-0.88	-53%
UK	0.62	0.51	0.45	0.43	0.41	0.41	-0.22	-35%
EU-27	**0.63**	**0.54**	**0.50**	**0.48**	**0.47**	**0.45**	**-0.18**	**-29%**
BR	1.08	1.03	1.05	1.01	0.99	0.97	-0.11	-10%
CN	5.04	3.33	3.17	3.02	2.82	2.73	-2.31	-46%
IN	4.48	3.82	3.07	2.93	2.83	2.75	-1.73	-39%
JP	0.43	0.43	0.40	0.39	0.39	0.37	-0.06	-13%
RU	3.75	3.56	2.82	2.70	2.51	2.40	-1.35	-36%
US	0.91	0.79	0.70	0.67	0.67	0.65	-0.25	-28%
RW	1.58	1.51	1.60	1.63	1.67	1.66	0.08	5%
World	**1.18**	**1.05**	**1.05**	**1.05**	**1.05**	**1.04**	**-0.13**	**-11%**

GHG emissions intensity of Gross Value Added, EU-27, 2008 (kg CO_2-e/EUR)



Between 1995 and 2008, the world's GHG intensity of the Gross Value Added decreased by 11 %, while in the EU-27 it fell by 29 %. In China and India, the reductions of the GHG intensity amounted to 2.3 and 1.7 kg CO_2-e/EUR respectively. In 2008, the regions with the highest GHG intensity per unit of Gross Value Added were India (2.8 kg CO_2-e/EUR), China (2.7 kg CO_2-e/EUR), Russia (2.4 kg CO_2-e/EUR), the Rest of the World (1.7 kg CO_2-e/EUR), and Brazil (0.97 kg CO_2-e/EUR). Japan showed the lowest GHG intensity (0.37 kg CO_2-e/EUR), followed by the EU-27 (0.45 kg CO_2-e/EUR) and the US (0.65 kg CO_2-e/EUR).

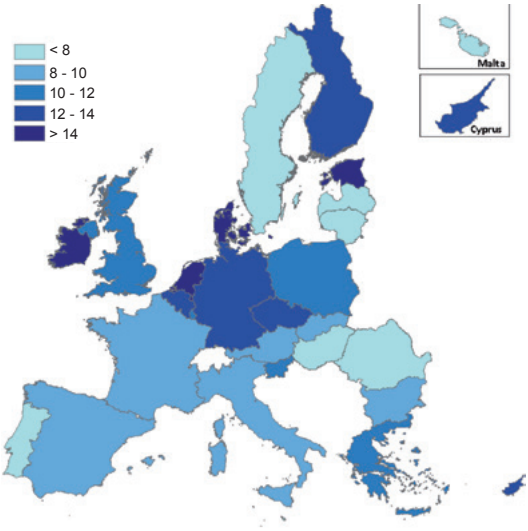
In this period, all EU-27 Member States except Denmark reduced their GHG intensity. Bulgaria, Estonia, Poland, Romania, and the Czech Republic turned out to be the top EU-27 countries with the highest GHG intensities in 2008. Luxembourg, Sweden, France, Austria, and Italy were the Member States with the lowest GHG intensities in the same year.

E.4. GHG emissions per capita

GHG emissions per capita (t CO_2-e/cap)

	1995	2000	2005	2006	2007	2008	2008 / 1995	2008 / 1995
AT	9.5	9.4	10.5	10.2	9.8	9.8	0.3	3%
BE	15.1	14.8	14.1	13.7	13.1	13.3	-1.8	-12%
BG	9.6	7.7	8.6	8.8	9.3	9.0	-0.6	-6%
CY	10.3	13.2	12.6	12.6	12.6	12.8	2.5	24%
CZ	13.6	13.3	13.5	13.3	13.8	12.7	-0.9	-7%
DE	13.6	12.7	12.2	12.3	12.0	12.0	-1.6	-12%
DK	17.1	16.8	18.2	21.3	21.9	22.2	5.1	30%
EE	14.4	13.2	14.3	14.0	16.3	15.0	0.6	4%
EL	9.9	11.1	11.7	11.4	11.6	11.1	1.3	13%
ES	7.7	9.1	9.8	9.4	9.5	8.6	1.0	12%
FI	14.3	14.0	14.0	16.1	15.6	14.0	-0.4	-2%
FR	9.4	9.2	8.7	8.4	8.1	8.0	-1.4	-15%
HU	7.8	7.6	8.0	7.9	7.6	7.3	-0.5	-6%
IE	16.2	17.8	16.6	16.1	15.5	15.2	-1.0	-6%
IT	9.4	9.8	9.8	9.6	9.3	9.1	-0.4	-4%
LT	6.4	5.9	7.2	7.5	8.2	7.9	1.5	23%
LU	21.3	9.5	12.0	11.8	10.7	10.2	-11.2	-52%
LV	5.3	4.5	5.2	5.5	5.9	5.8	0.4	8%
MT	6.6	6.8	7.1	7.2	7.3	7.1	0.5	8%
NL	15.5	15.0	14.8	14.5	14.5	14.4	-1.1	-7%
PL	11.5	10.1	10.3	10.7	10.6	10.5	-1.0	-8%
PT	7.2	8.2	8.6	8.2	7.9	7.7	0.5	7%
RO	7.9	6.0	6.9	7.1	7.1	6.8	-1.1	-14%
SE	8.9	8.4	8.4	8.4	8.2	7.9	-1.0	-11%
SI	9.2	9.4	10.4	10.6	10.7	11.4	2.2	24%
SK	9.9	9.1	9.3	9.2	8.8	9.0	-0.9	-9%
UK	12.7	12.2	11.8	11.5	11.3	11.0	-1.6	-13%
EU-27	**11.0**	**10.7**	**10.7**	**10.6**	**10.5**	**10.2**	**-0.8**	**-7%**
BR	4.3	4.3	4.7	4.6	4.7	4.9	0.6	14%
CN	3.7	3.6	5.2	5.6	5.9	6.3	2.6	70%
IN	1.6	1.6	1.7	1.8	1.9	1.9	0.4	23%
JP	9.7	10.0	9.9	9.9	10.2	9.6	-0.1	-1%
RU	14.9	14.5	15.5	16.0	16.2	16.2	1.3	9%
US	22.4	23.0	21.8	21.4	21.7	20.9	-1.5	-7%
RW	3.8	3.9	4.1	4.2	4.4	4.3	0.4	12%
World	**5.3**	**5.2**	**5.6**	**5.7**	**5.9**	**5.8**	**0.5**	**10%**

GHG emissions per capita, EU-27, 2008 (t CO_2-e/cap)



The global emissions of GHG per inhabitant between 1995 and 2008 increased by 0.51 t CO_2e to 5.8 t CO_2-e/cap (+10 %), while in the EU-27 it reduced by 0.77 t CO_2-e to 10.2 t CO_2-e/cap (-7 %). In China, Russia, and Brazil the emission of GHG grew by 2.6, 1.3, and 0.6 t CO_2-e/cap, respectively; in the US there was a reduction of 1.5 t CO_2-e/cap.

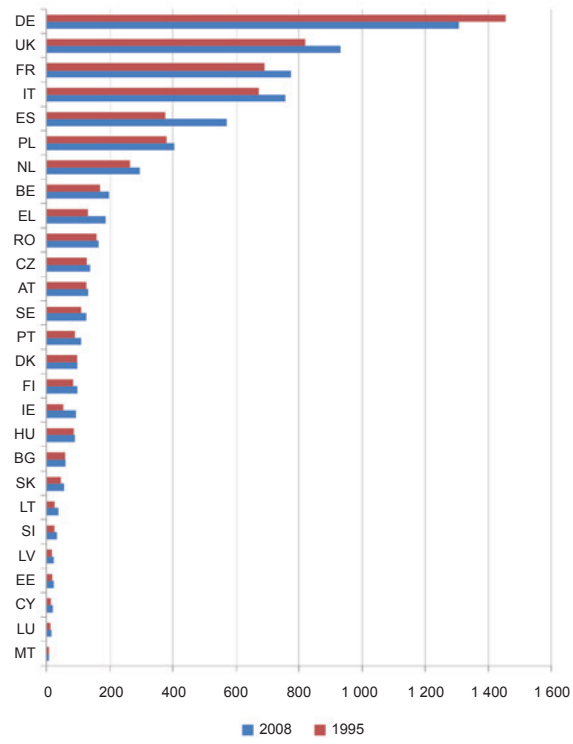
In 2008, the regions with the highest GHG emission per capita were the US (20.9 t CO_2-e/cap), Russia (16.2 t CO_2-e/cap), the EU-27 (10.2 t CO_2-e/cap), Japan (9.6 t CO_2-e/cap), and China (6.3 t CO_2-e/cap). Concerning the EU-27, Denmark, Ireland, Estonia, the Netherlands, and Finland were the top five countries in terms of GHG emission per capita. In contrast, Latvia, Romania, Malta, Hungary, and Portugal reported the lowest GHG emission per capita.

E.5. GHG footprint

GHG footprint (Mt CO_2-e)

	1995	2000	2005	2006	2007	2008	2008 / 1995	2008 / 1995
AT	124.3	121.3	134.6	131.4	128.9	130.4	6.1	5%
BE	167.6	166.7	187.0	186.7	184.0	195.2	27.5	16%
BG	56.6	47.2	53.5	50.0	55.1	57.2	0.6	1%
CY	10.9	14.0	14.0	14.2	14.8	18.1	7.2	67%
CZ	124.7	131.3	130.5	131.4	134.6	135.5	10.8	9%
DE	1 452.9	1 382.4	1 295.2	1 294.8	1 288.7	1 304.9	-148.0	-10%
DK	94.0	82.5	89.8	95.5	96.3	96.0	2.1	2%
EE	16.5	17.4	20.0	20.0	22.1	19.5	3.0	18%
EL	129.0	157.1	173.3	174.0	184.8	185.4	56.4	44%
ES	373.1	451.9	562.6	571.2	601.3	569.2	196.0	53%
FI	81.9	84.7	91.5	99.1	99.4	95.7	13.8	17%
FR	688.5	709.8	769.8	750.5	766.1	772.2	83.7	12%
HU	84.4	91.0	100.1	95.9	92.0	88.4	4.0	5%
IE	50.9	67.4	79.7	83.4	90.5	91.1	40.2	79%
IT	670.9	739.6	777.2	768.9	768.8	754.8	83.8	12%
LT	23.7	26.9	30.5	32.6	37.3	35.4	11.7	49%
LU	9.3	9.6	11.7	11.7	11.8	11.6	2.3	24%
LV	14.5	13.7	16.5	18.8	20.9	20.2	5.7	39%
MT	4.0	4.5	4.3	4.6	4.7	4.8	0.8	20%
NL	262.9	269.2	280.8	279.0	284.2	293.0	30.1	11%
PL	377.7	382.3	361.4	377.8	386.4	402.2	24.5	6%
PT	87.8	104.7	111.8	107.5	107.6	106.7	18.9	22%
RO	155.5	121.3	147.2	156.7	164.9	163.2	7.6	5%
SE	106.8	112.1	116.9	120.6	124.1	123.1	16.3	15%
SI	22.1	24.0	25.3	25.3	27.2	30.4	8.2	37%
SK	42.9	44.8	48.0	49.4	50.9	53.7	10.8	25%
UK	818.0	896.5	973.8	974.3	980.4	930.3	112.4	14%
EU-27	**6 051**	**6 274**	**6 607**	**6 625**	**6 728**	**6 688**	**636**	**11%**
BR	673	714	751	770	818	877	203	30%
CN	3 821	3 965	5 486	5 775	6 159	6 264	2 442	64%
IN	1 396	1 568	1 884	1 946	2 101	2 183	787	56%
JP	1 693	1 673	1 673	1 652	1 621	1 613	-81	-5%
RU	1 701	1 232	1 522	1 618	1 753	1 785	85	5%
US	6 332	7 374	7 743	7 721	7 691	7 411	1 079	17%
RW	8 772	9 244	10 714	11 454	12 133	12 478	3 705	42%
World	**30 440**	**32 043**	**36 379**	**37 560**	**39 004**	**39 298**	**8 858**	**29%**

GHG footprint, EU-27 (Mt CO_2-e)



The global GHG footprint in 2008 amounted to 39.298 Mt CO_2-e (+29 % increase compared to 1995). The Rest of the World was the region with the largest growht (+3.705 Mt CO_2-e), followed by China (+2.442 Mt CO_2-e), the US (+1.079 Mt CO_2-e), India (+787 Mt CO_2-e), and the EU-27 (+636 Mt CO_2-e). In 2008, the Rest of the World was responsible for 32 % of global GHG footprint, while the US held 19 %, the EU-27 17 %, and China 16 %.

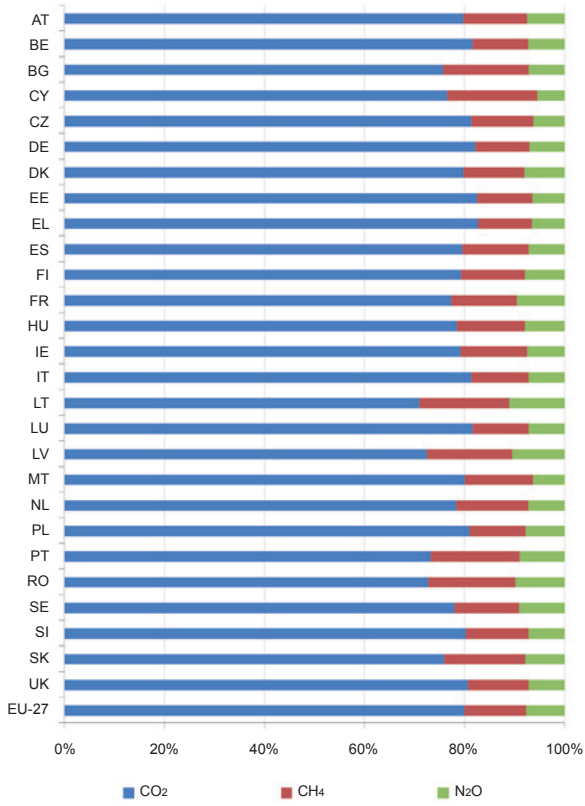
Within the EU-27, in 2008 Germany (20 %), the United Kingdom (14 %), France (12 %), Italy (11 %), and Spain (9 %) summed up almost two-thirds of the EU-27 total GHG footprint. Between 1995 and 2008, the GHG footprint of the EU-27 increased by 11 %. This indicator also followed a growing trend in all of the Member States except Germany. The three largest contributors to the increase of the European GHG footprint were Spain (+196 kt Mt CO_2-e), the United Kingdom (+112 kt Mt CO_2-e), and Italy (+84 kt Mt CO_2-e).

E.6. GHG footprint by type

GHG footprint by type, 2008 (Mt CO_2-e)

	CO_2	CH_4	N_2O	Total
AT	103.9	16.6	9.8	130.4
BE	159.0	21.8	14.4	195.2
BG	43.2	9.8	4.1	57.2
CY	13.8	3.3	1.0	18.1
CZ	110.1	16.8	8.6	135.5
DE	1 070.6	143.2	91.2	1 304.9
DK	76.5	11.7	7.8	96.0
EE	16.1	2.2	1.3	19.5
EL	153.2	20.0	12.2	185.4
ES	452.5	75.4	41.3	569.2
FI	75.8	12.2	7.6	95.7
FR	596.4	101.8	74.0	772.2
HU	69.3	12.0	7.1	88.4
IE	72.1	12.1	6.9	91.1
IT	613.3	87.4	54.0	754.8
LT	25.1	6.4	3.9	35.4
LU	9.4	1.3	0.8	11.6
LV	14.6	3.4	2.1	20.2
MT	3.8	0.7	0.3	4.8
NL	229.2	42.4	21.4	293.0
PL	325.4	45.4	31.4	402.2
PT	78.0	19.0	9.7	106.7
RO	118.5	28.5	16.1	163.2
SE	96.0	15.9	11.3	123.1
SI	24.4	3.8	2.2	30.4
SK	40.7	8.7	4.3	53.7
UK	749.9	113.3	67.2	930.3
EU-27	**5 341**	**835**	**512**	**6 688**
BR	409	285	183	877
CN	4 646	1 075	543	6 264
IN	1 446	476	261	2 183
JP	1 386	146	80	1 613
RU	1 323	325	138	1 785
US	6 211	830	370	7 411
RW	8 867	2 183	1 428	12 478
World	**29 628**	**6 155**	**3 514**	**39 298**

GHG footprint by type, EU-27, 2008 (%)



In 2008, 75 % of the global GHG footprint consisted of CH_4. Emissions of CH_4 constituted the second source of GHG at the global level (16 %) followed by N_2O (9 %). Regarding the EU-27, CO_2 represented 80 % of the GHG footprint, CH_4 12 %, and N_2O 8 %.

The CO_2 component of the EU-27 GHG footprint was the most important in all Member States, with shares ranging from 71 % to 73 %.

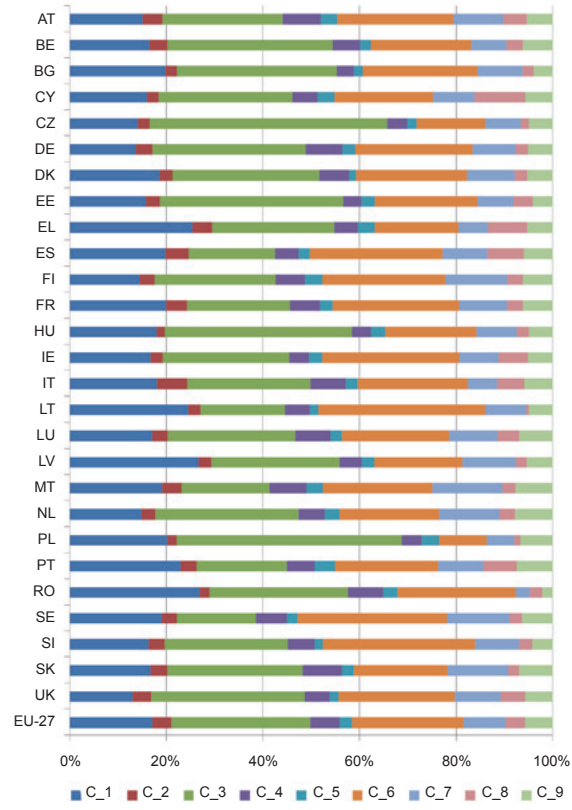
E.7. Household GHG footprint by consumption category

Household GHG footprint by consumption category, 2008 (Mt CO_2-e)

	C_1	C_2	C_3	C_4	C_5	C_6	C_7	C_8	C_9
AT	13.3	3.6	21.9	6.8	3.0	21.2	9.1	4.2	4.8
BE	22.1	4.8	45.8	7.6	3.1	27.6	9.8	4.5	8.3
BG	7.5	0.9	12.4	1.3	0.7	8.9	3.6	0.8	1.5
CY	2.0	0.3	3.5	0.7	0.4	2.6	1.1	1.3	0.7
CZ	13.6	2.4	47.7	4.0	1.8	13.9	7.1	1.6	4.8
DE	128.4	33.3	299.1	71.7	25.8	229.1	84.5	23.4	48.6
DK	11.9	1.8	19.5	3.9	0.9	14.7	6.4	1.7	3.4
EE	2.1	0.4	5.1	0.5	0.4	2.9	1.0	0.5	0.6
EL	35.6	5.6	35.4	6.9	4.9	24.2	8.6	11.4	7.4
ES	77.5	18.6	70.1	18.9	8.8	107.6	36.0	29.5	23.6
FI	8.9	1.9	15.5	3.8	2.2	15.7	7.9	2.0	3.8
FR	113.4	24.6	121.3	35.6	14.7	149.7	56.3	18.7	34.9
HU	10.7	1.0	23.0	2.4	1.8	11.2	5.0	1.4	3.0
IE	11.0	1.7	17.2	2.7	1.8	18.8	5.3	4.0	3.4
IT	99.4	34.9	140.5	40.1	13.6	126.1	33.6	30.9	32.5
LT	6.4	0.7	4.6	1.3	0.5	9.0	2.2	0.2	1.3
LU	1.3	0.2	2.0	0.5	0.2	1.6	0.7	0.3	0.5
LV	3.7	0.4	3.7	0.6	0.4	2.5	1.5	0.3	0.8
MT	0.7	0.1	0.7	0.3	0.1	0.8	0.5	0.1	0.3
NL	29.3	5.7	58.4	10.8	5.7	40.9	24.5	6.2	15.6
PL	59.9	6.0	138.8	12.0	11.0	29.4	16.8	4.1	19.8
PT	17.4	2.5	14.2	4.4	3.2	16.1	7.2	5.3	5.7
RO	30.2	2.3	32.3	8.2	3.1	27.7	3.2	2.9	2.5
SE	15.2	2.6	13.0	5.1	1.9	24.7	10.4	2.0	5.1
SI	3.4	0.7	5.3	1.2	0.4	6.6	1.9	0.6	0.9
SK	6.0	1.2	10.1	2.9	0.9	7.0	4.5	0.8	2.5
UK	95.2	26.9	231.9	37.1	13.6	174.6	69.2	36.4	41.9
EU-27	**826**	**185**	**1 393**	**291**	**125**	**1 115**	**418**	**195**	**278**
BR	274	19	75	20	18	111	72	35	43
CN	758	94	587	65	185	397	229	101	150
IN	531	61	254	52	23	198	152	46	60
JP	170	47	260	57	41	217	87	58	80
RU	254	54	288	66	30	243	120	23	84
US	662	175	1 813	267	353	1 106	395	257	551
RW	2 392	288	1 940	381	296	1 796	946	313	509
World	**5 867**	**922**	**6 609**	**1 198**	**1 072**	**5 184**	**2 419**	**1 028**	**1 755**

NB: C_1: Food, drinks, and tobacco; C_2: Clothing and footwear; C_3: Housing, fuel, and power; C_4: Household goods and services; C_5: Health and education; C_6: Transport and communications; C_7: Recreation and culture; C_8: Restaurants and hotels; C_9: Miscellaneous goods and services.

Household GHG footprint by consumption category, EU-27, 2008 (%)



In 2008, housing, fuel, and power drove 25 % of the global GHG footprint of households. Food, drinks, and tobacco were responsible for 23 % of the GHG footprint, and transport and communication activities summed up 20 %, and recreation and culture 9 %.

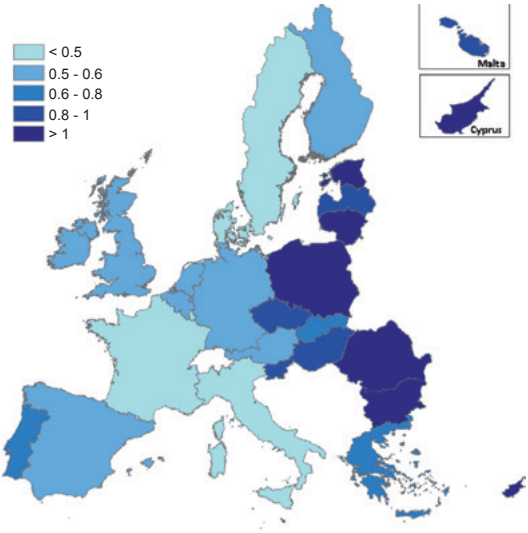
In the EU-27, housing, fuel, and power (29 %), transport and communication (23 %), food, drinks, and tobacco (17 %), and recreation and culture (9 %) were also the consumption activities that caused most of the GHG footprint.

E.8. GHG footprint intensity of final demand

GHG footprint intensity of final demand (kg CO_2-e/EUR)

	1995	2000	2005	2006	2007	2008	2008 / 1995	2008 / 1995
AT	0.62	0.55	0.55	0.52	0.50	0.50	-0.12	-20%
BE	0.65	0.57	0.60	0.58	0.56	0.58	-0.07	-11%
BG	2.42	2.19	2.00	1.67	1.72	1.69	-0.73	-30%
CY	1.02	1.11	0.93	0.91	0.89	1.03	0.01	1%
CZ	1.44	1.29	1.03	0.95	0.92	0.90	-0.55	-38%
DE	0.77	0.67	0.61	0.60	0.58	0.59	-0.19	-24%
DK	0.56	0.43	0.43	0.45	0.44	0.45	-0.11	-20%
EE	2.29	1.79	1.44	1.28	1.36	1.31	-0.98	-43%
EL	0.86	0.87	0.81	0.76	0.78	0.77	-0.08	-10%
ES	0.52	0.51	0.55	0.54	0.54	0.51	-0.01	-2%
FI	0.74	0.62	0.59	0.63	0.60	0.57	-0.17	-23%
FR	0.51	0.44	0.44	0.41	0.41	0.41	-0.10	-19%
HU	1.35	1.00	1.00	0.91	0.85	0.82	-0.53	-39%
IE	0.59	0.54	0.51	0.50	0.51	0.53	-0.06	-10%
IT	0.51	0.51	0.51	0.49	0.49	0.49	-0.02	-4%
LT	1.60	1.46	1.20	1.18	1.25	1.13	-0.47	-29%
LU	0.59	0.42	0.40	0.39	0.37	0.36	-0.24	-40%
LV	1.31	1.04	0.86	0.88	0.89	0.90	-0.42	-32%
MT	0.98	0.93	0.88	0.89	0.90	0.87	-0.11	-11%
NL	0.66	0.55	0.55	0.53	0.52	0.53	-0.13	-20%
PL	2.07	1.52	1.24	1.19	1.14	1.12	-0.95	-46%
PT	0.66	0.67	0.69	0.66	0.64	0.62	-0.04	-6%
RO	2.17	1.52	1.31	1.29	1.25	1.16	-1.01	-46%
SE	0.48	0.43	0.41	0.41	0.41	0.41	-0.07	-15%
SI	1.01	0.90	0.80	0.77	0.75	0.82	-0.19	-19%
SK	1.63	1.31	0.96	0.88	0.81	0.79	-0.84	-51%
UK	0.68	0.63	0.60	0.59	0.57	0.54	-0.14	-20%
EU-27	**0.69**	**0.62**	**0.59**	**0.58**	**0.57**	**0.56**	**-0.13**	**-19%**
BR	0.91	0.88	0.84	0.83	0.83	0.84	-0.07	-8%
CN	4.47	3.11	2.50	2.32	2.13	1.94	-2.53	-57%
IN	3.59	2.99	2.60	2.42	2.40	2.38	-1.22	-34%
JP	0.54	0.52	0.50	0.49	0.48	0.49	-0.05	-9%
RU	3.79	2.67	2.30	2.23	2.15	2.09	-1.70	-45%
US	0.91	0.86	0.79	0.77	0.76	0.74	-0.17	-18%
RW	1.89	1.75	1.86	1.90	1.93	1.91	0.02	1%
World	**1.18**	**1.05**	**1.05**	**1.05**	**1.05**	**1.04**	**-0.13**	**-11%**

GHG footprint intensity of final demand, EU-27, 2008 (kg CO_2-e/EUR)



The world's GHG footprint intensity of final demand totalled 1.04 kg CO_2-e/EUR in 2008, decreasing by 11 % from its 1995 level, while in the EU-27 it decreased by 19 % to reach 0.56 kg CO_2-e/EUR. China, Russia, and India registered the largest reductions. In 2008, the top five regions with the largest GHG intensity per unit of final demand were India (2.4 kg CO_2-e/EUR), Russia (2.1 kg CO_2-e/EUR), China (1.9 kg CO_2-e/EUR), the Rest of the World (1.9 kg CO_2-e/EUR), and Brazil (0.84 kg CO_2-e/EUR). Japan showed the lowest GHG intensity (0.49 kg CO_2-e/EUR), followed by the EU-27 (0.56 kg CO_2-e/EUR), and the US (0.74 kg CO_2-e/EUR)

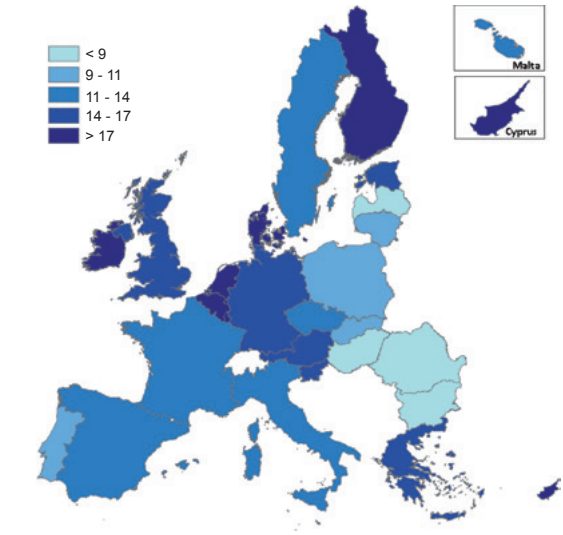
Within the EU-27, all the Member States, except Cyprus, reduced their GHG footprint intensity. Romania (-1 kg CO_2-e/EUR), Estonia (-0.98 kg CO_2-e/EUR), and Poland (-0.95 kg CO_2-e/EUR) showed the largest drops. In 2008, Bulgaria (1.7 kg CO_2-e/EUR), Estonia (1.3 kg CO_2-e/EUR), Romania (1.2 kg CO_2-e/EUR), Lithuania (1.1 kg CO_2-e/EUR), and Poland (1.1 kg CO_2-e/EUR) ranked the top in terms of the GHG footprint intensities, while Luxembourg (0.36 kg CO_2-e/EUR), France (0.41 kg CO_2-e/EUR), Sweden (0.41 kg CO_2-e/EUR), Denmark (0.45 kg CO_2-e/EUR), and Italy (0.49 kg CO_2-e/EUR) ranked the lowest.

E.9. GHG footprint per capita

GHG footprint per capita (t CO_2-e/cap)

	1995	2000	2005	2006	2007	2008	2008 / 1995	2008 / 1995
AT	15.6	15.2	16.4	15.9	15.6	15.7	0.0	0%
BE	16.5	16.3	17.9	17.8	17.4	18.3	1.8	11%
BG	6.7	5.8	6.9	6.5	7.2	7.5	0.8	11%
CY	16.8	20.2	18.6	18.6	19.0	22.9	6.1	36%
CZ	12.1	12.8	12.8	12.8	13.1	13.1	1.0	8%
DE	17.8	16.8	15.7	15.7	15.7	15.9	-1.9	-11%
DK	18.0	15.5	16.6	17.6	17.7	17.5	-0.5	-3%
EE	11.4	12.7	14.8	14.9	16.4	14.6	3.2	28%
EL	12.2	14.4	15.6	15.6	16.5	16.5	4.4	36%
ES	9.5	11.3	13.1	13.1	13.5	12.6	3.1	33%
FI	16.1	16.4	17.5	18.9	18.8	18.0	2.0	12%
FR	11.6	11.7	12.3	11.9	12.0	12.1	0.5	4%
HU	8.2	8.9	9.9	9.5	9.1	8.8	0.6	8%
IE	14.2	17.9	19.4	19.8	21.0	20.7	6.5	46%
IT	11.8	13.0	13.3	13.1	13.0	12.7	0.9	7%
LT	6.5	7.7	8.9	9.6	11.0	10.5	4.0	62%
LU	22.9	22.2	25.5	25.0	24.8	23.9	1.0	4%
LV	5.8	5.7	7.2	8.2	9.2	8.9	3.1	53%
MT	10.8	11.9	10.8	11.3	11.6	11.7	0.9	8%
NL	17.0	17.0	17.2	17.1	17.4	17.9	0.8	5%
PL	9.8	9.9	9.5	9.9	10.1	10.6	0.8	8%
PT	8.8	10.3	10.6	10.2	10.1	10.1	1.3	15%
RO	6.8	5.4	6.8	7.2	7.6	7.6	0.7	11%
SE	12.1	12.6	13.0	13.3	13.6	13.4	1.3	11%
SI	11.1	12.1	12.6	12.6	13.5	15.1	4.0	36%
SK	8.0	8.3	8.9	9.2	9.4	9.9	1.9	24%
UK	14.1	15.3	16.2	16.1	16.1	15.2	1.1	8%
EU-27	**12.6**	**13.0**	**13.5**	**13.4**	**13.6**	**13.4**	**0.8**	**6%**
BR	4.2	4.1	4.0	4.1	4.3	4.6	0.4	10%
CN	3.1	3.1	4.2	4.4	4.7	4.7	1.6	50%
IN	1.4	1.5	1.7	1.7	1.8	1.8	0.4	27%
JP	13.6	13.3	13.2	13.1	12.8	12.7	-0.9	-6%
RU	11.4	8.4	10.6	11.3	12.2	12.5	1.0	9%
US	23.8	26.1	26.1	25.8	25.4	24.3	0.5	2%
RW	3.7	3.6	3.8	4.0	4.2	4.2	0.5	14%
World	**5.3**	**5.2**	**5.6**	**5.7**	**5.9**	**5.8**	**0.5**	**10%**

GHG footprint per capita, EU-27, 2008 (t CO_2-e/cap)



Between 1995 and 2008, the world's GHG footprint per capita grew from 5.3 to 5.8 t CO_2-e/cap (+10 %). Most regions (excluding Japan) experimented an increase in the GHG footprint, particularly China (+1.6 t CO_2-e/cap), Russia (+1 t CO_2-e/cap), and the EU-27 (+0.8 t CO_2-e/cap). In contrast, Japan reduced its GHG footprint by 0.9 t CO_2-e/cap to 12.7 t CO_2-e/cap.

In 2008, the regions with the highest GHG footprint per capita were the US (24.3 t CO_2-e/cap), the EU-27 (13.4 t CO_2-e/cap), Japan (12.7 t CO_2-e/cap), Russia (12.5 t CO_2-e/cap), and China (4.7 t CO_2-e/cap). In the EU-27, Luxembourg (23.9 t CO_2-e/cap), Cyprus (22.9 t CO_2-e/cap), and Ireland (20.7 t CO_2-e/cap) were the Member States with the highest GHG footprint. Bulgaria (7.5 t CO_2-e/cap), Romania (7.6 t CO_2-e/cap), and Hungary (8.8 t CO_2-e/cap) showed the lowest GHG emissions per capita.

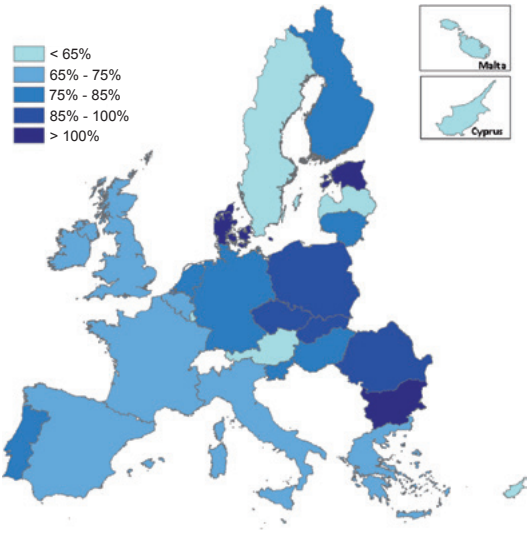
Between 1995 and 2008, Germany and Denmark were the only Member States that registered a reduction in terms of GHG footprint per capita. On the other hand, Ireland, Cyprus, and Greece showed the highest growht.

E.10. GHG footprint domestic coverage ratio

GHG footprint domestic coverage ratio (%)

	1995	2000	2005	2006	2007	2008	2008 / 1995	2008 / 1995
AT	61%	62%	64%	64%	63%	62%	2%	3%
BE	91%	91%	79%	77%	75%	73%	-18%	-20%
BG	143%	134%	125%	136%	130%	120%	-23%	-16%
CY	61%	65%	68%	68%	66%	56%	-5%	-9%
CZ	113%	104%	106%	104%	105%	97%	-16%	-14%
DE	76%	75%	78%	78%	77%	76%	-1%	-1%
DK	95%	108%	110%	121%	124%	127%	32%	33%
EE	126%	104%	96%	94%	99%	103%	-23%	-18%
EL	81%	77%	75%	73%	70%	67%	-14%	-17%
ES	81%	80%	75%	72%	70%	69%	-12%	-15%
FI	89%	86%	80%	85%	83%	77%	-12%	-13%
FR	81%	79%	71%	71%	68%	67%	-15%	-18%
HU	95%	85%	81%	83%	84%	83%	-12%	-13%
IE	114%	100%	85%	81%	74%	73%	-41%	-36%
IT	80%	75%	74%	73%	72%	72%	-8%	-11%
LT	99%	77%	81%	79%	74%	75%	-24%	-24%
LU	93%	43%	47%	47%	43%	43%	-50%	-54%
LV	92%	78%	73%	67%	64%	65%	-27%	-29%
MT	61%	57%	66%	64%	63%	61%	-0%	-0%
NL	91%	88%	86%	85%	83%	81%	-10%	-11%
PL	117%	102%	108%	108%	104%	99%	-18%	-15%
PT	82%	80%	81%	81%	78%	77%	-6%	-7%
RO	115%	112%	102%	98%	93%	90%	-26%	-22%
SE	74%	67%	65%	63%	60%	59%	-15%	-20%
SI	83%	78%	82%	84%	79%	76%	-7%	-8%
SK	124%	110%	104%	100%	93%	90%	-34%	-27%
UK	90%	80%	73%	72%	70%	73%	-17%	-19%
EU-27	**87%**	**82%**	**79%**	**79%**	**77%**	**76%**	**-11%**	**-13%**
BR	102%	105%	117%	113%	110%	106%	4%	4%
CN	118%	114%	125%	128%	128%	134%	16%	14%
IN	108%	110%	104%	106%	104%	105%	-3%	-3%
JP	71%	75%	75%	76%	79%	75%	4%	6%
RU	131%	172%	146%	142%	132%	130%	-0%	-0%
US	94%	88%	83%	83%	85%	86%	-8%	-9%
RW	104%	109%	107%	105%	105%	102%	-2%	-2%
World	**100%**	**100%**	**100%**	**100%**	**100%**	**100%**	**0%**	**0%**

GHG footprint domestic coverage ratio, EU-27, 2008 (%)



In 2008, the share of the GHG footprint covered with domestic GHG was below 100 % in Japan (75 %), the EU-27 (76 %), and the US (86 %). On the contrary, China presented one of the highest coverage ratios (134 %), followed by Russia (130 %), Brazil (106 %), India (105 %), and the Rest of the World (102 %).

During the period 1995 – 2008, the US reduced its domestic coverage ratio from 94 % to 86 %, the largest decrease among non-EU countries; India reduced its coverage ratio by from 108 % to 105 %. China's GHG footprint coverage ratio had the largest increase.

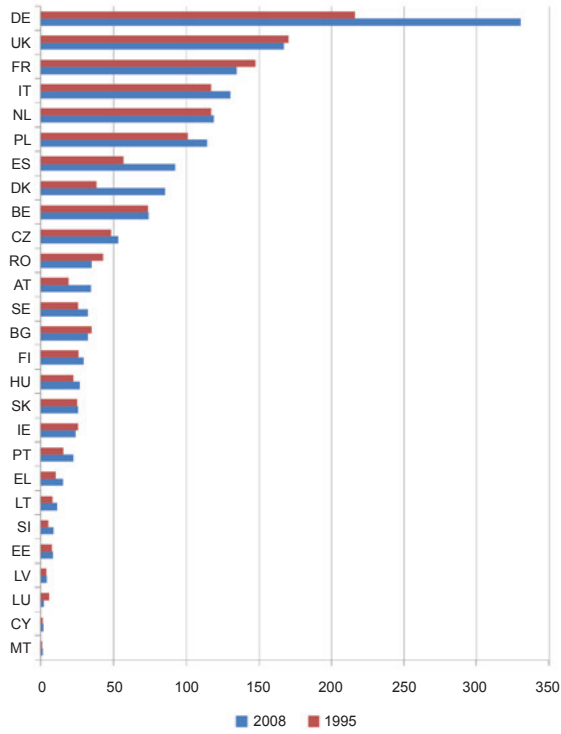
The share of the GHG footprint of the EU-27 covered by domestic emissions fell from 87 % to 76 %. In this period, all the countries (excluding Denmark, Austria, and Malta) reduced their domestic coverage ratios. In 2008, only Denmark (127 %), Bulgaria (120 %), and Estonia (103 %) showed the domestic coverage ratios of the GHG footprint above 100 %, while Luxembourg (43 %), Cyprus (56 %), Sweden (59 %), Malta (61 %), and Austria (62 %) were the countries with the lowest figures.

E.11. Embodied GHG in exports

Embodied GHG in exports, EU-27 (Mt CO_2-e)

	1995	2000	2005	2006	2007	2008	2008 / 1995	2008 / 1995
AT	18.8	24.0	32.8	33.9	34.1	34.2	15.5	82%
BE	73.3	78.3	78.6	77.9	74.1	73.6	0.4	0%
BG	34.6	28.8	24.5	31.3	32.9	31.8	-2.8	-8%
CY	1.0	1.7	1.3	1.5	1.6	1.5	0.5	48%
CZ	48.3	46.7	52.6	54.0	57.9	52.8	4.5	9%
DE	215.9	253.6	300.9	326.1	331.1	330.2	114.3	53%
DK	38.0	45.9	58.6	75.8	78.7	85.3	47.3	125%
EE	7.5	6.2	5.9	6.6	8.1	8.0	0.4	6%
EL	10.1	13.5	14.2	15.4	15.0	14.9	4.8	48%
ES	56.3	81.2	93.2	93.1	97.8	92.2	35.9	64%
FI	25.5	27.8	27.7	32.1	30.9	29.0	3.5	14%
FR	147.2	149.7	136.1	134.8	132.8	134.4	-12.8	-9%
HU	21.9	22.5	23.2	26.0	27.8	26.7	4.8	22%
IE	25.2	25.9	25.3	24.9	23.7	23.4	-1.9	-7%
IT	117.1	123.9	128.8	131.3	134.1	130.2	13.1	11%
LT	7.8	6.6	8.8	9.5	10.8	11.2	3.4	44%
LU	5.6	1.6	2.0	2.2	2.0	1.9	-3.7	-66%
LV	3.5	3.0	3.3	3.3	3.5	3.7	0.2	6%
MT	0.5	0.6	0.9	0.9	1.0	1.0	0.5	94%
NL	116.9	117.6	118.1	116.5	118.1	118.8	1.9	2%
PL	100.8	89.6	107.7	117.0	118.1	114.4	13.6	13%
PT	15.2	17.6	21.1	22.0	22.4	22.0	6.8	45%
RO	42.5	36.4	38.1	37.3	35.7	34.9	-7.6	-18%
SE	25.3	27.0	31.2	32.3	32.3	32.1	6.8	27%
SI	4.7	4.8	7.0	7.8	7.8	8.2	3.5	75%
SK	24.7	23.2	25.1	26.3	25.3	25.3	0.7	3%
UK	170.2	163.0	172.6	161.2	159.3	166.8	-3.3	-2%
EU-27	**1 358**	**1 420**	**1 540**	**1 601**	**1 617**	**1 609**	**250**	**18%**
BR	92	119	212	203	205	208	116	127%
CN	826	803	1 811	2 066	2 229	2 865	2 039	247%
IN	172	249	296	333	344	370	197	115%
JP	153	190	228	250	273	259	106	69%
RU	609	953	835	838	767	781	172	28%
US	615	609	546	570	655	724	110	18%
RW	1 862	2 548	3 231	3 294	3 493	3 601	1 738	93%
World	**5 687**	**6 892**	**8 698**	**9 154**	**9 584**	**10 416**	**4 730**	**83%**

Embodied GHG in exports, EU-27 (Mt CO_2-e)



Between 1995 and 2008, the GHG embodied in global exports increased by 4 730 Mt CO_2-e to 10 416 Mt CO_2-e (+83 %). Growth in GHG exports was led by China (+2 039 Mt CO_2-e), the Rest of the World (+1 738 Mt CO_2-e), and the EU-27 (+250 Mt CO_2-e). Most of the EU-27 Member States increased the amount of GHG embodied in exports. The largest growth in absolute terms were registered in Germany (+114 Mt CO_2-e), Denmark (+47 Mt CO_2-e), and Spain (+36 Mt CO_2-e). In contrast, France (-13 Mt CO_2-e), Romania (-8 Mt CO_2-e), and Luxembourg (-4 Mt CO_2-e) reduced the GHG embodied in exports.

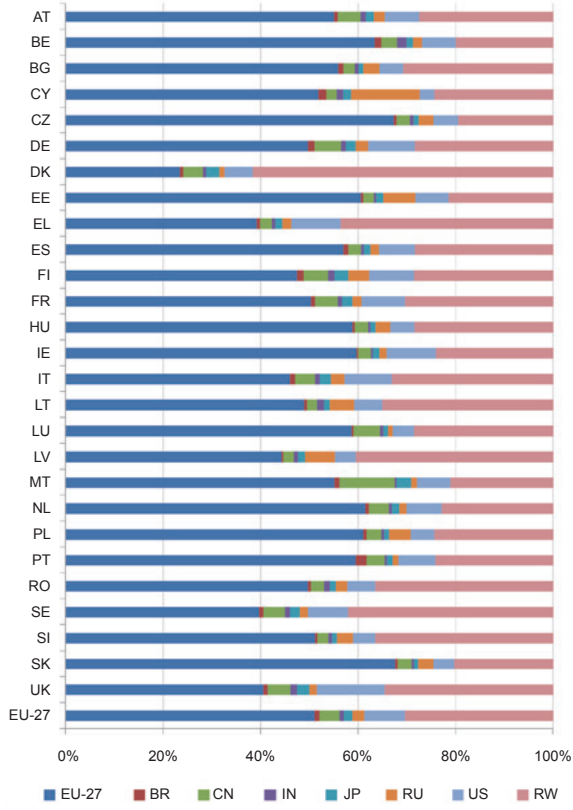
In 2008, 35 % of the GHG embodied in global exports were related to exports of the Rest of the World, 28 % to China, 15 % to the EU-27, 7 % to Russia, and 7 % to the US. Within the EU-27, Germany was the country with the highest amount of GHG embodied in exports (330 Mt CO_2-e), followed by the United Kingdom (167 Mt CO_2-e), France (134 Mt CO_2-e), Italy (130 Mt CO_2-e), and the Netherlands (119 Mt CO_2-e).

E.12. Embodied GHG in exports by main partner countries

Embodied GHG in exports by main partner countries, 2008 (Mt CO_2-e)

	EU-27	BR	CN	IN	JP	RU	US	RW	Total exports
AT	18.8	0.3	1.6	0.3	0.6	0.8	2.4	9.4	34.2
BE	46.6	1.0	2.4	1.4	1.0	1.4	5.1	14.7	73.6
BG	17.8	0.3	0.8	0.2	0.3	1.0	1.6	9.8	31.8
CY	0.8	0.0	0.0	0.0	0.0	0.2	0.0	0.4	1.5
CZ	35.5	0.3	1.5	0.4	0.6	1.6	2.6	10.3	52.8
DE	163.8	4.6	18.2	3.3	6.6	8.2	31.8	93.7	330.2
DK	20.0	0.5	3.5	0.6	2.3	0.9	4.9	52.6	85.3
EE	4.8	0.0	0.2	0.0	0.1	0.5	0.5	1.7	8.0
EL	5.9	0.1	0.4	0.1	0.2	0.3	1.5	6.5	14.9
ES	52.5	0.9	2.4	0.6	1.2	1.6	6.8	26.2	92.2
FI	13.8	0.4	1.5	0.4	0.8	1.2	2.7	8.3	29.0
FR	67.6	1.1	6.3	1.1	3.0	2.4	12.1	40.8	134.4
HU	15.7	0.2	0.7	0.1	0.3	0.8	1.3	7.6	26.7
IE	13.9	0.1	0.6	0.1	0.3	0.4	2.4	5.6	23.4
IT	59.8	1.5	5.3	1.4	2.9	3.6	12.6	43.2	130.2
LT	5.5	0.1	0.2	0.2	0.1	0.6	0.6	3.9	11.2
LU	1.1	0.0	0.1	0.0	0.0	0.0	0.1	0.6	1.9
LV	1.7	0.0	0.1	0.0	0.1	0.2	0.2	1.5	3.7
MT	0.6	0.0	0.1	0.0	0.0	0.0	0.1	0.2	1.0
NL	73.0	0.8	4.8	0.8	1.9	1.7	8.5	27.2	118.8
PL	69.8	0.8	3.4	0.6	1.1	5.1	5.6	27.9	114.4
PT	13.1	0.5	0.8	0.1	0.3	0.3	1.6	5.3	22.0
RO	17.3	0.3	0.9	0.4	0.5	0.8	2.0	12.8	34.9
SE	12.7	0.3	1.4	0.3	0.7	0.5	2.6	13.5	32.1
SI	4.2	0.0	0.2	0.1	0.1	0.3	0.4	3.0	8.2
SK	17.1	0.1	0.7	0.1	0.2	0.8	1.1	5.1	25.3
UK	67.5	1.6	7.8	2.3	4.2	2.5	23.3	57.7	166.8
EU-27	**821**	**16**	**66**	**15**	**29**	**38**	**135**	**490**	**1 609**
BR	58	0	28	2	8	6	24	82	208
CN	663	39	21	78	214	78	597	1 176	2 865
IN	90	5	34	1	14	7	66	152	370
JP	38	3	41	3	2	6	39	128	259
RU	372	9	52	10	30	5	74	230	781
US	153	12	64	12	50	9	27	398	724
RW	**1 018**	**71**	**429**	**140**	**307**	**93**	**792**	**750**	**3 601**

Embodied GHG in exports by main partner countries, EU-27, 2008 (%)



In 2008, 28 % of the GHG embodied in the exports of the Rest of the World were conveyed to the EU-27, while 22 % were to the US, 12 % to China, and 9 % to Japan. Almost 21 % of the GHG embodied in the exports of the Rest of the World were traded within this region. On the other hand, 41 % of the embodied GHG in Chinese exports were to meet the Rest of the World markets, 23 % to EU-27, and 21 % to the US.

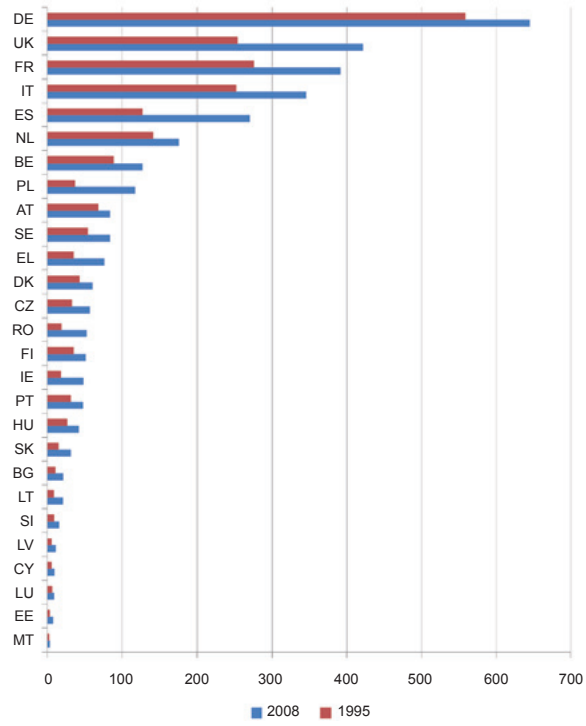
The EU-27 countries delivered most of the GHG embodied in exports to other Member States (51 %), 30 % to the Rest of the World, and 8 % to the US.

E.13. Embodied GHG in imports

Embodied GHG in imports (Mt CO_2-e)

	1995	2000	2005	2006	2007	2008	2008 / 1995	2008 / 1995
AT	67.4	69.8	81.4	80.9	82.1	83.1	15.7	23%
BE	87.8	93.1	118.0	121.1	119.3	126.5	38.7	44%
BG	10.4	12.7	11.0	13.2	16.6	20.2	9.9	95%
CY	5.2	6.5	5.8	6.1	6.6	9.5	4.2	81%
CZ	32.0	41.7	45.4	48.5	50.7	56.3	24.3	76%
DE	558.6	595.4	588.7	605.7	630.6	644.8	86.2	15%
DK	42.6	39.0	50.1	55.4	55.9	59.8	17.1	40%
EE	3.2	5.5	6.6	7.8	8.2	7.4	4.2	132%
EL	34.6	50.1	58.4	62.4	69.7	75.6	41.0	119%
ES	126.8	169.8	234.5	251.7	275.6	270.0	143.2	113%
FI	34.3	40.0	45.9	46.6	47.9	50.6	16.3	47%
FR	275.6	300.9	357.3	355.3	380.3	391.5	115.9	42%
HU	25.8	36.3	42.2	42.4	42.9	41.7	15.9	62%
IE	17.9	26.2	36.9	40.7	47.3	47.7	29.8	167%
IT	251.8	306.1	330.5	337.7	351.2	345.2	93.5	37%
LT	8.1	12.7	14.4	16.4	20.4	20.0	11.9	148%
LU	6.3	7.1	8.2	8.4	8.7	8.6	2.3	37%
LV	4.7	6.0	7.8	9.5	11.0	10.8	6.1	132%
MT	2.1	2.5	2.3	2.6	2.8	2.9	0.8	39%
NL	140.8	149.0	157.7	159.3	165.5	175.3	34.6	25%
PL	36.7	80.1	77.6	88.4	101.0	116.6	79.9	218%
PT	30.6	38.4	41.9	42.9	46.1	46.9	16.2	53%
RO	18.8	22.3	35.9	39.9	48.1	51.7	32.9	175%
SE	53.6	64.5	72.1	77.3	81.5	82.6	29.0	54%
SI	8.5	10.1	11.5	11.9	13.5	15.6	7.1	83%
SK	14.5	18.9	23.4	26.2	28.8	30.6	16.0	110%
UK	253.6	345.1	436.0	438.3	451.8	421.7	168.1	66%
EU-27	**2 152**	**2 550**	**2 902**	**2 996**	**3 164**	**3 213**	**1 061**	**49%**
BR	76	83	83	99	122	155	78	102%
CN	136	249	451	476	526	735	599	441%
IN	64	97	219	216	253	260	196	306%
JP	642	603	646	647	610	654	12	2%
RU	88	61	132	154	205	240	152	173%
US	980	1 494	1 824	1 877	1 801	1 753	773	79%
RW	1 549	1 756	2 441	2 689	2 903	3 406	1 858	120%
World	**5 687**	**6 892**	**8 698**	**9 154**	**9 584**	**10 416**	**4 730**	**83%**

Embodied GHG in imports, EU-27 (Mt CO_2-e)



Between 1995 and 2008, the GHG embodied in global imports increased by 4 730 Mt CO_2-e to 10 416 Mt CO_2-e (+83 %). This growth was mainly driven by the Rest of the World (+1 858 Mt CO_2-e), the EU-27 (+1 061 Mt CO_2-e), the US (+773 Mt CO_2-e), and China (+599 Mt CO_2-e). In 2008, the EU-27 imported 31 % of the GHG embodied in global imports, being roughly the same share as the Rest of the World (33 %).

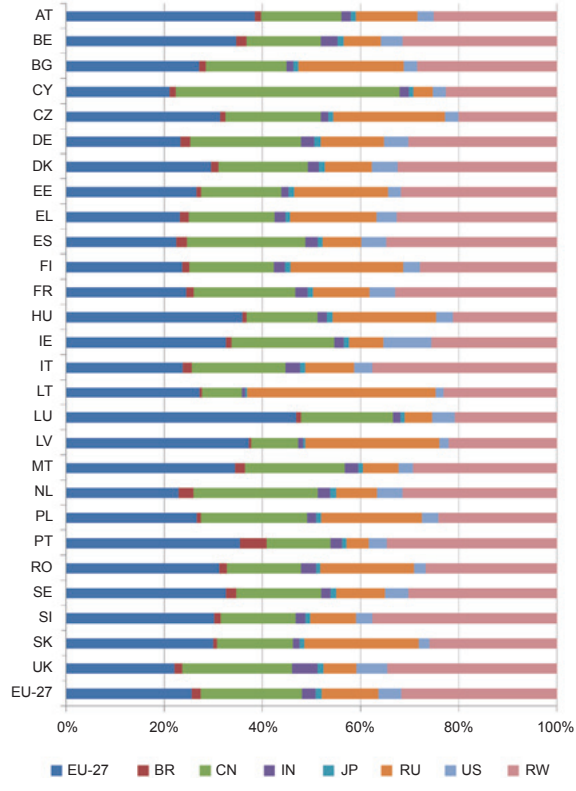
In all EU-27 Member States the GHG embodied in imports increased, the largest positive growth in absolute terms being reported by the United Kingdom (+168 Mt CO_2-e), Spain (+143 Mt CO_2-e), France (+116 Mt CO_2-e), Italy (+94 Mt CO_2-e), and Germany (+86 Mt CO_2-e). Within the EU-27, in 2008 Germany was the country with the highest level of GHG embodied in imports (645 Mt CO_2-e), followed by the United Kingdom (422 Mt CO_2-e), France (392 Mt CO_2-e), Italy (345 Mt CO_2-e), and Spain (270 Mt CO_2-e).

E.14. Embodied GHG in imports by main partner countries

Embodied GHG in imports by main partner countries, 2008 (Mt CO_2-e)

	EU-27	BR	CN	IN	JP	RU	US	RW	Total imports
AT	32.0	1.0	13.6	1.6	0.8	10.4	2.8	20.9	83.1
BE	43.8	2.7	19.1	4.3	1.5	9.5	5.6	39.9	126.5
BG	5.5	0.3	3.3	0.3	0.2	4.4	0.5	5.8	20.2
CY	2.0	0.1	4.3	0.2	0.1	0.4	0.2	2.1	9.5
CZ	17.7	0.5	11.0	0.8	0.6	12.8	1.5	11.3	56.3
DE	150.0	12.8	145.7	17.1	9.0	82.6	32.3	195.3	644.8
DK	17.7	0.9	10.9	1.3	0.7	5.7	3.1	19.4	59.8
EE	2.0	0.1	1.2	0.1	0.1	1.4	0.2	2.3	7.4
EL	17.5	1.3	13.3	1.6	0.7	13.3	3.1	24.7	75.6
ES	60.5	5.9	64.9	6.8	2.9	21.3	13.6	94.0	270.0
FI	12.0	0.7	8.7	1.2	0.5	11.6	1.7	14.1	50.6
FR	95.8	6.0	81.1	9.3	4.6	45.1	20.4	129.2	391.5
HU	15.0	0.3	6.0	0.8	0.5	8.8	1.4	8.8	41.7
IE	15.5	0.5	10.0	0.9	0.5	3.3	4.7	12.3	47.7
IT	82.0	6.4	65.7	10.3	3.6	34.3	12.9	130.1	345.2
LT	5.4	0.1	1.6	0.1	0.1	7.7	0.3	4.6	20.0
LU	4.0	0.1	1.6	0.1	0.1	0.5	0.4	1.8	8.6
LV	4.0	0.1	1.0	0.1	0.1	3.0	0.2	2.4	10.8
MT	1.0	0.1	0.6	0.1	0.0	0.2	0.1	0.9	2.9
NL	40.2	5.3	44.3	4.5	2.1	14.5	9.2	55.2	175.3
PL	31.0	1.0	25.1	2.1	1.3	23.9	3.9	28.2	116.6
PT	16.6	2.5	6.1	1.1	0.4	2.2	1.7	16.3	46.9
RO	16.1	0.8	7.9	1.6	0.4	9.9	1.3	13.8	51.7
SE	26.9	1.7	14.3	1.6	0.9	8.2	3.9	25.1	82.6
SI	4.7	0.2	2.4	0.3	0.2	1.5	0.5	5.9	15.6
SK	9.2	0.2	4.7	0.4	0.3	7.1	0.7	7.9	30.6
UK	92.9	6.7	94.5	21.5	5.4	28.2	26.7	145.9	421.7
EU-27	**821**	**58**	**663**	**90**	**38**	**372**	**153**	**1 018**	**3 213**
BR	16	0	39	5	3	9	12	71	155
CN	66	28	21	34	41	52	64	429	735
IN	15	2	78	1	3	10	12	140	260
JP	29	8	214	14	2	30	50	307	654
RU	38	6	78	7	6	5	9	93	240
US	135	24	597	66	39	74	27	792	1 753
RW	**490**	**82**	**1 176**	**152**	**128**	**230**	**398**	**750**	**3 406**

Embodied GHG in imports by main partner countries, EU-27, 2008 (%)



In 2008, 35 % of the GHG embodied in the imports of the Rest of the World were originated in China, 22 % in other Rest of the World, 14 % in the EU-27, and 12 % in the US. The Rest of the World was also the main source of GHG embodied in Chinese imports (70 %); while 45 % of the GHG embodied in US imports came from the Rest of the World and 58 % from China.

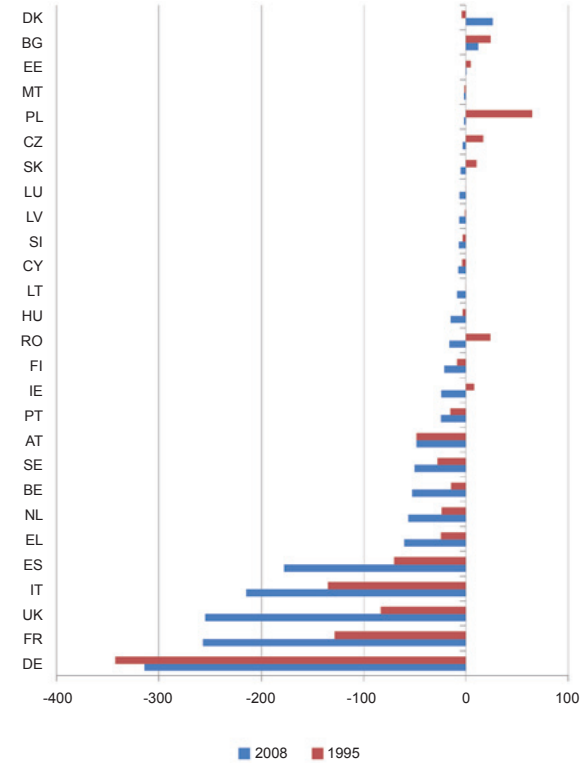
Almost 32 % of the GHG embodied in the imports of the EU-27 countries came from the Rest of the World, 26 % from other Member States, 21 % from China, and 12 % from Russia.

E.15. GHG trade balance

GHG trade balance (Mt CO_2-e)

	1995	2000	2005	2006	2007	2008	2008 / 1995	2008 / 1995
AT	-48.7	-45.8	-48.6	-47.0	-47.9	-48.9	-0.2	1%
BE	-14.5	-14.7	-39.4	-43.2	-45.2	-52.9	-38.4	264%
BG	24.2	16.1	13.5	18.1	16.4	11.5	-12.7	-52%
CY	-4.2	-4.9	-4.5	-4.6	-5.0	-7.9	-3.7	89%
CZ	16.3	5.0	7.2	5.4	7.1	-3.5	-19.8	-122%
DE	-342.7	-341.8	-287.7	-279.6	-299.5	-314.6	28.1	-8%
DK	-4.6	6.9	8.5	20.3	22.9	25.6	30.2	-650%
EE	4.3	0.7	-0.7	-1.3	-0.1	0.6	-3.7	-86%
EL	-24.5	-36.6	-44.2	-47.0	-54.7	-60.6	-36.2	148%
ES	-70.5	-88.7	-141.3	-158.6	-177.8	-177.8	-107.3	152%
FI	-8.8	-12.2	-18.2	-14.5	-16.9	-21.6	-12.8	145%
FR	-128.4	-151.2	-221.2	-220.5	-247.5	-257.1	-128.7	100%
HU	-3.9	-13.8	-18.9	-16.4	-15.1	-15.0	-11.1	286%
IE	7.4	-0.3	-11.6	-15.8	-23.5	-24.3	-31.7	-431%
IT	-134.7	-182.2	-201.6	-206.3	-217.2	-215.0	-80.3	60%
LT	-0.3	-6.2	-5.7	-6.9	-9.6	-8.8	-8.5	2712%
LU	-0.6	-5.5	-6.2	-6.2	-6.7	-6.6	-6.0	932%
LV	-1.2	-3.0	-4.5	-6.2	-7.5	-7.1	-5.9	508%
MT	-1.6	-1.9	-1.5	-1.7	-1.8	-1.9	-0.3	20%
NL	-23.8	-31.4	-39.6	-42.8	-47.4	-56.5	-32.7	137%
PL	64.1	9.5	30.1	28.6	17.0	-2.2	-66.3	-103%
PT	-15.4	-20.8	-20.9	-20.9	-23.7	-24.9	-9.4	61%
RO	23.7	14.1	2.2	-2.7	-12.4	-16.8	-40.5	-171%
SE	-28.2	-37.5	-40.9	-45.0	-49.3	-50.5	-22.3	79%
SI	-3.8	-5.3	-4.5	-4.1	-5.7	-7.4	-3.6	93%
SK	10.2	4.2	1.8	0.1	-3.5	-5.2	-15.4	-151%
UK	-83.5	-182.1	-263.4	-277.1	-292.5	-254.9	-171.4	205%
EU-27	**-794**	**-1 129**	**-1 362**	**-1 396**	**-1 547**	**-1 605**	**-811**	**102%**
BR	16	36	129	103	83	54	38	246%
CN	690	554	1359	1590	1703	2130	1440	209%
IN	108	153	76	117	91	109	1	1%
JP	-489	-413	-418	-397	-337	-396	94	-19%
RU	521	892	703	684	563	541	20	4%
US	-365	-885	-1 278	-1 307	-1 146	-1 029	-664	182%
RW	**314**	**792**	**790**	**606**	**590**	**194**	**-119**	**-38%**

GHG trade balance, EU-27 (Mt CO_2-e)



In 2008, the EU-27 showed the largest deficit in terms of GHG embodied in trade (1 605 Mt CO_2-e), followed by the US (1 029 Mt CO_2-e) and Japan (396 Mt CO_2-e). Between 1995 and 2008 the GHG trade deficit increased by 811 Mt CO_2-e in the EU-27, by 664 in the US and by 119 Mt CO_2-e in the Rest of the World. The countries with the largest surplus in terms of GHG embodied in trade were China (2 130 Mt CO_2-e), Russia (541 Mt CO_2-e), and the Rest of the World (194 Mt CO_2-e).

All the EU-27 countries (excluding Denmark, Bulgaria, and Estonia) showed a deficit in the GHG trade balance. The largest deficits were those of Germany (315 Mt CO_2-e), France (257 Mt CO_2-e), the United Kingdom (255 Mt CO_2-e), Italy (215 Mt CO_2-e), and Spain (178 Mt CO_2-e). Between 1995 and 2008, Germany and Denmark were the only Member States that improved their GHG trade balance.

E.16. GHG trade balance by main partner countries

GHG trade balance by main partner countries, 2008 (Mt CO_2-e)

	EU-27	BR	CN	IN	JP	RU	US	RW	Trade Balance
AT	-13.2	-0.7	-12.0	-1.3	-0.3	-9.7	-0.3	-11.5	-48.9
BE	2.8	-1.7	-16.7	-2.9	-0.6	-8.1	-0.5	-25.2	-52.9
BG	12.3	0.1	-2.6	-0.1	0.1	-3.3	1.0	4.0	11.5
CY	-1.2	-0.1	-4.3	-0.2	-0.1	-0.2	-0.2	-1.8	-7.9
CZ	17.8	-0.2	-9.6	-0.4	-0.0	-11.2	1.1	-1.0	-3.5
DE	13.9	-8.2	-127.5	-13.8	-2.5	-74.5	-0.5	-101.6	-314.6
DK	2.3	-0.4	-7.4	-0.7	1.6	-4.8	1.8	33.2	25.6
EE	2.9	-0.0	-1.0	-0.1	0.0	-0.9	0.3	-0.6	0.6
EL	-11.7	-1.2	-12.9	-1.5	-0.5	-13.0	-1.5	-18.2	-60.6
ES	-8.0	-5.0	-62.5	-6.3	-1.7	-19.6	-6.9	-67.8	-177.8
FI	1.8	-0.3	-7.2	-0.8	0.3	-10.4	1.0	-5.8	-21.6
FR	-28.1	-4.9	-74.8	-8.2	-1.7	-42.7	-8.3	-88.4	-257.1
HU	0.7	-0.2	-5.3	-0.7	-0.2	-8.0	-0.1	-1.2	-15.0
IE	-1.6	-0.5	-9.4	-0.8	-0.2	-2.9	-2.3	-6.6	-24.3
IT	-22.2	-5.0	-60.4	-8.9	-0.7	-30.6	-0.3	-86.9	-215.0
LT	0.0	-0.0	-1.4	0.0	0.0	-7.1	0.3	-0.7	-8.8
LU	-2.9	-0.1	-1.5	-0.1	-0.1	-0.5	-0.3	-1.2	-6.6
LV	-2.4	-0.0	-0.9	-0.1	0.0	-2.7	-0.0	-0.9	-7.1
MT	-0.4	-0.0	-0.5	-0.1	0.0	-0.2	-0.0	-0.6	-1.9
NL	32.8	-4.5	-39.5	-3.7	-0.2	-12.8	-0.7	-28.0	-56.5
PL	38.8	-0.2	-21.7	-1.5	-0.1	-18.9	1.7	-0.4	-2.2
PT	-3.5	-2.0	-5.3	-1.0	-0.1	-1.9	-0.1	-10.9	-24.9
RO	1.2	-0.5	-6.9	-1.2	0.1	-9.1	0.7	-1.1	-16.8
SE	-14.1	-1.5	-12.8	-1.3	-0.3	-7.7	-1.3	-11.5	-50.5
SI	-0.5	-0.2	-2.2	-0.2	-0.1	-1.2	-0.1	-2.9	-7.4
SK	7.9	-0.1	-4.0	-0.3	-0.1	-6.3	0.4	-2.8	-5.2
UK	-25.4	-5.1	-86.7	-19.2	-1.2	-25.7	-3.4	-88.2	-254.9
EU-27	**0**	**-42**	**-597**	**-75**	**-8**	**-334**	**-18**	**-529**	**-1 605**
BR	42	0	-11	-3	6	-3	12	11	54
CN	597	11	0	43	173	26	533	747	2 130
IN	75	3	-43	0	11	-4	54	13	109
JP	8	-6	-173	-11	0	-24	-11	-179	- 396
RU	334	3	-26	4	24	0	65	137	541
US	18	-12	-533	-54	11	-65	0	-394	-1 029
RW	**529**	**-11**	**-747**	**-13**	**179**	**-137**	**394**	**0**	**194**

GHG trade balance by main partner countries, EU-27, 2008 (%)

In 2008, the GHG trade balance of the EU-27 showed a deficit with all the other regions except with Japan. The largest deficits of the EU-27 were with China (597 Mt CO_2-e), the Rest of the World (529 Mt CO_2-e), and Russia (334 Mt CO_2-e). On the contrary, China presented a GHG trade surplus against all the other regions.

Some EU-27 countries showed a surplus in the GHG trade balance, mostly with other Member States.

F. Ozone Precursors Emissions

Basic concepts

This chapter assesses the emission of ozone precursors to the atmosphere. The emissions of each country are calculated on the basis of the residence principle. According to this approach, each country reports the emissions generated by the residents in the country (i.e. including the emissions of residents abroad and excluding the emissions of non-residents in the national territory). This accounting framework is different from the one followed by the emissions inventories, which account for the emissions generated in the territory of the country, irrespective of the residence of the polluter.

Ozone precursors emissions include the release to the atmosphere of four pollutants: non-methane volatile organic compounds (NMVOC), methane (CH_4), carbon monoxide (CO), and nitrogen oxides (NO_x). The emissions of these pollutants are aggregated according to their tropospheric ozone-forming potential and are reported in terms of 'NMVOC equivalent'.

The ozone precursors emissions intensity of Gross Value Added is a measure of the ozone precursors generated to produce one unit worth of goods and services in a specific country. It is calculated as the quotient between the ozone precursors emissions and the Gross Value Added at constant prices of 2008.

The concept of ozone precursors footprint refers to the ozone precursors generated when producing the goods and services devoted to satisfy the domestic final demand of a country (i.e. household consumption, government consumption, and investment), regardless of the country that actually emitted these substances.

The household footprint is the part of the ozone precursors footprint related to household consumption. It distinguishes up to 9 categories of consumption.

The ozone precursors emission intensity of the final demand is a measure of the emissions generated to produce one unit worth of the goods and services demanded by households, government consumption, and investment activities. It is calculated as the quotient between the ozone precursors footprint and the domestic final demand at constant prices of 2008.

The ozone precursors footprint domestic coverage ratio shows the relation between the ozone precursors footprint and the ozone precursors emissions of a country. It represents the share of the ozone precursors footprint of a country that is covered by its own emissions.

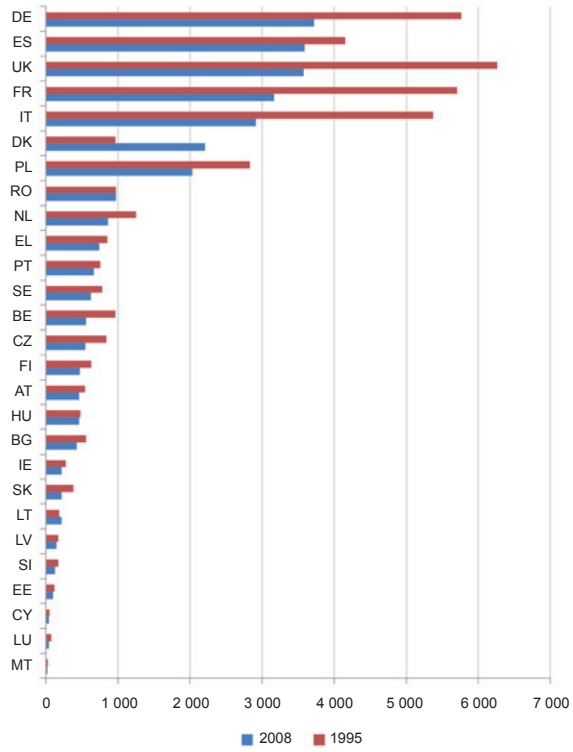
Embodied ozone precursors emissions in exports and imports account for the emissions directly or indirectly generated to produce internationally traded goods and services. The difference between the ozone precursors emissions embodied in exports and imports gives the ozone precursors trade balance. A deficit/surplus in the ozone precursors trade balance indicates that the emissions embodied in imports are greater/less than those exported. Moreover, a deficit in the ozone precursors trade balance indicates that with the domestic emissions it is not possible to satisfy the domestic final demand (the contrary applies to a surplus). From this assertion it follows that the ozone precursors footprint equals the ozone precursors emission minus the trade balance.

F.1. Ozone precursors emissions

Ozone precursors emissions (kt NMVOC-e)

	1995	2000	2005	2006	2007	2008	2008 / 1995	2008 / 1995
AT	539	487	492	497	472	458	-82	-15%
BE	958	796	652	613	585	554	-404	-42%
BG	554	394	448	461	419	422	-132	-24%
CY	48	42	42	42	42	39	-9	-20%
CZ	833	648	595	583	583	545	-288	-35%
DE	5 755	4 653	3 932	3 955	3 797	3 718	-2 037	-35%
DK	958	1 125	1 496	1 810	2 054	2 205	1 247	130%
EE	115	104	100	94	102	97	-18	-16%
EL	843	847	817	787	745	735	-109	-13%
ES	4 146	4 087	3 947	3 910	3 847	3 577	-569	-14%
FI	625	560	510	523	492	464	-161	-26%
FR	5 697	4 787	3 861	3 592	3 373	3 156	-2 542	-45%
HU	473	435	488	495	461	453	-20	-4%
IE	272	271	238	231	227	215	-56	-21%
IT	5 368	4 118	3 302	3 159	3 057	2 910	-2 459	-46%
LT	179	201	208	210	218	214	36	20%
LU	68	36	31	32	31	38	-30	-45%
LV	172	149	152	154	153	144	-29	-17%
MT	27	16	19	19	18	17	-10	-36%
NL	1 246	1 097	968	904	920	857	-389	-31%
PL	2 827	2 252	1 979	2 123	2 023	2 026	-801	-28%
PT	752	751	733	702	682	659	-93	-12%
RO	966	1 033	975	994	998	972	6	1%
SE	777	676	648	646	643	618	-160	-21%
SI	170	134	125	127	123	127	-43	-25%
SK	373	234	235	221	216	215	-158	-42%
UK	6 255	4 986	4 352	4 007	3 835	3 569	-2 686	-43%
EU-27	**40 998**	**34 920**	**31 346**	**30 887**	**30 113**	**29 002**	**-11 996**	**-29%**
BR	11 386	11 209	13 608	11 209	11 735	12 058	673	6%
CN	38 890	40 888	52 232	55 259	57 918	62 128	23 238	60%
IN	21 349	22 767	24 682	25 294	26 130	26 700	5 351	25%
JP	6 731	6 442	6 393	6 465	6 561	6 326	-404	-6%
RU	13 823	13 127	13 509	14 170	14 200	15 019	1 196	9%
US	60 363	53 288	44 767	45 020	43 697	40 838	-19 525	-32%
RW	160 597	161 448	171 963	195 052	234 416	200 962	40 365	25%
World	**354 137**	**344 089**	**358 500**	**383 355**	**424 769**	**393 034**	**38 896**	**11%**

Ozone precursors emissions, EU-27 (kt NMVOC-e)



Between 1995 and 2008, ozone precursors emissions increased worldwide by 39 Mt NMVOC-e to 393 Mt NMVOC-e (+11 %). The growth in the emission of these substances was predominantly driven by the Rest of the World (+40 Mt NMVOC-e), China (+23 Mt NMVOC-e), and India (+5 Mt NMVOC-e). In 2008, 51 % of the ozone precursors were emitted in the Rest of the World, 16 % in China, 10 % in the US, 7 % in the EU-27, and 7 % in India. Within the EU-27, in 2008, Germany (13 %), Spain (12 %), the United Kingdom (12 %), France (11 %), and Italy (10 %) emitted more than half of the European ozone precursors.

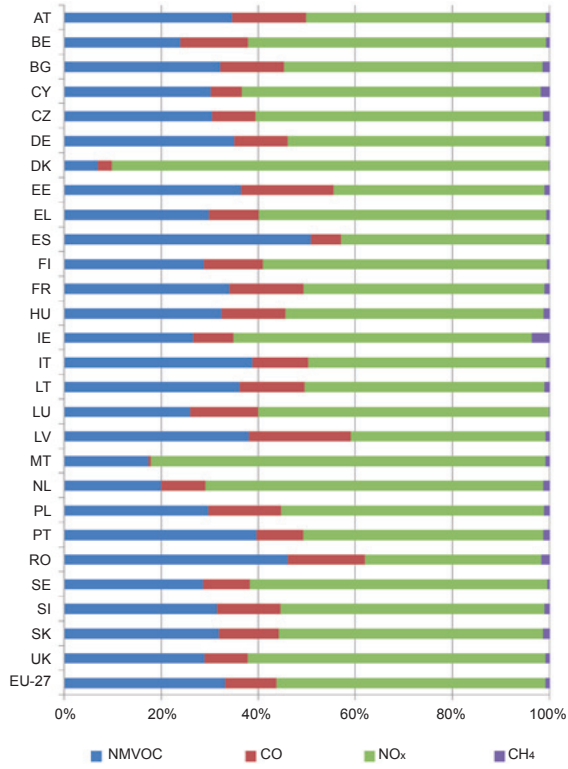
During the same period, the emissions of ozone precursors in the EU-27 decreased by 29 % to 29 Mt NMVOC-e. The largest reductions in absolute terms were reported by the United Kingdom, France, and Germany. Denmark, Lithuania, and Romania were the only countries that showed an increase in the ozone precursors.

F.2. Ozone precursors emissions by type

Ozone precursors emissions by type, 2008 (kt NMVOC-e)

	NMVOC	CO	NO_X	CH_4	Total
AT	158	69	226	4	458
BE	132	78	340	4	554
BG	135	55	225	6	422
CY	12	2	24	1	39
CZ	166	49	323	8	545
DE	1 298	413	1 975	32	3 718
DK	150	64	1 988	4	2 205
EE	35	18	42	1	97
EL	219	75	435	5	735
ES	1 819	220	1 514	24	3 577
FI	133	57	271	3	464
FR	1 073	483	1 565	36	3 156
HU	147	59	241	6	453
IE	57	18	132	8	215
IT	1 128	334	1 424	24	2 910
LT	77	29	106	2	214
LU	10	5	23	0	38
LV	55	30	58	1	144
MT	3	0	14	0	17
NL	172	77	597	11	857
PL	599	305	1 098	24	2 026
PT	261	64	326	9	659
RO	447	154	353	17	972
SE	177	59	379	3	618
SI	40	17	69	1	127
SK	68	27	117	3	215
UK	1 030	317	2 189	32	3 569
EU-27	**9 600**	**3 080**	**16 052**	**271**	**29 002**
BR	5 196	2 952	3 675	235	12 058
CN	22 206	11 504	27 507	911	62 128
IN	11 255	6 297	8 802	345	26 700
JP	1 678	305	4 328	14	6 326
RU	5 054	2 903	6 726	336	15 019
US	13 331	8 047	19 017	443	40 838
RW	81 401	57 586	60 427	1 548	200 962
World	**149 722**	**92 673**	**146 535**	**4 103**	**393 034**

Ozone precursors emissions by type, EU-27, 2008 (%)



In 2008, NMOVC were the main ozone precursors around the world (38 % of global ozone precursors emissions), followed by NOx (37 %), CO (24 %), and CH_4 (1 %). In the EU-27, NOx represented 55 % of the ozone precursors, NMVOC 33 %, CO 11 %, and CH_4 1 %.

The NMVOC component of the EU-27 ozone precursors footprint was the most important in 18 out of 27 Member States, with corresponding shares ranging from 42 % to 52 %. In the rest of the Member States, NOx was the main gas. Lithuania (52 %), Denmark (50 %), Spain (49 %), Latvia (48 %), and Estonia (48 %) were the Member States with the highest level of NMVOC in total ozone precursors emissions.

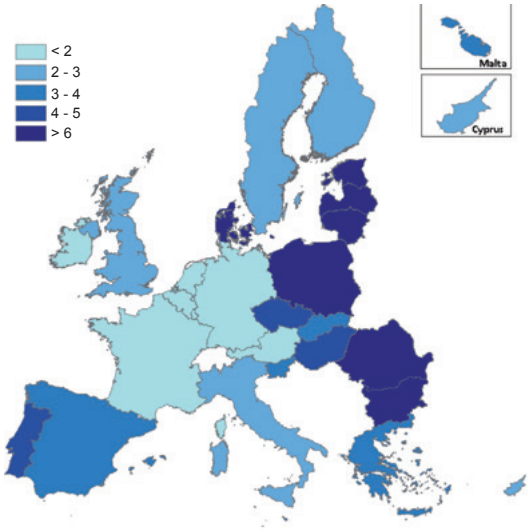
F.3. Ozone precursors emissions intensity of Gross Value Added

Ozone precursors emissions intensity of Gross Value Added

(g NMVOC-e/EUR)

	1995	2000	2005	2006	2007	2008	2008 / 1995	2008 / 1995
AT	2.9	2.3	2.1	2.1	1.9	1.8	-1.1	-39%
BE	4.1	3.0	2.3	2.1	1.9	1.8	-2.3	-56%
BG	27.2	20.3	18.7	18.3	15.8	15.2	-11.9	-44%
CY	5.0	3.7	3.1	3.0	2.8	2.5	-2.5	-50%
CZ	9.4	6.9	5.3	4.8	4.5	4.1	-5.4	-57%
DE	3.2	2.3	1.9	1.9	1.7	1.7	-1.5	-48%
DK	6.0	6.1	7.8	9.2	10.2	11.1	5.0	83%
EE	18.0	11.9	7.8	6.7	6.8	6.8	-11.3	-63%
EL	6.4	5.5	4.3	4.0	3.6	3.5	-2.8	-45%
ES	6.4	5.2	4.3	4.1	3.9	3.6	-2.8	-44%
FI	6.2	4.3	3.5	3.5	3.1	2.9	-3.3	-53%
FR	4.2	3.1	2.3	2.1	1.9	1.8	-2.4	-58%
HU	7.9	6.1	5.7	5.5	5.1	5.0	-3.0	-37%
IE	3.7	2.4	1.6	1.5	1.4	1.3	-2.3	-64%
IT	4.5	3.1	2.4	2.3	2.1	2.1	-2.4	-54%
LT	13.6	12.3	8.8	8.2	7.7	7.4	-6.2	-46%
LU	3.4	1.4	1.0	1.0	0.9	1.0	-2.4	-69%
LV	19.0	12.7	8.8	7.9	7.2	7.0	-12.0	-63%
MT	7.8	3.7	4.2	4.1	3.6	3.3	-4.5	-58%
NL	3.4	2.4	2.0	1.8	1.8	1.6	-1.7	-52%
PL	15.5	9.7	7.4	7.5	6.7	6.3	-9.2	-59%
PT	6.9	5.8	5.3	4.9	4.6	4.4	-2.5	-36%
RO	11.9	13.5	9.7	9.2	8.6	7.8	-4.1	-34%
SE	3.9	2.8	2.4	2.3	2.2	2.1	-1.8	-46%
SI	9.1	5.8	4.5	4.3	3.9	3.9	-5.2	-57%
SK	11.8	6.3	5.0	4.3	3.8	3.5	-8.2	-70%
UK	5.3	3.6	2.8	2.5	2.3	2.1	-3.1	-60%
EU-27	**4.9**	**3.7**	**3.0**	**2.9**	**2.7**	**2.6**	**-2.4**	**-48%**
BR	17.8	15.3	16.3	13.0	12.8	12.6	-5.2	-29%
CN	43.4	30.2	24.2	22.7	20.8	20.2	-23.2	-53%
IN	63.6	50.6	38.7	35.9	33.8	32.1	-31.6	-50%
JP	2.4	2.2	2.0	2.0	2.0	1.9	-0.5	-19%
RU	23.3	22.0	17.1	16.6	15.4	15.5	-7.8	-34%
US	9.2	6.5	4.8	4.7	4.5	4.2	-5.0	-54%
RW	27.8	24.3	24.0	26.4	30.8	26.2	-1.6	-6%
World	**13.7**	**11.3**	**10.4**	**10.7**	**11.4**	**10.4**	**-3.3**	**-24%**

Ozone precursors emissions intensity of Gross Value Added, EU-27, 2008 (g NMVOC-e/EUR)



Between 1995 and 2008, global ozone precursors intensity of the Gross Value Added decreased by 24 % to 10 g NMVOC-e/EUR, while in the EU-27 it fell by 48 % to 2.6 g NMVOC-e/EUR. In India and China the reductions amounted 32 and 23 g NMVOC-e/EUR respectively. In 2008, India (32 g NMVOC-e/EUR) and the Rest of the World (26 g NMVOC-e/EUR) were the regions with the highest ozone precursors intensity per unit of Gross Value Added, followed by China (20 g NMVOC-e/EUR), Russia (16 g NMVOC-e/EUR), Brazil (13 g NMVOC-e/EUR). Japan showed the lowest ozone precursors emissions intensity (1.9 g NMVOC-e/EUR), followed by the EU-27 (2.6 g NMVOC-e/EUR) and the US (4.2 g NMVOC-e/EUR).

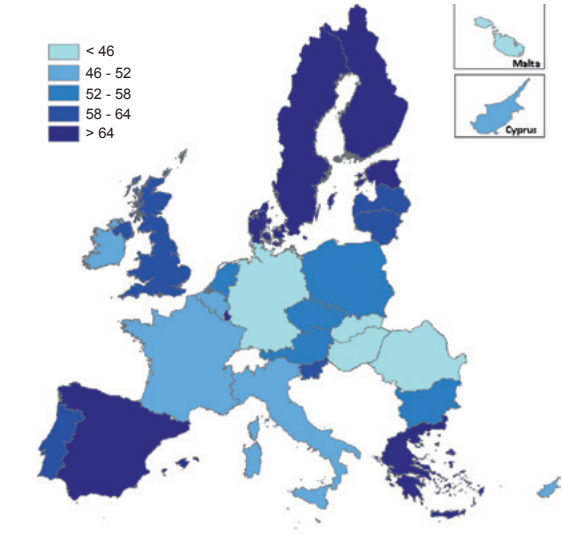
In this period, all EU-27 Member States (excluding Denmark) reduced their ozone precursors emissions intensity; Latvia, Bulgaria, Estonia, Poland, and Slovakia were the countries with the highest reductions in absolute terms. Bulgaria, Denmark, Romania, Lithuania, and Latvia turned out to be the countries with the highest ozone precursors intensities in 2008. Luxembourg, Ireland, the Netherlands, Germany, and Austria were the Member States with the lowest intensities.

F.4. Ozone precursors emissions per capita

Ozone precursors emissions per capita (kg NMVOC-e/cap)

	1995	2000	2005	2006	2007	2008	2008 / 1995	2008 / 1995
AT	68	61	60	60	57	55	-13	-19%
BE	95	78	62	58	55	52	-43	-45%
BG	66	48	58	60	55	55	-11	-16%
CY	75	61	56	54	54	49	-26	-34%
CZ	81	63	58	57	57	53	-28	-35%
DE	71	57	48	48	46	45	-25	-36%
DK	184	211	276	333	377	403	219	119%
EE	79	76	74	70	76	72	-7	-9%
EL	80	78	74	71	67	66	-14	-18%
ES	105	102	92	89	86	79	-26	-25%
FI	123	108	97	100	93	87	-35	-29%
FR	96	79	62	57	53	49	-47	-49%
HU	46	43	48	49	46	45	-1	-1%
IE	75	72	58	55	53	49	-27	-35%
IT	94	72	56	54	52	49	-46	-48%
LT	49	57	61	62	64	64	15	30%
LU	168	82	67	67	65	78	-90	-54%
LV	69	63	66	67	67	63	-6	-8%
MT	72	41	47	46	43	42	-31	-42%
NL	81	69	59	55	56	52	-29	-35%
PL	73	58	52	56	53	53	-20	-27%
PT	75	74	70	66	64	62	-13	-17%
RO	43	46	45	46	46	45	3	6%
SE	88	76	72	71	71	67	-21	-24%
SI	85	68	63	63	61	63	-22	-26%
SK	70	43	44	41	40	40	-30	-43%
UK	108	85	72	66	63	58	-50	-46%
EU-27	**86**	**72**	**64**	**63**	**61**	**58**	**-27**	**-32%**
BR	70	64	73	60	62	63	-7	-11%
CN	32	32	40	42	44	47	15	46%
IN	22	22	22	22	22	22	0	1%
JP	54	51	51	51	52	50	-4	-8%
RU	93	89	94	99	99	105	12	13%
US	227	189	151	150	145	134	-93	-41%
RW	68	62	61	68	81	68	0	0%
World	**62**	**56**	**55**	**58**	**64**	**58**	**-4**	**-6%**

Ozone precursors emissions per capita, EU-27, 2008 (kg NMVOC-e/cap)



The global ozone precursors emissions per inhabitant between 1995 and 2008 decreased by 4 kg NMVOC-e/cap to 58 kg NMVOC-e/cap (-6 %); in the EU-27 they fell by 27 kg NMVOC-e/cap to 58 kg NMVOC-e/cap (-32 %). In China and Russia the emissions of ozone precursors grew by 15 and 12 kg NMVOC-e/cap respectively, while in the US, Brazil, and Japan ozone precursors emissions were reduced by 93, 7, and 4 kg NMVOC-e/cap respectively.

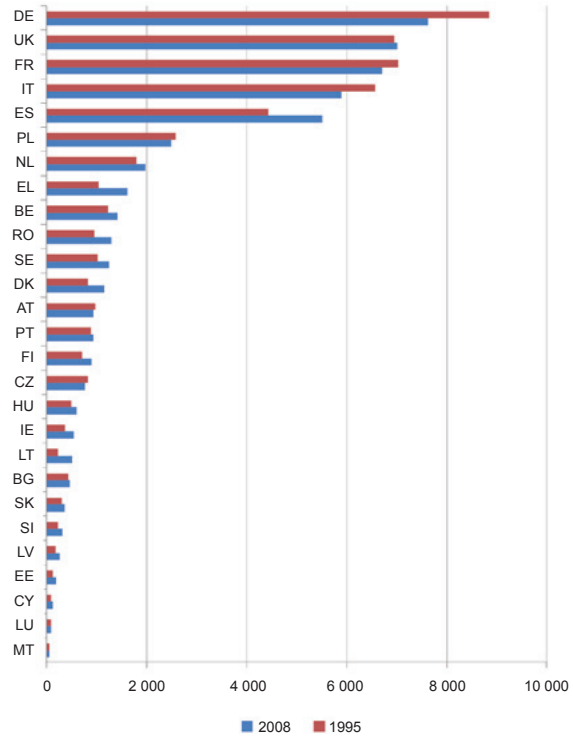
In 2008, the regions with the highest emissions of ozone precursors per capita were the US (134 kg NMVOC-e/cap), Russia (105 kg NMVOC-e/cap), the Rest of the World (68 kg NMVOC-e/cap), Brazil (63 kg NMVOC-e/cap), and the EU-27 (58 kg NMVOC-e/cap). In the EU-27, Denmark, Finland, Spain, Luxembourg, and Estonia were the top five countries in terms of per capita emissions of ozone precursors. In contrast, Slovakia, Malta, Hungary, Romania, and Germany reported the lowest emissions per capita.

F.5. Ozone precursors footprint

Ozone precursors footprint (kt NMVOC-e)

	1995	2000	2005	2006	2007	2008	2008 / 1995	2008 / 1995
AT	957	904	946	969	988	931	-25	-3%
BE	1 223	1 154	1 220	1 176	1 405	1 405	182	15%
BG	422	350	399	381	431	455	33	8%
CY	81	86	82	78	98	106	24	30%
CZ	812	740	709	721	754	746	-67	-8%
DE	8 845	8 277	7 211	7 360	7 973	7 627	-1 218	-14%
DK	815	715	849	883	1 104	1 136	321	39%
EE	114	136	136	138	185	175	61	54%
EL	1 033	1 188	1 256	1 235	1 441	1 603	570	55%
ES	4 427	4 621	5 048	5 043	6 045	5 503	1 077	24%
FI	699	786	755	748	825	885	186	27%
FR	7 028	6 471	6 341	5 927	7 099	6 707	-321	-5%
HU	482	530	604	569	606	585	103	21%
IE	351	422	468	482	627	537	186	53%
IT	6 561	6 081	5 586	5 570	6 374	5 881	-681	-10%
LT	217	274	293	269	608	498	281	129%
LU	80	67	74	69	82	76	-4	-5%
LV	165	160	192	182	266	248	83	50%
MT	41	36	37	39	44	44	3	8%
NL	1 784	1 738	1 764	1 730	2 090	1 967	183	10%
PL	2 570	2 401	2 092	2 211	2 399	2 480	-91	-4%
PT	875	936	934	903	995	928	53	6%
RO	943	983	1 040	1 100	1 246	1 279	336	36%
SE	1 002	1 036	1 057	1 037	1 289	1 238	236	24%
SI	218	188	182	177	211	302	85	39%
SK	294	249	297	296	362	347	53	18%
UK	6 946	7 054	7 282	6 886	8 390	7 013	67	1%
EU-27	**48 985**	**47 582**	**46 854**	**46 179**	**53 936**	**50 700**	**1 716**	**4%**
BR	11 213	10 877	11 914	10 257	11 343	11 905	692	6%
CN	34 284	35 704	42 658	39 646	49 961	52 920	18 636	54%
IN	20 652	21 670	24 556	24 454	26 772	26 816	6 165	30%
JP	12 222	12 285	11 614	12 455	12 550	12 386	164	1%
RU	10 819	7 695	10 058	10 658	11 925	12 282	1 463	14%
US	63 267	62 147	56 031	57 431	59 432	54 157	-9 111	-14%
RW	152 696	146 129	154 816	182 275	198 850	171 867	19 171	13%
World	**354 137**	**344 089**	**358 499**	**383 355**	**424 769**	**393 034**	**38 896**	**11%**

Ozone precursors footprint, EU-27 (kt NMVOC-e)



In 2008, the global ozone precursors footprint amounted to 393 Mt NMVOC-e (11 % increase compared to 1995). The Rest of the World and China were the regions with the largest growth (+19 Mt NMVOC-e each), followed by India (+6.2 Mt NMVOC-e), the EU-27 (+1.7 Mt NMVOC-e), and Russia (+1.5 Mt NMVOC-e). On the contrary, the US reduced its ozone precursors footprint by 9.1 Mt NMVOC-e. In 2008, the Rest of the World was responsible for 44 % of the global ozone precursors footprint, while the US held 14 %, and the EU-27 and China 13 % each.

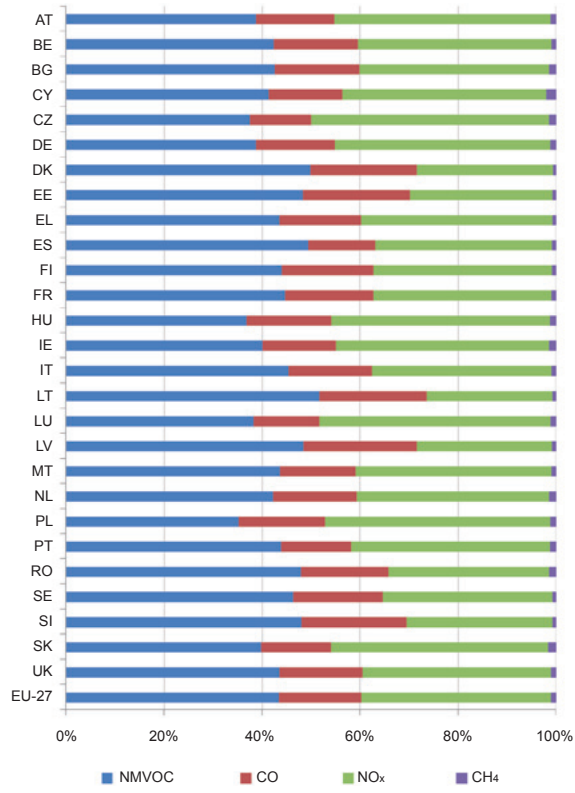
Between 1995 and 2008, the ozone precursors footprint of the EU-27 increased by 4 %. This indicator also followed a growing trend in most of the Member States. In 2008, Germany (15 %), the United Kingdom (14 %), France (13 %), Italy (12 %), and Spain (11 %) summed up almost two-thirds of the EU-27 total ozone precursors footprint.

F.6. Ozone precursors footprint by type

Ozone precursors footprint by type, 2008 (kt NMVOC-e)

	NMVOC	CO	NO_X	CH_4	Total
AT	361	149	410	11	931
BE	596	240	555	15	1 405
BG	193	79	176	7	455
CY	44	16	44	2	106
CZ	279	93	362	11	746
DE	2 960	1 220	3 352	95	7 627
DK	566	247	316	8	1 136
EE	85	38	51	1	175
EL	697	267	625	13	1 603
ES	2 712	757	1 984	50	5 503
FI	389	166	322	8	885
FR	2 995	1 204	2 440	68	6 707
HU	215	102	260	8	585
IE	215	80	233	8	537
IT	2 667	1 003	2 153	58	5 881
LT	257	109	127	4	498
LU	29	10	36	1	76
LV	120	58	69	2	248
MT	19	7	18	0	44
NL	830	335	773	28	1 967
PL	874	435	1 140	30	2 480
PT	406	134	375	13	928
RO	612	228	419	19	1 279
SE	574	226	428	11	1 238
SI	145	65	90	3	302
SK	138	49	153	6	347
UK	3 047	1 195	2 695	76	7 013
EU-27	**22 026**	**8 511**	**19 607**	**557**	**50 700**
BR	5 346	2 958	3 412	190	11 905
CN	19 397	10 654	22 152	717	52 920
IN	11 338	6 495	8 666	317	26 816
JP	5 172	1 914	5 203	97	12 386
RU	4 212	2 392	5 461	216	12 282
US	20 773	10 761	22 069	553	54 157
RW	61 458	48 988	59 966	1 455	171 867
World	**149 722**	**92 673**	**146 535**	**4 103**	**393 034**

Ozone precursors footprint by type, EU-27, 2008 (%)



In 2008, NMOVC were the main ozone precursors around the world (38 % of global ozone precursors footprint), followed by NO_x (37 %), CO (24 %), and CH_4 (1 %). In the EU-27, NMVOC represented 43 % of the ozone precursors, NO_x 39 %, CO 17 %, and CH_4 1 %.

The NMVOC component of the EU-27 ozone precursors footprint was the most important in 18 out of 27 Member States, with a share ranging from 42 % to 52 %. In the rest of the Member States, NO_x was the main gas. Lithuania (52 %), Denmark (50 %), Spain (49 %), and Latvia and Estonia (48 % each) were the Member States with the highest level of NMVOC in relation to total ozone precursors footprint.

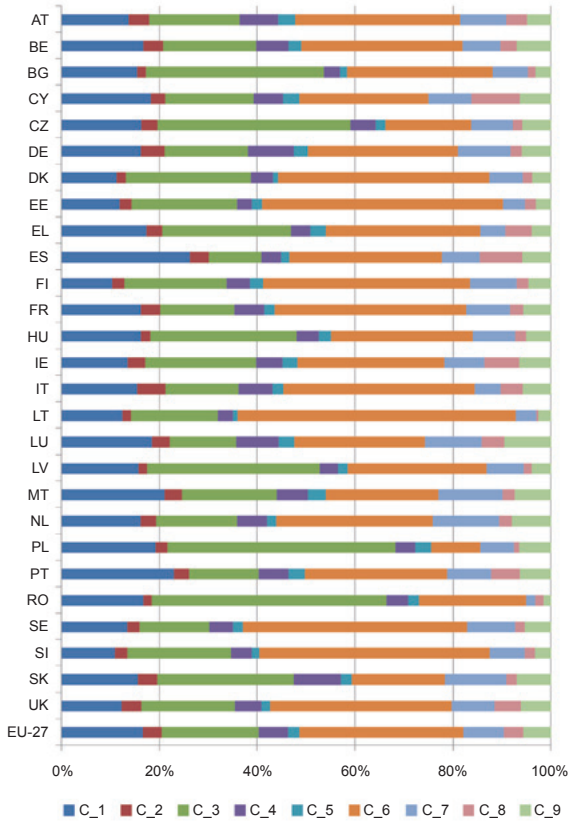
F.7. Household ozone precursors footprint by consumption category

Household ozone precursors footprint by consumption category, 2008 (kt NMVOC-e)

	C_1	C_2	C_3	C_4	C_5	C_6	C_7	C_8	C_9
AT	89	27	120	52	23	219	62	27	33
BE	155	38	177	62	23	306	73	32	65
BG	49	6	116	10	4	95	23	5	10
CY	13	2	13	4	2	20	6	7	5
CZ	82	17	199	26	10	88	43	9	30
DE	873	255	922	499	160	1 653	576	123	324
DK	93	16	212	37	9	357	57	15	32
EE	16	3	28	4	3	64	6	3	4
EL	218	40	329	50	39	397	64	67	50
ES	1 054	154	427	163	70	1 250	309	352	232
FI	63	15	128	29	16	258	59	14	28
FR	815	201	760	308	106	1 970	453	134	288
HU	64	7	118	18	10	114	35	8	20
IE	49	13	83	19	11	109	30	26	24
IT	680	259	659	306	100	1 729	235	201	255
LT	48	6	68	12	4	217	16	2	10
LU	8	2	6	4	1	12	5	2	4
LV	27	3	60	6	3	49	13	3	7
MT	7	1	6	2	1	8	4	1	2
NL	213	42	219	80	26	423	180	34	106
PL	355	45	864	77	61	185	127	20	120
PT	150	20	93	41	21	191	59	39	41
RO	163	16	468	42	22	212	19	17	14
SE	116	21	123	42	18	395	85	17	46
SI	24	6	47	9	3	104	16	5	7
SK	36	9	64	22	5	44	29	5	16
UK	673	220	1 047	298	98	2 028	482	297	337
EU-27	**6 133**	**1 442**	**7 357**	**2 223**	**850**	**12 495**	**3 067**	**1 464**	**2 109**
BR	2 095	242	1 414	294	252	3 198	769	333	629
CN	6 141	650	7 341	461	1 172	8 309	1 554	714	1 030
IN	5 470	531	4 553	463	208	6 402	1 382	538	512
JP	1 312	345	1 412	428	314	2 428	623	382	600
RU	2 214	372	1 789	383	139	2 418	764	121	483
US	4 220	1 331	9 599	2 002	2 257	12 961	2 647	1 603	3 897
RW	21 848	2 640	34 984	4 232	2 796	49 772	9 002	3 220	4 889
World	**49 433**	**7 553**	**68 449**	**10 487**	**7 988**	**97 982**	**19 808**	**8 376**	**14 149**

NB: C_1: Food, drinks, and tobacco; C_2: Clothing and footwear; C_3: Housing, fuel, and power; C_4: Household goods and services; C_5: Health and education; C_6: Transport and communications; C_7: Recreation and culture; C_8: Restaurants and hotels; C_9: Miscellaneous goods and services.

Household ozone precursors footprint by consumption category, EU-27, 2008 (%)



In 2008, transport and communication activities caused 34 % of the global ozone precursors footprint of households; housing, fuel, and power were responsible for 24 % of the footprint, food, drinks, and tobacco summed up 17 %, and recreation and culture 8 %.

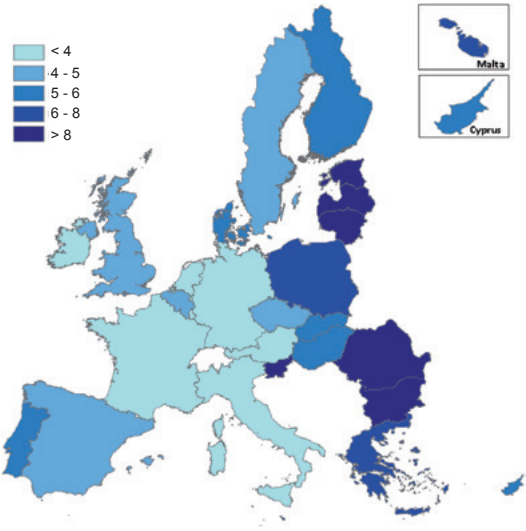
In the EU-27, transport and communication (34 %), housing, fuel, and power (20 %), food, drinks, and tobacco (17 %), and recreation and culture (7 %) were also the consumption activities that caused most of the ozone precursors footprint.

F.8. Ozone precursors footprint intensity of final demand

Ozone precursors footprint intensity of final demand (g NMVOC-e/EUR)

	1995	2000	2005	2006	2007	2008	2008 / 1995	2008 / 1995
AT	4.8	4.1	3.9	3.9	3.8	3.6	-1.2	-25%
BE	4.8	4.0	3.9	3.7	4.3	4.2	-0.6	-12%
BG	18.0	16.3	14.9	12.7	13.4	13.4	-4.6	-26%
CY	7.6	6.9	5.5	5.0	5.9	6.0	-1.6	-22%
CZ	9.4	7.3	5.6	5.2	5.1	4.9	-4.5	-47%
DE	4.7	4.0	3.4	3.4	3.6	3.4	-1.3	-27%
DK	4.8	3.7	4.1	4.1	5.1	5.3	0.5	10%
EE	15.8	14.0	9.8	8.8	11.4	11.8	-4.1	-26%
EL	6.9	6.6	5.9	5.4	6.1	6.7	-0.2	-2%
ES	6.2	5.2	5.0	4.7	5.5	5.0	-1.2	-20%
FI	6.3	5.7	4.9	4.7	5.0	5.3	-1.0	-16%
FR	5.2	4.0	3.6	3.2	3.8	3.5	-1.6	-31%
HU	7.7	5.8	6.1	5.4	5.6	5.4	-2.3	-30%
IE	4.1	3.4	3.0	2.9	3.6	3.1	-1.0	-23%
IT	5.0	4.2	3.7	3.6	4.0	3.8	-1.2	-24%
LT	14.7	14.8	11.5	9.7	20.4	15.9	1.2	8%
LU	5.1	3.0	2.5	2.3	2.5	2.3	-2.8	-54%
LV	15.0	12.1	10.0	8.5	11.3	11.1	-3.9	-26%
MT	10.0	7.5	7.6	7.6	8.4	8.0	-2.0	-20%
NL	4.5	3.6	3.4	3.3	3.8	3.6	-0.9	-21%
PL	14.1	9.5	7.2	7.0	7.1	6.9	-7.2	-51%
PT	6.6	6.0	5.8	5.5	5.9	5.4	-1.2	-18%
RO	13.1	12.3	9.2	9.0	9.5	9.1	-4.0	-31%
SE	4.5	4.0	3.7	3.5	4.2	4.1	-0.4	-9%
SI	10.0	7.1	5.8	5.4	5.9	8.2	-1.8	-18%
SK	11.2	7.3	5.9	5.3	5.8	5.1	-6.1	-54%
UK	5.8	5.0	4.5	4.1	4.9	4.1	-1.7	-29%
EU-27	**5.6**	**4.7**	**4.2**	**4.0**	**4.5**	**4.3**	**-1.4**	**-24%**
BR	15.2	13.4	13.4	11.0	11.5	11.5	-3.8	-25%
CN	40.1	28.0	19.4	15.9	17.3	16.4	-23.7	-59%
IN	53.2	41.3	33.9	30.4	30.6	29.2	-24.0	-45%
JP	3.9	3.8	3.5	3.7	3.7	3.8	-0.1	-3%
RU	24.1	16.7	15.2	14.7	14.7	14.4	-9.7	-40%
US	9.1	7.2	5.7	5.8	5.9	5.4	-3.7	-40%
RW	32.9	27.7	26.8	30.3	31.6	26.2	-6.6	-20%
World	**13.7**	**11.3**	**10.4**	**10.7**	**11.4**	**10.4**	**-3.3**	**-24%**

Ozone precursors footprint intensity of final demand, EU-27, 2008 (g NMVOC-e/EUR)



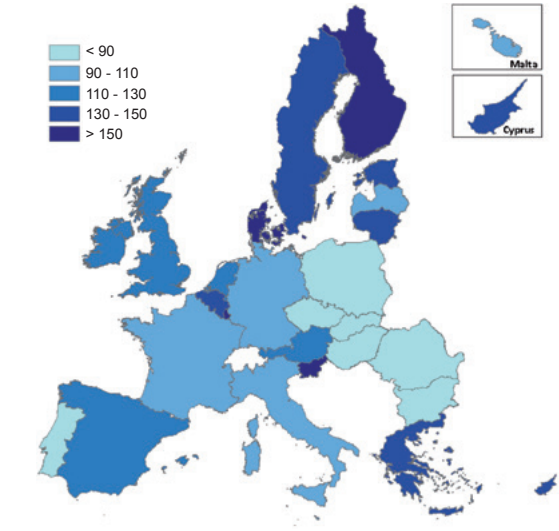
The world's ozone precursors footprint intensity of final demand totalled 10 g NMVOC-e/EUR in 2008, a decrease of 24 % from 1995. In the EU-27, the intensity was reduced by 24 % to reach 4.3 g NMVOC-e/EUR. India and China reported the largest reductions. In 2008, the top five regions with the largest ozone precursors intensity per unit of final demand were India (29 g NMVOC-e/EUR), the Rest of the World (26 g NMVOC-e/EUR), China (16 g NMVOC-e/EUR), Russia (14 g NMVOC-e/EUR), and Brazil (12 g NMVOC-e/EUR). Japan showed the lowest ozone precursors intensity, followed by the EU-27 and the US (3.8, 4.3, and 5.4 g NMVOC-e/EUR respectively).

Regarding the EU-27, all the Member States (excluding Denmark) reduced their ozone precursors footprint intensity. Poland, Slovakia, and Bulgaria showed the largest drops in absolute terms. In 2008, Lithuania (16 g NMVOC-e/EUR), Bulgaria (13 g NMVOC-e/EUR), Estonia (12 g NMVOC-e/EUR), Latvia (11 g NMVOC-e/EUR), and Romania (9.1 g NMVOC-e/EUR) ranked the top in terms of the ozone precursors footprint intensities. Luxembourg, Ireland, Germany, France, the Netherlands, Austria, and Italy showed an ozone precursors intensity of final demand below 4 g NMVOC-e/EUR.

F.9. Ozone precursors footprint per capita

	1995	2000	2005	2006	2007	2008	2008 / 1995	2008 / 1995
AT	120	113	115	117	119	112	-8	-7%
BE	121	113	117	112	133	132	11	9%
BG	50	43	51	49	56	60	9	19%
CY	126	125	109	102	126	134	8	6%
CZ	79	72	69	70	73	72	-7	-9%
DE	108	101	87	89	97	93	-16	-14%
DK	156	134	157	163	203	208	51	33%
EE	79	99	101	103	138	131	52	66%
EL	97	109	113	111	129	143	45	47%
ES	113	115	117	115	136	122	9	8%
FI	137	152	144	142	156	167	30	22%
FR	118	107	101	94	112	105	-14	-12%
HU	47	52	60	56	60	58	12	25%
IE	97	112	114	115	145	122	24	25%
IT	115	107	96	95	108	99	-17	-15%
LT	60	78	86	79	180	148	88	148%
LU	197	155	160	148	171	157	-40	-20%
LV	66	67	83	79	117	109	43	66%
MT	110	96	93	96	108	108	-3	-2%
NL	116	110	108	106	128	120	4	4%
PL	67	62	55	58	63	65	-2	-2%
PT	87	92	89	85	94	87	0	0%
RO	42	44	48	51	58	59	18	43%
SE	114	117	117	115	141	135	21	19%
SI	109	95	91	89	105	150	41	38%
SK	55	46	55	55	67	64	9	17%
UK	120	120	121	114	138	115	-5	-4%
EU-27	**102**	**99**	**95**	**94**	**109**	**102**	**-0**	**-0%**
BR	69	62	64	55	60	62	-7	-10%
CN	28	28	33	30	38	40	12	41%
IN	21	21	22	21	23	23	1	5%
JP	98	98	92	98	99	98	-0	-0%
RU	73	52	70	74	83	86	13	18%
US	238	220	189	192	197	178	-60	-25%
RW	64	56	55	64	68	58	-6	-10%
World	**62**	**56**	**55**	**58**	**64**	**58**	**-4**	**-6%**

Ozone precursors footprint per capita, EU-27, 2008 (kg NMVOC-e/cap)



Between 1995 and 2008, the world's ozone precursors footprint per capita decreased from 62 to 58 kg NMVOC-e/cap (-6 %). The US (-60 kg NMVOC-e/cap), Brazil (-7 kg NMVOC-e/cap), and the Rest of the World (-6 kg NMVOC-e/cap) led the reduction in the ozone precursors footprint. In contrast, Russia, China, and India increased their ozone precursors footprint by 13, 12, and 1 kg NMVOC-e/cap respectively. In the EU-27 it stayed at the level of 1995.

In 2008, the regions with the highest ozone precursors footprint per capita were the US (178 kg NMVOC-e/cap), the EU-27 (102 kg NMVOC-e/cap), Japan (98 kg NMVOC-e/cap), Russia (86 kg NMVOC-e/cap), and Brazil (62 kg NMVOC-e/cap). In the EU-27, Denmark (208 kg NMVOC-e/cap), Finland (167 kg NMVOC-e/cap), and Luxembourg (157 kg NMVOC-e/cap) were the Member States with the highest ozone precursors footprint. Hungary, Romania, and Bulgaria showed the lowest ozone precursors emission (58, 59, and 60 kg NMVOC-e/cap respectively).

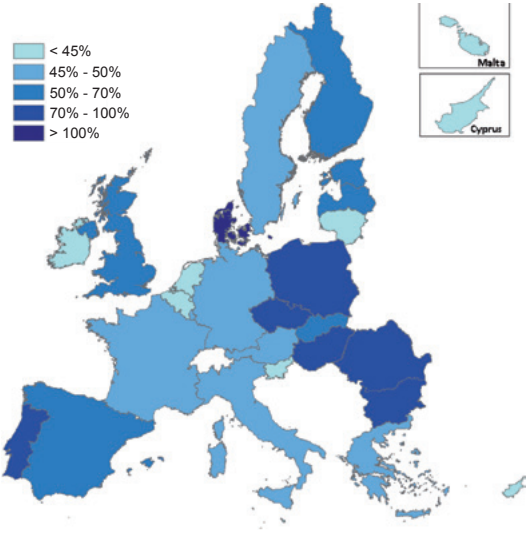
Between 1995 and 2008, Luxembourg, Italy, Germany, France, and Austria registered the largest reductions in terms of ozone precursors footprint per capita. On the other hand, Lithuania, Estonia, Denmark, Greece, and Latvia showed the highest growth.

F.10. Ozone precursors footprint domestic coverage ratio

Ozone precursors footprint domestic coverage ratio (%)

	1995	2000	2005	2006	2007	2008	2008 / 1995	2008 / 1995
AT	56%	54%	52%	51%	48%	49%	-7%	-13%
BE	78%	69%	53%	52%	42%	39%	-39%	-50%
BG	131%	113%	112%	121%	97%	93%	-39%	-29%
CY	59%	49%	52%	53%	43%	37%	-23%	-38%
CZ	103%	88%	84%	81%	77%	73%	-29%	-29%
DE	65%	56%	55%	54%	48%	49%	-16%	-25%
DK	118%	157%	176%	205%	186%	194%	77%	65%
EE	101%	77%	73%	68%	55%	55%	-46%	-45%
EL	82%	71%	65%	64%	52%	46%	-36%	-44%
ES	94%	88%	78%	78%	64%	65%	-29%	-31%
FI	89%	71%	68%	70%	60%	52%	-37%	-41%
FR	81%	74%	61%	61%	48%	47%	-34%	-42%
HU	98%	82%	81%	87%	76%	77%	-21%	-21%
IE	77%	64%	51%	48%	36%	40%	-37%	-48%
IT	82%	68%	59%	57%	48%	49%	-32%	-40%
LT	82%	73%	71%	78%	36%	43%	-39%	-48%
LU	85%	53%	42%	45%	38%	50%	-35%	-42%
LV	104%	93%	79%	84%	57%	58%	-47%	-45%
MT	65%	43%	50%	48%	40%	39%	-27%	-41%
NL	70%	63%	55%	52%	44%	44%	-26%	-38%
PL	110%	94%	95%	96%	84%	82%	-28%	-26%
PT	86%	80%	78%	78%	69%	71%	-15%	-17%
RO	102%	105%	94%	90%	80%	76%	-26%	-26%
SE	78%	65%	61%	62%	50%	50%	-28%	-36%
SI	78%	71%	69%	72%	58%	42%	-36%	-46%
SK	127%	94%	79%	75%	60%	62%	-65%	-51%
UK	90%	71%	60%	58%	46%	51%	-39%	-43%
EU-27	**84%**	**73%**	**67%**	**67%**	**56%**	**57%**	**-26%**	**-32%**
BR	102%	103%	114%	109%	103%	101%	-0%	-0%
CN	113%	115%	122%	139%	116%	117%	4%	3%
IN	103%	105%	101%	103%	98%	100%	-4%	-4%
JP	55%	52%	55%	52%	52%	51%	-4%	-7%
RU	128%	171%	134%	133%	119%	122%	-5%	-4%
US	95%	86%	80%	78%	74%	75%	-20%	-21%
RW	105%	110%	111%	107%	118%	117%	12%	11%
World	**100%**	**100%**	**100%**	**100%**	**100%**	**100%**	**-0%**	**-0%**

Ozone precursors footprint domestic coverage ratio, EU-27, 2008 (%)



In 2008, the share of the ozone precursors footprint covered with domestic emissions was over 100 % in all the regions, except the US (75 %), the EU-27 (57 %), and Japan (51 %). During the period 1995 – 2008, only China and the Rest of the World increased the coverage ratios.

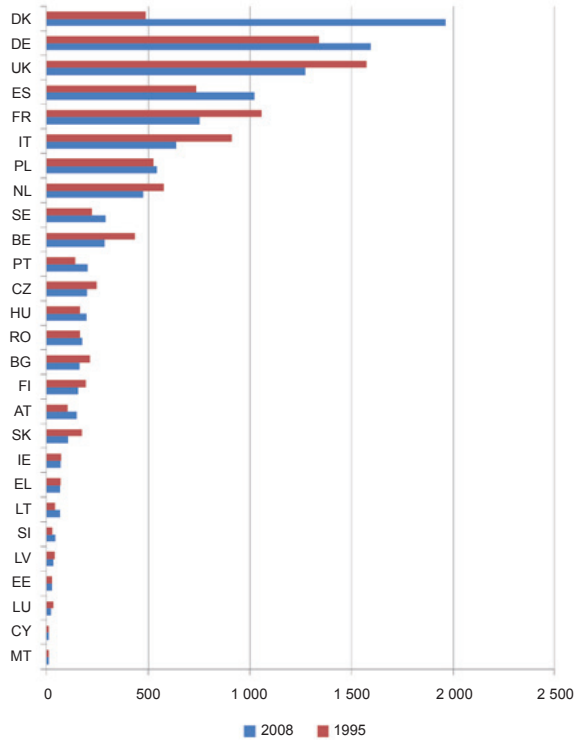
Between 1995 and 2008, the share of the ozone precursors footprint of the EU-27 covered by domestic emissions fell from 84 % to 57 %. In this period, Denmark was also the only country with a domestic coverage ratio above 100 %. Cyprus (37 %), Malta and Belgium (39 % each), Ireland (40 %), and Slovenia (42 %) were the countries with the lowest domestic coverage ratios.

F.11. Embodied ozone precursors in exports

Embodied ozone precursors in exports (kt NMVOC-e)

	1995	2000	2005	2006	2007	2008	2008 / 1995	2008 / 1995
AT	100	117	144	156	153	147	47	47%
BE	434	387	334	318	302	284	-150	-35%
BG	210	139	141	178	158	159	-51	-24%
CY	7	7	7	8	8	7	1	12%
CZ	243	199	205	202	214	197	-45	-19%
DE	1 338	1 472	1 520	1 636	1 584	1 593	255	19%
DK	486	763	1 183	1 540	1 751	1 964	1 478	304%
EE	24	24	20	18	24	24	0	2%
EL	66	71	60	60	61	63	-3	-4%
ES	734	968	1 028	1 072	1 058	1 020	286	39%
FI	191	182	177	177	163	153	-38	-20%
FR	1 057	1 055	864	839	799	750	-307	-29%
HU	161	156	172	194	197	194	33	21%
IE	70	74	73	71	70	66	-4	-5%
IT	908	742	653	663	662	636	-273	-30%
LT	40	46	61	61	61	63	23	57%
LU	31	16	15	16	16	21	-10	-32%
LV	37	34	34	33	32	31	-7	-18%
MT	6	4	6	6	6	7	0	4%
NL	575	563	518	470	497	474	-101	-18%
PL	524	460	503	569	560	539	14	3%
PT	137	158	184	196	199	198	61	44%
RO	162	206	195	189	178	173	11	7%
SE	222	240	279	294	297	288	67	30%
SI	26	27	38	43	40	42	16	62%
SK	172	109	114	114	110	106	-66	-39%
UK	1 572	1 332	1 508	1 240	1 225	1 271	-300	-19%
EU-27	**9 531**	**9 550**	**10 034**	**10 362**	**10 427**	**10 468**	**937**	**10%**
BR	938	1 251	2 599	1 899	2 303	2 350	1 412	151%
CN	5 876	7 753	14 094	20 190	14 617	17 405	11 529	196%
IN	1 493	2 322	2 766	2 987	3 093	3 229	1 735	116%
JP	1 281	1 764	2 280	1 987	2 262	1 969	688	54%
RU	3 755	5 998	4 632	4 911	4 232	4 746	991	26%
US	6 290	6 690	6 226	4 815	5 225	5 292	-998	-16%
RW	24 600	37 065	46 116	45 227	68 946	63 594	38 994	159%
World	**53 764**	**72 393**	**88 746**	**92 379**	**111 104**	**109 053**	**55 289**	**103%**

Embodied ozone precursors in exports, EU-27 (kt NMVOC-e)



Between 1995 and 2008 the ozone precursors emissions embodied in global exports increased by 103 % to 109 Mt NMVOC-e. Growth in the exports of ozone precursors emissions was led by the Rest of the World (+39 Mt NMVOC-e) and China (+12 Mt NMVOC-e). Within the EU-27, the largest growths in absolute terms were registered in Denmark (+1.5 Mt NMVOC-e), Spain (+0.29 Mt NMVOC-e), and Germany (+0.26 Mt NMVOC-e). France, the United Kingdom, and Italy reduced the ozone precursors emissions embodied in exports by 0.31, 0.3, and 0.27 Mt NMVOC-e respectively.

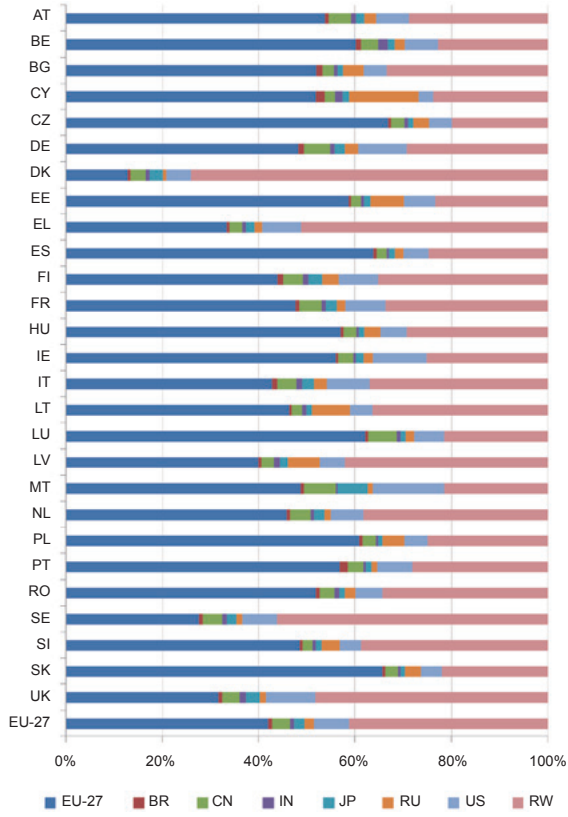
In 2008, 58 % of the ozone precursors emissions embodied in global exports were related to the exports of the Rest of the World, 56 % to China, 10 % to the EU-27, and 5 % to the US. Within the EU-27, Denmark was the country with the highest amount of ozone precursors emissions embodied in exports (2 Mt NMVOC-e), followed by Germany (1.6 Mt NMVOC-e), and the United Kingdom (1.3 Mt NMVOC-e).

F.12. Embodied ozone precursors in exports by main partner countries

Embodied ozone precursors in exports by main partner countries, 2008 (kt NMVOC-e)

	EU-27	BR	CN	IN	JP	RU	US	RW	Total exports
AT	79	1	7	1	3	3	10	42	147
BE	171	3	10	6	4	6	20	65	284
BG	83	2	4	1	2	7	8	53	159
CY	4	0	0	0	0	1	0	2	7
CZ	132	1	5	2	2	6	9	39	197
DE	767	19	86	14	35	44	159	468	1 593
DK	249	12	62	16	55	14	99	1 457	1 964
EE	14	0	1	0	0	2	2	6	24
EL	21	0	2	1	1	1	5	32	63
ES	650	7	20	5	13	17	54	253	1 020
FI	67	2	6	2	4	5	12	54	153
FR	357	6	34	7	17	13	62	253	750
HU	111	1	5	1	2	7	10	57	194
IE	37	0	2	0	1	1	7	17	66
IT	272	6	26	7	16	17	57	235	636
LT	29	0	1	1	1	5	3	23	63
LU	13	0	1	0	0	0	1	4	21
LV	12	0	1	0	1	2	2	13	31
MT	3	0	0	0	0	0	1	1	7
NL	217	3	20	3	10	6	32	182	474
PL	327	3	15	3	5	24	26	135	539
PT	112	3	6	1	2	2	14	56	198
RO	90	1	5	2	2	4	10	59	173
SE	80	2	12	3	6	3	21	162	288
SI	20	0	1	0	0	2	2	16	42
SK	69	1	3	1	1	4	5	23	106
UK	401	10	46	17	37	16	130	614	1 271
EU-27	**4 386**	**88**	**383**	**94**	**222**	**212**	**762**	**4 322**	**10 468**
BR	580	4	216	20	79	49	337	1 066	2 350
CN	3 916	237	120	454	1 323	481	3 522	7 352	17 405
IN	790	55	213	6	104	55	525	1 480	3 229
JP	246	16	194	20	13	32	203	1 244	1 969
RU	2 220	56	307	61	184	26	470	1 421	4 746
US	998	74	394	76	324	59	175	3 193	5 292
RW	**19 029**	**1 669**	**6 371**	**2 613**	**5 780**	**1 095**	**12 616**	**14 422**	**63 594**

Embodied ozone precursors in exports by main partner countries, EU-27, 2008 (%)



In 2008, 30 % of the ozone precursors emissions embodied in the exports of the Rest of the World were conveyed to the EU-27, 20 % to the US, 10 % to China, and 9 % to Japan. Up to 20 % of the ozone precursors emissions embodied in the exports of the Rest of the World were traded within the region. In the case of China, 42 % of the ozone precursors emissions embodied in Chinese exports were delivered to the Rest of the World, 22 % to the EU-27, 20 % to the US, and 8 % to Japan.

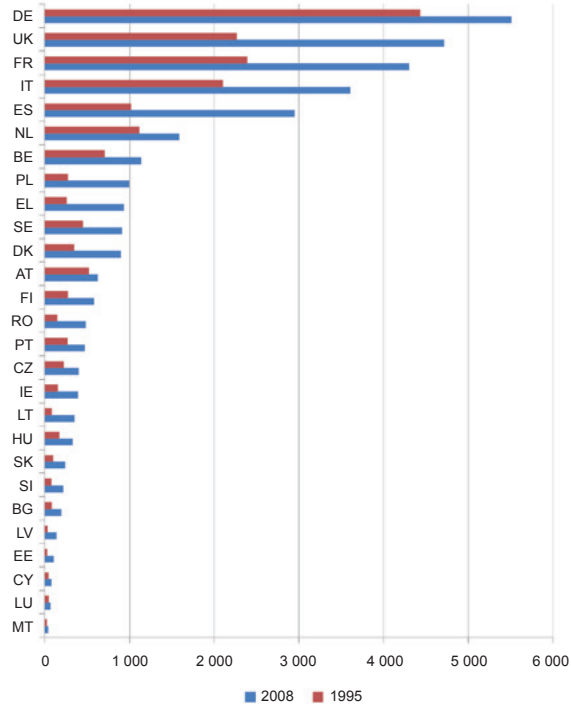
The EU-27 countries delivered most of the ozone precursors emissions embodied in exports to other Member States (42 %), 41 % to the Rest of the World, and 7 % to the US.

F.13. Embodied ozone precursors in imports

Embodied ozone precursors in imports (kt NMVOC-e)

	1995	2000	2005	2006	2007	2008	2008 / 1995	2008 / 1995
AT	517	533	599	628	669	621	104	20%
BE	699	745	902	881	1 122	1 135	435	62%
BG	77	95	92	98	170	192	115	148%
CY	39	51	47	45	65	74	35	88%
CZ	222	290	319	341	385	398	175	79%
DE	4 428	5 096	4 798	5 041	5 760	5 502	1 074	24%
DK	342	353	535	613	801	895	552	161%
EE	23	56	56	62	107	103	80	353%
EL	256	412	499	508	756	931	675	264%
ES	1 014	1 502	2 129	2 205	3 257	2 946	1 932	191%
FI	266	408	421	402	496	575	309	116%
FR	2 387	2 739	3 344	3 174	4 524	4 301	1 914	80%
HU	170	250	288	268	342	326	156	92%
IE	149	225	303	322	470	387	238	161%
IT	2 101	2 704	2 937	3 074	3 980	3 607	1 505	72%
LT	79	119	146	121	452	347	268	340%
LU	42	48	57	54	67	59	16	39%
LV	30	45	74	61	146	135	105	349%
MT	20	25	25	26	33	34	13	65%
NL	1 112	1 204	1 314	1 296	1 667	1 584	471	42%
PL	267	608	615	657	937	992	725	271%
PT	260	343	385	397	512	467	207	79%
RO	139	155	260	295	427	480	340	244%
SE	447	600	688	685	943	909	462	104%
SI	73	81	95	93	128	217	144	195%
SK	93	124	177	189	256	237	144	156%
UK	2 262	3 400	4 437	4 119	5 780	4 715	2 452	108%
EU-27	**17 518**	**22 213**	**25 542**	**25 654**	**34 250**	**32 167**	**14 648**	**84%**
BR	765	918	904	947	1 911	2 198	1 432	187%
CN	1 269	2 569	4 520	4 578	6 660	8 197	6 928	546%
IN	796	1 224	2 640	2 147	3 734	3 345	2 549	320%
JP	6 772	7 607	7 500	7 976	8 252	8 028	1 257	19%
RU	751	566	1 181	1 400	1 957	2 008	1 258	168%
US	9 195	15 550	17 490	17 227	20 960	18 610	9 416	102%
RW	16 699	21 746	28 968	32 450	33 379	34 499	17 801	107%
World	**53 764**	**72 393**	**88 746**	**92 379**	**111 104**	**109 053**	**55 289**	**103%**

Embodied ozone precursors in imports, EU-27 (kt NMVOC-e)



Between 1995 and 2008, the ozone precursors emissions embodied in global imports increased by 103 % to 109 Mt NMVOC-e. This growth was mainly driven by the Rest of the World (+18 Mt NMVOC-e), the EU-27 (+15 Mt NMVOC-e), and the US (+9.4 Mt NMVOC-e). In 2008, the Rest of the World imported 32 % of the ozone precursors emissions embodied in global imports, the EU-27 29 %, the US 17 %, China 8 %, and Japan 7 %.

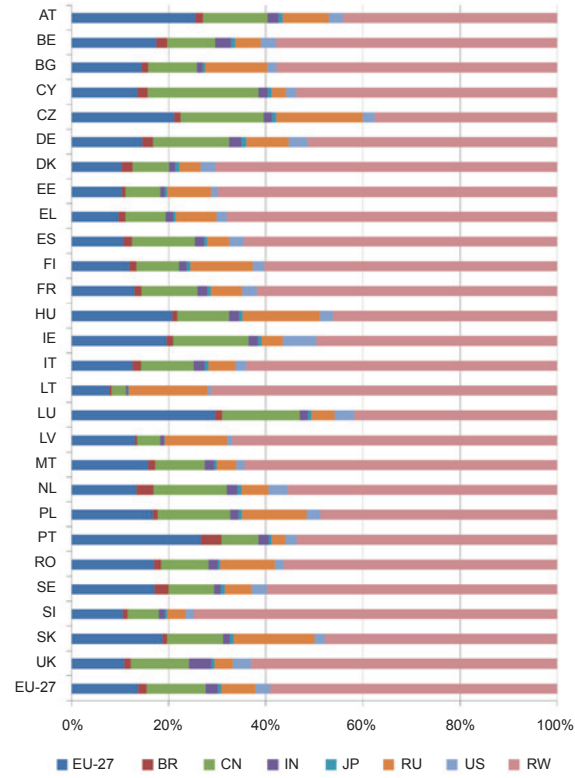
In all EU-27 Member States the ozone precursors emissions embodied in imports increased, the largest growth in absolute terms being reported by the United Kingdom (+2.5 Mt NMVOC-e), Spain (+1.9 Mt NMVOC-e), and France (+1.9 Mt NMVOC-e). Within the EU-27, in 2008, Germany was the country with the highest level of ozone precursors emissions embodied in imports (5.5 Mt NMVOC-e), followed by the United Kingdom (4.7 Mt NMVOC-e) and France (4.3 Mt NMVOC-e).

F.14. Embodied ozone precursors in imports by main partner countries

Embodied ozone precursors in imports by main partner countries, 2008 (kt NMVOC-e)

	EU-27	BR	CN	IN	JP	RU	US	RW	Total imports
AT	158	10	83	14	6	59	18	274	621
BE	197	26	112	37	9	61	35	658	1 135
BG	28	3	19	2	1	24	4	111	192
CY	10	1	17	1	1	2	2	40	74
CZ	84	5	68	7	4	71	10	150	398
DE	801	123	860	140	58	482	209	2 831	5 502
DK	92	20	67	11	8	40	26	631	895
EE	11	1	7	1	1	9	1	72	103
EL	90	13	77	14	5	79	19	634	931
ES	314	50	383	57	18	135	85	1 904	2 946
FI	69	7	51	9	4	74	13	347	575
FR	557	62	495	88	29	282	129	2 660	4 301
HU	68	3	35	6	3	52	9	151	326
IE	76	5	60	8	3	17	27	192	387
IT	451	61	395	83	24	200	85	2 308	3 607
LT	27	1	10	1	1	56	2	247	347
LU	17	1	9	1	0	3	2	25	59
LV	18	1	6	1	0	17	1	91	135
MT	5	0	3	1	0	1	1	22	34
NL	211	56	237	36	14	88	60	881	1 584
PL	166	10	147	17	7	131	28	485	992
PT	124	20	36	9	3	14	11	250	467
RO	81	7	47	9	2	54	8	271	480
SE	154	26	86	13	6	50	28	544	909
SI	23	2	14	3	1	9	3	162	217
SK	44	2	27	3	2	39	5	114	237
UK	510	64	564	216	36	173	176	2 976	4 715
EU-27	**4 386**	**580**	**3 916**	**790**	**246**	**2 220**	**998**	**19 029**	**32 167**
BR	88	4	237	55	16	56	74	1 669	2 198
CN	383	216	120	213	194	307	394	6 371	8 197
IN	94	20	454	6	20	61	76	2 613	3 345
JP	222	79	1 323	104	13	184	324	5 780	8 028
RU	212	49	481	55	32	26	59	1 095	2 008
US	762	337	3 522	525	203	470	175	12 616	18 610
RW	**4 322**	**1 066**	**7 352**	**1 480**	**1 244**	**1 421**	**3 193**	**14 422**	**34 499**

Embodied ozone precursors in imports by main partner countries, EU-27, 2008 (%)



In 2008, almost 21 % of the ozone precursors emissions embodied in the imports of the Rest of the World were originated in China, 13 % in the EU-27, and 9 % in the US. The Rest of the World and China were the main sources of ozone precursors emissions embodied in the imports of the US (68 % and 19 % respectively). In the case of China, 78 % of the ozone precursors embodied in imports came from the Rest of the World.

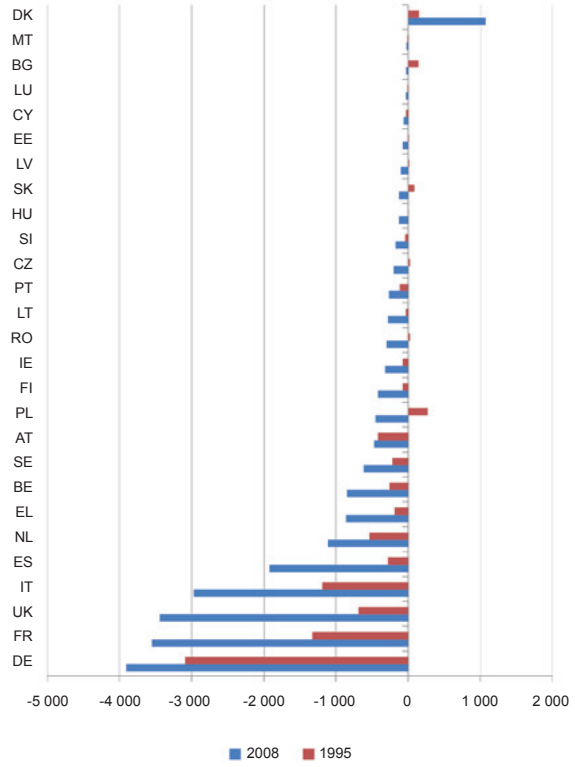
In the year 2008, 59 % of the ozone precursors emissions embodied in the imports of the EU-27 countries came from the Rest of the World, 12 % from other Member States, 12 % from China, and 7 % from Russia.

F.15. Ozone precursors trade balance

Ozone precursors trade balance (kt NMVOC-e)

	1995	2000	2005	2006	2007	2008	2008 / 1995	2008 / 1995
AT	-417	-417	-455	-472	-516	-474	-57	14%
BE	-265	-358	-568	-563	-820	-851	-586	221%
BG	133	44	49	80	-12	-33	-165	-125%
CY	-33	-44	-40	-37	-56	-67	-34	103%
CZ	21	-92	-114	-138	-171	-200	-221	-1076%
DE	-3 090	-3 624	-3 278	-3 405	-4 176	-3 910	-820	27%
DK	143	410	647	927	949	1.069	926	647%
EE	1	-32	-36	-44	-83	-78	-80	-7175%
EL	-190	-341	-440	-448	-695	-868	-678	358%
ES	-280	-534	-1 101	-1 133	-2 198	-1 927	-1 646	587%
FI	-75	-226	-244	-225	-333	-422	-347	466%
FR	-1 330	-1 684	-2 480	-2 335	-3 726	-3 551	-2 221	167%
HU	-9	-95	-116	-74	-145	-132	-123	1329%
IE	-79	-151	-230	-251	-400	-321	-242	307%
IT	-1 193	-1 962	-2 284	-2 411	-3 318	-2 971	-1 778	149%
LT	-39	-73	-85	-60	-391	-284	-245	632%
LU	-12	-32	-43	-38	-51	-38	-26	221%
LV	7	-11	-40	-28	-114	-105	-112	-1554%
MT	-14	-21	-19	-20	-27	-27	-13	92%
NL	-538	-641	-797	-826	-1.171	-1.110	-572	106%
PL	257	-149	-113	-88	-377	-454	-711	-276%
PT	-123	-185	-201	-201	-313	-269	-146	119%
RO	23	51	-65	-106	-249	-307	-329	-1463%
SE	-225	-360	-409	-391	-646	-621	-396	176%
SI	-48	-54	-57	-51	-88	-175	-128	268%
SK	79	-15	-62	-75	-145	-132	-211	-267%
UK	-691	-2 069	-2 929	-2 879	-4 555	-3 443	-2 753	399%
EU-27	**-7 987**	**-12 663**	**-15 509**	**-15 292**	**-23 824**	**-21 699**	**-13 711**	**172%**
BR	173	333	1 694	952	391	153	-20	-12%
CN	4 606	5 184	9 574	15 613	7 957	9 208	4 602	100%
IN	697	1 098	126	840	-641	-117	-814	-117%
JP	-5 491	-5 843	-5 221	-5 990	-5 990	-6 060	- 569	10%
RU	3 004	5 432	3 451	3 511	2 275	2 737	- 267	-9%
US	-2 904	-8 859	-11 264	-12 412	-15 735	-13 318	-10 414	359%
RW	**7 901**	**15 318**	**17 147**	**12 777**	**35 566**	**29 095**	**21 194**	**268%**

Ozone precursors trade balance, EU-27 (kt NMVOC-e)



In 2008, the EU-27 showed the largest deficit in terms of ozone precursors embodied in trade (22 Mt NMVOC-e) followed by the US (13 Mt NMVOC-e), and Japan (6 Mt NMVOC-e). Between 1995 and 2008 the ozone precursors emissions trade deficit increased by 14 Mt NMVOC-e in the EU-27 and by 10 Mt NMVOC-e in the US. The countries with the largest surplus in terms of ozone precursors embodied in trade were the Rest of the World (29 Mt), China (9.2 Mt), and Russia (2.7 Mt).

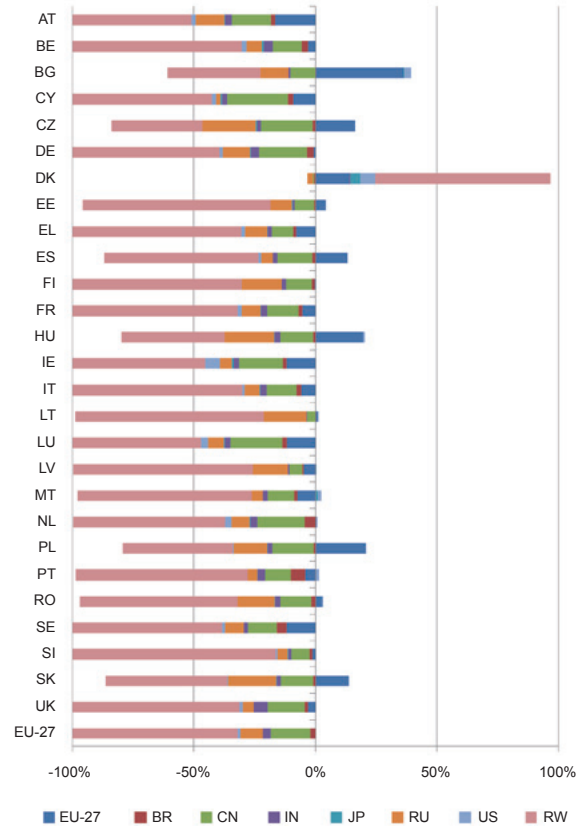
All the EU-27 countries (excluding Denmark) showed a deficit in the ozone precursors trade balance. The largest deficits were those of Germany (3.9 Mt NMVOC-e), France (3.6 Mt NMVOC-e), the United Kingdom (3.4 Mt NMVOC-e), and Italy (3 Mt NMVOC-e). Denmark reported a surplus of 1.1 Mt NMVOC-e.

F.16. Ozone precursors trade balance by main partner countries

Ozone precursors trade balance by main partner countries, 2008 (kt NMVOC-e)

	EU-27	BR	CN	IN	JP	RU	US	RW	Trade Balance
AT	-79	-9	-76	-13	-3	-55	-8	-231	-474
BE	-27	-23	-102	-31	-5	-55	-15	-593	-851
BG	55	-0	-15	-1	0	-18	4	-58	-33
CY	-6	-1	-17	-1	-0	-1	-1	-38	-67
CZ	48	-4	-63	-5	-1	-64	-0	-110	-200
DE	-34	-104	-774	-125	-23	-437	-49	-2 362	-3 910
DK	157	-8	-5	5	47	-26	73	826	1.069
EE	4	-1	-7	-1	-0	-8	0	-66	-78
EL	-69	-12	-76	-14	-3	-78	-14	-602	-868
ES	336	-42	-363	-53	-6	-117	-31	-1 652	-1 927
FI	-2	-6	-44	-7	-0	-68	-1	-293	-422
FR	-201	-55	-460	-80	-12	-268	-67	-2 407	-3 551
HU	43	-2	-30	-5	-0	-45	1	-94	-132
IE	-39	-5	-58	-7	-2	-15	-19	-175	-321
IT	-179	-55	-369	-76	-8	-183	-28	-2 073	-2 971
LT	2	-1	-9	-1	0	-51	0	-224	-284
LU	-5	-1	-8	-1	-0	-2	-1	-20	-38
LV	-5	-1	-5	-1	0	-15	0	-78	-105
MT	-2	-0	-3	-1	0	-1	0	-20	-27
NL	6	-53	-217	-33	-4	-82	-27	-699	-1.110
PL	161	-7	-132	-14	-2	-107	-2	-350	-454
PT	-12	-16	-29	-8	-0	-11	4	-195	-269
RO	8	-6	-41	-7	-0	-51	2	-211	-307
SE	-75	-24	-74	-10	-0	-47	-8	-382	-621
SI	-3	-2	-13	-2	-1	-7	-2	-146	-175
SK	25	-2	-24	-3	-1	-36	-1	-90	-132
UK	-109	-53	-518	-199	1	-157	-46	-2 362	-3 443
EU-27	**0**	**-493**	**-3 533**	**-696**	**-25**	**-2 008**	**-237**	**-14 707**	**-21 699**
BR	493	0	-22	-35	63	-7	264	-603	153
CN	3533	22	0	241	1129	173	3129	981	9 208
IN	696	35	-241	0	84	-6	449	-1 133	-117
JP	25	-63	-1 129	-84	0	-152	-121	-4 536	-6 060
RU	2 008	7	-173	6	152	0	411	326	2 737
US	237	-264	-3 129	-449	121	-411	0	-9 423	-13 318
RW	**14 707**	**603**	**-981**	**1 133**	**4 536**	**-326**	**9 423**	**0**	**29 095**

Ozone precursors trade balance by main partner countries, EU-27, 2008 (%)



In 2008, the ozone precursors trade balance of the EU-27 showed a deficit with all the other regions. The largest deficits of the EU-27 were with Rest of the World (15 Mt NMVOC-e), China (3.5 Mt NMVOC-e), and Russia (2 Mt NMVOC-e). China presented a trade surplus against all the other regions.

Within the EU-27 countries, the largest deficits in the ozone precursors trade balance were with the Rest of the World, China, and Russia. Some EU-27 countries showed a surplus in the ozone precursors trade balance, mostly with other Member States and, in the case of Denmark, with the rest of the World.

Data & Methods

World Input-Output Database

The European Commission-funded World Input-Output Database (WIOD) is composed of a set of harmonised supply, use, and symmetric I-O tables, valued at current and previous year prices. It includes data on international trade and satellite accounts related to various environmental and socio-economic indicators. These include energy, emissions, water, land, materials, industry output and value added, capital stock and investment, and wages and employment by skills type. The database covers 27 EU countries and 13 other major countries in the world and the Rest of the World as an aggregated region. In the present document we have included some of the other major countries in the Rest of the World.

The WIOD database distinguishes between 35 industries, 59 products and 5 final demand categories, and spans the period of 1995 to 2009. However, since 2009 figures are preliminary estimates, the time span used in this study has been constrained to the period 1995 – 2008.

The environmental extensions in WIOD are based in the accounting principles of the national accounts followed for compiling the whole database. Therefore, environmental accounts can be linked directly with the rest of the relevant socio-economic information of the WIOD. The environmental extensions cover the extraction of resources and the emissions released by national economic activities, i.e. those generated by economic activities of resident units. This accounting principle differs from the one followed by other data sources, such as the emissions inventories of United Nations, which consider the environmental pressures generated within the area under national jurisdiction (territorial principle).

The database is freely downloadable from the website www.wiod.org, which also provides its detailed description.

Methodology

As mentioned in the introduction, the indicators reported in this publication could be grouped into three categories: production indicators, consumption or footprint indicators and trade indicators.

The production indicators cover the use of resources as primary inputs and the emissions directly generated by national economic activities. This information comes directly from the WIOD database, with only minor additional calculations to obtain some derived indicators such as per capita figures or intensities.

The footprint and trade indicators were obtained by using a Multi-Regional Input-Output (MRIO) model. MRIO models have been widely used to calculate footprints and to analyse the environmental consequences of trade.

The methodology is described for the case of three regions with n sectors and one environmental extension, but it can be applied to any number of regions and sectors. In this study, the model was applied to 34 regions, 35 industries, 5 final demand categories and 6 environmental dimensions of the WIOD.

The starting point of the model is the MRIO table at basic prices. This table describes the flows of goods and services from all sectors to all intermediate and final users, explicitly distinguishing the countries of origin and destination for each flow.

We can distinguish three main components in the MRIO table:

$$\mathbf{Z} = \begin{bmatrix} \mathbf{Z}^{11} & \mathbf{Z}^{12} & \mathbf{Z}^{12} \\ \mathbf{Z}^{21} & \mathbf{Z}^{22} & \mathbf{Z}^{23} \\ \mathbf{Z}^{31} & \mathbf{Z}^{32} & \mathbf{Z}^{33} \end{bmatrix} \quad \mathbf{f} = \begin{bmatrix} \mathbf{f}^{1} \\ \mathbf{f}^{2} \\ \mathbf{f}^{3} \end{bmatrix} = \begin{bmatrix} \mathbf{f}^{11} + \mathbf{f}^{12} + \mathbf{f}^{13} \\ \mathbf{f}^{21} + \mathbf{f}^{22} + \mathbf{f}^{23} \\ \mathbf{f}^{31} + \mathbf{f}^{32} + \mathbf{f}^{33} \end{bmatrix} \quad \mathbf{x} = \begin{bmatrix} \mathbf{x}^{1} \\ \mathbf{x}^{2} \\ \mathbf{x}^{3} \end{bmatrix}$$

where $\mathbf{Z}^{rs}$ is the intermediate matrix with sectoral deliveries from country r to country s; $\mathbf{f}^{rs}$ is the column vector of country **s** final demand (including household consumption, government consumption, and investment) for goods produced by country **r**; and $\mathbf{x}^{r}$ is the vector column vector of gross output for country **r**. Further, let assume that the MRIO table is extended to include a vector of sectoral resources use or emissions generation. For simplicity we will focus only on one environmental dimension, say, water and denote the corresponding column vector of sectoral water use by country by:

$$\mathbf{w} = \begin{bmatrix} \mathbf{w}^{1} \\ \mathbf{w}^{2} \\ \mathbf{w}^{3} \end{bmatrix}$$

The relation between **x**, **Z** and **f** is defined by the accounting equation $\mathbf{x} = \mathbf{Zi} + \mathbf{f}$, where i is the column summation vector consisting of ones.

The input coefficient matrix for the whole system is defined as $\mathbf{A} = \mathbf{Z}(\hat{\mathbf{x}})^{-1}$, where $(\hat{\mathbf{x}})$ is a diagonal matrix with the values of vector **x** long its diagonal and zero elsewhere. Thus, the accounting equation can now be written as the standard input-output model: $\mathbf{x} = \mathbf{Ax} + \mathbf{f}$. The last, is the basic equation of the standard input-output model. For an arbitrary final demand final demand vector f, the solution to the model is given by $\mathbf{x} = \mathbf{Lf}$, where $\mathbf{L} = \mathbf{(I - A)^{-1}}$ is the Leontief inverse.

The water coefficients vector, $\mathbf{v} = (\hat{\mathbf{x}})^{-1}\mathbf{w}$, gives the amount of water per unit of output. Hence, the amount of water required for the production of goods in order to satisfy total final demand **f** is given by

$$\mathbf{w} = \hat{\mathbf{v}}\mathbf{x} = \hat{\mathbf{v}}\mathbf{L}\mathbf{f} \qquad [1]$$

We can write [1] in its partitioned form as:

$$\begin{bmatrix} \mathbf{w}^1 \\ \mathbf{w}^2 \\ \mathbf{w}^3 \end{bmatrix} = \begin{bmatrix} \hat{\mathbf{v}}^1 & \mathbf{0} & \mathbf{0} \\ \mathbf{0} & \hat{\mathbf{v}}^2 & \mathbf{0} \\ \mathbf{0} & \mathbf{0} & \hat{\mathbf{v}}^3 \end{bmatrix} \begin{bmatrix} \mathbf{L}^{11} & \mathbf{L}^{12} & \mathbf{L}^{13} \\ \mathbf{L}^{21} & \mathbf{L}^{22} & \mathbf{L}^{23} \\ \mathbf{L}^{31} & \mathbf{L}^{32} & \mathbf{L}^{33} \end{bmatrix} \begin{bmatrix} \mathbf{f}^{11} + \mathbf{f}^{12} + \mathbf{f}^{13} \\ \mathbf{f}^{21} + \mathbf{f}^{22} + \mathbf{f}^{23} \\ \mathbf{f}^{31} + \mathbf{f}^{32} + \mathbf{f}^{33} \end{bmatrix} \qquad [2]$$

From [2] we can calculate the water embodied in the exports $\mathbf{wexp}^1$ and imports $\mathbf{wimp}^1$ the water trade balance $\mathbf{wtb}^1$, and the water footprint $\mathbf{wpf}^1$ of region 1:

$$\mathbf{wexp}^1 = \hat{\mathbf{v}}^1\mathbf{L}^{11}(\mathbf{f}^{12} + \mathbf{f}^{13}) + \hat{\mathbf{v}}^1\mathbf{L}^{12}\mathbf{f}^2 + \hat{\mathbf{v}}^1\mathbf{L}^{13}\mathbf{f}^3 \qquad [3]$$

$$\mathbf{wimp}^1 = (\hat{\mathbf{v}}^2\mathbf{L}^{21} + \hat{\mathbf{v}}^3\mathbf{L}^{31})\mathbf{f}^{11} + (\hat{\mathbf{v}}^1\mathbf{L}^{12} + \hat{\mathbf{v}}^2\mathbf{L}^{22} + \hat{\mathbf{v}}^3\mathbf{L}^{32})\mathbf{f}^{21} + (\hat{\mathbf{v}}^1\mathbf{L}^{13} + \hat{\mathbf{v}}^2\mathbf{L}^{23} + \hat{\mathbf{v}}^3\mathbf{L}^{33})\mathbf{f}^{31} \qquad [4]$$

$$\mathbf{wtb} = \mathbf{wexp}^1 - \mathbf{wimp}^1 \qquad [5]$$

$$\mathbf{wfp}^1 = \hat{\mathbf{v}}\mathbf{L}\mathbf{g}^1 + h^1 \qquad [6]$$

where $\mathbf{h}^1$ is the water used directly by households, and $\mathbf{g}^1$ is a column vector that represents the domestic final demand of country 1:

$$\mathbf{g}^1 = \begin{bmatrix} \mathbf{f}^{11} \\ \mathbf{f}^{21} \\ \mathbf{f}^{31} \end{bmatrix}$$

In a similar way, it is possible to calculate the water embodied in trade and the water footprint of the other two regions.

The household footprint by consumption category was computed from the vector of domestic final demand as follows. Firstly, household footprint was calculated by replacing the final demand vector of equation [6] by the vector of household consumption. The second step consists of allocating part of the impacts embodied in transport and wholesale and retail trade margins to the sectors that incorporate these margins. To that end, we used country-specific information on margins paid and received from EUROSTAT for the EU-27 countries and the EU-27 structures for non-EU-27 countries. Finally, the household footprint by consumption category was obtained by distributing the footprint calculated in the previous step to COICOP consumption categories, using bridge matrices elaborated by the JRC/IPTS.

The indicators corresponding to the other environmental extensions have been calculated following the methodology described in this section.

In spite of the large potentialities provided by the data reported in this document, we have however to highlight some limitations derived from the dataset. One of the main shortcomings of using the WIOD for environmental analysis is the sector aggregation, especially for resources use. This may result in a sectoral aggregation bias when allocating the use of resources (water, land, and materials). In the case of material extraction, and in order to avoid these issues, the extraction of construction materials was allocated to the building sector instead to the mining sector.

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Abstract

In the recent decades, the increase in the world population, the economic expansion and the globalization of the economy have led to a dramatic growth in the use of some natural resources and in the levels of pollution. These trends have coincided with a growing concern about some critical questions for the future of humankind such as resource scarcity and depletion, climate change, environmental degradation, the limits of growth or the inequalities in the access to natural resources across countries.

This Pocketbook presents a series of indicators describing the evolution of the use of natural resources and the emission of air pollutants around the world, in relation to production, consumption and trade activities. Based on different analysis derived from the World Input-Output Database (WIOD), this publication includes information on 6 environmental dimensions: land use, material extraction, water use, and emission of acid substances, greenhouse gases and ozone precursors. The time frame covered is the period between 1995 and 2008, and the geographical scope includes the EU-27 Member States, Brazil, China, India, Japan, Russia, the United States of America and the Rest of the World.

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