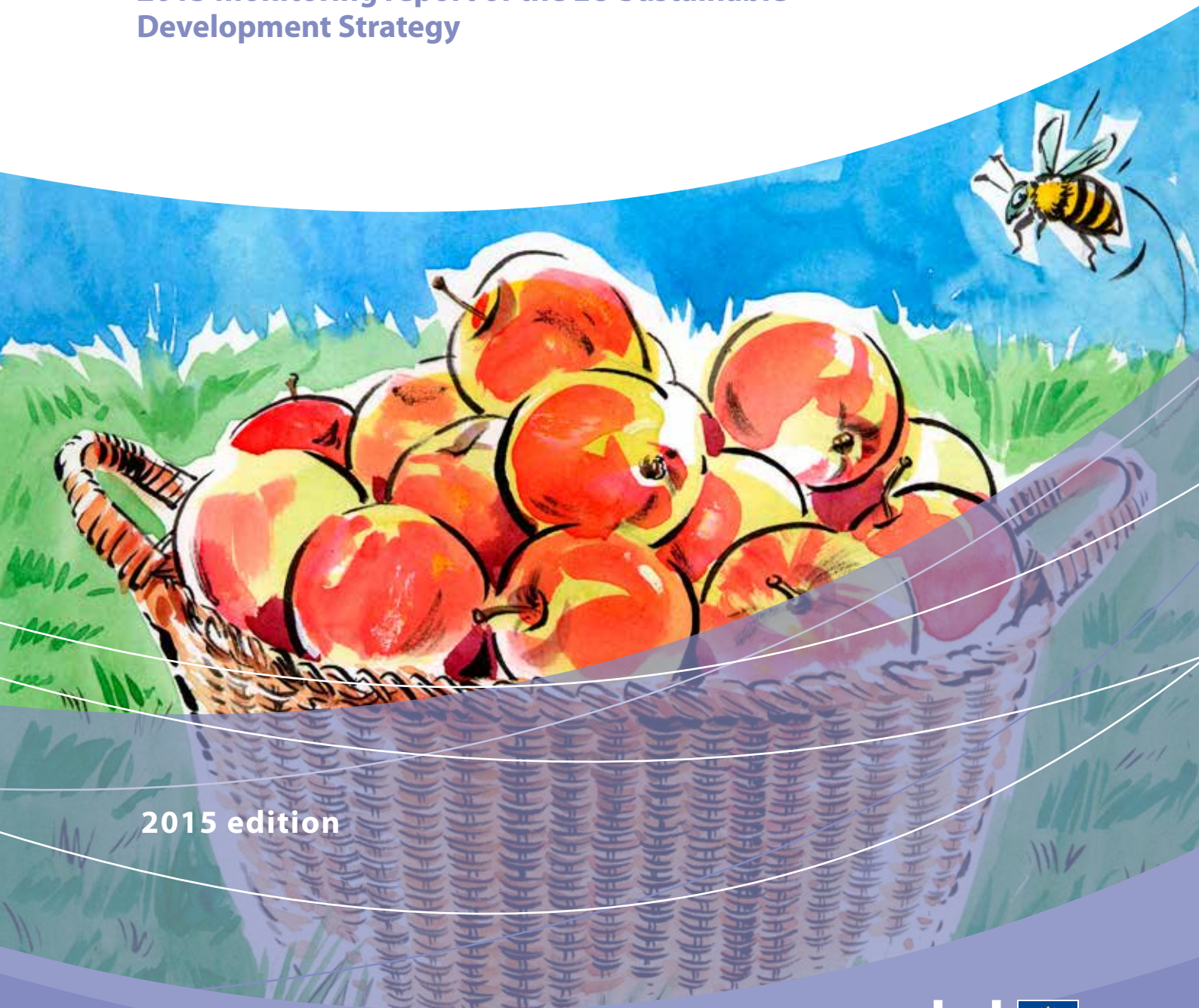


Sustainable development in the European Union

2015 monitoring report of the EU Sustainable
Development Strategy



2015 edition

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Development Strategy

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Foreword of First Vice-President of the European Commission

‘You cannot manage what you don’t measure’, which is why I attach a lot of importance to this report. We must monitor the progress that Europe makes on sustainable development in an integrated way. We are, after all, pursuing economic growth as well as protecting our natural capital and promoting social justice. Measuring all these elements helps us to define, adapt and improve our policies.

The findings of the 2015 report show success and give us reasons for optimism in some areas, but also illustrate that much more needs to be done.

As First Vice-President with the overall responsibility for sustainable development within the Commission, I am strongly committed to working towards a more sustainable Union. At the global level, 2015 is a defining year for sustainable development. The September UN Summit will adopt an ambitious set of global Sustainable Development Goals. The European Union must continue to lead the way in implementing these pledges. Sustainable development has long been at the heart of the European project. It is anchored in our Treaties and in our policies.

Our long-term policy agenda must bring about a systemic change in which economic growth, social cohesion and environmental protection go hand in hand and are mutually reinforcing. This vision will define our social agenda and growth strategy, our energy and climate goals, our environmental ambitions and our research and innovation programmes. We will make sure that each of them balances social, economic and environmental considerations and contributes to a good standard of life for all Europeans, within the limits of our planet.

New developments in Europe and at international level are likely to influence the future versions of this report. The global Sustainable Development Goals will help to shape the agenda ahead, and how we measure and report on progress. This is a unifying global project: we all live on the same planet, we all breathe the same air and we all cherish our children’s future.

Frans Timmermans

First Vice-President of the European Commission
and responsible for sustainable development





Foreword of Eurostat's Director-General

The year 2015 marks an important milestone in the progress towards sustainable development, with the adoption of the Sustainable Development Goals (SDGs) and targets by the United Nations Summit of 25–27 September 2015. Following up on the Millennium Development Goals, the SDGs constitute a new global agenda for development up to 2030, striving to reconcile the objectives of economic progress while safeguarding the natural environment and promoting social justice. A global indicator framework to measure progress towards the SDGs and targets is currently under development.



Sustainable development has long been on the political agenda of the European Union, with the creation of its Sustainable Development Strategy (EU SDS) and the respective sustainable development indicators (SDI) set. The EU SDS brings together the many strands of economic, social and environmental policy under one overarching objective — to continually improve the quality of life and well-being for present and future generations.

The Eurostat monitoring report, published every two years, provides an objective, statistical picture of progress towards the goals and objectives of the EU SDS based on the EU SDI set. This 2015 edition shows that while the EU has made progress towards several of its objectives both in the long term (since 2000) and the short term (over the past five years), a number of unsustainable trends still persist.

Eurostat will continue monitoring progress towards sustainable development in the European Union after the adoption of the SDGs and targets. In the meantime, I hope that this publication will be a valuable contribution on behalf of the European Union to the global debate on the future of sustainable development and the challenges lying ahead of us all — citizens, policy makers and statisticians.

Walter Radermacher
Director-General, Eurostat



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The data presented in this publication refer to the data available on Eurostat's website in early July 2015.

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Executive summary





Executive summary

Sustainable development policy aims to achieve a continuous improvement in citizens' quality of life and well-being. This involves the pursuit of economic progress while safeguarding the natural environment and promoting social justice. The economic, environmental and social dimensions are all part of the EU Sustainable Development Strategy (EU SDS) adopted in 2001 and renewed in 2006 ⁽¹⁾. The EU SDS also includes an institutional and a global dimension, involving the adoption of good governance practices in the EU and the promotion of a global partnership for worldwide sustainable development. In view of these five dimensions, the EU SDS defines objectives and targets aimed at putting the EU on a path to sustainable development. This monitoring report provides a quantitative assessment of whether the EU is moving in the right direction.

Progress towards the EU SDS objectives is evaluated using a set of sustainable development indicators (SDIs) grouped into ten thematic areas. More than 100 indicators structured around the ten themes are presented in this report. Each theme has a headline indicator that shows whether the EU has made overall progress towards EU SDS objectives and targets. One development that may affect future versions of this monitoring report will be the adoption of Sustainable Development Goals (SDGs) by UN Member States in September 2015 ⁽²⁾. These goals will shape the global agenda for sustainable development for the coming decades.

This monitoring report evaluates progress over two periods: the long term, accounting for progress since the year 2000; and the short term, looking at the trends over the past five years. This summary focuses on the long-term trends of the headline indicators. Some short-term trends are also analysed in cases where they deviate substantially from the respective long-term trends.

Is the EU moving towards sustainable development?

As illustrated in Table A.1, the overall picture is rather mixed across indicators and over time for the ten thematic areas covered by the EU SDI set. Progress towards sustainable development is summarised below, organised by the five dimensions of the EU SDS.

Economic development: real GDP per capita and resource productivity in the EU have improved over the long term

In terms of the economic dimension of sustainable development, the headline indicators depict an overall favourable picture for the EU. Moderately favourable changes have been observed in **real GDP per capita**, the headline indicator of the 'socioeconomic development' theme. The indicator increased by more than 13 % between 2000 and 2014. The upward trend was continuous prior to the economic crisis, but was interrupted in 2008 as the financial market turmoil spilled over into the real economy. Following a modest recovery in 2010 and 2011 and another, less pronounced contraction in 2012 and 2013, real gross domestic product (GDP) per capita grew again in 2014.

The headline indicator of the 'sustainable consumption and production' theme has developed even more favourably in the long term. **Resource productivity** (the ratio between GDP and the total amount of materials directly used to produce it) has improved substantially since 2002 thanks to an overall reduction in material consumption and an increase in GDP. This means the EU has been able to generate higher economic value for each unit of material used. However, the most pronounced reduction in material consumption occurred at the height of the economic crisis, between 2008 and 2009. During this period, the drop in material consumption outstripped the fall in GDP. Therefore, it is possible that the observed improvement in resource productivity does not represent a major turnaround in resource use patterns, but is rather a result of the recent economic slump and its negative effect on resource-intensive industries, such as construction.

Social development: improvements in public health and demographic change are evident, but poverty increased sharply since the start of the economic crisis

Progress towards the social dimension of sustainable development has been uneven. Indicators that are strongly linked to economic activity have moved in a clearly unfavourable direction since the start of the economic crisis. This is particularly true in the area of 'social inclusion'. In other areas, however, some

⁽¹⁾ Council of the European Union (2006), *Review of the Sustainable Development Strategy (EU SDS) — Renewed Strategy*, 10917/06.

⁽²⁾ For more information on the SDGs see the chapter 'The broader horizon of sustainable development' on page 23.


Table A.1: Evaluation of changes in the headline indicators of the SDI set, EU-28 ⁽¹⁾

SDI theme	Headline indicator	Long-term evaluation (since 2000)	Short-term evaluation (last five-year period)
Socioeconomic development	Real GDP per capita		
Sustainable consumption and production	Resource productivity	⁽²⁾	
Social inclusion	People at risk of poverty or social exclusion	⁽³⁾⁽⁴⁾	⁽⁴⁾
Demographic changes	Employment rate of older workers	⁽²⁾	
Public health	Life expectancy and healthy life years	⁽⁵⁾	
Climate change and energy	Greenhouse gas emissions		
	Primary energy consumption		
Sustainable transport	Energy consumption of transport relative to GDP		
Natural resources	Common bird index	⁽⁶⁾	⁽⁶⁾
Global partnership	Official development assistance	⁽²⁾	
Good governance	[No headline indicator]	:	:

⁽¹⁾ An explanation of the evaluation method and the meaning of the weather symbols is provided in the Introduction.

⁽²⁾ From 2002.

⁽³⁾ From 2005.

⁽⁴⁾ Evaluation based on EU-27.

⁽⁵⁾ From 2004.

⁽⁶⁾ EU aggregate with changing composition.

progress is evident. The headline indicators of the ‘demographic change’ and ‘public health’ themes reveal a favourable picture.

The headline indicator of the ‘social inclusion’ theme has developed in a moderately unfavourable way over the long-term period. Between 2005 and 2013, 2.7 million people were lifted out of the **risk of poverty or social exclusion**, but this was not enough to keep the EU on track towards the Europe 2020 poverty reduction target. The number of people affected by one or more forms of poverty increased sharply with the start of the economic crisis in late 2008, which offset some progress in the previous years. It peaked at 123 million people in 2012 before falling slightly in 2013. Almost one in four people in the EU were at risk of poverty or social exclusion in 2013. As a result, the indicator’s short-term trend has been clearly unfavourable.

The EU has progressed in a more favourable direction for other social objectives. The **employment rate of older workers**, the headline indicator of the ‘demographic changes’ theme, has increased continuously since 2002. In 2013, the EU finally met its 50 % employment target for older workers, which was originally set for 2010. Although the trend has been positive for both men and women, the increase in the employment rate of older men slowed down in recent years. This has led to a narrowing of the gender employment gap among older workers. Compared with prime-aged and younger workers, older people enjoyed more secure job positions during the economic crisis.



Life expectancy increased moderately in the long run, reflecting some positive developments in the ‘public health’ theme. A girl born in the EU in 2013 can expect to live on average 83.3 years and a boy 77.8 years. This constitutes an increase of 1.8 years for females and 2.6 years for males since 2004. Despite these longer life spans, the time men and women can expect to live in good health has not increased. Therefore, people on average are not expected to spend all the years of life gained in good health, but will have to live with some kind of disability or disease.

Environmental development: weak economic activity in the short term has reduced some pressure on the environment, but overall progress is mixed

Regarding the environmental dimension of sustainable development, the headline indicators show mixed results. Environmental indicators linked to economic performance have developed favourably in the short term, but this is mainly due to reduced economic activity. This is evident in the reduction of greenhouse gas emissions and energy consumption. However, some setbacks can be expected with the recent economic recovery. Despite some mildly positive long-term developments, the pressure on natural resources has increased in the short term.

Clearly favourable developments have been observed for one of the two headline indicators of the ‘climate change and energy’ theme. **Greenhouse gas (GHG) emissions** have steadily decreased in the long run. If this trend continues, the EU is likely to surpass its Europe 2020 target of reducing emissions by 20 % compared with 1990 levels. In 2012, the EU was only two percentage points away from its target. This favourable trend has been largely driven by a transformation of the energy sector, in particular by gains in energy efficiency and a switch from oil and coal to natural gas and renewable sources. However, the recent economic downturn and the associated decline in production and energy use have also contributed to this trend. The economic recovery could therefore increase GHG emissions in the coming years.

Primary energy consumption, the second headline indicator of the ‘climate change and energy’ theme, has developed in an unfavourable direction over the long term. This is largely due to a substantial increase in the consumption of primary energy in the early 2000s. The situation has changed considerably in the most recent period. Since 2008, primary energy consumption has declined more or less continuously as a result of effective energy efficiency policies and weak economic performance in the EU. The reduction has been sufficient to place the EU back on track to meet its Europe 2020 target of improving energy efficiency by 20 % by 2020.

Similar trends can be observed for the headline indicator of the ‘sustainable transport’ theme. **Energy consumption of transport relative to GDP** has followed a moderately unfavourable long-term trend but a clearly favourable short-term trend. The indicator has fallen more or less continuously since 2000, which does not necessarily reflect better environmental outcomes. In fact, between 2000 and 2007, transport energy use increased, although less than the increase in GDP. However, the situation has changed in the short term. Since the start of the economic crisis in 2008, the demand for energy has dropped, while GDP has declined at a slower pace. It is unclear whether this favourable short-term trend will continue with the economic recovery.

The population status of **common birds**, the headline indicator in the ‘natural resources’ theme, has deteriorated in the long term. Short-term developments have been even more aggravated as a result of the substantial decline in the abundance of farmland birds. Overall, biodiversity within the EU has been under continuous pressure by the transformation of land, which is increasingly used for agriculture, infrastructure and human settlements. Although biodiversity concerns are increasingly being integrated into EU policies, further efforts may be required to reverse the negative trend.

Global partnership: the EU is not on track to meet its target on official development assistance, but shows clear progress in other areas

Regarding commitments in the area of ‘global partnership’, the share of gross national income (GNI) spent by the EU on **official development assistance** (ODA) has increased only marginally since 2004. The increase has been too slow to place the EU on track to meet its long-standing target of dedicating 0.7 % of GNI to ODA in 2015. To some extent, this is linked to the EU’s weakened economic situation since the start of the economic and financial crisis in 2008. Nonetheless, the EU remains the world’s largest donor and its share of ODA to low-income countries has increased more markedly over the long term. It should also be noted that most indicators in the ‘global partnership’ theme display favourable trends.

**Good governance: no headline indicator**

The theme 'good governance' has no headline indicator because no indicator is considered to be sufficiently robust and policy-relevant to provide a comprehensive overview of the good governance concept. For an analysis of the main aspects of this theme, see the respective chapter on p. 315.

Introduction





Introduction

Sustainable development is a fundamental and overarching objective of the European Union, enshrined in the Treaty ⁽¹⁾. Measuring progress towards sustainable development is an integral part of the EU Sustainable Development Strategy (EU SDS), and it is Eurostat's task to produce a monitoring report every two years based on the EU set of sustainable development indicators (SDIs). This 2015 edition of the monitoring report is the sixth quantitative assessment of progress of the EU towards its sustainable development objectives ⁽²⁾.

The EU set of sustainable development indicators (SDIs)

Background

The first steps of Eurostat towards measuring sustainable development (SD) go back to the 1990s. Following the United Nations (UN) Conference on Environment and Development held in Rio de Janeiro in 1992 (also known as 'Rio Earth Summit'), Eurostat started working closely with the UN Commission on Sustainable Development (UNCSD) on global indicators of sustainable development, and published indicator compilations in 1997 ⁽³⁾ and in 2001 ⁽⁴⁾.

A first EU SDI set was proposed following the adoption of the first EU SDS in 2001 ⁽⁵⁾ and was endorsed by the Commission in 2005 ⁽⁶⁾. The set was slightly revised after the review of the first EU SDS ⁽⁷⁾ that led to an adoption of a renewed strategy in 2006 ⁽⁸⁾. Since then, several reviews of the SDI set have been carried out by the Commission with the assistance of the working group on SDIs, which is composed of statisticians and policy representatives at national and EU level. Nevertheless, the current set of SDIs, as presented in this report, is still close to that endorsed in 2005.

The thematic framework

The EU SDI set is organised in a theme-oriented framework, which provides a clear and easily communicable structure relevant for political decision-making. The framework is based on current priority policy issues, but can be adjusted to possible changes in these priorities and objectives which may emerge over time.

The SDI framework covers ten thematic areas belonging to the economic, the social, the environmental, the global and the institutional dimensions:

- socioeconomic development,
- sustainable consumption and production,
- social inclusion,
- demographic changes,
- public health,
- climate change and energy,
- sustainable transport,
- natural resources,
- global partnership,
- good governance.

⁽¹⁾ Article 3 of the Treaty on European Union.

⁽²⁾ For previous assessments based on the EU SDIs, see <http://ec.europa.eu/eurostat/web/sdi/publications>.

⁽³⁾ Eurostat (1997), *Indicators of sustainable development: A pilot study following the methodology of the United Nations Commission on Sustainable Development*, Luxembourg, Office for Official Publications of the European Union.

⁽⁴⁾ Eurostat (2001), *Measuring progress towards a more sustainable Europe: Proposed indicators for sustainable development*, Luxembourg, Office for Official Publications of the European Union.

⁽⁵⁾ Göteborg European Council (2001), *Presidency conclusions*, 15 and 16 June 2001.

⁽⁶⁾ Communication from Mr Almunia (2005), *Sustainable development indicators to monitor the implementation of the EU Sustainable Development Strategy*, SEC(2005) 161.

⁽⁷⁾ Commission Communication (2005), *On the review of the Sustainable Development Strategy — A platform for action*, COM(2005) 658.

⁽⁸⁾ Council of the European Union (2006), *Review of the EU Sustainable Development Strategy (EU SDS) — Renewed Strategy*, 10917/06.



Each theme is further divided into subthemes and includes three different levels of indicators (see the following section on the different kinds of indicators included in the set).

The main body of the current EU SDS, essentially unchanged since 2006, is built around seven key challenges, with corresponding operational objectives and targets as well as associated actions and measures⁽⁹⁾. In addition, a number of key objectives and policy guiding principles serve as a basis for the strategy. The SDI framework additionally includes a theme on ‘socioeconomic development’ which focuses on the key objective of economic prosperity, and a theme on ‘good governance’ related to the guiding principles of the EU SDS and other cross-cutting issues.

The most recent changes to the indicator set followed the adoption of the Europe 2020 strategy⁽¹⁰⁾ and its eight headline indicators, which have been integrated into the SDI framework in the themes ‘socioeconomic development’, ‘social inclusion’ and ‘climate change and energy’.

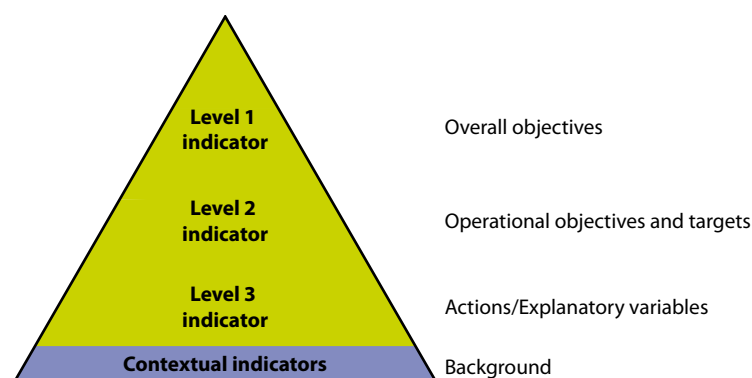
Over the course of several revisions — the latest dating from an online discussion held with the members of the SDI working group in late 2014 — some changes have been made to reflect trends in EU policies related to sustainable development and to adjust to data availability. The overall framework has, however, proved sufficiently robust to remain unchanged.

The different kinds of indicators

The EU SDI set is structured as a three-storey pyramid, distinguishing between three levels of indicators. This approach not only reflects the structure of the EU SDS (overall objectives, operational objectives, actions), but also responds to different kinds of user needs. The three-level pyramid is complemented with contextual indicators, as illustrated below:

- At the top (**first level**) of the pyramid are the headline indicators, monitoring the ‘overall objectives’ related to the seven key challenges of the EU SDS. On the whole they are widely used indicators with a high communicative and educational value. They are robust and available for most EU Member States, generally for a period of at least five years.
- The **second level** of the pyramid consists in most cases of indicators related to the ‘operational objectives’ of the Strategy. They are the lead indicators in their respective subthemes. They are robust and available for most EU Member States for a period of at least three years.
- The **third level** consists of indicators related to actions described in the Strategy or to other issues which are useful for analysing progress towards the Strategy’s objectives. Breakdowns of higher level indicators, for example, by gender or income group, are in some cases also found at level 3.
- **Contextual indicators** are part of the SDI set, but they either do not directly monitor a particular SDS objective, or they are not policy responsive. Generally, they are difficult to interpret in a normative way. They are included in the set because they provide valuable background information on issues having direct relevance for sustainable development policies and are helpful to an understanding of the topic.

Figure B.1: The indicator pyramid of the EU SDI framework



⁽⁹⁾ The topics ‘social inclusion, demography and migration’ are considered together in one EU SDS key challenge, but are represented by two separate themes (‘social inclusion’ and ‘demographic changes’) in the SDI framework. This division reflects the different nature of these two issues.

⁽¹⁰⁾ European Commission (2010), *Europe 2020 — A strategy for smart, sustainable and inclusive growth*, COM(2010) 2020 final.



Data coverage and sources

The SDI framework contains more than 100 indicators, divided into ten themes as described above. The complete set of indicators is available on the Eurostat website at <http://ec.europa.eu/eurostat/sustainabledevelopment>. For the purpose of the monitoring report it was necessary to focus the analysis on a meaningful sub-set, by selecting those indicators that are considered most important for illustrating the overall EU progress towards sustainable development. This means that, for example, some third-level indicators and contextual indicators are not included in the analysis. The sub-set of indicators selected for this 2015 edition of the monitoring report is presented in Annex II of this publication.

Data are mainly presented for the aggregated EU-28 level. In the cases when EU-28 aggregated data are not available, EU-27 data are presented instead, referring to the situation of the 27 EU Member States before the accession of Croatia to the EU in July 2013. Also, whenever EU-28 data are only available for a very short time period, the EU-27 data are presented in addition to the EU-28. In a few cases (in particular for indicators on 'global partnership') data are shown for the EU-15 aggregate level, referring to the EU before the enlargement of 2004.

In addition to the 28 EU Member States, data for EU candidate countries and the countries of the European Free Trade Association (EFTA) are included in the country-level comparisons throughout the report when available, complementing the EU-level analysis.

Additionally, global comparisons of the EU with other major economies in the world (for example, the United States, Japan and China) are included, mainly for the SDI headline indicators and the Europe 2020 indicators.

The data presented in this report were mainly extracted in early July 2015. Most of the data used to compile the indicators stem from the standard Eurostat collection of statistics through the European Statistical System (ESS), but a number of other data sources have also been used, notably other European Commission services, the European Environment Agency (EEA), the OECD and the World Bank.

The Eurostat website contains a section dedicated to the SDIs in the ten thematic areas of the EU SDS ⁽¹⁾. Eurostat online data codes, such as [tsdec100](#) and [nama_10_gdp](#) ⁽²⁾, allow easy access to the most recent data on Eurostat's website. In this report, these online data codes are given as part of the source below each table and figure. The reader is led directly to the most recent data when clicking on the online data code. Online data codes lead to an open dataset which generally contains more dimensions and longer time series using the Data Explorer interface. Alternatively, data can be accessed by entering the data code into the search field on the Eurostat's website.

Eurostat's website also includes a section called 'Statistics Explained', accessible at http://ec.europa.eu/eurostat/statistics-explained/index.php/Main_Page. This is an official Eurostat website presenting the full range of statistical subjects covered by Eurostat, including the EU SDS, in an easily understandable way. It works in a similar way to Wikipedia. Together, the articles make up an encyclopaedia of European statistics for everyone, completed by a [statistical glossary](#) clarifying all terms used and by numerous links to further information and the latest data and metadata, a portal for occasional and regular users.

Treatment of breaks in time series

Breaks in time series occur when the data collected in a specific year are not completely comparable with the data from previous years. This could be caused by a change in the classification used, the definition of the variable, the data coverage and/or other reasons. Breaks in time series could affect the continuity and consistency of data over time. However, it should be noted that such breaks do not necessarily undermine the reliability of time series. There are certain techniques applied by Eurostat and other statistical agencies to ensure the continuity of time series in the presence of breaks.

In the course of preparing this 2015 edition of the monitoring report, a case-by-case assessment of breaks in times series has been conducted to determine the extent to which a break would affect the assessment of an indicator. In cases where a break was considered significant enough to affect the evaluation of an indicator or the comparability between countries, the analysis of the indicator was adjusted accordingly.

Breaks in times series are indicated throughout the report in footnotes below the graphs.

⁽¹⁾ See <http://ec.europa.eu/eurostat/web/sdi/indicators>

⁽²⁾ There are two types of online data codes: tables have eight-character codes the first of which is the letter 't' — for example tps00001 and tsdph220, while databases have codes that use an underscore '_' within the syntax of the code, for example nama_gdp_c or demo_pjan.



Evaluation of indicators

What is evaluated?

The main purpose of this publication is to assess progress towards sustainable development based on the objectives and targets set out in the EU SDS and other relevant policy initiatives such as the Europe 2020 strategy. The object of the evaluation is the relative direction and rate of change in the light of sustainable development objectives, not the ‘sustainability’⁽¹³⁾ of the situation at any point in time. It is therefore a relative, not an absolute assessment.





Ideally, each indicator would be evaluated against either a quantitative target set within the political process or a scientifically established threshold. However, many of the objectives of the EU SDS lack an explicit quantified and measurable target. In these cases, the indicator is evaluated according to a set of common and objective rules to ensure a consistent approach across indicators and to avoid ad hoc value judgments. These rules, although imperfect, provide a simple, transparent, consistent and easily understandable approach across the report.

There are certain limitations of the evaluation method applied in this publication, in particular regarding the evaluation of the direction and magnitude of change of some indicators. For some indicators, such as household saving, it is difficult to determine the desired direction of change; for example, while reducing household saving could be beneficial in the short term, it could be economically detrimental in the long term. Evaluating the magnitude of change could also be difficult for some indicators. In particular, environmental trends tend to be irreversible, therefore even a small change in the indicator could be considered strictly unfavourable. For consistency purposes, the same assessment categories are used for all indicators evaluated in the report.

How is an indicator evaluated?

The report evaluates progress by means of four categories depending on how favourable or unfavourable the developments have been over the assessment period. The four categories are represented visually by means of weather symbols, as shown in Table B.1.

Table B.1: Categories and associated weather symbols for the evaluation of the indicators

Evaluation category	Symbol
Changes are clearly favourable in relation to SD objectives	
No or moderately favourable changes in relation to SD objectives	
Changes are moderately unfavourable in relation to SD objectives	
Changes are clearly unfavourable in relation to SD objectives	
Contextual indicator or not enough data available for an evaluation	:

It is important to note that the evaluation presented in this report is based only on the development of the EU and does not take into account international comparisons. As a result, the evaluation of certain indicators might disregard some important aspects and present a different picture than expected. For example, looking at labour productivity, the evaluation could come to a different conclusion if considering the productivity growth gap between the EU and the US. However, for consistency purposes such international comparisons are not taken into account for the evaluation of the indicators.

⁽¹³⁾The concept of sustainable development should be distinguished from that of sustainability. ‘Sustainability’ is a property of a system, whereby it is maintained in a particular state through time. The concept of sustainable development refers to a process involving change or development. The strategy aims to ‘achieve continuous improvement of quality of life’, and the focus is therefore on sustaining the process of improving human well-being. Rather than seeking a stable equilibrium, sustainable development is a dynamic concept, recognising that changes are inherent to human societies.



This publication assesses progress for the EU as a whole since the adoption of the EU SDS ⁽¹⁴⁾. Since this constitutes a rather long time period (over ten years for most indicators), it is important to consider whether a trend has been continuous over time or whether there has been a turnaround in the development over the years. In order to account for such recent fluctuations, the evaluation of each indicator in this publication is carried out over two time periods:

- A **long-term evaluation** is based as far as possible on the evolution of the indicator between 2000 and the latest year of data available for the EU-28 ⁽¹⁵⁾. If data are only available for five consecutive years or less, no long-term evaluation is made ⁽¹⁶⁾. Previous editions of the report only monitored long-term trends of the indicators. Since the evaluation method itself has not changed, the results of the long-term evaluation in this edition are comparable with the evaluation results in previous editions.
- The long-term evaluation is complemented by a **short-term evaluation** based on the indicator evolution during the latest five-year period ⁽¹⁷⁾. This new component of the monitoring report allows comparing the results of the short-term and long-term evaluation in order to reveal whether a trend has been continuous over the years or whether the indicator has deviated from its long-term path at a certain point in time.

Both the long- and the short-term evaluations are based on the ‘compound annual growth rate’ (CAGR) formula, which assesses the pace and direction of the evolution of an indicator (for a detailed description of the calculation method see Annex III). This method uses the data from the first and the last years of the evaluated time span and calculates the average annual rate of change of the indicator (in %) between these two data points. Usually, the long-term evaluation uses the year 2000 as a base, while the short-term evaluation uses the year 2007, 2008 or 2009, depending on whether the latest available data are for 2012, 2013 or 2014 respectively. It is important to note that the short-term evaluation considers five year-on-year changes, which consequently involve six consecutive years.

Depending on the type of indicator and the presence or absence of a quantitative target, two different calculation methods have been applied:

1. Indicators with quantitative targets:

Whenever possible, the evaluation of indicators takes into account concrete targets set in relevant EU policies and strategies. Most of the targets included in the EU SDS from 2006 (with a time horizon until 2010) have already been replaced by newer targets (with a time horizon up to 2020 and beyond) in more recent policy initiatives. As a consequence, most of the targets used for the monitoring of the progress in this 2015 edition actually stem from the Europe 2020 strategy and other relevant initiatives.

In the presence of a quantified political target (such as for greenhouse gas emissions or employment), the actual rate of change of the indicator (based on the CAGR as described in Annex III) is compared with the theoretical rate of change that would be required to meet the target in the target year. If the actual rate is 95 % or more of the required rate, the indicator is evaluated as clearly favourable (‘on target path’). Between 80 % and 95 %, it is evaluated as moderately favourable (‘close to target path’), and between 0 % and 80 %, it is evaluated as moderately unfavourable (‘far from the target path’). The evaluation is clearly unfavourable if the actual trend is pointing in the wrong direction — away from the target path. Figure B.2 shows an example for an indicator for which an increase constitutes the desired direction in terms of SD objectives, such as ‘share of renewable energies’.

⁽¹⁴⁾ Although it could be argued that longer time periods are needed to monitor sustainable development, it is the purpose of this publication to assess progress since commitments were taken on the various issues monitored. Year 2000 is used as reference as it is the last year before the adoption of the EU SDS in 2001.

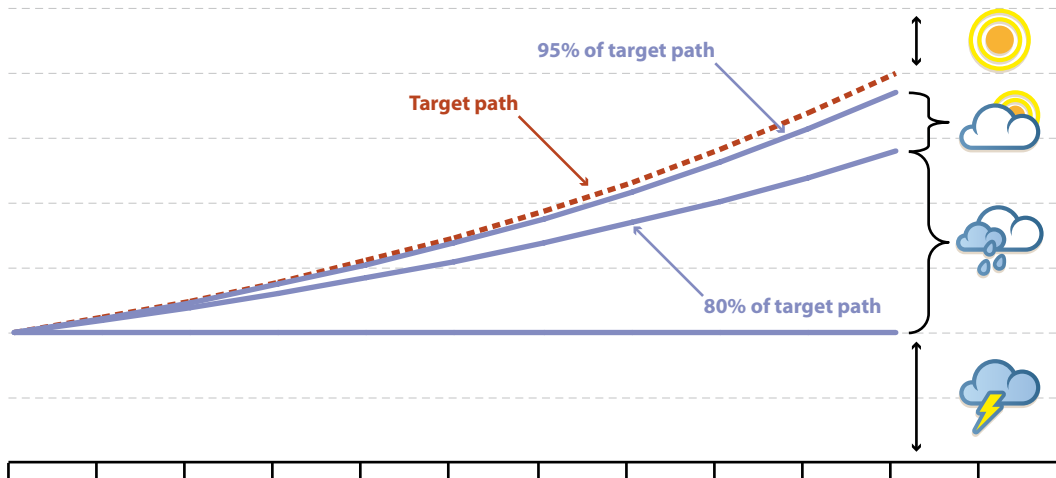
⁽¹⁵⁾ EU aggregates are back-calculated when sufficient information is available. For example, the EU-28 aggregate is often presented for periods prior to the accession of Croatia in 2014 and the accession of Bulgaria and Romania in 2007, as if all 28 Member States had always been members of the EU. The label is changed if the data refer to another aggregate (EU-27 or EU-25) or a note is added if the data refer to a partial aggregate created from an incomplete set of country information (no data for certain Member States or reference years).

⁽¹⁶⁾ In the case when data for the EU-28 are available for a rather short time period and the trend is not in line with the long-term trend observable for the EU-27, data for the EU-27 are used for the long-term evaluation instead.

⁽¹⁷⁾ The short-term evaluation is based on data from at least three consecutive years. If these are not available for the EU-28, data for the EU-27 are instead used for the evaluation if available.



Figure B.2: Schematic representation of the evaluation of indicators with quantitative targets

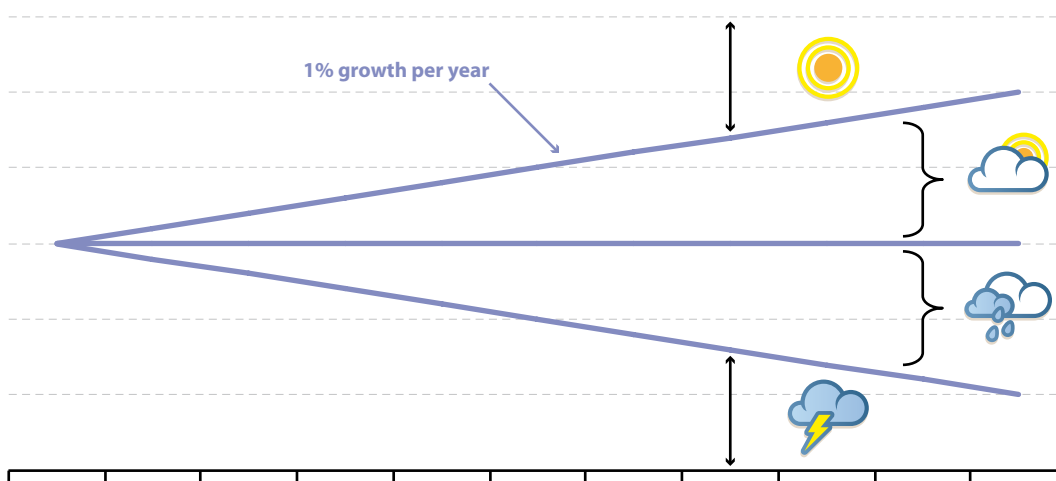


2. Indicators without quantitative targets:

In the absence of a quantified target, the evaluation of an indicator is entirely based on the calculation of the observed rate of change of the indicator (based on the CAGR as described in Annex III) and using the following thresholds: A change of more than 1 % per year is considered clearly favourable or unfavourable (depending on the direction of the change in relation to SD objectives). A favourable annual change of more than 1 % corresponds to the 'sun' symbol in Table B.2, whereas an unfavourable change of similar magnitude corresponds to the 'thunderstorm' symbol. A change between 0 % and 1 % per year is considered moderately favourable or unfavourable, again depending on the direction of the change, thus corresponding to the 'sun/cloud' and 'rain' symbols in Table B.2 respectively.

Figure B.3 shows an example of an indicator for which an increase constitutes the desired direction in terms of SD, such as 'organic farming'.

Figure B.3: Schematic representation of the evaluation of indicators without quantitative targets





Decoupling indicators as a special case:

For some of the indicators the issue of interest is not the change in one single trend but in the relationship of two trends. One of these two trends is usually an economic variable (such as GDP), and the other one an environmental variable that shows the environmental pressures exerted by the economic activity. For example, this is the case when analysing trends in resource productivity, where the focus is put on the relationship between the trends in GDP and material consumption.

These are called ‘decoupling’ indicators because they show the strength of the link (or the ‘coupling’) between the economic and the environmental variable. In relation to sustainable development, the aim is to achieve a ‘decoupling’ of these two variables, so that continued economic growth does not lead to a further increase in environmental degradation.

It is important to note that the evaluation method used for this monitoring report does not look at the correlation of the two underlying indicators (pressure and driving force) but at the development of the pressure variable in relation to the development of the driving force variable ⁽¹⁸⁾. Overall, the evaluation is considered favourable if the (environmental) pressure variable is decreasing and unfavourable if it is increasing. Depending on the direction and magnitude of change in the pressure variable in relation to the driving force, there are four different degrees of decoupling and thus four evaluation categories:

- *Absolute decoupling*: The situation when the pressure on the environment decreases while the (economic) driving force increases is considered to be ‘clearly favourable’. This is also the case when the driving force is decreasing but at a slower pace than the decrease in the pressure variable. These situations represent ‘absolute decoupling’ between the driving force (economic) variable and the pressure (environmental) variable.
- *Favourable relative decoupling*: When the pressure on the environment decreases but at a slower pace than the decrease in the economic variable, the situation is referred to as ‘favourable relative decoupling’ and is evaluated as ‘moderately favourable’.
- *Unfavourable relative decoupling*: When the environmental pressure increases but at a slower pace than the increase in the driving force, the situation is referred to as ‘unfavourable relative decoupling’. It is evaluated as ‘moderately unfavourable’ because of the increase in the environmental impacts.
- *No decoupling*: When the pressure on the environment increases at the same or higher rate than the growth of the economic variable, or if the pressure on the environment increases while the economic variable regresses, it is referred to as a situation of ‘no decoupling’ and is evaluated as ‘clearly unfavourable’.

Graphical representation of indicators with quantitative targets

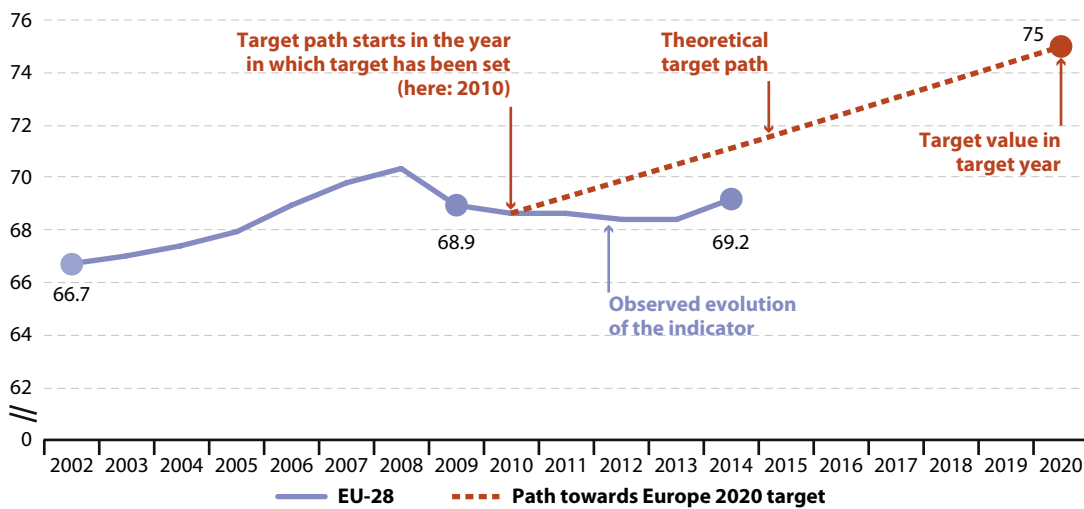
For each indicator with a quantitative target, the graph on the indicator page shows a ‘target path’ — a dashed line which is in a different colour from the observed path of the indicator. It represents a theoretical path which starts in the year in which the target has been set in a policy process or which has been defined as a base year for the target. The target path finishes at the target year by which the desired (target) value of the indicator would ideally be reached. The slope of the target path is calculated using the CAGR formula described above, thus it has an exponential form ⁽¹⁹⁾. Figure B.4 shows as an example both the observed and the target paths of the ‘total employment rate’ indicator. Most targets presented in the report apply to all 28 EU Member States, therefore the target path refers to the desired speed and direction of change for the EU-28 as a whole. However, for some indicators EU-28 data are only available for a short period or not at all. In these cases EU-27 data are also presented in the graph.

⁽¹⁸⁾ For more information and specific examples of decoupling indicators see: <http://europa.eu/IbD93tk>

⁽¹⁹⁾ Although the target path has an exponential form, it may appear linear due to the rather short period shown in the graph.



Figure B.4: Graphical representation of an indicator with a quantitative target



What's new?

The 2015 edition of the monitoring report builds on and updates the 2013 edition. It features two new elements compared with previous editions. One of the new features is the focus on the post-2015 development agenda of the UN, in particular the Sustainable Development Goals (SDGs), which are set to replace the Millennium Development Goals (MDGs) starting in 2015. The chapter 'The broader horizon of sustainable development' (see p. 23) provides an overview of the policy process behind the definition of SDGs, the actors involved and the key documents. The chapter also discusses the recent UN initiatives for improving the availability of data and indicators to measure progress towards the SDGs. Finally, the EU's involvement in framing the post-2015 agenda of the UN is briefly discussed.

Another novelty in the current edition of the report is the introduction of a short-term evaluation, which complements the long-term evaluation already used in previous monitoring reports, by looking into the trends of the indicators over the last five-year periods. Consequently, two evaluation results — in the form of weather symbols — are presented for each indicator, as described in the section above.

The broader horizon of sustainable development





The broader horizon of sustainable development

The global perspective on sustainable development

The purpose of this chapter is to place the Sustainable Development Strategy (SDS) of the EU into a broader perspective of international initiatives for sustainable development. The United Nations Conference on Sustainable Development, held in 2012 in Rio de Janeiro, marked the conception of a new global agenda for development, which strives to reconcile the objectives of poverty eradication and sustainability. It is manifested in the selection of Sustainable Development Goals (SDGs), which are set to replace the Millennium Development Goals (MDGs) and direct global development efforts after the year 2015. The International Conference on Financing for Development ⁽¹⁾, held in 2002 in Monterrey, and its follow-up held in Doha in 2008 ⁽²⁾, constituted a turning point for global development co-operation. A third Financing for Development conference took place in Addis Ababa in July 2015, this time to ensure the mobilisation of resources for achieving the sustainable development objectives after 2015. This chapter provides a closer look at the UN 2030 agenda for sustainable development, briefly describing the work streams involved in the definition of the SDGs, which are of universal application. This has impacts on the EU. At the European level, the Europe 2020 strategy, adopted in 2010, has taken over parts of the sustainable development agenda and is thus also worth a closer look. This is done in the last part of this chapter.

The roots of the international policy agenda for sustainable development

In 1987, the World Commission on Environment and Development (WCED) published a very influential report titled 'Our common future' ⁽³⁾, also known as the 'Brundtland report' ⁽⁴⁾. It introduced the most widely used definition of sustainable development into the policy discourse: 'Development which meets the needs of the current generations without compromising the ability of future generations to meet their own needs' ⁽⁵⁾. The report placed environmental concerns firmly on the political agenda. It recognised the interlocking nature of ecological, social and economic challenges and called for their discussion as one single issue. The report put forward eight interrelated objectives for sustainable development (see Box C.1).

Box C.1: Objectives for sustainable development in 'Our common future'

The WCED report 'Our common future' outlined the following critical objectives for environment and development policies that follow from the concept of sustainable development ⁽⁶⁾:

- Reviving growth;
- Changing the quality of growth;
- Meeting essential needs for jobs, food, energy, water and sanitation;
- Ensuring a sustainable level of population;
- Conserving and enhancing the resource base;
- Re-orienting technology and managing risk;
- Merging environment and economics in decision making;
- Re-orienting international economic relations.

The United Nations Conference on Environment and Development, which took place in 1992 in Rio de Janeiro, has been a cornerstone of modern sustainable development policies and has strongly influenced the direction they have taken. It has enabled a consensus between the otherwise conflicting objectives of economic growth, social equity and environmental protection by embracing the multi-dimensional concept of sustainable development. The Rio Declaration on Environment and Development ⁽⁷⁾, also known as the Rio Declaration, and Agenda 21 ⁽⁸⁾ were the major outcome documents of the Rio conference. The Rio Declaration contained 27 principles of sustainable development, including the often cited principle 7

⁽¹⁾ See: <http://www.un.org/ffd/coverage.htm>

⁽²⁾ See: <http://www.un.org/esa/ffd/doha/>

⁽³⁾ World Commission on Environment and Development (1987), *Our common future*.

⁽⁴⁾ Named after the former Norwegian prime minister Gro Harlem Brundtland who acted as chair of the WCED.

⁽⁵⁾ See footnote 3, chapter 2, para. 1.

⁽⁶⁾ Id., para. 28.

⁽⁷⁾ United Nations Conference on Environment and Development (1992), *Rio Declaration on Environment and Development*.

⁽⁸⁾ United Nations Conference on Environment and Development (1992), *Agenda 21*.



on ‘common but differentiated responsibilities’ of states. Agenda 21 laid out specific actions for integrating and attaining social, economic and environmental objectives, including the role of major groups of stakeholders.

More importantly from a statistical point of view, the Rio conference sparked the development of new metric systems to better reflect on the concept of sustainable development and prosperity. Essentially, commonly used indicators such as the gross national product (GNP), individual resource use or pollutant flows were already perceived as not being able to capture the more complex and multifaceted nature of sustainable development ⁽⁹⁾. A series of initiatives, including the work of the Commission on the Measurement of Economic Performance and Social Progress ⁽¹⁰⁾ and ‘GDP and beyond’ ⁽¹¹⁾, have stressed the importance of developing a new system of indicators which measures progress in all areas of sustainable development.

The roots of the 2030 agenda for sustainable development: the MDGs and ‘Rio+20’

Sustainable development has faced serious challenges since the UN Conference on Environment and Development endorsed the concept in Rio de Janeiro in 1992. Putting the idea into practice has proved difficult and its outcomes remain uneven across countries. Unsustainable trends persist: on the one hand, growing world populations and rising consumption patterns put a strain on the life-supporting environment ⁽¹²⁾. On the other hand, income inequality has often risen within countries and the gap between the richest and the poorest countries has widened despite the impressive growth of GDP in recent decades. A large part of the global population still lives in conditions of severe poverty and cannot satisfy their basic needs such as safe drinking water, secure food supply, sanitation or electricity ⁽¹³⁾.

Addressing the development needs of the poorest populations has been on the global political agenda since the Millennium Development Goals (MDGs) were agreed by UN Member States in 2000. The target date for achieving most of the MDGs was set as 2015. As the deadline approaches, the international community has started negotiations on the way forward. Discussions on a ‘post-2015 development agenda’ of the UN were initiated at the Millennium Development Goals Summit in 2010. The outcome document of the summit affirmed the commitment of world leaders to eradicate poverty, while recognising the need to strengthen efforts in all three areas of sustainable development ⁽¹⁴⁾.

Twenty years after the first Rio conference, the United Nations Conference on Sustainable Development (UNCSD) was held in June 2012, again in Rio de Janeiro — therefore also called ‘Rio+20’ ⁽¹⁵⁾. The conference has been conceived as a landmark event in the global movement for sustainable development. As the main outcome, world leaders decided to launch a process for the development of a set of Sustainable Development Goals (SDGs), which will constitute the goals of the 2030 agenda for sustainable development, thus replacing the MDGs after 2015.

Taking stock of the Millennium Development Goals

The MDGs were agreed by UN Member States at the turn of the 21st century at the Millennium Summit in New York City ⁽¹⁶⁾. They address some of the most pressing issues faced by developing countries at the time. The eight goals, complemented by 21 targets and 43 indicators, aimed to eradicate extreme poverty and enhance education, health, gender equality, environmental sustainability and global partnership in the most deprived regions of the world ⁽¹⁷⁾. The United Nations Millennium Declaration ⁽¹⁸⁾, the outcome document of the Millennium Summit, provides the rationale behind the selection of the MDGs. It affirms the commitment of world leaders to ‘free our men, women, and children from the abject and dehumanizing conditions of extreme poverty’ ⁽¹⁹⁾. The global nature of problems addressed by the MDGs requires global action. This has been reflected in Goal 8 ‘Global Partnership for Development’, which calls for increased international co-operation to meet the needs of developing countries.

⁽⁹⁾ United Nations Conference on Environment and Development (1992), *Agenda 21*, para. 40.4.

⁽¹⁰⁾ See: *Report by the Commission on the Measurement of Economic Performance and Social Progress*.

⁽¹¹⁾ For more information see: <http://ec.europa.eu/eurostat/web/gdp-and-beyond>

⁽¹²⁾ United Nations General Assembly (2012), *The Future We Want*, A/RES/66/288, para.11.

⁽¹³⁾ OECD (2011), *Divided We Stand: Why Inequality Keeps Rising*.

⁽¹⁴⁾ Millennium Development Goals Summit (2010), *Outcome document*, A/RES/65/1, para. 41.

⁽¹⁵⁾ See: <http://www.uncsd2012.org>

⁽¹⁶⁾ See: http://www.un.org/en/events/pastevents/millennium_summit.shtml

⁽¹⁷⁾ The complete list of the MDGs and the associated targets is available at: <http://mdgs.un.org/unsd/mdg/Host.aspx?Content=Indicators/OfficialList.htm>

⁽¹⁸⁾ Millennium Summit of the United Nations (2000), *United Nations Millennium Declaration*.

⁽¹⁹⁾ *Id.*, Article 11.



Progress towards the MDGs is closely monitored by the UN and results are presented in the Millennium Development Goals Report which is published once a year. Assessment of progress so far reveals differences across targets and regions ⁽²⁰⁾. Some goals have been achieved well ahead of the 2015 deadline: the number of people living in extreme poverty has declined by more than half, more people have gained access to improved sources of drinking water, gender parity in primary education has become a reality, and the political participation of women has increased around the world. Significant progress has also been made with regard to fighting malaria and tuberculosis. However, progress has been insufficient in other areas relating to environmental sustainability, child and maternal mortality, primary school enrolment and access to antiretroviral therapy in developing countries, to mention a few. While the economic development of certain regions, in particular in Asia, has accelerated progress towards the targets, others have lagged behind, such as Sub-Saharan Africa where overall progress has been the slowest. Nonetheless, the MDGs have been recognised as a success in the global effort ‘to raise public awareness, increase political will and mobilise resources to eradicate poverty’ ⁽²¹⁾.

World leaders have agreed that the MDGs should be a stepping stone in the development of the 2030 agenda for sustainable development. In September 2013, a UN special event took stock of the efforts made towards achieving the MDGs. In the outcome document, participants expressed their determination to ‘craft a strong post-2015 development agenda, that will build on the foundations laid by the Millennium Development Goals, complete the unfinished business and respond to new challenges’ ⁽²²⁾.

Rio+20 and ‘The future we want’

The Rio+20 conference was hosted by Brazil in Rio de Janeiro from 20 to 22 June 2012. It was attended by participants from 192 UN Member States, including several heads of state and government, as well as representatives from the private sector, NGOs and other groups. In order to strengthen global efforts in resolving sustainable development challenges, the Rio+20 Conference produced a comprehensive outcome document entitled ‘The future we want’ ⁽²³⁾. One of the most important decisions which came out of the conference was the agreement to define Sustainable Development Goals to replace the Millennium Development Goals after the year 2015 and promote sustainable development on a global scale.

The Rio+20 outcome document not only mandates the establishment of a set of SDGs, but also provides guidance for their conceptualisation: ‘The goals should address and incorporate in a balanced way all three dimensions of sustainable development and their interlinkages. They should be coherent with and integrated into the United Nations development agenda beyond 2015’ ⁽²⁴⁾. The outcome document further stresses the importance of formulating goals which are ‘action oriented, concise and easy to communicate, limited in number, aspirational, global in nature and universally applicable to all countries while taking into account different national realities, capacities and levels of development and respecting national policies and priorities’ ⁽²⁵⁾.

⁽²⁰⁾ United Nations (2015), *Millennium Development Goals Report*, United Nations, New York.

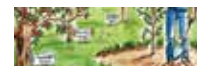
⁽²¹⁾ European Commission (2013), *A decent life for all: Ending poverty and giving the world a sustainable future*, COM(2013) 92 final, p. 4.

⁽²²⁾ United Nations General Assembly (2013), *Outcome document of the special event to follow up efforts made towards achieving the Millennium Development Goals*, A/68/L.4, para. 16.

⁽²³⁾ United Nations General Assembly (2012), *The future we want*, A/RES/66/288.

⁽²⁴⁾ *Id.*, para. 246.

⁽²⁵⁾ *Id.*, para. 247.



Box C.2: Main outcomes of the Rio+20 conference set out in 'The future we want'

The Rio+20 outcome document 'The future we want' contains a number of practical measures for implementing sustainable development:

- Member States decided to launch a process to develop a set of Sustainable Development Goals (SDGs), building upon the Millennium Development Goals (MDGs), to be integrated into the post-2015 development agenda of the UN.
- Governments also decided to establish an Expert Committee under the General Assembly to prepare options on a strategy for sustainable development financing.
- Governments also agreed to establish a high-level political forum to follow up on the implementation of sustainable development.
- They also agreed to strengthen the role of the United Nations Environment Programme (UNEP) on several fronts.
- Governments also requested the United Nations Statistical Commission, in consultation with relevant United Nations system entities and other relevant organisations, to launch a programme of work in the area of broader measures of progress to complement gross domestic product.
- Governments also adopted the 10-year framework of programmes on sustainable consumption and production patterns ⁽²⁶⁾, and invited the General Assembly to designate a body to take any necessary steps to fully operationalise the framework.

The 2030 agenda for sustainable development

Following the Rio+20 Conference, the UN launched a post-2015 process, which culminated in the definition of the 2030 agenda for sustainable development. The 2030 agenda, approved in September 2015 by the UN General Assembly ⁽²⁷⁾ defines sustainable development goals and targets, refers to the development of a global indicator framework and calls for revitalised global partnership to ensure its implementation. Many actors at the political, technical and scientific level are involved in the definition of the different elements of the 2030 agenda. Several international organisations, as well as stakeholders from the civil society and the private sector have been involved at different stages of the post-2015 process.

Main actors and work streams of the post-2015 process

The definition of sustainable development goals and targets, the development of a global indicator framework and the mobilisation of financial resources for sustainable development are closely interrelated, and the definition of each element has implication for the other ones. However, the definition of each of the three elements has in general followed separate work streams and involved different actors. Here follows a description of each of them.

Definition of goals and targets

First reflections on the definition of sustainable development goals and targets come from a UN System Task Team on the Post-2015 UN Development Agenda, established in January 2012 by the UN Secretary-General and comprising more than 60 UN agencies and international organisations. In May 2012 the Task Team presented a report to the UN Secretary-General, 'Realizing the Future We Want for All' ⁽²⁸⁾, which contained initial findings and recommendations for a post-2015 development agenda (as it was still called at that time). The report calls for an 'integrated policy approach to ensure inclusive economic development, social progress and environmental sustainability and a development agenda that responds to the aspirations of all people for a world free of want and fear' ⁽²⁹⁾. The document has served as the basis for a broader and inclusive consultation along the post-2015 process. In March 2013 the Task Team released a second

⁽²⁶⁾ As contained in A/CONF.216/5.

⁽²⁷⁾ At the time that this report was published, the document 'Transforming our world: the 2030 agenda for sustainable development' had not yet been officially adopted. The adoption of the document was expected to occur a few weeks later, by an ad hoc UN summit scheduled on 25–27 September 2015.

⁽²⁸⁾ UN System Task Team on the Post-2015 UN Development Agenda (2012), *Realizing the Future We Want for All*.

⁽²⁹⁾ *Id.*, p. 43.



report with specific recommendations for the establishment of a global partnership to support the implementation of the post-2015 development agenda ⁽³⁰⁾.

Significant contribution also comes from the High-Level Panel of Eminent Persons mandated by the UN Secretary-General in July 2012 with the task of providing guidance and recommendations on the global development agenda beyond 2015. The Panel involved political personalities from UN Member States and representatives from the private sector, academia and the civil society. The main outcome of the High-Level Panel is the May 2013 report titled 'A New Global Partnership: Eradicate Poverty and Transform Economies through Sustainable Development' ⁽³¹⁾. In the report, the Panel concludes that the post-2015 agenda needs to be driven by five fundamental shifts, namely — leaving no one behind, placing sustainable development at the core, transforming economies for jobs and inclusive growth, building peace and effective, open and accountable institutions for all, and, finally, building a new global partnership.

The work on the post-2015 process has been carried out in an open and inclusive way. Various consultations with the public have been initiated by the UN and partner organisations, the results of which have contributed to the post-2015 debate. The United Nations Development Group (UNDG) released a report in September 2013, titled 'A Million Voices: The World We Want' ⁽³²⁾, which synthesised the results of 88 national consultations, 11 thematic consultations ⁽³³⁾ and a global survey ⁽³⁴⁾ (see Box C.3). In addition, regional consultations were carried out by the Regional Economic Commissions of the UN in 2012 and 2013, the results of which were published in May 2013 in a report titled 'A Regional Perspective on the Post-2015 United Nations Development Agenda' ⁽³⁵⁾.

Box C.3: Development priorities of the public in 'A Million Voices: The World We Want'

The results of various consultations and surveys at national and global level have been synthesised in a UNDG report titled 'A Million Voices: The World We Want' published in September 2013. According to the report, there is an overall agreement among the public that the areas of development covered by the MDGs are still relevant and thus need to be integrated in the post-2015 development framework. At the same time, there is a call for strengthening the ambition and urgency of the targets in order to

reach out to the people who are still living in unacceptable conditions of poverty.

Going beyond quantitative targets and focusing on the quality of goods and services is deemed essential. Reducing inequalities and insecurities, especially for vulnerable groups of the population, is another priority area identified in the public consultations. Essentially, global challenges are seen as interlinked and the responsible use of natural resources is defined as a precondition for pursuing social objectives.

A first proposal of sustainable development goals and targets was prepared by an Open Working Group (OWG) of the UN General Assembly, established in January 2013 as a follow up of the Rio+20 Conference. The OWG included 30 members from UN Member States. The outcome document ⁽³⁶⁾, delivered in July 2014, consists of a draft proposal on goals and targets which has become the basis for the following inter-governmental negotiations ⁽³⁷⁾. The proposal contains a list of 17 SDGs and 169 related targets. Out of these, 16 goals and 106 targets are substantive, while Goal 17 and 62 targets relate to the means to implement the strategy. Box C.4 lists the 17 SDGs proposed by the OWG.

⁽³⁰⁾ UN System Task Team on the Post-2015 UN Development Agenda (2013), *A renewed global partnership for development*.

⁽³¹⁾ High Level Panel of Eminent Persons on the Post-2015 Development Agenda (2013), *A New Global Partnership: Eradicate Poverty and Transform Economies through Sustainable Development*.

⁽³²⁾ United Nations Development Group (2013), *A Million Voices: The World We Want*.

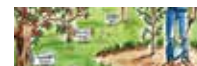
⁽³³⁾ For more information on the national and thematic consultations see: <https://www.worldwewant2015.org/sitemap>.

⁽³⁴⁾ See: <http://www.myworld2015.org/>

⁽³⁵⁾ United Nations Regional Commissions (2013), *A Regional Perspective on the Post-2015 United Nations Development Agenda*, E/ESCWA/OES/2013/2 13-0077.

⁽³⁶⁾ Open Working Group of the General Assembly on Sustainable Development Goals (2014), *Open Working Group proposal for Sustainable Development Goals*, A/68/970.

⁽³⁷⁾ See conclusion of the 68th session of the General Assembly: <http://www.un.org/en/ga/68/meetings/>



Box C.4: List of SDGs proposed in the report of the OWG

The Open Working Group on the Sustainable Development Goals proposed the following 17 SDGs in its report published in July 2014. The document also contains 169 targets.

Goal 1 — End poverty in all its forms everywhere

Goal 2 — End hunger, achieve food security and improved nutrition and promote sustainable agriculture

Goal 3 — Ensure healthy lives and promote well-being for all at all ages

Goal 4 — Ensure inclusive and equitable quality education and promote lifelong learning opportunities for all

Goal 5 — Achieve gender equality and empower all women and girls

Goal 6 — Ensure availability and sustainable management of water and sanitation for all

Goal 7 — Ensure access to affordable, reliable, sustainable and modern energy for all

Goal 8 — Promote sustained, inclusive and sustainable economic growth, full and productive employment and decent work for all

Goal 9 — Build resilient infrastructure, promote inclusive and sustainable industrialisation and foster innovation

Goal 10 — Reduce inequality within and among countries

Goal 11 — Make cities and human settlements inclusive, safe, resilient and sustainable

Goal 12 — Ensure sustainable consumption and production patterns

Goal 13 — Take urgent action to combat climate change and its impacts ⁽³⁸⁾

Goal 14 — Conserve and sustainably use the oceans, seas and marine resources for sustainable development

Goal 15 — Protect, restore and promote sustainable use of terrestrial ecosystems, sustainably manage forests, combat desertification, and halt and reverse land degradation and halt biodiversity loss

Goal 16 — Promote peaceful and inclusive societies for sustainable development, provide access to justice for all and build effective, accountable and inclusive institutions at all levels

Goal 17 — Strengthen the means of implementation and revitalise the global partnership for sustainable development

The UN Secretary-General produced a synthesis report in December 2014, which brings together the results of the different work streams of the post-2015 process. In the report ‘The Road to Dignity by 2030’ ⁽³⁹⁾, the Secretary-General endorsed the SDGs proposed by the OWG and laid out a transformational approach for their further deliberation. The synthesis report of the Secretary-General also discussed the opportunities and challenges for the development of better sustainable development metrics. In particular, the Secretary-General noted that: ‘Measures that do not distinguish between socially and environmentally harmful activities on the one hand, and social goods on the other, that do not account for equity and the distribution of costs and benefits and do not consider impacts on future generations will not help us to navigate to a sustainable future’ ⁽⁴⁰⁾.

With a view to prepare the September 2015 UN summit, intergovernmental negotiations (IGN) between the UN Member States were conducted between January and July 2015. The main outcome of the negotiations is a document titled ‘Transforming our world: the 2030 agenda for sustainable development’ ⁽⁴¹⁾, proposed for adoption at the summit. This document consists of four elements: (i) a declaration, (ii) a set of sustainable development goals and targets, (iii) means of implementation, and (iv) a follow-up and review. The set of goals and targets is a substantial part of the document. The set largely reproduces the proposal of the OWG, from which it departs only for some amendments to a limited number of targets.

⁽³⁸⁾ Acknowledging that the United Nations Framework Convention on Climate Change is the primary international, intergovernmental forum for negotiating the global response to climate change.

⁽³⁹⁾ UN Secretary-General (2014), *The Road to Dignity by 2030: Ending Poverty, transforming all Lives and Protecting the Planet*, Synthesis report of the Secretary-General on the Post-2015 Agenda.

⁽⁴⁰⁾ Id., p. 28.

⁽⁴¹⁾ See: *Transforming our World: the 2030 agenda for sustainable development*, finalised text for adoption.



Development of a global indicator framework for the SDGs and need for a data revolution

A global indicator framework to measure progress towards the SDGs and targets is an important element of the 2030 agenda for sustainable development. However, the development of such a framework will go beyond the UN summit of September 2015, which will approve the sustainable development goals and targets. According to the current roadmap, the United Nations Statistical Commission (UNSC), which as the leading statistical body of the UN oversees this work stream, is expected to approve the framework at its 47th meeting in March 2016. Work to establish an indicator framework for the SDGs and targets began more than two years ago and has involved many actors. Here follows an overview of the most relevant contributions to this work stream.

The work was initiated by the Friends of the Chair Group on Broader Measures of Progress, established in March 2013 by the UNSC with the aim to come up with more comprehensive measures of progress to complement GDP and better reflect on sustainable development objectives, as requested in the Rio+20 outcome document. The FOC group ran a global survey on measures of progress and indicators, the results of which were presented in two parts in February 2015. The objectives of the survey were to review and collect already established broader measures of progress from around the world ⁽⁴²⁾, to monitor the availability of indicators for Sustainable Development Goals and associated targets ⁽⁴³⁾, and to identify remaining data gaps. The FOC prepared another report, endorsed by the 46th session of the UNSC in March 2015 ⁽⁴⁴⁾, which includes a roadmap for the development and the implementation of an indicator and monitoring framework for the sustainable development goals and targets. It also discusses the expected data requirements and examines possible ways to close these gaps. The report recommends the creation of two groups to define the indicator framework and to support the monitoring of progress.

The first one is an Inter-Agency and Expert Group on SDG indicators (IEAG-SDGs). The main task of this group is to elaborate a proposal for a global indicator framework ⁽⁴⁵⁾, to be adopted by the UNSC in March 2016. The group consists of technical experts from national statistical offices and, as observers, representatives from regional and international organisations and agencies. While the group was mandated by the UNSC, its work is constrained by the requirements in the outcome document of the IGN, which states that ‘this framework will be simple yet robust, address all SDGs and targets including for means of implementation, and preserve the political balance, integration and ambition contained therein’ ⁽⁴⁶⁾.

A second group — a High-level Group for Partnership, Coordination and Capacity-Building for post-2015 monitoring (HLG) — was proposed by the FOC and mandated by the UNSC. The role of the HLG, which is expected to start its work at the beginning of 2016, is to foster global partnership in the monitoring of sustainable development indicators. It will also promote capacity-building for the monitoring of the 2030 agenda ⁽⁴⁷⁾. The group comprises representatives from national statistical offices, civil society and international organisations.

Monitoring progress towards the SDGs and targets will require substantial efforts, not only from developing countries but also from developed ones. The awareness that the existing statistical data are insufficient to monitor all the proposed SDGs and targets and that significant efforts are needed to fill the gaps emerged at an early stage of the discussion. Already the aforementioned High-Level Panel of Eminent Persons has called for a ‘data revolution’ to support the measurement and monitoring of the SDGs and targets. This data revolution entails, among other things, the use of innovative technologies for the collection and sharing of data to complement existing statistical systems ⁽⁴⁸⁾.

⁽⁴²⁾ Friends of the Chair Group on Broader Measures of Progress (2015), *Results of the global questionnaire of the Friends of the Chair on broader measure of progress. Part I: Survey of existing practices to go beyond GDP to measure progress.*

⁽⁴³⁾ Friends of the Chair Group on Broader Measures of Progress (2015), *Results of the global questionnaire of the Friends of the Chair on broader measure of progress. Part II: Availability of indicators for Sustainable Development Goals and associated targets.*

⁽⁴⁴⁾ Report of the Friends of the Chair Group on Broader Measures of Progress, February 2015, E/CN.3/2015/2.

⁽⁴⁵⁾ For more information on the activities of the IEAG-SDGs see: Report of the Friends of the Chair Group on Broader Measures of Progress, February 2015, E/CN.3/2015/2, Annex I, and Terms of reference for the Inter-agency Expert Group on Sustainable Development Goal Indicators.

⁽⁴⁶⁾ See: *Transforming our World: the 2030 agenda for sustainable development*, Finalised text for adoption, p. 27.

⁽⁴⁷⁾ See: Terms of reference for the High-level Group for Partnership, Coordination and Capacity-Building for post-2015 monitoring.

⁽⁴⁸⁾ High Level Panel of Eminent Persons on the Post-2015 Development Agenda (2013), *A New Global Partnership: Eradicate Poverty and Transform Economies through Sustainable Development*, p. 9.



For this purpose, in 2014 the Secretary General formed an Independent Expert Advisory Group on Data Revolution for Sustainable Development. This group presented its recommendations on how to mobilise the data revolution for sustainable development in a report to the Secretary-General called 'A World that Counts' ⁽⁴⁹⁾. The key recommendations of the group encompass the following aspects:

- Develop a global consensus on principles and standards
- Share technology and innovations for the common good
- New resources for capacity development
- Leadership for coordination and mobilisation
- Exploit some quick wins on SDG data.

Relevant input to the discussion on data revolution also comes from the Sustainable Development Solutions Network (SDSN), a global and independent network of research centres, universities and technical institutions. The group was launched by the UN Secretary-General in 2012 and has worked closely with the UN agencies, the private sector and civil society with the main task to provide scientific and technical support for addressing sustainable development challenges. As a contribution to the debate on data revolution, the SDSN proposes a comprehensive framework including 100 Global Reporting Indicators, accompanied by Complementary National Indicators to measure progress towards the SDGs proposed by the OWG. These are presented in a report titled 'Indicators and a monitoring framework for Sustainable Development Goals: Launching a data revolution for the SDGs' ⁽⁵⁰⁾, which was developed in a consultation with experts from the UN organisations, academia, civil society, business and national statistical offices. In the report, the SDSN envisages four levels of monitoring — national, global, regional and thematic (see box C.5). The SDSN stresses that the reporting on the SDGs should be primarily at the national level and that countries should be able to choose the indicators that are most appropriate for their context. However, the development of a global monitoring framework is also deemed essential for complementing national efforts. This would require the selection of indicators which are harmonised and universal.

Box C.5: A multi-level framework for monitoring the SDGs

The SDSN report 'Indicators and a monitoring framework for Sustainable Development Goals' discusses a multi-level framework for monitoring progress towards the SDGs. It builds on lessons learned from the MDGs and involves the following four levels of reporting:

National reporting is seen as the most important level of reporting. It will be carried out primarily by National Statistical Offices (NSOs), following national standards and may not all be internationally comparable. A limited set of Global Monitoring Indicators is proposed to be integrated into national reporting.

Global reporting is proposed to complement national reporting and monitoring efforts. It would be based on a set of Global Monitoring Indicators that are harmonised to common global standards and would form a basis for review at the High Level Political Forum.

Regional reporting is considered also important for fostering knowledge-sharing, reciprocal learning, and peer review across countries in the same region. It is seen as the link between reporting at the national and global level. Regional indicators would comprise Global Monitoring Indicators, Complementary National Indicators and possibly a number of indicators targeting specific regional priorities.

Thematic reporting refers to the complex challenges that must be addressed across a broad range of sectors. Since official indicators tend to be more outcome-based and simple, the suggested thematic reporting would involve specialist indicators, including input and process metrics. The thematic reporting may involve unofficial data sources as well as creative and novel ways of collecting, analysing and processing data.

⁽⁴⁹⁾ Independent Experts Advisory Group on the Data Revolution (2014), *A World that Counts: Mobilising the data revolution for sustainable development*.

⁽⁵⁰⁾ Sustainable Development Solutions Network (2015), *Indicators and a monitoring framework for Sustainable Development Goals: Launching a data revolution for the SDGs*.



Global partnership

Meeting the sustainable development objectives of the UN critically depends on the ability of governments to mobilise sufficient financial resources, as recognised in the Rio+20 Outcome Document. Member States agreed in Rio to launch an intergovernmental process to discuss the means of financing sustainable development. It was decided that the process will be carried out in an open and broad consultation with relevant stakeholders.

In June 2013, an Intergovernmental Committee of Experts on Sustainable Development Financing (ICSDF) was established by the UN General Assembly in order to implement this process, with the tasks to assess the financing needs of developing countries, to consider existing mechanisms for financing and to finally propose options for a financing strategy for sustainable development. Additional input has been provided by the Working Group on Financing for Sustainable Development, set up by the UN System Task Team. In its report of August 2014 ⁽⁶¹⁾, the Committee outlines options for an integrated sustainable development financing strategy. While the Committee recognises the ‘enormous’ challenges when it comes to financing sustainable development objectives, it also presents viable options for the mobilisation of additional funds and their effective use. The Committee provides specific recommendations in five areas: domestic public and private financing, international public and private financing and blended finance.

Intergovernmental negotiations have continued in preparation of the Third International Conference on Financing for Development (FFD). The conference took place on 13–16 July 2015 in Addis Ababa, Ethiopia, and gathered representatives from national governments, non-governmental organisations, business and relevant institutional stakeholders. The conference adopted an outcome document which presents concrete actions for mobilising financial support for the post-2015 development agenda ⁽⁶²⁾.

The EU involvement in the post-2015 process

Based on a public consultation held in summer 2012 ⁽⁶³⁾ and the conclusions of the European Environment Council meeting in October 2012 ⁽⁶⁴⁾, the European Commission in 2013 formulated a common approach to follow up on Rio+20 and the post-2015 development agenda in its communication ‘A Decent Life for All’ ⁽⁶⁵⁾. Therein the Commission laid out principles for an overarching framework for development beyond 2015. Integrating the objectives of sustainable development and poverty eradication is seen as an essential element of this overarching approach. Although some common elements between the two had already been recognised, much of the work on sustainable development and poverty eradication had been carried out in separate strands (one stemming from the Millennium Declaration and the other from a series of UN summits). Thus, the adoption and implementation of SDGs is a practical manner of bringing these two strands together. European Council conclusions from June 2013 welcomed the above-mentioned communication and reiterated the commitment of the EU and its Member States ‘to play a full and active role in the work to define the post-2015 framework’ ⁽⁶⁶⁾.

The Rio+20 outcome document noted the importance of ‘developing and utilising sustainable development strategies as key instruments for guiding decision-making and implementation of sustainable development’. As noted in the aforementioned 2013 communication of the European Commission ‘the implementation and regular review of the Europe 2020 strategy, which builds on the integrative approach initiated by the EU Strategy for Sustainable Development, should contribute to greater coherence, mainstreaming and integration of the three dimensions of sustainable development (social, environmental and economic) in EU policies at large’ ⁽⁶⁷⁾. More information on the Europe 2020 strategy and its relation to the EU Sustainable Development Strategy is provided in the next section of this chapter ‘The Europe 2020 strategy — how does it fit in the picture?’.

In June 2014, the European Commission published a new communication on post-2015, titled ‘A Decent Life for All: From vision to collective action’. It affirmed the existing position of the EU that a framework for development beyond 2015 should integrate the three dimensions of sustainable development in a balanced way, while taking into account the different starting points and capacities of countries. A list of potential

⁽⁶¹⁾ Report of the Intergovernmental Committee of Experts on Sustainable Development Financing, Final Draft, 8 August 2014.

⁽⁶²⁾ See: Outcome document of the Third International Conference on Financing for Development: Addis Ababa Action Agenda.

⁽⁶³⁾ See: https://ec.europa.eu/europeaid/consultation-towards-post-2015-development-framework_en

⁽⁶⁴⁾ European Council (2012), *Conclusions on Rio+20: Outcome and follow-up to the UNCSD 2012 Summit*, 15477/12, Brussels, 25 October 2012.

⁽⁶⁵⁾ European Commission (2013), *A decent life for all: Ending poverty and giving the world a sustainable future*, COM(2013) 92 final.

⁽⁶⁶⁾ See: *The Overarching Post 2015 Agenda: Council Conclusions*, Luxembourg, 25 June 2013.

⁽⁶⁷⁾ See footnote 55, p. 6.



targets and priority areas was also included in the communication as a step forward in the selection of a final set of SDGs ⁽⁵⁸⁾. In December 2014, the European Council adopted conclusions on a transformative post-2015 agenda ⁽⁵⁹⁾. The document underpins the position of the EU during the negotiations on the 2030 agenda for sustainable development.

The implementation of the 2030 agenda requires a new global partnership for development as noted by the European Commission in its communication from February 2015 ‘A Global Partnership for Poverty Eradication and Sustainable Development after 2015’ ⁽⁶⁰⁾. In its communication, the Commission stresses the importance of building international co-operation based on the principles of ‘shared responsibility, mutual accountability and respective capacity’ whereas ‘countries at all stages of development must engage with and take responsibility for its implementation’ ⁽⁶¹⁾. The communication outlines the following key components of such as global partnership:

- An enabling and conducive policy environment at all levels;
- Developing capacity to deliver the agenda;
- Mobilisation and effective use of domestic and international public finances;
- Stimulating trade to eradicate poverty and promote sustainable development;
- Driving transformative change through science, technology and innovation;
- Mobilising the domestic and international private sector;
- Harnessing the positive effect of migration.

European Council conclusions from May 2015 set out a number of guiding principles for a new global partnership for poverty eradication and sustainable development after 2015 ⁽⁶²⁾. They affirmed the principles of ‘universality, shared responsibility, mutual accountability, consideration of respective capabilities and multi-shareholder approach’, set out in the December 2014 Council conclusions, and added that the new global partnership ‘should be based on and promote human rights, equality, non-discrimination, democratic institutions good governance, rule of law, inclusiveness, environmental sustainability and respect for planetary boundaries’ ⁽⁶³⁾. The Council conclusions further adopted the key components of global partnership mentioned above.

The Europe 2020 strategy — how does it fit in the picture?

The Europe 2020 strategy ⁽⁶⁴⁾, adopted by the European Council on 17 June 2010 ⁽⁶⁵⁾, is the EU ten-year strategy for growth and jobs. It puts forward three mutually reinforcing priorities to make Europe a smarter, more sustainable and more inclusive place to live:

- It envisages the transition to **smart growth** through the development of an economy based on knowledge, research and innovation.
- The **sustainable growth** objective relates to the promotion of more resource efficient, greener and competitive markets.
- The **inclusive growth** priority encompasses policies aimed at fostering job creation and poverty reduction.

For each of the three priorities the strategy foresees one or more targets in five areas: employment, research and development (R&D) and innovation, climate change and energy, education, and poverty and social exclusion. The strategy objectives and targets are further supported by seven thematic flagship initiatives.

Eurostat monitors the Europe 2020 headline targets through a scoreboard of nine headline indicators and four supplementary indicators, regularly updated on the Eurostat website ⁽⁶⁶⁾. A 2015 edition of the

⁽⁵⁸⁾ European Commission (2014), *A Decent Life for All: From vision to collective action*, COM(2014) 0335 final.

⁽⁵⁹⁾ See: *Council conclusions on a transformative post-2015 agenda*, Brussels, 16 December 2014.

⁽⁶⁰⁾ European Commission (2012), *A Global Partnership for Poverty Eradication and Sustainable Development after 2015*, COM(2015) 44 final.

⁽⁶¹⁾ *Id.*, p. 3.

⁽⁶²⁾ See: *A New Global Partnership for Poverty Eradication and Sustainable Development after 2015*, Council Conclusions, 26 May 2015.

⁽⁶³⁾ *Id.*, art. 6.

⁽⁶⁴⁾ European Commission (2010), *Europe 2020 — A strategy for smart, sustainable and inclusive growth*, COM(2010) 2020 final.

⁽⁶⁵⁾ See: *European Council Conclusions*, 17 June 2010.

⁽⁶⁶⁾ See: <http://ec.europa.eu/eurostat/web/europe-2020-indicators/europe-2020-strategy/headline-indicators-scoreboard>



monitoring report ‘Smarter, greener, more inclusive? Indicators to support the Europe 2020 strategy’ ⁽⁶⁷⁾ was published in March 2015.

Table C.1: The Europe 2020 strategy’s key priorities, headline targets and flagship initiatives

	Targets	Flagship initiatives
Smart Growth	<ul style="list-style-type: none"> — 3 % of GDP to be invested in the research and development (R&D) sector. — Reduce the rates of early school leaving to below 10 %, and at least 40 % of 30 to 34 year olds to have completed tertiary or equivalent education. 	<ul style="list-style-type: none"> — Innovation Union — Youth on the move — A digital agenda for Europe
Sustainable Growth	<ul style="list-style-type: none"> — Reduce greenhouse gas emissions by 20 % compared to 1990 levels. — Increase the share of renewables in final energy consumption to 20 %. — 20 % increase in energy efficiency. 	<ul style="list-style-type: none"> — Resource efficient Europe — An industrial policy for the globalisation era
Inclusive Growth	<ul style="list-style-type: none"> — 75 % of 20 to 64 year old men and women to be employed. — Reduce poverty by lifting at least 20 million people out of the risk of poverty and social exclusion. 	<ul style="list-style-type: none"> — An agenda for new skills and jobs — European platform against poverty and social exclusion

Europe 2020 and the EU SDS as a complementary system

The context of the adoption of the SDGs at the summit of September 2015 is an opportunity to consider the EU activities relevant to this broad agenda, having regard to the EU Sustainable Development Strategy and the Europe 2020 strategy.

The relationship between the EU Sustainable Development Strategy and the Lisbon Strategy — the predecessor of Europe 2020 — was described as complementary. The EU SDS sets the overall framework, within which short- and medium-term strategies should operate, by providing a long-term perspective and clear and coherent guidance to all policy areas. Whereas the EU SDS is primarily concerned with quality of life, intra- and inter-generational equity and coherence between all policy areas, including international aspects, it recognises the role of economic development in facilitating the transition to a more sustainable society.

The measures of Europe 2020, for instance, should therefore be compatible with the long-term objectives of the EU SDS. In this sense, Europe 2020 can be seen as the practical implementation of the EU’s overarching policy agenda for sustainable development. In its recent communication ‘A decent life for all’, the European Commission highlighted the role of Europe 2020 as building ‘on the integrative approach initiated by the EU Strategy for Sustainable Development, by contributing to greater coherence, mainstreaming and integration of the three dimensions of sustainable development in EU policies at large’ ⁽⁶⁸⁾.

Europe 2020 has thus drawn on several of the challenges addressed in the EU SDS. These include resource efficiency, the ‘20/20/20’ climate and energy targets, as well as poverty reduction and education. Table C.2 shows a comparison of the seven EU SDS key challenges and how they have been taken up by the Europe 2020 strategy’s flagship initiatives.

⁽⁶⁷⁾ See: Eurostat (2015), *Smarter, greener, more inclusive? Indicators to support the Europe 2020 strategy*, 2015 edition.

⁽⁶⁸⁾ European Commission (2013), *A decent life for all: Ending poverty and giving the world a sustainable future*, COM(2013) 92 final, p. 6.



Table C.2: How the seven EU SDS key challenges are addressed by the Europe 2020 strategy and its flagship initiatives (1)

Europe 2020 flagship initiative EU SDS key challenge	A digital agenda for Europe	Innovation Union	Youth on the Move	A Resource-Efficient Europe	An Integrated Industrial Policy for the Globalisation Era	An Agenda for new skills and jobs	The European Platform against Poverty and Social Exclusion
Climate change and clean energy 'To limit climate change and its costs and negative effects to society and the environment.'	√√	√√		√√√	√√√		
Sustainable transport 'To ensure that our transport systems meet society's economic, social and environmental needs whilst minimising their undesirable impacts on the economy, society and the environment.'	√√	√√		√√	√√		
Sustainable consumption and production 'To promote sustainable consumption and production patterns.'	√	√		√√√	√√		
Conservation and management of natural resources 'To improve management and avoid overexploitation of natural resources, recognising the value of ecosystem services.'		√√		√√√	√√		
Public Health 'To promote good public health on equal conditions and improve protection against health threats.'	√√	√√				√	√√
Social inclusion, demography and migration 'To create a socially inclusive society by taking into account solidarity between and within generations and to secure and increase the quality of life of citizens as a precondition for lasting individual well-being.'	√√	√√	√√			√√√	√√√
Global poverty & sustainable development challenges 'To actively promote sustainable development worldwide and ensure that the European Union's internal and external policies are consistent with global sustainable development and its international commitments.'				√√			√√

(1) One tick (√) means that less than 25 % of the operational objectives of an EU SDS key challenge were mentioned in the respective flagship initiative document; two ticks (√√) mean between 25 % and 75 %, and three ticks (√√√) mean over 75 %; empty cells mean that no references to the operational objectives were found in the flagship initiative document.

Source: Pisano et al. (2011), *Sustainable development governance & policies in the light of major EU policy strategies and international developments*, ESDN Quarterly Report No. 22 (September 2011).



These synergies are also reflected in the EU set of sustainable development indicators (SDI), which comprise the indicators presented in this report, and cover all of the Europe 2020 headline indicators ⁽⁶⁹⁾.

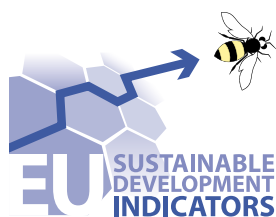
Apart from the obvious links and synergies in the indicator set between the EU SDS and the Europe 2020 strategy, the EU SDS engages in a very comprehensive picture of sustainable development to reflect the social and environmental aspects of development. The theme on 'global partnership' outlines the EU's responsibility for intra-generational equity by supporting the achievement of the Millennium Development Goals and introduces the concept of policy coherence for development, in accordance with the Treaty. Furthermore, the EU SDI set engages in the wider framework of societal progress and quality of life in particular that is taken into account by the themes 'public health', 'demographic changes' and 'social inclusion'.

In short, although the Europe 2020 strategy builds upon the integrated approach of the EU SDS, the analysis presented in Table C.2 shows that Europe 2020 focuses mainly on the growth-related aspects of a smart, sustainable and inclusive society. In this sense, this 2015 edition of the 'Sustainable Development in the EU' monitoring report aims to give a broad, comprehensive picture of whether the EU is moving towards sustainable development based on the framework of objectives and targets as outlined in the EU Sustainable Development Strategy.

⁽⁶⁹⁾ The theme 'socioeconomic development' includes the indicators 'Employment rate by gender, age group 20–64' and 'Gross domestic expenditure on R&D (GERD)'. The theme 'social inclusion' contains the bulk of the Europe 2020 headline indicators, namely 'People at risk of poverty or social exclusion' (used as headline indicator of this theme) and its three sub-indicators 'People living in households with very low work intensity', 'People at risk of poverty after social transfers' and 'Severely materially deprived people'. Additionally, the theme incorporates the two education indicators 'Early leavers from education and training' and 'Tertiary educational attainment'. The theme 'climate change and energy' draws on the indicators 'Greenhouse gas emissions', 'Share of renewable energy in gross final energy consumption', and 'Primary energy consumption', all of them being used as headline indicators of this theme.

Socioeconomic development

























Overview of the main changes

Real gross domestic product (GDP) per capita in the EU has increased moderately both in the long term (since 2000) and in the short term (since 2009). The indicator's continuous upward trend was interrupted by the start of the economic crisis in late 2008. Although the EU economy has since returned to growth, a fragile recovery is expected. Deterioration of economic conditions during the crisis has also affected other indicators in the 'socioeconomic development' theme. Labour markets were hard hit, with young people among the worst affected. Household savings have been strongly reduced in the short run, although disposable household income has improved moderately. Investment has also contracted, particularly in the short term. More favourable developments can be seen in some areas of competitiveness and eco-efficiency. Labour productivity has increased substantially since 2000, although some gains were reversed during the economic crisis. Energy intensity has improved even more steadily, both in the long term and short term. Investment in research and development (R&D) has increased only slightly.

Table 1.1: Evaluation of changes in the socioeconomic development theme, EU-28⁽¹⁾

Indicator	Long-term evaluation (since 2000)	Short-term evaluation (last five-year period)
Real GDP per capita		
Economic development		
Investment	 ⁽²⁾	
Disposable household income	 ⁽³⁾	
Household saving		
Innovativeness, competitiveness and eco-efficiency		
Labour productivity		
Eco-innovation	:	:
Research and development expenditure		
Energy intensity	 ⁽²⁾	
Employment		
Employment	 ⁽²⁾	
Young people neither in employment nor in education or training	 ⁽²⁾	
Unemployment		

⁽¹⁾ An explanation of the evaluation method and the meaning of the weather symbols is given in the Introduction and in Annex III.

⁽²⁾ From 2002.

⁽³⁾ From 2003.

Key trends in socioeconomic development

Recent changes in real GDP per capita indicate fragile recovery under way

In the long run between 2000 and 2014 **real GDP per capita** in the EU grew moderately by 0.9% per year on average. Growth was more pronounced before the economic crisis of 2008. Between 1995 and 2007 real GDP per capita increased continuously at a rate of 2.2% per year on average. As the financial and economic crisis took hold of the EU economy, however, GDP growth stalled in 2008 and by 2009 had contracted by 4.7%. Swift implementation of fiscal stimuli and other policy actions at national and EU levels contained the worst effects of the crisis and restored economic growth in 2010 and 2011. Although real GDP per capita contracted slightly in 2012 and 2013, it increased again in 2014 by 1.1%. As a result, in the short term between 2009 and 2014 the EU economy grew at an average annual rate of 0.7%.

The crisis continues to weigh on investment in the EU

Between 2002 and 2014 **investment** (as a share of GDP) declined in the EU. This was most likely due to a loss of household and business confidence during the financial market turmoil and the economic crisis. The drop in total investment was somewhat offset by increased government spending in the first years of the crisis. However, since 2009 government investment has also declined as a result of fiscal consolidation efforts, driving total investment down further. Public spending cuts have also contributed to reducing adjusted **disposable household income** in the Member States hardest hit by the economic crisis. In the rest of the EU, households experienced a continuous improvement in their disposable income in the period between 2003 and 2013.

The EU **household saving rate** was strongly subdued in 2014 compared with 2009 due to the negative effects of fiscal consolidation efforts on household disposable income. Since 2010 the household saving rate has been falling, which was also observed before the 2008 economic crisis. In the long run between 2000 and 2014 the indicator dropped moderately by 1.4 percentage points.

Gains in competitiveness due to higher labour productivity but subdued innovation

Labour productivity increased almost continuously between 2000 and 2013. Some gains were reversed between 2007 and 2009 as a result of the economic downturn, but in 2010 labour productivity rebounded to its pre-crisis level and has continued to grow. **Energy intensity** in the EU has also improved. It declined by 15.9% between 2002 and 2013 as a result of absolute decoupling of gross inland energy consumption from economic growth ⁽¹⁾.

Less favourable developments have been observed with regard to innovation. **R&D expenditure** as a share of GDP increased slightly in the EU between 2000 and 2013 but more rapid progress is needed to reach the 3% target set out in the Europe 2020 strategy. Most of the increase in 2008 and 2009 came from the public sector, reflecting government efforts to support economic growth by boosting R&D expenditure. Since then R&D intensity has remained at about 2% of GDP. In terms of **eco-innovation** activities, the majority of Member States performed lower in 2013 compared with 2010.

Muted labour market recovery

Between 2002 and 2014 the **EU employment rate** rose moderately by 2.5 percentage points, mostly due to strong labour market performance before the economic crisis. Short-term developments in the labour market have been much less favourable. The economic crisis and prolonged labour market stagnation held back employment between 2008 and 2013. Although the indicator picked up again in 2014, the EU is off-track to meeting the Europe 2020 target to reach a 75% employment rate by 2020.

In 2014, the share of young people neither in employment nor in education or training (**NEET rate**) was equivalent to its 2009 level of 12.4% and slightly lower than its 2002 level of 13%. Although the NEET rate had been falling gradually before the crisis, it was driven up again with the start of the crisis, largely due to the rise in youth unemployment. The overall **unemployment rate** in the EU followed a similar trend of falling gradually before the crisis and increasing sharply afterwards. In 2013 EU unemployment reached a record high of 10.9% but fell slightly in 2014, indicating a possible labour market recovery.

(1) For a detailed description of decoupling indicators see the Introduction chapter (p. 13)



Why do we focus on socioeconomic development?

By promoting a prosperous, innovative, knowledge-rich, competitive and eco-efficient economy that provides high living standards and high-quality employment, socioeconomic development aims to harmonise the three main pillars of sustainable development: economic development, protection of the environment and social justice.

Gross domestic product (GDP) is the best-known measure of macro-economic activity and has been regarded by some as a proxy indicator for societal progress. However, by design and purpose, it cannot be relied on to inform on all policy-related issues and its deficiencies as a measure of well-being have been increasingly recognised. Nevertheless, GDP is closely linked to a number of issues highly relevant for economic development, such as employment or R&D investment. Reflecting changes in consumption and production patterns, GDP growth is also linked to resource use and climate change, especially when not matched by similar increases in resource efficiency. Moreover, the availability of economic resources determines the potential of technological and scientific innovations needed for a switch to 'low-carbon' ⁽²⁾ and resource-efficient economies.

The economic dimension of socioeconomic development is analysed in view of investment, disposable household income, net national income and household saving. Investment directly affects an economy's prosperity because it contributes to the accumulation of capital goods, either in the form of physical capital or knowledge ⁽³⁾. Disposable household income is an important means for achieving higher living standards, so is crucial for pursuing the social objectives of sustainable development. Household saving also has an important role to play, particularly in ensuring resources and opportunities are shared fairly between generations. It determines the amount of financial resources available to invest in improving the stock of productive, natural and human capital.

An economy's capacity for innovation, competitiveness and eco-efficiency is analysed through indicators on R&D, labour productivity, eco-innovation and energy intensity. R&D expenditure, through its links to education, innovation, employment, labour productivity and economic growth, is crucial for the prosperity and competitiveness of EU economies. The expansion of scientific and technological knowledge can help society tackle some of its most pressing challenges such as climate change, population ageing, labour market attainment and security of material supply. Eco-innovation allows economic prosperity to increase while preserving the environment and utilising natural resources more efficiently. The formation of human capital (the skills, knowledge and experience possessed by an individual or population) through education and training advances academic knowledge and innovative technologies, which in turn contribute to job creation, labour productivity and resource efficiency. Labour productivity is an important determinant of an economy's future competitiveness and long-term economic growth.

Sustained economic growth, however, if not counterbalanced by eco-efficiency improvements, can damage the natural environment and jeopardise ecosystems, thus significantly affecting well-being in the long run. Sustainable development relies on ensuring economic prosperity while minimising environmental pressures and avoiding over-exploitation of resources. An economy's energy intensity is important in this respect because it highlights progress in the decoupling of economic growth from environmental degradation.

Employment is essential for the well-functioning and competitiveness of economies. Rising employment can help make society more inclusive by reducing poverty and inequality in and between both regions and social groups. Apart from generating the income needed to achieve good living standards, paid work provides opportunities for meaningful engagement in society, promoting a sense of self-worth, purpose and social inclusion. In contrast, high and persistent unemployment can lead to social exclusion, degradation of individual skills and increased poverty, which in turn slows economic growth. Young people are particularly vulnerable to weak economic conditions. Improving their education and employment opportunities is key to social inclusion and the sustainability of our economic systems.

⁽²⁾ A 'low carbon economy' is an economy in which production and consumption processes emit little or no carbon dioxide.

⁽³⁾ Recent improvements in the methodological framework underlying the compilation of European System of Accounts (ESA 2010), which has been used for data transmissions from September 2014, underlines the importance of this aspect by reclassifying expenditures on research and development (R&D) from intermediate consumption to capital formation. See: Regulation (EU) No 549/2013 of the European Parliament and of the Council of 21 May 2013 on the European system of national and regional accounts in the European Union; further information on <http://ec.europa.eu/eurostat/web/esa-2010>.

How does the EU tackle socioeconomic development?

Socioeconomic development represents one of the seven key challenges identified under the EU Sustainable Development Strategy (EU SDS) ⁽⁴⁾. The policy imperative in this respect is the promotion of a 'prosperous, knowledge-rich, competitive and eco-efficient economy, which provides high living standards and full and high-quality employment throughout the EU'.

The Europe 2020 strategy ⁽⁵⁾ aims to tackle the short-term challenges of the crisis and prepare the EU economy for the coming decade. Under its priorities

of smart, sustainable and inclusive growth, the strategy has set targets to increase EU expenditure on R&D to 3% of GDP, increase energy efficiency by 20% and raise the employment rate of 20 to 64 year olds to 75% by 2020.

These targets are supported by the Europe 2020 strategy's flagship initiatives 'Innovation Union' ⁽⁶⁾, 'digital Agenda for Europe' ⁽⁷⁾, 'Youth on the Move' ⁽⁸⁾, 'An Agenda for New Skills and Jobs' ⁽⁹⁾, 'An Industrial Policy for the Globalisation Era' ⁽¹⁰⁾ and 'Resource Efficient Europe' ⁽¹¹⁾.

Further reading on socioeconomic development

Eurostat (2015), *Smarter, greener, more inclusive? Indicators to support the Europe 2020 strategy: 2015 edition*, Publications Office of the European Union, Luxembourg.

Eurostat (2013), *Individual employment, household employment and risk of poverty in the EU: A decomposition analysis*, Publications Office of the European Union, Luxembourg.

Eurostat (2013), *Science, Technology and Innovation in Europe: 2013 edition*, Publications Office of the European Union, Luxembourg.

European Commission (2011), *Innovation Europe Competitiveness Report*, Publications Office of the European Union, Luxembourg.

ILO (2015), *Studies on growth and equity: An employment-oriented investment strategy for Europe*, International Labour Office Research Department, Geneva.

United Nations (2010), *Analysing and measuring social inclusion in a global context*, United Nations, New York.

OECD (2008), *Sustainable Development: Linking economy, society and environment*, OECD Publishing, Paris.

⁽⁴⁾ Council of the European Union (2009), *Review of the EU Sustainable Development Strategy — Presidency report*, 16818/09.

⁽⁵⁾ Commission Communication (2010), *Europe 2020 — A strategy for smart, sustainable and inclusive growth*, COM(2010) 2020 final.

⁽⁶⁾ Commission Communication (2013), *Europe 2020 Flagship Innovation Union*, COM (2010) 546 final; see also Commission Communication, *State of Innovation Union 2012 — Accelerating Change*, COM (2013), 149 final.

⁽⁷⁾ Commission Communication (2010), *A Digital Agenda for Europe*, COM(2010) 245 final/2.

⁽⁸⁾ Commission Communication (2010), *Youth on the Move: An initiative to unleash the potential of young people to achieve smart, sustainable and inclusive growth in the European Union*, COM(2010) 477 final.

⁽⁹⁾ Commission Communication (2010), *An agenda for new skills and jobs: A European contribution towards full employment*, COM(2010) 682 final.

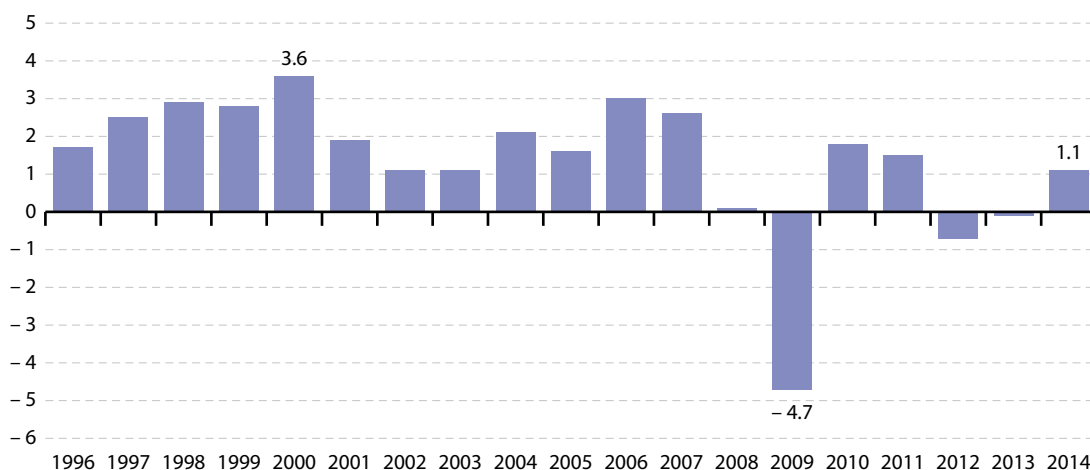
⁽¹⁰⁾ Commission Communication (2010), *An integrated industrial policy for the globalisation era*, COM(2010) 614.

⁽¹¹⁾ Commission Communication (2011), *A resource efficient Europe — Flagship initiative under the Europe 2020 Strategy*, COM(2011) 21.

Real GDP per capita

Real GDP per capita followed an upward long-term trend, increasing by 0.9% per year on average between 2000 and 2014. The EU economy shrank by 4.7% between 2008 and 2009 as a result of the crisis but rebounded in the years after. Between 2009 and 2014 real GDP per capita grew by 0.7% per year on average, indicating a fragile recovery is under way.

Figure 1.1: Change in real GDP per capita, EU-28, 1996–2014
(% change on previous year)



Source: Eurostat (online data code: [tsdec100](#))

Real gross domestic product (GDP) per capita in the EU increased continuously at an average growth rate of 2.2% per year between 1995 and 2007. This trend reversed with the start of the economic crisis in late 2008, and in 2009 a decline of 4.7% was recorded. This was the strongest one-year drop of the past two decades. More recent developments have been tentative. Between 2009 and 2011, real GDP per capita picked up again, recording a moderate increase of 1.6% per year on average. From 2011 to 2013, economic activity contracted by 0.8% over the two-year period before returning to positive growth in 2014.

Between 2000 and 2014 real GDP per capita grew by 0.9% per year on average, following an upward long-term trend. In the short term, since 2009, the average annual growth rate has been slightly lower at 0.7% due to the protracted effects of the economic crisis. It should be noted that real GDP per capita has developed differently across EU Member States. Some economies, particularly the ones that had accumulated large macroeconomic imbalances before 2008, have been more exposed to the effects of the crisis and experienced larger dips in 2008 and 2009 as well as in 2012 and 2013, while others have been less affected.

Is economic recovery under way in the EU?

Decisive policy actions at national and European level in response to the crisis alleviated some of the gravest short-term risks to the economy. These measures, including rescue packages for the most troubled economies, counter-cyclical fiscal stimulus and banking sector support, brought about moderate economic growth in 2010 and 2011 and helped improve confidence and financial conditions for sovereigns and banks⁽¹²⁾. The moderate increase in economic activity in 2014 points towards a recovery. However, this is likely to be slower and more fragile than typical cyclical adjustments due to the severity of the recent economic slump. Certain negative factors stemming from the crisis, such as high debt, uncertainty and tight financing conditions have been slow to recede and remain a drag on investment and domestic consumption⁽¹³⁾. As a result, real GDP per capita slipped 0.7% in 2011–2012 and remained subdued in 2013.

⁽¹²⁾ International Monetary Fund (2013), *World Economic Outlook 2013: Hopes, Realities, Risks*, p. 1.

⁽¹³⁾ OECD (2014), *Economic Outlook: Volume 2014/2*, OECD Publishing, p. 18.



Long term
(since 2000)



Short term
(since 2009)

Box 1.1: EU measures for tackling the economic crisis

The **Stability and Growth Pact** (SGP) is a rule-based framework aimed at maintaining the stability of the economic and monetary union. The SGP contains two arms: the preventive arm seeking to ensure that fiscal policy is conducted in a sustainable manner and the corrective arm setting out the framework for countries to take corrective action in the case of an excessive deficit.

The **macroeconomic imbalance procedure** (MIP) and the **excessive deficit procedure** (EDP) are two key instruments of the EU economic governance framework. The MIP is intended to monitor the build-up of persistent macroeconomic imbalances and serves as an early warning system. The EDP is a part of the SGP's corrective arm and its main purpose is to enforce compliance with budgetary discipline. The EDP limits the budget deficit and public debt of Member States on the basis of the following thresholds enshrined in the Treaty: government deficit within 3% of GDP and gross debt not exceeding 60% of GDP.

In December 2011, a reinforced SGP entered into force with a new set of six legislative proposals for economic and fiscal surveillance, known as the

'**six-pack**'. Two further Regulations for budgetary surveillance were introduced in May 2013, the so-called '**two-pack**'⁽¹⁴⁾. The first Regulation requires countries to present their draft budgets to the European Commission, which has the right to assess and, if necessary, issue an opinion on them. The second Regulation sets out explicit rules and procedures for enhanced surveillance of any euro area country in distress.

Additionally, the EU adopted a number of **recovery packages** as an emergency measure to protect the worst affected countries from bankruptcy and thus avoid the crisis spreading to other economies in the region. Since 2010, financial assistance has been provided to a number of Member States, most notably Greece, Ireland, Portugal and Spain⁽¹⁵⁾. **Stabilisation of the banking sectors** of the most afflicted countries was another important step in tackling the crisis. This was achieved through a series of EU/IMF support programmes for recapitalisation and restructuring of crisis-hit banks including debt guarantees, equity injections and asset purchases. These measures have been crucial for preserving financial stability across Europe by preventing liquidity from seizing-up in the economies worst hit by the crisis.

Growth prospects turn positive but moderate

The EU is expected to gradually return to growth over the next few years, according to European Commission forecasts, reinforced by substantial improvements in the public finances, stronger domestic demand, lower oil prices and quantitative easing in the euro area⁽¹⁶⁾. The benefits of the necessarily tighter fiscal stance have started to show effect with debt-to-GDP levels falling in 2014⁽¹⁷⁾. Overall improvement in public finances since 2011, especially in the countries which had some of the largest imbalances, has allowed the pace of fiscal consolidation to slow, reducing pressure on public and household spending.

As the recovery gains ground and confidence returns to the market, investment conditions are expected to improve, especially in the private sector which declined sharply between 2008 and 2011. Business investment is a key driver of domestic demand and is important for restoring economic growth in periods of recovery. Although still low, business and household spending are set to rise gradually and support growth as the effects of the crisis recede. As a result, annual GDP growth is expected to accelerate to 1.8% in 2015 and 2.1% in 2016⁽¹⁸⁾.

How GDP growth varies between Member States

Economic growth was positive in all EU Member States between 2000 and 2007, before the economic and financial crises aggravated market conditions. The strongest average annual growth rates were observed in some central and eastern EU Member States, namely Latvia (10.3%), Estonia (8.4%), Romania (7.4%), Bulgaria (6.6%) and Slovakia (6.2%). In contrast, real GDP per capita in some Member States grew by less

⁽¹⁴⁾ Information on specific measures under the 'six-pack' and 'two-pack': http://ec.europa.eu/economy_finance/articles/governance/2012-03-14_six_pack_en.htm

⁽¹⁵⁾ For more information on financial assistance programmes to EU Member States see the [dedicated section on the European Commission website](#).

⁽¹⁶⁾ European Commission (2015), *European Economic Forecast Spring 2015*, p. 10.

⁽¹⁷⁾ *Id.*, p. 5.

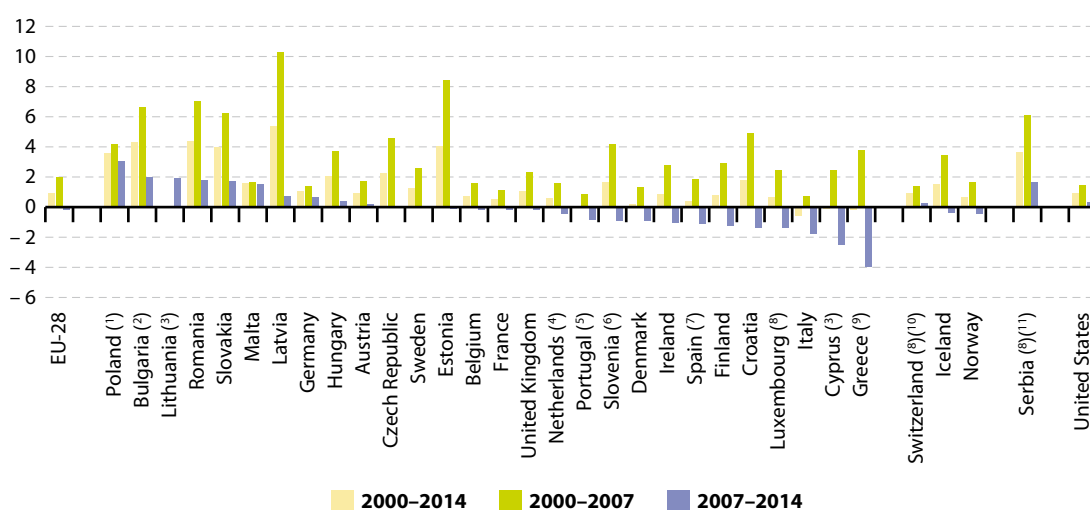
⁽¹⁸⁾ *Id.*, p. 1.

than 2% per year on average. The lowest growth rates were observed in Italy (0.7%), Portugal (0.9%) and France (1.1%).

By 2014 growth stabilised in most Member States, but the drag on economic activity has lingered longer in some southern EU economies. The strongest decline in real GDP per capita between 2007 and 2014 was observed in Greece, Cyprus and Italy. These countries either had unsustainable pre-crisis balance sheets or were strongly affected by a real estate property bubble. Even in countries that did not accumulate external imbalances, such as Germany, economic growth deteriorated as a result of shrinking EU export demand and business uncertainty⁽¹⁹⁾.

Economies of central and eastern Member States, which had more stable balance sheets before the crisis, grew more strongly between 2007 and 2014, despite the spill-over effects of more troubled economies. Poland performed exceptionally well and was the only EU economy to maintain economic growth during the crisis and thereafter. Between 2007 and 2014, Poland and Bulgaria had the fastest average growth rates per year (3.1% and 2.0% respectively), followed by Lithuania (1.9%), Romania (1.8%) and Slovakia (1.7%).

Figure 1.2: Change in real GDP per capita, by country, 2000–2014, 2000–2007 and 2007–2014 (average annual change in %)



(1) Data are estimates. (2) Data for 2014 are provisional. (3) Data for 2013–2014 are provisional. (4) Data for 2012–2014 are provisional. (5) Data for 2013–2014 are estimates. (6) Break in time series for 2008. (7) Data are provisional. (8) Data for 2013 instead of 2014. (9) Data for 2011–2014 are provisional. (10) Data for 2012–2013 are provisional. (11) Data for 2002 instead of 2000.

Source: Eurostat (online data code: [tsdec100](#))

EU trends in GDP compared with other countries in the world

Moderate growth has returned to the EU and other major economies as the effects of the global crisis have slowly started to recede⁽²⁰⁾. However, economic performance has diverged across regions and recovery is expected to remain uneven. Among the advanced economies, growth in the United States has gained ground and is expected to remain strong due to improved domestic demand and lower energy prices⁽²¹⁾. Japan has experienced a weaker recovery from the economic recession due to reduced domestic demand and private investment⁽²²⁾. However, the economy is expected to start growing again in 2015 and 2016. Regarding emerging market economies, growth rates have been significant in China, India and Indonesia. In contrast, GDP has contracted in Russia due to falling oil revenues and political tensions, and remained weak in Brazil and South Africa.

(19) European Commission (2012), *European Competitiveness Report 2012: Executive Summary*, p. 5.

(20) OECD (2014), *Economic Outlook, Volume 2014/2*, OECD Publishing, p. 18.

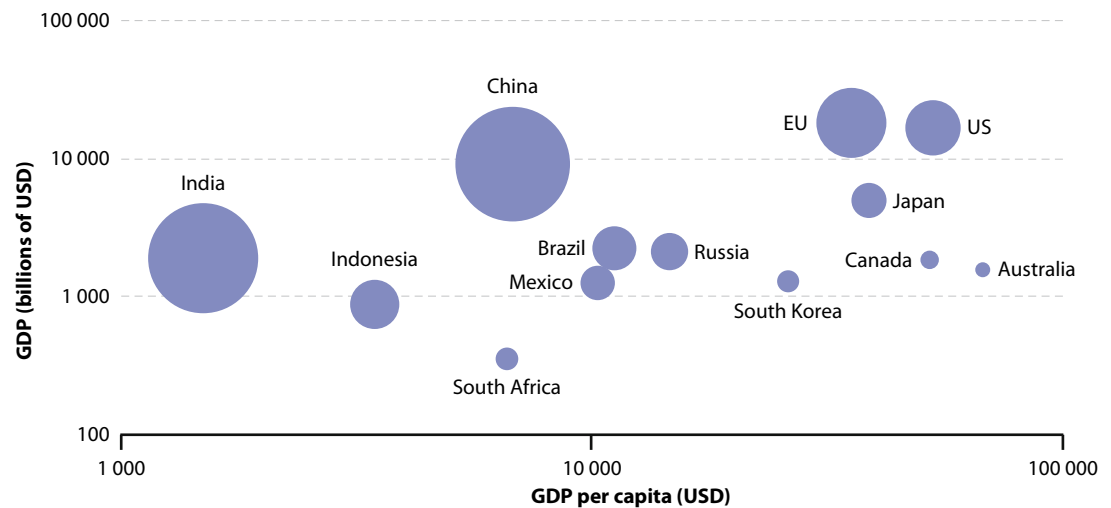
(21) European Commission (2015), *European Economic Forecast Spring 2015*, p. 138.

(22) *Id.*, p. 140.



Economic recovery has been slower in the EU than in other advanced economies. It is expected to remain weak largely due to the protracted effects of the euro area crisis, unfavourable investment climate and slow implementation of reforms. Nonetheless, the EU remains the world's largest economy in terms of GDP (billion US dollars). In 2013, the 28 EU Member States together produced a GDP of 17.96 trillion US dollars, followed by the United States, China and Japan. EU living standards, as measured by GDP per capita, remain among the highest in the world, surpassed by Australia, the United States, Canada and Japan.

Figure 1.3: The EU compared with other economies in the world, 2013 ⁽¹⁾



⁽¹⁾ The size of the bubbles shows the population size.

Source: World Bank

What lies beneath this indicator?

Growth in GDP per capita helps create jobs and generates additional economic resources for long-term investment. However, if it relies on using more natural resources, it puts pressure on the environment and reduces future consumption possibilities. By contrast, tapping into alternative sources of growth such as technological innovation or advancing education and human skills could break this link by decoupling environmental pressures from economic growth ⁽²³⁾.

Real GDP per capita is calculated as the ratio of real GDP to the average population in a specific year. As a measure of average real income, it is often used as an indicator of how well off people are in a given country.

GDP is a measure of economic activity. It refers to the value of total output of goods and services produced by an economy within a certain period of time, less intermediate consumption, plus net taxes on products and imports. It can be measured in three ways: output, expenditure or income. On the expenditure side, GDP is comprised of private final consumption, government final consumption, gross fixed capital formation, changes in inventories, and net exports (the difference between imports and exports of goods and services).

Although per capita income is widely used as a proxy for prosperity, it is not a full measure of well-being. It does not account for some social issues, such as the equality of income distribution or the value of non-market services (such as household labour or voluntary work) relevant for individual well-being.

⁽²³⁾ OECD (2012), *Environmental Outlook to 2050: The Consequences of Inaction*, p. 52.

Investment

Investment in the EU fell by almost two percentage points in the long-term period from 2002 to 2014. This was largely due to a sharp fall in private investment caused by the unfavourable effects of the economic crisis. In the short term, from 2009 to 2014, government investment also declined as a result of fiscal consolidation efforts, which drove total investment down further.



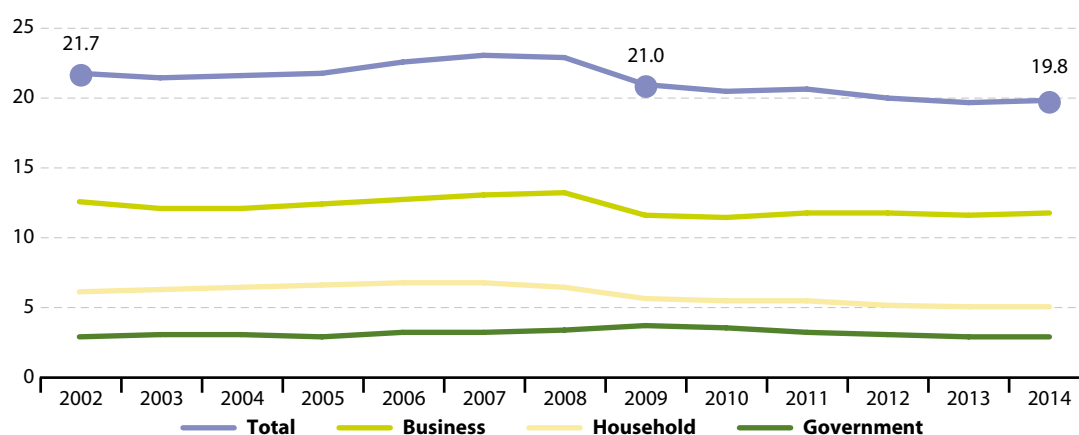
Long term
(since 2002)



Short term
(since 2009)

Figure 1.4: Investment by institutional sector, EU-28, 2002–2014

(% of GDP)

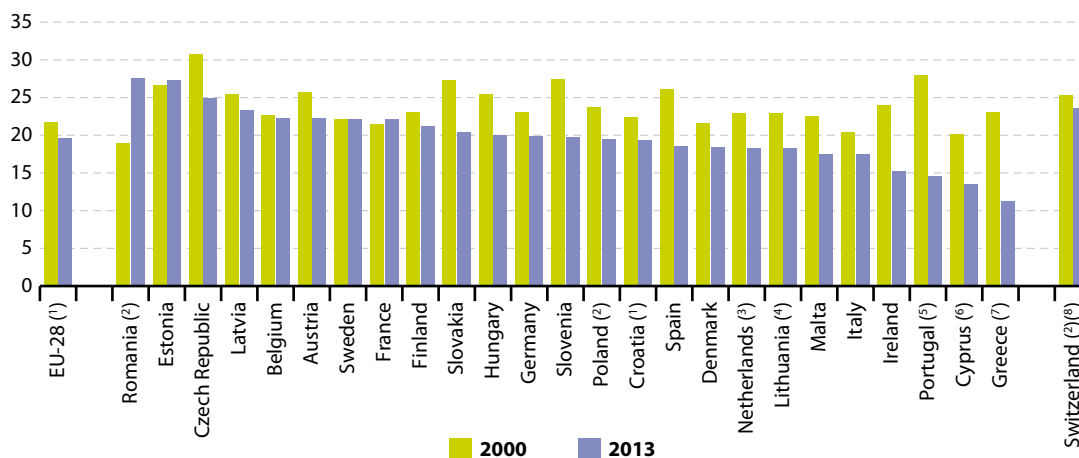


Source: Eurostat (online data code: [tsdec210](#))

The share of GDP used for total investment in the EU has closely followed the economic cycle. Between 2002 and 2007 investment grew continuously, reaching a peak of 23.0% of GDP in 2007. Since the economic crisis of 2008, however, the indicator has followed a downward trend. Over the long-term period between 2002 and 2014, it fell by almost two percentage points, from 21.7% to 19.8%. This was mostly due to a steep fall in business investment in 2009, although a decline in household investment also contributed. Total investment was further reduced by a decline in government investment between 2009 and 2014.

Figure 1.5: Total investment, by country, 2000 and 2013

(% of GDP)



(¹) Data for 2002 instead of 2000. (²) Data for 2012 instead of 2013. (³) Data for 2012–13 are provisional. (⁴) Data for 2004 instead of 2000. (⁵) Data for 2013 are estimates. (⁶) Provisional data. (⁷) Data for 2006 instead of 2000; provisional data. (⁸) Data for 2012 are provisional.

Source: Eurostat (online data code: [tsdec210](#))

How investment varies between Member States

Total investment had been improving in most EU countries before the crisis. Romania, Latvia and Estonia were the strongest performers, increasing their investment as a share of GDP by ten or more percentage points between 2000 and 2007. However, as a result of the crisis total investment was halved in Cyprus, Greece and Ireland and was strongly reduced in Spain and Portugal. Loss of investor confidence was also strong in Slovakia, Lithuania and Latvia.

The crisis hit private investment hardest

The slump in total investment during the economic downturn was not a surprise because investment expenditure is normally a highly cyclical and volatile component of GDP. A series of negative economic events — the collapse of property bubbles, the financial and sovereign debt crises, the related economic recession, and uncertainty about the euro's future — dampened business and consumer confidence⁽²⁴⁾. As a result, household and business investment declined to unprecedented levels across the EU between 2007 and 2013.

In fact, private investment was the hardest-hit component of the EU's GDP during the economic downturn⁽²⁵⁾. As lending standards tightened and a fall in asset prices reduced consumer wealth, households saved money instead of spending it on durables and housing⁽²⁶⁾. Business investment, in addition to the high economic uncertainty and a large decline in growth expectations, was also affected by reduced access to financing in the form of tightened credit conditions. This was especially the case for small and medium-sized enterprises⁽²⁷⁾.

Government investment remained stable or slightly improved in the majority of Member States between 2008 and 2010. This was a direct result of countercyclical fiscal measures widely used in response to the economic crisis. However, in 2013 ambitious fiscal consolidation programmes led to government investment falling to unprecedented levels in Ireland, Cyprus and Spain, and to levels that were lower than in 2007 in the majority of Member States.

Box 1.2: The EU Investment Plan

The European Commission has launched an Investment Plan for 2015–2017⁽²⁸⁾ to accelerate short-term economic recovery and boost long-term growth in the EU. The plan envisages measures for improving the investment climate and the effective use of strained public resources at the EU and national levels. Co-operation with Member States is deemed crucial for pushing forward with necessary structural reforms and exercising fiscal discipline. At the plan's core are three mutually reinforcing strands:

- The mobilisation of at least EUR 315 000 million over 2015–2017, utilising public resources and encouraging private investment.
- Targeted initiatives to ensure investment matches the needs of the real economy.
- Measures to improve the predictability of the regulatory environment and to remove investment barriers.

EU investment trends compared with other countries in the world

The private investment crisis brought on by the economic downturn is not an exclusively EU phenomenon. Other major economies, including the United States and Japan, experienced a comparable contraction in private investment. However, in these two countries increased private consumption moderated the negative impact that this had on growth⁽²⁹⁾. Furthermore, in line with the EU's expansionary policy in response to the economic and financial crisis, most major economies around the world embarked on unprecedented stimulus packages, ranging from 6 % of GDP in the United States to 12 % in China⁽³⁰⁾.

⁽²⁴⁾ For indicators on confidence see the designated section in the Eurostat database: *Confidence indicators by sector*.

⁽²⁵⁾ McKinsey Global Institute (2012), *Investing in Growth: Europe's next challenge*, p. 11.

⁽²⁶⁾ European Commission (2009), *Economic crisis in Europe: Causes, Consequences and Responses*, p. 24.

⁽²⁷⁾ See footnote 25, p. 4.

⁽²⁸⁾ European Commission (2013), *An Investment Plan for Europe*, COM(2014) 903 final.

⁽²⁹⁾ See footnote 25, p. 15.

⁽³⁰⁾ ILO (2011), *A Review of Global Fiscal Stimulus*, p. 2.



What lies beneath this indicator?

Investment as a percentage of GDP represents spending that enhances an economy's productive capacity. This has an impact on living standards in the medium and long term. The acquisition of capital goods can encompass, among other things, energy and transport infrastructure, industrial and service facilities, eco-innovative technologies, and education and research and development (R&D). Long-term investment that is economically, environmentally and socially sound is crucial for supporting sustainable growth. This indicator accounts for the share of GDP that is used for gross investment (rather than, for example, for consumption or exports). It is defined as total gross fixed capital formation (GFCF) expressed as a percentage of GDP, for the public and private sectors.



Disposable household income



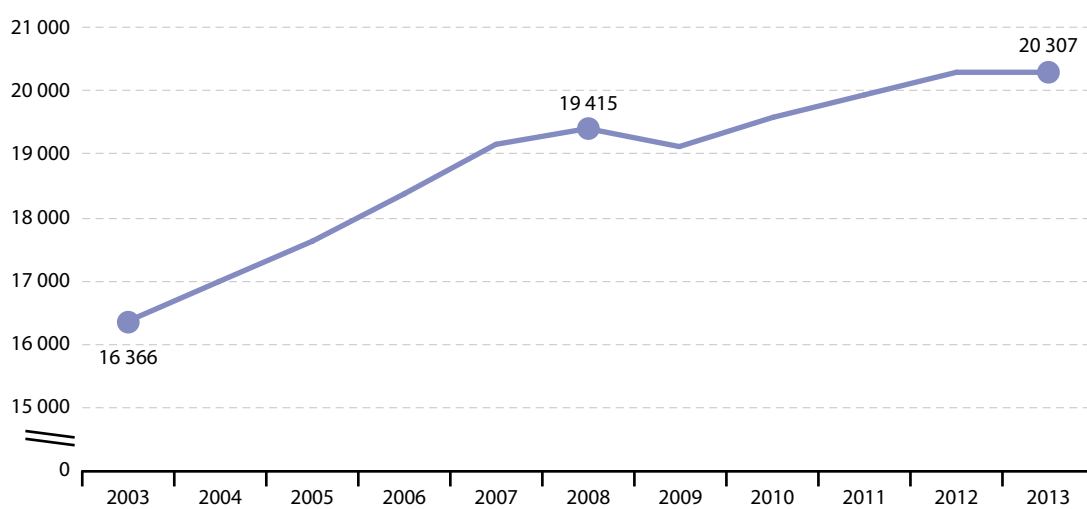
Long term
(since 2003)



Short term
(since 2008)

Per capita gross disposable income of households in the EU increased by 24% over the long-term period from 2003 to 2013. Short-term developments from 2008 to 2013 have also been positive at the EU level although some gains were reversed by the economic crisis. Households in crisis-hit Member States have experienced a marked deterioration in their position.

Figure 1.6: Real adjusted gross disposable income of households per capita, EU-28, 2003–2013 ⁽¹⁾
(Purchasing power standards (PPS))



⁽¹⁾ Break in time series in 2005.

Source: Eurostat (online data code: [tec00113](#))

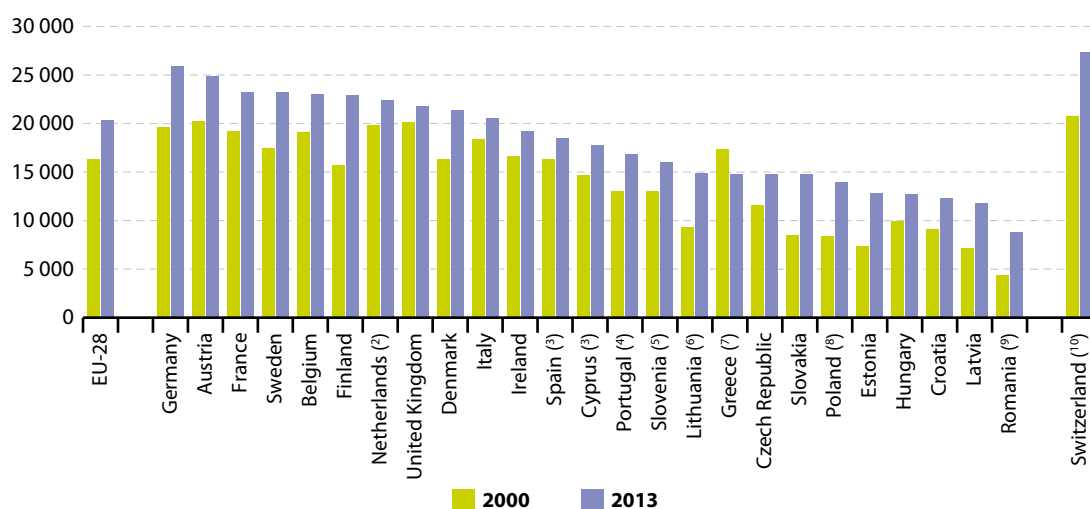
Real adjusted gross disposable income of households per capita refers to the income available to households for spending and saving after paying taxes. It includes social benefits and social transfers in kind (goods and services provided by the government, such as education and healthcare).

In the long run, disposable household income per capita in the EU expressed in purchasing power standards (PPS) has increased markedly, from 16 366 PPS in 2003 to 20 307 PPS in 2013. Progress was slower in the short run, from 2008 to 2013, due to effect of the economic crisis on labour market conditions and social spending. This short-term slowdown in growth has put more people at risk of poverty and social exclusion and has increased the share of long-term unemployed (see the 'Social inclusion' chapter on p. 111).

How disposable income varies between Member States

In 2013, Germany and Austria had the highest disposable household income per capita in the EU, followed by France, Sweden and Belgium. Central and eastern EU Member States dominated the lower end of the spectrum. In Romania, Latvia and Croatia disposable household income per capita in 2013 was less than half that of Germany. However, some central and eastern EU Member States have been catching up with the rest of Europe in terms of income levels. Notably, in Lithuania, Slovakia, Latvia, Poland and Estonia disposable income per capita increased by more than 50% and in Romania by more than 100% over the period from 2003 to 2013.

Figure 1.7: Real adjusted gross disposable income of households per capita, by country, 2003 and 2013 ⁽¹⁾
(Purchasing power standards (PPS))



⁽¹⁾ Break in time series in 2005 for all countries.

⁽²⁾ Provisional data for 2012–2013.

⁽³⁾ Provisional data for 2003–2004 and 2006–2013.

⁽⁴⁾ Data are estimates for 2012–2013.

⁽⁵⁾ Break in series for 2008.

⁽⁶⁾ Data for 2004 instead of 2003.

⁽⁷⁾ Data for 2006 instead of 2003, provisional data for 2006–2013.

⁽⁸⁾ Data are estimates for 2003–2004 and 2006–2013.

⁽⁹⁾ Data for 2012 instead of 2013.

⁽¹⁰⁾ Data for 2012 instead of 2013; provisional data for 2012.

Source: Eurostat (online data code: [tec00113](#))

What impact did the crisis have on the material well-being of households?

Disposable household income deteriorated in a number of EU Member States with the start of the economic crisis. Households in Greece experienced by far the strongest decline between 2008 and 2013 (– 22.8%), followed by Cyprus (– 13.8%), Ireland (– 5.1%) and the Netherlands (– 5.0%). The steep decline was largely due to increased unemployment, reductions in working time and earning, falling income from capital and other sources ⁽³¹⁾.

A scaling up of social protection schemes partially cushioned households from the immediate effects of the crisis. Benefit payments were increased automatically and additional fiscal stimulus was provided for vulnerable groups of the population ⁽³²⁾. Social payments were increased in Ireland and Cyprus, for example, and tax reductions were introduced in most Member States ⁽³³⁾.

However, from 2010 onwards fiscal stimulus measures were discontinued due to growing concerns over rising sovereign debt and fiscal deficits. Instead, governments focused on lowering public expenditure by reducing social payments ⁽³⁴⁾. As a result, Member States that introduced some of the boldest cuts in social expenditure (such as Greece, Ireland, Portugal and Spain), have seen drops in household disposable income and crippling domestic demand.

What lies beneath this indicator?

Households use disposable income to cover living expenses, make purchases and save for the future. It is an important means for achieving higher living standards and for gaining access to quality education, health

⁽³¹⁾ ILO (2014), *World Social Protection Report 2014/15: Building economic recovery, inclusive development and social justice*, International Labour Office, Geneva, p. 133.

⁽³²⁾ *Id.*, p. 132.

⁽³³⁾ Eurostat (2012), *Statistics in focus 35/2012, Income per capita varied by a factor of 4 across EU countries*, p. 2.

⁽³⁴⁾ See footnote 31, p. 134.



care and housing ⁽³⁵⁾. Changes in real disposable income strongly affect household spending on goods and services. Expectations about future changes in taxes and welfare payments also play a role in consumers' spending decisions. Tax rises and reductions in benefit payments lower the income available to households. Higher inflation also undermines the level of disposable income available to households in the case when prices rise faster than wages.

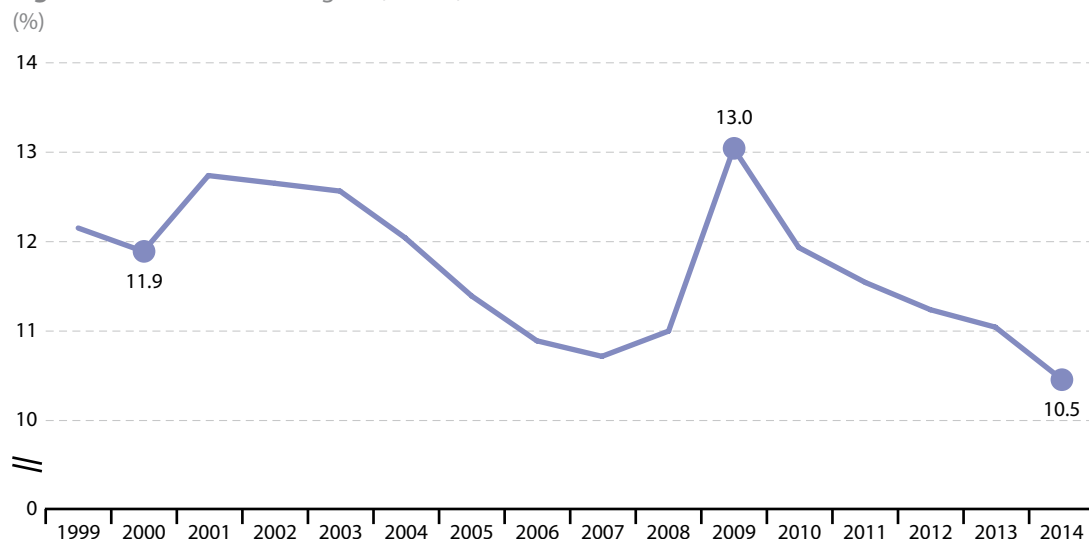
Disposable household income mainly consists of payments received in the form of salaries and wages, social transfers and net property income. It excludes taxes paid. Adjusted disposable income improves the comparison of income levels across countries by also considering the provision of social transfers in kind (goods and services financed by the government, for example, in health and education). The indicator is expressed in purchasing power standards to allow for comparison across countries.

⁽³⁵⁾ For more information see: [OECD Better Life Index, Income](#).

Household saving

The household saving rate in the EU fell moderately in the long term between 2000 and 2014. In the short term between 2009 and 2014 the indicator dropped by more than two percentage points, offsetting a swift increase between 2007 and 2009.

Figure 1.8: Household saving rate, EU-28, 1999–2014



Source: Eurostat (online data code: [tsdec240](#))

The EU household saving rate climbed to 12.7% in 2001 as financial distress from the economic slump of the early 2000s took its toll on consumer spending. This was followed by a prolonged, steady decline in the saving rate between 2002 and 2007, possibly driven by a combination of low interest rates and low and stable inflation, boosting customers' demand for credit.

Household savings started to pick up again in late 2008, due to the start of the economic crisis, and reached a decade-high of 13.0% in 2009. This is not a surprise because the household saving rate is in general sensitive to uncertainty over the economy and interest rates. Since 2010 household savings have continuously fallen, reaching a record low of 10.5% in 2014.

As a result of the gradual decline between 2000 and 2007 and the steep fall since 2010, the indicator has developed unfavourably both in the long term (since 2000) and in the short term (since 2009). The short-term decline of more than 2.5 percentage points has been more substantial compared with the long-term fall of 1.4 percentage points. It should be noted that low levels of household savings are not necessarily undesirable in times of economic recession. Running down savings during a downturn indicates higher spending, which helps restore economic stability. Therefore, the drop in the indicator should be interpreted with caution in view of the recent economic slump in the EU.

Although household spending is expected to increase in the EU with the improvement of economic conditions and the subsequent increase in real disposable income, there is a chance that the household saving rate could increase moderately in 2015 ⁽⁶⁾. At the same time, savings are not likely to increase by much due to downward pressure from relatively low interest rates, improved labour markets and less uncertainty.

How household saving rates vary between Member States

In 2013, the saving rate of households across the EU Member States ranged from the negative (–7.6% in Cyprus and –4.0% in Latvia) to 18.1% in Sweden. Negative saving rates in Cyprus and Latvia indicate that on average households in these countries spent more than their regular income and financed the difference

⁽⁶⁾ European Commission (2015), *European Economic Forecast Spring 2015*, p. 30.



Long term
(since 2000)



Short term
(since 2009)

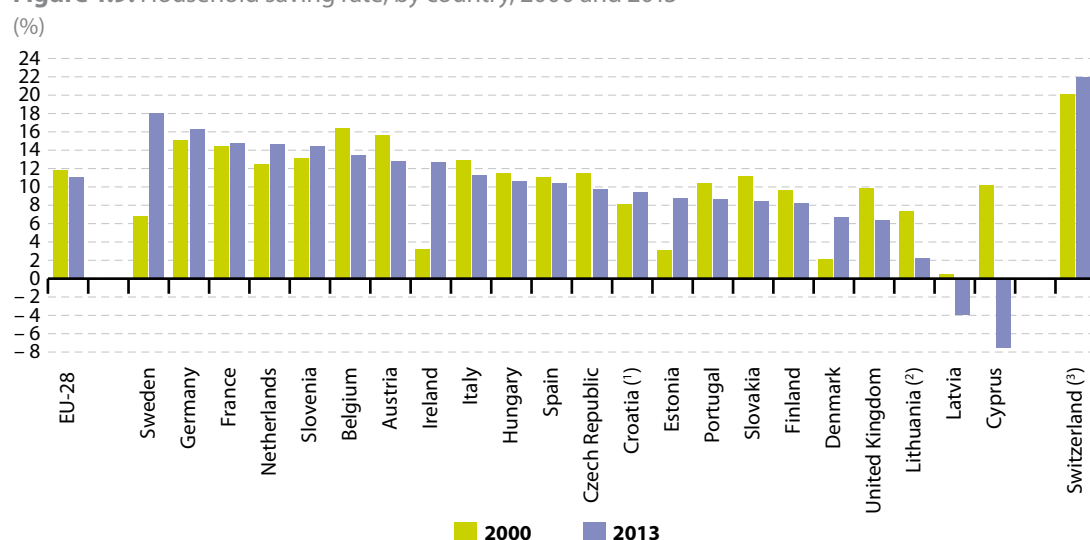
through credit, selling assets or running down cash and deposits. Average household saving rates were also low in Lithuania (2.2%), the United Kingdom (6.4%) and Denmark (6.7%). The other end of the spectrum was dominated by a number of northern and western EU Member States with household saving rates well above the EU average (18.0% in Sweden, 16.3% in Germany, 14.7% in France and 14.7% in the Netherlands).

The majority of Member States experienced a reduction in household saving rates between 2000 and 2013. The strongest decline occurred in Cyprus (-17.8 percentage points), whereas in Sweden and Ireland the indicator increased by 11.3 and 9.5 percentage points respectively.

Before the economic crisis of 2008, household saving rates across the EU were converging ⁽³⁷⁾. However, they started to diverge as the recession took hold. Countries that were hard hit by the crisis, in particular those with housing bubbles, experienced strong reductions.

Variations across countries could be the result of a combination of factors, including differences in income tax rates, inflation rates, pension systems, stock and housing prices, and real interest rates, among others.

Figure 1.9: Household saving rate, by country, 2000 and 2013



(1) Data for 2005 instead of 2000.

(2) Data for 2004 instead of 2000.

(3) Data for 2012 instead of 2013.

Source: Eurostat (online data code: [tsdec240](#))

What lies beneath this indicator?

The household saving rate comprises the largest part of an economy's total savings, so it is essential for the allocation of an economy's financial resources. The household saving rate represents the proportion of household disposable income that is not spent on final consumption and can instead be invested. In the short term, household savings help to cushion economic fluctuations by allowing households to smooth their consumption over time, responding to big changes in their income. In the long term, the household saving rate is a key determinant of an economy's potential growth and capacity to invest in productive, natural and human capital for future generations.

The gross household saving rate is calculated as gross savings divided by gross disposable income. The latter is adjusted for the change in the net equity of households in pension funds reserves. A negative savings rate indicates that a household spends more than it receives in the form of regular income. The difference could be financed through credit (increasing debt), sales of assets (financial and non-financial), or by running down cash and deposits.

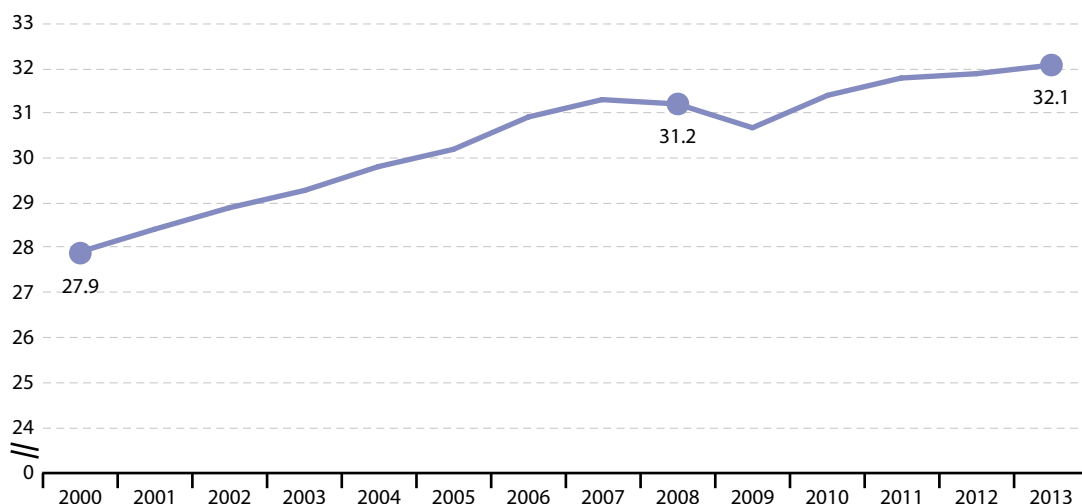
⁽³⁷⁾ Gregorini, F. and Akritidis, L. (2014), *Households in Europe in years of economic crisis*, NTTS Conference, Brussels 11 March, 2014.

Labour productivity

Output per hour worked in the EU increased by 15 % in the long term between 2000 and 2013. In the short term, some productivity gains were reversed by the economic crisis but since 2010 the indicator has returned to an upward path.

Figure 1.10: Labour productivity per hour worked, EU-28, 2000–2013

(Euro per hour worked)



Source: Eurostat (online data code: [tsdec310](#))



Long term
(since 2000)



Short term
(since 2008)

The output of workers per hour worked (labour productivity) in the EU increased continuously between 2000 and 2007. This trend was interrupted by the start of the economic crisis in 2008 and the following deterioration of economic conditions. As a result, labour productivity in the EU fell from EUR 31.3 per hour worked in 2007 to EUR 30.7 in 2009. A slowdown in productivity during crises could reflect weak investment under conditions of high economic uncertainty, resulting in slow capital accumulation ⁽³⁸⁾. Weak productivity could also result from companies retaining labour during the downturn, leading to underuse of labour and spare capacity ⁽³⁹⁾.

In 2010, labour productivity rebounded to its pre-crisis level and continued to grow in the following years, albeit at a very low rate. In 2013, output per worker increased to EUR 32.1 per hour against the backdrop of a slow economic recovery. During an economic rebound, productivity initially rises as firms increase the work intensity of employees instead of hiring new workers. However, as firms start taking on more workers this boost in productivity is likely to level off.

How labour productivity varies between Member States

Almost all Member States benefited from increased labour productivity between 2000 and 2013. The only exception was Luxembourg where productivity fell marginally. Improvements in labour productivity were most pronounced in Latvia (100%), Lithuania (89.3%), Romania (86.7%), Estonia (62.9%) and Slovakia (61%). This could be the result of more efficient use of labour or the accumulation of physical and human capital ⁽⁴⁰⁾. It could also be due to a larger shift from industries and economic activities with low productivity levels to ones with higher levels, even if the activities have not become more productive themselves.

⁽³⁸⁾ European Commission (2010), *European Economic Forecast*, Autumn 2010, p. 48.

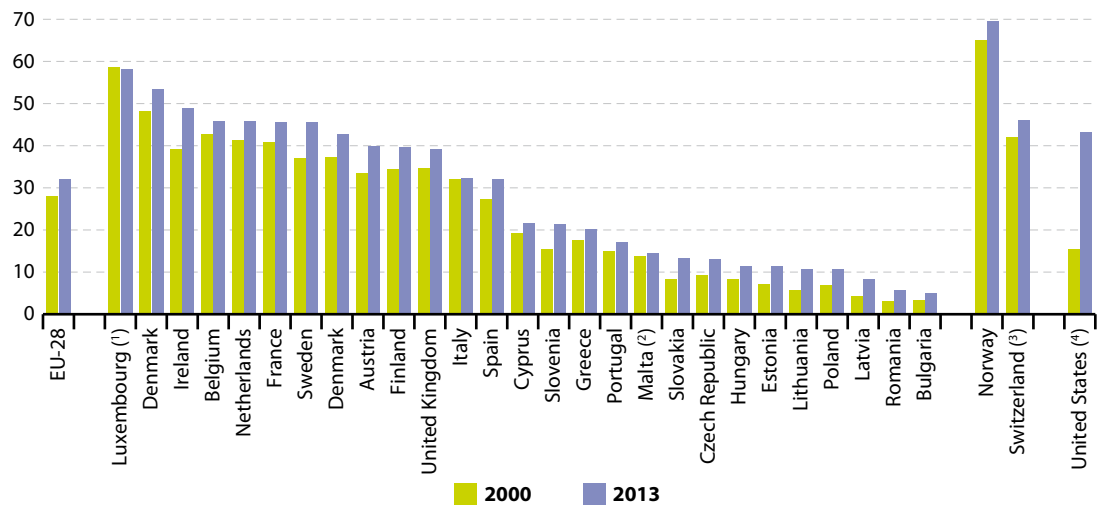
⁽³⁹⁾ Among other factors, this might have been caused by the rigid employment protection legislations in many Member States, increasing labour market inflexibility and substituting layoffs with work-sharing and reduced working hours.

⁽⁴⁰⁾ ILO (2014), *Key Indicators of the Labour Market*, 8th edition, p. 111.



Considerable differences in productivity can be observed across Europe. In 2013, Luxembourg and Denmark had the most efficient workers, producing an output of more than EUR 50 per hour. At the other end of the spectrum, labour productivity in 11 Member States was under EUR 20 per hour. The large divergence in productivity rates within the EU has been identified as an important structural weakness and one of the underlying causes of the economic crisis. Internal and external structural adjustment programmes, such as improving export performance and limiting unsustainable residential investments, are taking place in Ireland, Greece, Spain, Cyprus, Portugal and Slovenia. Wage growth in these countries did not match productivity gains before the crisis. These measures were introduced to rebalance labour productivity, boost competitiveness and improve economic performance ⁽⁴⁾.

Figure 1.11: Labour productivity per hour worked, by country, 2000 and 2013
(EUR per hour worked)



⁽¹⁾ Data for 2002 instead of 2000; 2012 data instead of 2013.

⁽²⁾ Data for 2012 instead of 2013.

⁽³⁾ Data for 2008 instead of 2013.

⁽⁴⁾ Data for 2009 instead of 2013.

Source: Eurostat (online data code: [tsdec310](#))

What lies beneath this indicator?

Labour productivity, as a major source of economic growth, is a key determinant of the future competitiveness and prosperity of the EU economy as well as its population's living standards. Technological innovations, together with improvements in organisation and physical and human capital (health and skills), are some of the main factors contributing to productivity gains. In the framework of the Europe 2020 strategy fostering an innovative and knowledge-based society is seen as a major route to increasing labour productivity.

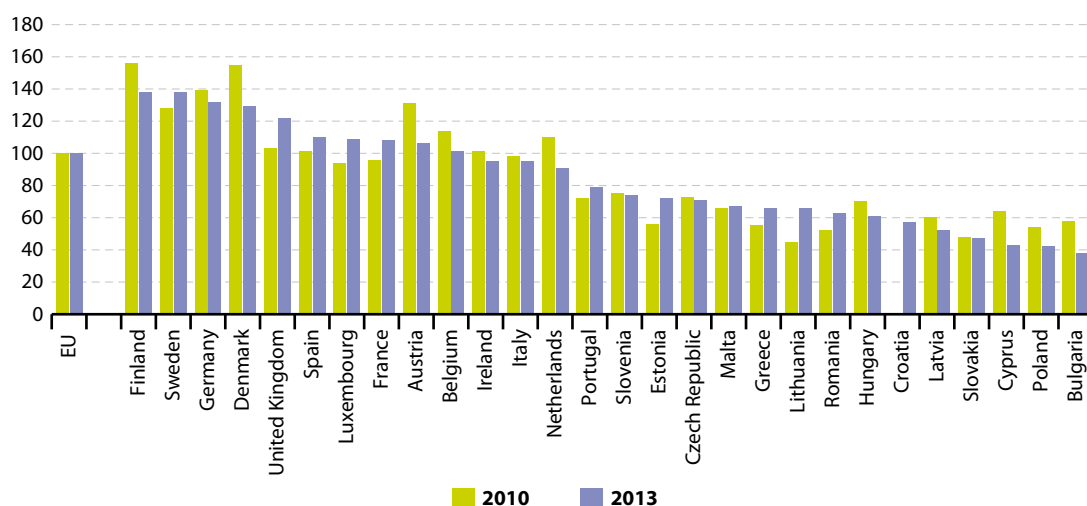
Labour productivity per hour worked is a measure of real output (GDP deflated) generated per unit of labour (measured by the total number of hours worked). It is an indication of the efficiency with which labour inputs enter into the production of goods and services.

⁽⁴⁾ European Commission (2013), *European Economic Forecast*, Spring 2013, p. 25.

Eco-innovation

In 2013, ten Member States scored better than the EU average in terms of eco-innovation activities.

Figure 1.12: Eco-innovation index, by country, 2010 and 2013
(index EU=100) ⁽¹⁾



⁽¹⁾ For 2010–2012 the average used for indexing to 100 is based on the 27 EU Member States before the accession of Croatia. From 2013 onwards the EU average is based on data for the 28 EU Member States. As the units are relative, the index cannot indicate progress in absolute terms.

Source: Eurostat (online data code: t2020_rt200)

Innovation in environmental technologies, products and services (eco-innovation) differs substantially across the EU. In 2013, ten Member States performed better than the EU average in terms of eco-innovation activities. Finland, Sweden and Germany received the highest scores, forming the group of ‘eco-innovation leaders’ in the EU. However, these countries were not necessarily the best performers in terms of environmental outcomes as a moderate correlation has been observed between a relatively high eco-innovation score and material consumption and greenhouse gas emissions ⁽⁴²⁾. At the other end of the scale, eco-innovation was least prominent in Bulgaria, Poland, Cyprus and Slovakia.

What lies beneath this indicator?

Eco-innovation refers to the development of new or significantly improved products (goods and services) or organisational practices that reduce the use of natural resources and decrease the release of harmful substances throughout the entire life cycle. It plays an important role in addressing environmental challenges without compromising economic and social objectives. Besides its environmental benefits, eco-innovation brings new products to the market, contributing to economic activity and job creation ⁽⁴³⁾.

The eco-innovation index shows how well individual Member States perform in eco-innovation compared with the EU average. It is based on 16 indicators in five areas: eco-innovation inputs, eco-innovation activities, eco-innovation outputs, environmental outcomes and socioeconomic outcomes ⁽⁴⁴⁾.

⁽⁴²⁾ Eco-innovation Observatory (2013), *Europe in Transition Paving the way to a green economy through eco-innovation*, Annual report 2012, Executive Summary.

⁽⁴³⁾ Eco-innovation Observatory (2011), *Eco-Innovation Brief #1: Introducing eco-innovation: from incremental changes to systemic transformations*.

⁽⁴⁴⁾ Eco-innovation Observatory (2011), *Eco-Innovation Brief #3: The Eco-Innovation Scoreboard at a glance*.

Research and development expenditure



Long term
(since 2000)

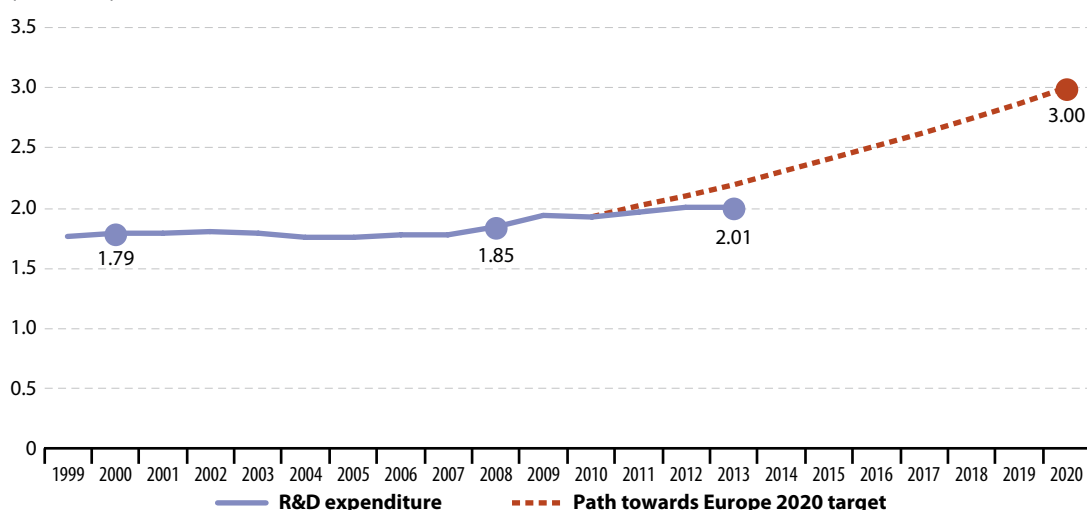


Short term
(since 2008)

R&D intensity in the EU rose by about 12 % between 2000 and 2013, mostly due to a boost from the public sector during the crisis. A gap of almost one percentage point remains to be closed by 2020 to reach the 3 % target.

Figure 1.13: Total R&D expenditure, EU-28, 1999–2013 (1)

(% of GDP)



(1) Data for 1999 to 2003 and 2013 are estimates.

Source: Eurostat (online data code: [tsdec320](#))

Over the period 2000 to 2007 research and development (R&D) expenditure as a share of GDP (also referred to as ‘R&D intensity’) was relatively stable in the EU, remaining at about 1.79%. Despite the slowdown in economic activity during the crisis, R&D intensity recorded a slight increase from 1.85% of GDP in 2008 to 2.01% of GDP in 2013. Although R&D expenditure as a share of GDP has improved both in the long term (since 2000) and short term (since 2008), much more rapid progress is needed to reach the Europe 2020 goal of 3%. As of 2013, a gap of 0.99 percentage points remains to be closed.

Which sectors have boosted R&D expenditure since the start of the economic crisis?

One reason for the increase in R&D intensity following the financial and economic crisis is the fact that GDP has fallen more rapidly than overall R&D expenditure ⁽⁴⁵⁾. Additionally, individual Member States have acted to boost public R&D spending to counteract the effects of the crisis and stimulate economic growth ⁽⁴⁶⁾. Between 2008 and 2009, government sector expenditure on R&D in the EU grew faster than the private non-profit sector and slower than higher education. In contrast, R&D expenditure in the business sector declined over the same period. However, business spending on R&D recovered in 2010 and has continued to grow. In 2012, the top European companies increased investment in R&D by 6.3% compared with the previous year ⁽⁴⁷⁾.

⁽⁴⁵⁾ European Commission (2013), *Innovation Union Competitiveness Report 2013*, p. 17.

⁽⁴⁶⁾ European Commission (2011), *Innovation Union Competitiveness Report 2011*, p. 65.

⁽⁴⁷⁾ European Commission (2013), EU R&D Scoreboard, *The 2013 EU Industrial R&D Investment Scoreboard*, p. 7.

Box 1.3: How does the EU foster R&D expenditure?

Within the framework of the Europe 2020 strategy and its 'Innovation Union' flagship initiative, the EU aims to improve framework conditions and access to finance for research and innovation to help turn ideas into products and services that create growth

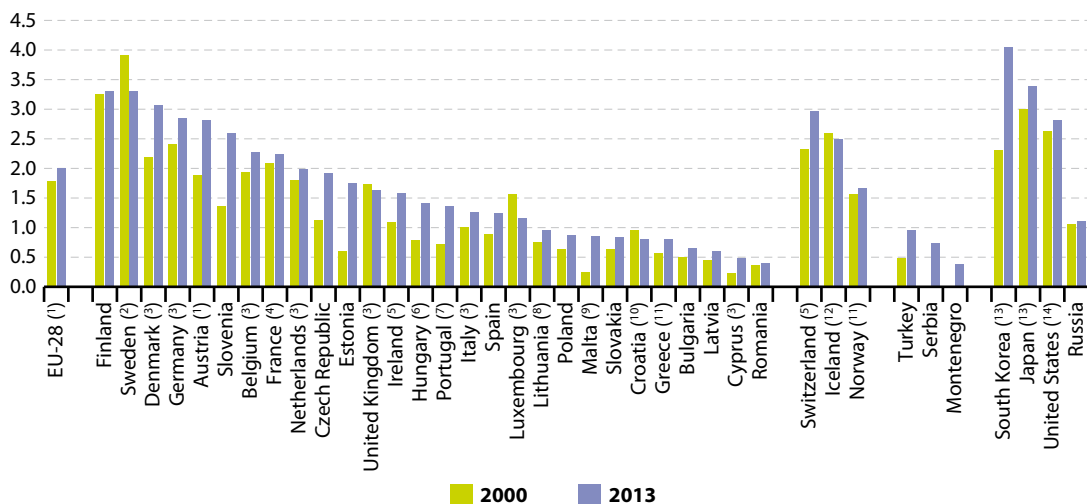
and jobs. To this end, raising combined public and private investment levels in the R&D sector to 3% of GDP has been made one of the five headline targets of the Europe 2020 strategy.

How R&D expenditure varies between Member States

R&D expenditure as a share of GDP varied between 0.39% and 3.31% across the EU in 2013. Scandinavian countries, in particular Sweden and Denmark, as well as Finland, spent more than one percentage point more on R&D than the EU average. Out of this group, however, only Denmark managed to reach its national target under the Europe 2020 framework⁽⁴⁸⁾. At the other end of the spectrum, in ten Member States, mostly in the eastern and southern part of Europe, R&D expenditure was less than 1.0% of GDP. Many Member States recorded a substantial increase in R&D intensity after the economic crisis. This was not only a result of slower GDP growth, but also reflected government efforts to support economic recovery and long-term growth by boosting public and private R&D investment.

Figure 1.14: Total R&D expenditure, by country, 2000 and 2013

(% of GDP)



(1) Data are estimates.

(2) Data are estimates; 2001 data (instead of 2000).

(3) 2013 data are estimates or provisional.

(4) Break in series for 2000; 2013 data are provisional.

(5) 2012 data (instead of 2013).

(6) Definition differs for 2000.

(7) 2000 data are estimates; 2013 data are provisional.

(8) 2004 data (instead of 2000).

(9) 2002 data (instead of 2000); 2013 data are provisional.

(10) 2002 data (instead of 2000).

(11) 2001 data (instead of 2000).

(12) 2011 data (instead of 2013); break in series for 2011.

(13) 2011 data (instead of 2013).

(14) 2012 data (instead of 2013); 2012 data are provisional.

Source: Eurostat (online data code: tsdec320)

⁽⁴⁸⁾ The national Europe 2020 targets for R&D expenditure as a share of GDP are 3% for Denmark and 4% for Finland and Sweden.

EU trends in R&D expenditure compared with other countries in the world

Despite the distance to the 3 % target set out in the Europe 2020 strategy, in 2012 the EU (2.01 %) was among the six best performers in the world concerning R&D expenditure as a share of GDP. According to Eurostat and UN data ⁽⁴⁹⁾, South Korea was at the forefront (4.04%), followed by Israel (3.93%), Japan (3.38%) the United States (2.81 %), Iceland (2.49 %) and Singapore (2.10 %) ⁽⁵⁰⁾. Canada and Russia were behind the EU with R&D levels of 1.73 % and 1.13 % respectively. Regarding the business sector, the top European companies increased R&D investment by 6.3 % in 2012, which was above the world average (6.2 %) but below the growth by US firms (8.2 %) ⁽⁵¹⁾. The strong R&D performance of European businesses was largely driven by Germany, especially in the automobile sector.

What lies beneath this indicator?

R&D contributes to a well-functioning economy by fostering knowledge and know-how which translate into new ideas for products, procedures and services. An innovative economy helps companies grow and maintain their competitive advantage in the market, resulting in economic growth and more jobs. The EU population's well-being also depends on scientific and technical solutions to global societal challenges such as climate change and population ageing. The indicator measures gross domestic expenditure on research and experimental development (GERD) as a proportion of GDP. GERD includes R&D expenditure within higher education, government, business enterprise and the private non-profit sector.

⁽⁴⁹⁾ Data for Canada, Israel and Singapore are retrieved from UN Data.

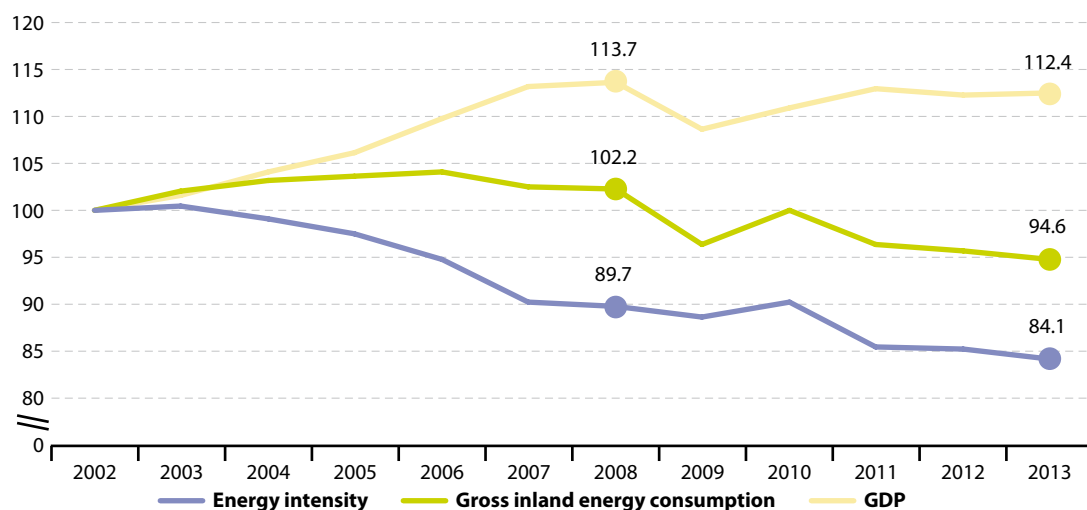
⁽⁵⁰⁾ 2011 figures for South Korea, Japan and Iceland.

⁽⁵¹⁾ European Commission, EU R&D Scoreboard, *The 2013 EU Industrial R&D Investment Scoreboard*, p. 5.

Energy intensity

Energy intensity in the EU dropped by 15.9% over the period 2002 to 2013 as a result of absolute decoupling of energy consumption from economic growth.

Figure 1.15: Energy intensity of the economy, EU-28, 2002–2013
(index 2002 = 100)



Source: Eurostat (online data codes: tsdec360, tsdcc320 and nama_10_gdp)

Energy intensity — the energy used to produce one unit of economic output — has declined substantially over the past decade. Between 2002 and 2013 energy consumption in the EU fell by 5.4%, whereas GDP grew by 12.4%. As a result, energy intensity recorded a drop of 15.9% over the same time period, indicating absolute decoupling of energy consumption from economic growth.

Decoupling energy consumption from economic growth is essential for reconciling economic and environmental goals. A decrease in energy intensity can be observed both in the presence of absolute decoupling (energy consumption falls despite economic growth) and relative decoupling (energy consumption grows at a slower pace than economic growth).

Energy intensity remains responsive to swings in economic cycles

Energy intensity tends to follow the economic cycle. Between 2003 and 2008 energy intensity in the EU steadily declined, mostly because GDP was growing at a faster rate than gross inland energy consumption (relative decoupling). During the economic downturn, from 2008 until 2009, GDP contracted but energy consumption was also reduced due to suppressed consumption and production. As a result energy intensity continued to fall (–1.2%). The rebound in economic growth in the EU in 2010 (+2.0% compared with 2009) was accompanied by a surge in energy consumption (+3.8% compared with 2009). As a result, energy intensity increased for the first time since 2003, by 1.8% between 2009 and 2010. However, energy intensity in the EU fell substantially by 6.7% during the next three years as energy consumption fell rapidly while GDP continued to grow. This indicated an absolute decoupling of energy consumption from GDP growth.

The 15.5% reduction in energy intensity over the past decade has been influenced by improvements in energy efficiency (both in terms of final consumption and power generation) and a shift to renewable energy sources in the power generation mix. The rise in eco-efficiency, which is reflected in reduced energy intensity, has also resulted from structural economic changes within the EU. These include the transition towards a more service-based economy and less energy-intensive and higher value-added industries ⁽⁵²⁾.

⁽⁵²⁾ European Environmental Agency (2012), *Total primary energy intensity (CSI 028/ENER 017)*.



Long term
(since 2002)



Short term
(since 2008)

**Box 1.4: How does the EU foster eco-efficiency?**

Although no quantified target for energy intensity has been adopted, eco-efficiency is strongly promoted within the Europe 2020 strategy. Two of the strategy's objectives, also translated into headline targets, involve improving energy efficiency by 20% and increasing the share of renewables in final energy consumption in the EU to 20% by 2020.

On 25 October 2012, the EU adopted the Directive 2012/27/EU on energy efficiency⁽⁶³⁾. This establishes a common framework of measures for the promotion of energy efficiency within the Union in order to ensure the achievement of the EU's 2020 headline target on energy efficiency and to pave the way for further energy efficiency improvements beyond that date.

What lies beneath this indicator?

The indicator on total energy consumption helps identify the extent to which the EU economy has managed to decouple energy consumption and economic growth. But as well as energy intensity, eco-efficiency should be monitored alongside other environmental indicators such as CO₂ emissions or the share of renewables in domestic energy production. This is because the overall environmental impacts of economic activity depend on the total amount of energy consumption and the mix of fuels and technologies used in energy production.

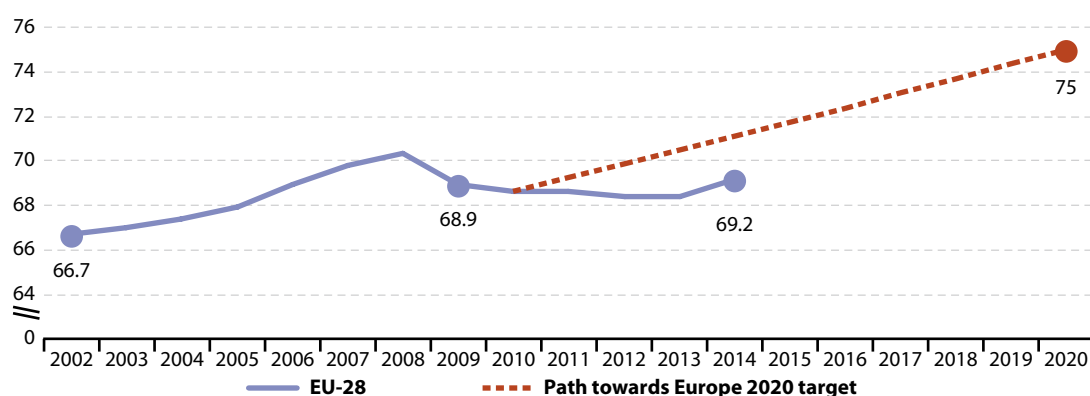
Total energy intensity is measured as the ratio between the gross inland consumption of energy and GDP. Energy consumption encompasses the consumption of various fuel types including solid fuels, liquid fuels, natural gas, nuclear and renewables.

⁽⁶³⁾ <http://eur-lex.europa.eu/LexUriServ/LexUriServ.do?uri=OJ:L:2012:315:0001:0056:EN:PDF>

Employment

The EU employment rate increased by 2.5 percentage points in the long-term period between 2002 and 2014. The indicator improved only marginally in the short term between 2009 and 2014 due to the unfavourable effects of the economic crisis on labour markets. Overall progress has been slow and a gap of five percentage points remains to the Europe 2020 employment target of 75%.

Figure 1.16: Total employment rate, EU-28, 2002–2014
(% of age group 20 to 64 years)



Source: Eurostat (online data code: tsdec410)

The share of persons aged 20 to 64 in employment in the EU increased steadily between 2002 and 2008, reaching a peak of 70.3% in 2008. This trend reversed with the start of the economic crisis. The indicator followed the economic cycle with the usual time-lag as adjustments in the labour market took longer to respond to changes in aggregate demand⁽⁵⁴⁾. In 2009, the economic crisis fully hit the European labour market, bringing the employment rate back to the 2006 level of 68.9%.

In 2010 the employment rate continued to fall, before coming to a standstill at about 68.4% where it remained until 2013. Between 2010 and 2013 the EU economy experienced jobless growth as most GDP growth was driven by increases in productivity and hours worked rather than employment⁽⁵⁵⁾. In 2014, employment picked up for the first time since the start of the crisis, reaching 69.2%. However, because of labour market stagnation in the post-crisis years, the EU does not seem to be on track to reach its Europe 2020 employment target of 75%.



Long term
(since 2002)



Short term
(since 2009)

Box 1.5: How does the EU foster employment?

Within the framework of the Europe 2020 strategy the EU adopted the headline target of raising the employment rate for women and men aged 20 to 64 to 75%. This should include greater participation of young people, older workers and low-skilled workers and better integration of legal migrants. This goal is supported by the employment package, which aims to create more and better jobs throughout the EU.

The strategy's employment priority theme is further supported through several flagship initiatives. 'Youth

on the Move' aims to improve the performance of EU education systems and help integrate young people into the labour market. The EU employment package 'Towards a Job Rich Recovery' calls for a better monitoring of skills and needs and a 'close cooperation between the worlds of education and work'. Finally, 'An Agenda for New Skills and Jobs' puts forward reforms aimed at improving flexibility and security in the labour market, increasing the match between skill supply and labour market needs, and enhancing job quality and working conditions.

⁽⁵⁴⁾ European Commission (2012), *Employment and Social Developments in Europe*, p. 67.

⁽⁵⁵⁾ Id., p. 19.



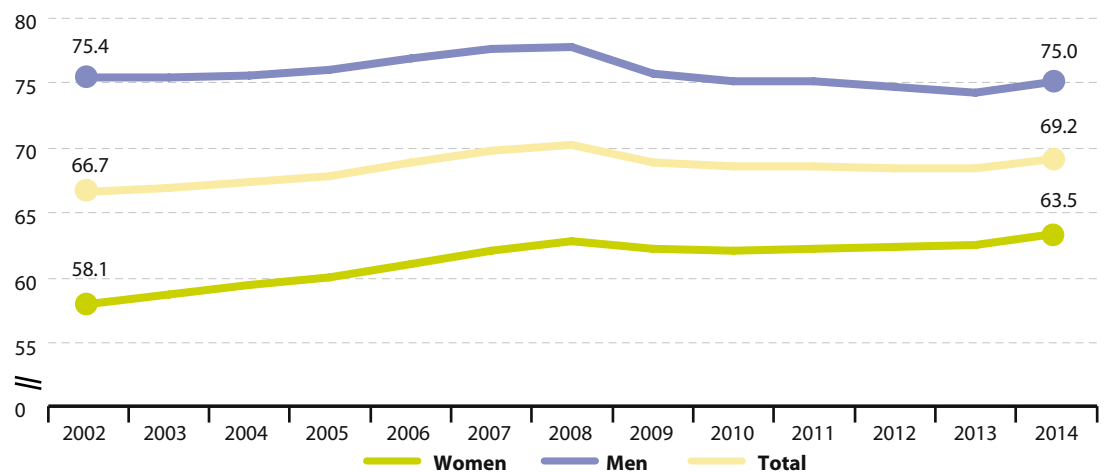
The gender employment gap is shrinking

Although the employment gender gap in the EU has decreased substantially over the past decade, women still tend to be less economically active than men. In 2014, the employment rate of women was still 11.5 percentage points lower than that of men.

A number of factors contribute to this trend. The most important is the time women spend on childcare and other family responsibilities. This is especially the case in countries where childcare services are unaffordable or absent. Furthermore, the longer women are out of the labour market or remain unemployed due to care duties, the harder it becomes for them to find a job.

Nevertheless, between 2002 and 2014 the EU employment gender gap closed by more than five percentage points. The strongest reduction occurred during the economic crisis, partly because traditionally male-dominated industries, such as construction and automobile, were the most affected by the crisis⁽⁵⁶⁾.

Figure 1.17: Employment rate, by sex, EU-28, 2002–2014
(% of age group 20 to 64 years)



Source: Eurostat (online data code: [tsdec420](#))

Employment rates are lower among youths and older people

Youths and older workers generally have lower employment rates than other age groups. In 2014, the employment rate of young people aged 20 to 29 was nine percentage points below the EU's total employment level (referring to the population aged 20 to 64). The employment rate of older workers aged 55 to 64 was even lower (17% below the total employment rate). Nevertheless, employment of older workers has increased continuously over time, rising from slightly below 40% in 2003 to above 50% in 2014, in line with the Europe 2020 objective (see Box 1.5)⁽⁵⁷⁾. In contrast, young people were less likely to be employed in 2014 compared with ten years earlier.

Does better educational attainment increase employability?

The level of education is an important factor for explaining the variation in activity and employment rates between different labour groups. Employment rates generally increase with the level of educational attainment. In 2014, 82.1% of people with tertiary education were employed, which was significantly higher than the EU average employment rate for the same year (69.2%). In contrast, just slightly more than half (51.9%) of those with at most primary or lower secondary education were employed. The rate for workers with upper secondary or post-secondary non-tertiary education was close to the EU average level at 70.1%.

⁽⁵⁶⁾ European Commission (2009), *Economic Crisis in Europe: Causes, Consequences and Responses*, Directorate-General for Economic and Financial Affairs, p. 36.

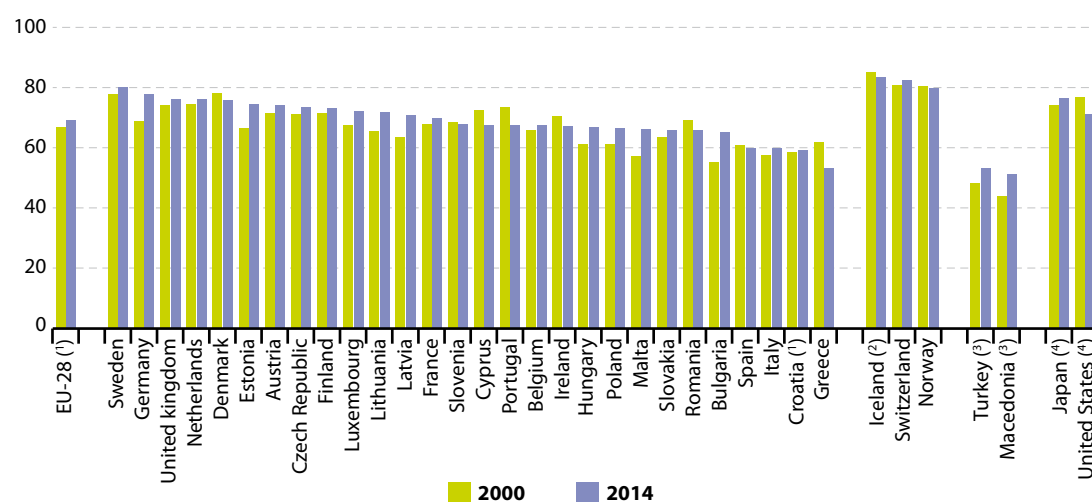
⁽⁵⁷⁾ For more information on the employment rates of older workers see the headline indicator for demographic change on p. 147.

Although the employment rates of different education subgroups have followed the same path over time, people with lower education levels were more vulnerable to job losses during the 2008 economic crisis. This is possibly due to the fact that sectors requiring lower qualification levels, such as the construction industry in Spain, the UK and Ireland, were hit hardest by the economic downturn. Recognising the importance of education for improving job market performance, the EU has adopted headline targets and policy measures in the areas of education and employment as part of the Europe 2020 strategy (see Box 1.6).

How employment rates vary between Member States

There are substantial differences in the employment rates across the EU and the gap between the best and the worst performing countries has increased since 2000. In 2014, employment rates in Sweden, Germany, the United Kingdom, the Netherlands and Denmark exceeded 75%. In contrast, employment rates were less than the EU average of 69.2% in 15 Member States. The lowest end of the spectrum was dominated by southern EU Member States, with Greece having the lowest average employment rate at 53.3%, followed by Croatia (59.2%), Spain and Italy (59.9% each). These low rates are likely to reflect differences in economic development, demographic trends, labour market structures and policies across Member States, as well as the asymmetric impact of economic shocks.

Figure 1.18: Total employment rate, by country, 2000 and 2014
(% of age group 20 to 64 years)



(1) 2002 data (instead of 2000).

(2) 2003 data (instead of 2000).

(3) 2006 data (instead of 2000).

(4) 2013 data (instead of 2014).

Source: Eurostat (online data code: tsdec410)

What lies beneath this indicator?

Employment represents an essential cornerstone of socioeconomic development by fostering economic prosperity, social inclusion and quality of life. Labour market participation is an important factor for human well-being because it gives people the space and resources needed to achieve life goals and aspirations. It also gives them a sense of purpose and allows them to engage meaningfully in society.

The employment rate is defined as the share of population aged between 20 and 64 in employment.



Young people neither in employment nor in education or training



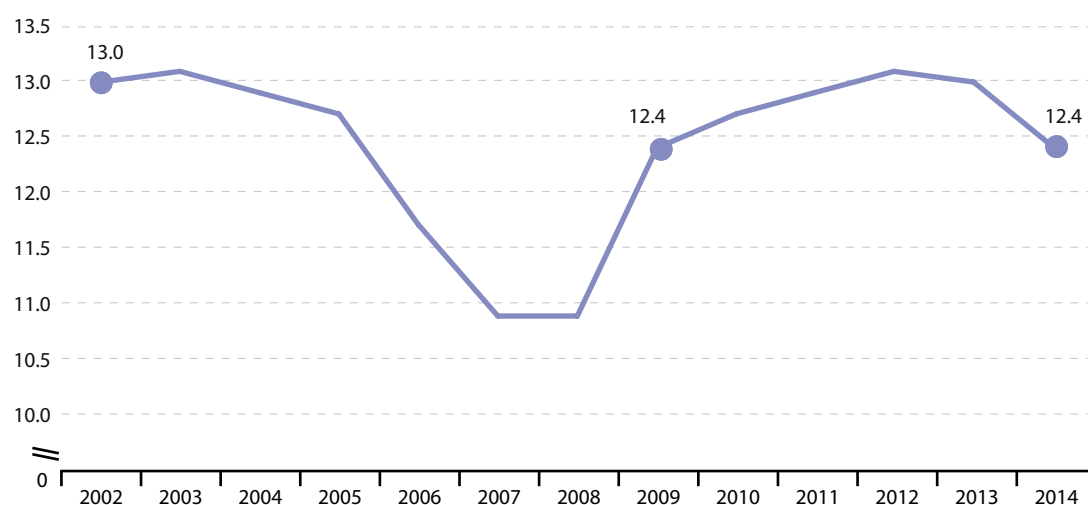
Long term
(since 2002)



Short term
(since 2009)

The share of young people not in employment, education or training (NEET rate) declined slightly in the period between 2000 and 2014. The indicator reached a decade low of 10.9% in 2008, before increasing again until 2012 as a result of the economic crisis and the related hike in youth unemployment.

Figure 1.19: Young people neither in employment nor in education or training (NEET rate), EU-28, 2002–2014 ⁽¹⁾
(% of the population aged 15 to 24)



⁽¹⁾ Break in series for 2003 and 2006.

Source: Eurostat (online data code: [edat_lfse_20](#))

In 2014, 12.4% of young people aged 15 to 24 in the EU were not employed and were not receiving further education or training (NEET rate). This exactly corresponds to the NEET rate of 2009 and it represents a slight reduction compared with 2012, when the NEET rate reached 13.1%. Although no change can be observed in the short term between 2009 and 2014, the NEET rate fell slightly in the long-term period between 2002 and 2014. Reductions were much stronger before the economic crisis of late 2008 and the subsequent increase in the number of unemployed young people. Generally, in times of economic downturn youths tend to be among the most vulnerable groups on the labour market, along with migrants and low-skilled workers ⁽⁵⁸⁾.

⁽⁵⁸⁾ Eurostat (2015), *Smarter, greener, more inclusive? Indicators to support the Europe 2020 strategy (2015 edition)*, Publications Office of the European Union, Luxembourg, p. 46.

Box 1.6: How does the EU tackle youth unemployment?

The flagship initiative 'Youth on the Move' calls attention to the 'unacceptably high' youth unemployment in the EU and the need to radically improve the transition of young people to the labour market to reach the 75% employment target set out in the Europe 2020 strategy. The flagship initiative addresses the challenges young people face in education and training and in accessing the labour market by focusing on four main lines of action ⁽⁵⁹⁾:

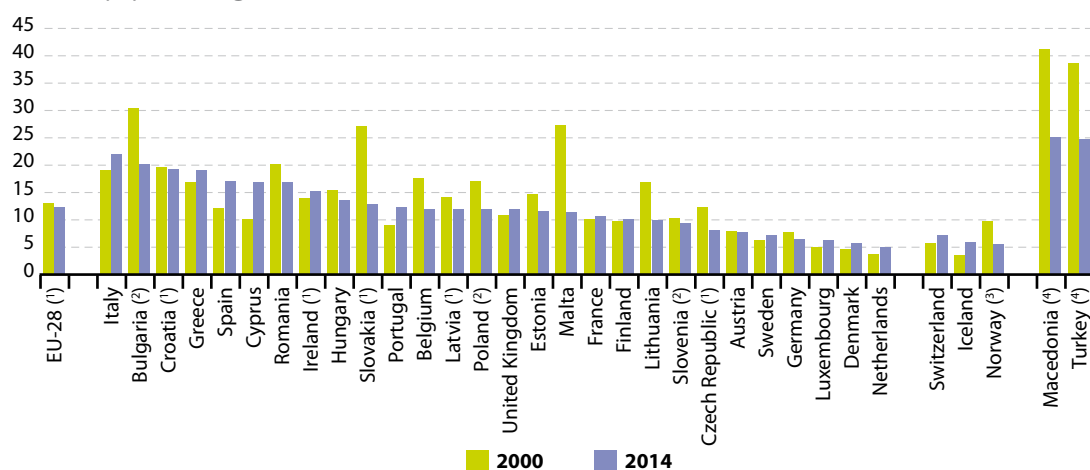
- **Lifelong learning** to develop key competences and quality learning outcomes, in line with labour market needs. This includes tackling the high levels of **early school leaving**.
- Raising the share of young people participating in **higher education or equivalent** to keep up with competitors in the knowledge-based economy and to foster innovation.
- Promoting **learning mobility** through programmes and initiatives.
- Urgently improving the **employment situation of young people** by facilitating the transition from school to work and reducing labour market segmentation.

How NEET rates vary between Member States

In 2014, the share of young people aged 15 to 24 who were not in employment, education or training varied between 5.0% and 22.1% across the EU. The lowest NEET rates were in the Netherlands, Denmark, Luxembourg and Germany. At the other end of the spectrum, NEET rates were highest in some eastern and southern EU Member States. In Italy and Bulgaria every fifth person or more in the 15 to 24 year age group fell into the NEET category. Both countries generally have high shares of early leavers from education and training ⁽⁶⁰⁾ and low employment rates ⁽⁶¹⁾, which increases the risk of young people being excluded from the labour market. NEET rates decreased in the majority of EU Member States between 2000 and 2014. The strongest improvements were in Bulgaria, Slovakia and Malta, where NEET rates fell by more than ten percentage points. In contrast, Cyprus, Spain, Portugal and other crisis-hit economies have seen rising NEET levels since 2008.

Figure 1.20: Young people neither in employment nor in education or training (NEET rate), by country, 2000 and 2014

(% of the population aged 15 to 24)



⁽¹⁾ Data for 2002 (instead of 2000).

⁽²⁾ Data for 2001 (instead of 2000).

⁽³⁾ Data for 2003 (instead of 2000).

⁽⁴⁾ Data for 2006 (instead of 2000).

Source: Eurostat (online data code: edat_lfse_20)

⁽⁵⁹⁾ European Commission (2010), *Youth on the Move: An initiative to unleash the potential of young people to achieve smart, sustainable and inclusive growth in the European Union*, COM(2010) 477 final, Brussels, p. 3f.

⁽⁶⁰⁾ Eurostat (2015), *Smarter, greener, more inclusive? Indicators to support the Europe 2020 strategy (2015 edition)*, Publications Office of the European Union, Luxembourg, p. 107.

⁽⁶¹⁾ Id., p. 31.



What lies beneath this indicator?

The indicator on young people neither in employment nor in education and training (NEET rate) provides a broad measure of the untapped potential of young people who could otherwise be contributing to national development. Young people falling within the NEET category are neither investing in their skills nor gaining work experience, putting them at risk of labour market and social exclusion. As a result, they are also more likely to depend on benefits. Low educational attainment, disability or a migration background are some of the key determinants of young people entering the NEET category ⁽⁶²⁾. Improving youths' educational attainment and qualifications is of utmost importance for increasing their employability and reducing the risk of long periods of inactivity.

The NEET rate provides information on the share young people aged 15 to 24 who are not in employment and are not receiving further education or training.

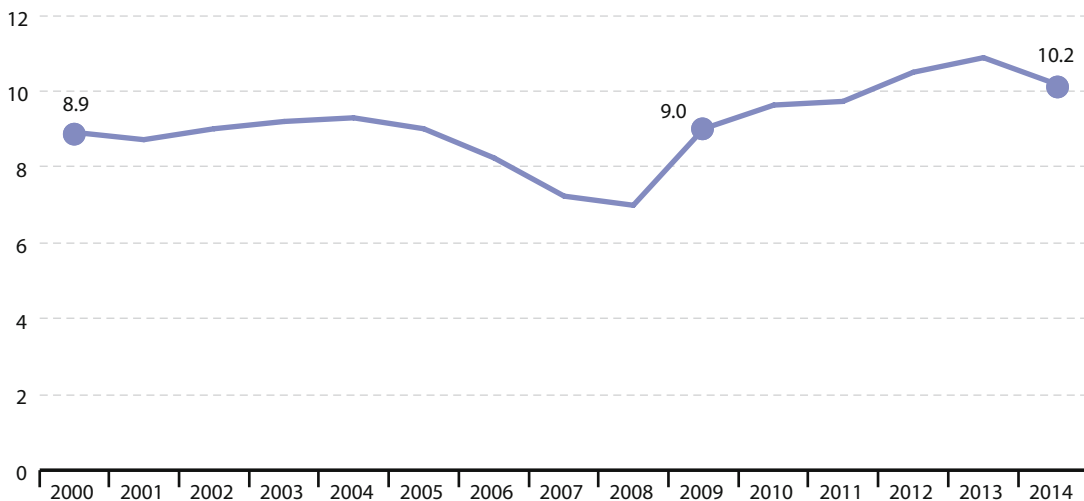
⁽⁶²⁾ European Commission (2012), *Employment and Social Developments in Europe 2011*, Directorate-General for Employment, Social Affairs and Inclusion, Publications Office of the European Union, Luxembourg, p. 28.



Unemployment

The EU unemployment rate increased by 1.3 percentage points between 2000 and 2014. This was due to a steep increase of more than three percentage points between 2008 and 2014.

Figure 1.21: Total unemployment rate, EU-28, 2000–2014 (%)



Source: Eurostat (online data code: [tsdec450](#))

The unemployment rate in the EU has increased by 1.3 percentage points in the long term (since 2000), largely due to a substantial short-term increase in joblessness since 2009. Between 2000 and 2005 the EU unemployment rate was more or less stable at about 9%. Over the next three years, unemployment fell steadily, reaching a decade low of 7.0% in 2008.

The economic crisis that took hold of the European economy in 2008 first hit the labour market in 2009. This reflects the normal delay with which labour markets respond to GDP fluctuations. As a result, between 2009 and 2013 the EU unemployment rate increased consistently, reaching a peak of 10.9% in 2013. This upward trend reversed in 2014 when it fell slightly to 10.2% due to improved economic conditions and a stronger labour market.

Youth unemployment and male unemployment affected most by the labour market downturn

A closer look at the unemployment indicator shows that young people aged 15 to 24 have been more strongly affected by labour market deterioration than other age groups. Between 2008 and 2013 youth joblessness increased by 7.8 percentage points, before falling to 22.2% in 2014. Long spells of unemployment are particularly harmful for young people because they lead to skill erosion and prevent them from building up work experience. This diminishes their labour market prospects from an early stage. In light of these developments, young people are a high priority for policy action at the EU and national levels (see Box 1.6).



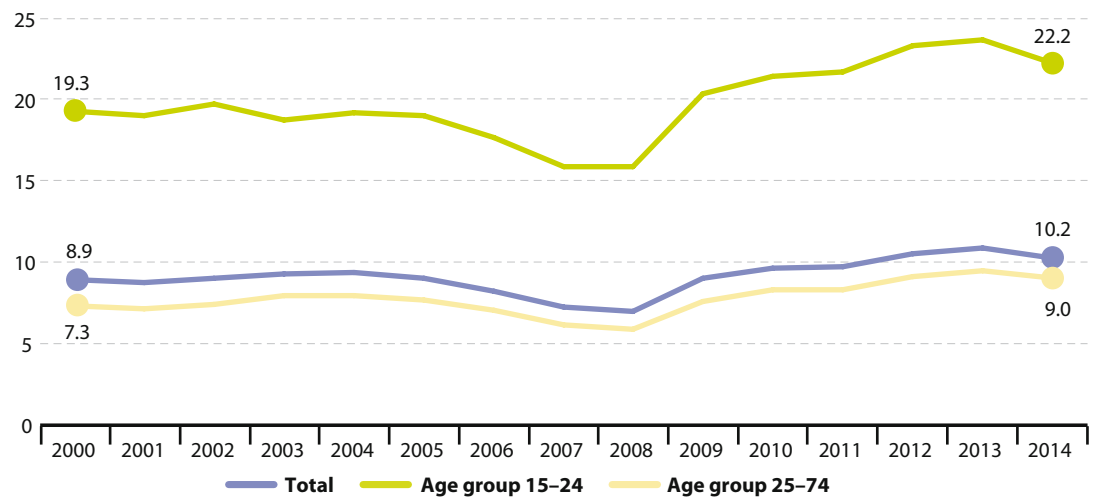
Long term
(since 2000)



Short term
(since 2009)



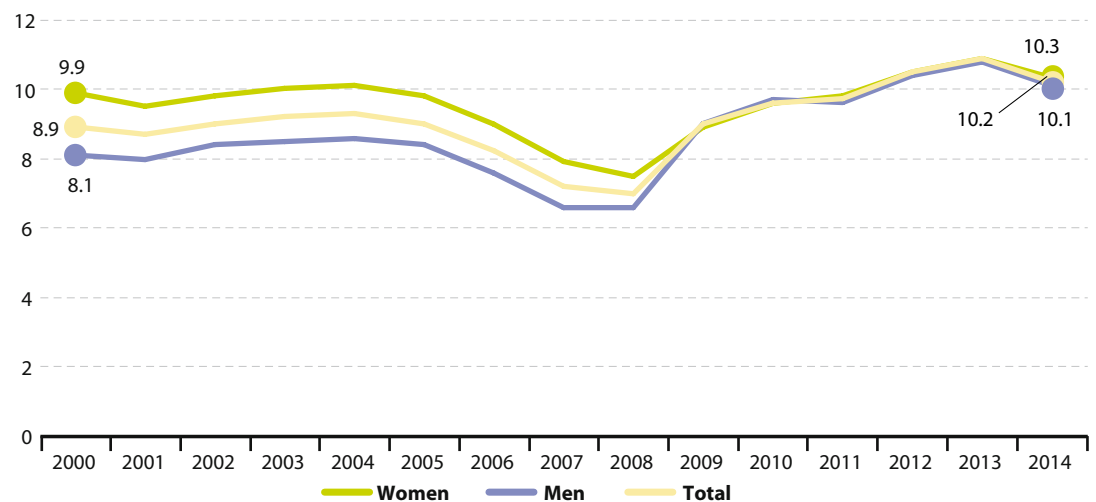
Figure 1.22: Unemployment rate by age group, EU-28, 2000–2014 (%)



Source: Eurostat (online data code: [tsdec460](#))

Since 2000, gaps in the unemployment rates of men and women have been closing. In 2014, the gender unemployment gap was nearly non-existent, mainly as a result of the pronounced increase in male unemployment compared with a small increase in female unemployment during the economic downturn.

Figure 1.23: Unemployment rate by sex, EU-28, 2000–2014 (%)



Source: Eurostat (online data code: [tsdec450](#))

Box 1.7: Strengthening social integration within the Economic and Monetary Union

In October 2013 the European Commission proposed several measures for deepening the social integration of the EU ⁽⁶³⁾. The Commission Communication focuses on three areas:

- Reinforcing surveillance of employment and social challenges and strengthening policy co-ordination under the European Semester through the creation of a scoreboard, which allows better and earlier identification of employment and social problems. Indicators in the scoreboard would include: the unemployment level and the way it evolves; NEET rate (young people not in education, employment or training) and youth unemployment rate; the real gross disposable income of households; the at-risk-of-poverty rate of the working age population; and inequalities (the S80/S20 ratio). The data should feed into policy through the Country Specific Recommendations or by integrating a limited number of employment and social indicators into the annual Alert Mechanism Report (AMR).
- Enhancing solidarity and reinforcing labour mobility by reducing costs and removing barriers to labour mobility across the EU.
- Strengthening social dialogue at EU and national levels by better involving social partners such as trade unions and employers at key steps of decision-making processes under the European semester.

How unemployment rates vary between Member States

Pronounced differences can be observed in the labour market performances between EU Member States. In 2014, unemployment rates across the EU varied by more than 20 percentage points. The highest unemployment rates by far were observed in Greece (26.5%) and Spain (24.5%), followed by Croatia (17.3%) and Cyprus (16.1%). On the other end of the spectrum, Germany, Austria, Malta and Luxembourg revealed strong labour market performance with unemployment rates ranging between 5.0% and 5.9%.

Due to the prolonged effects of the economic crisis, the average duration of unemployment and the share of long-term unemployed among jobseekers have increased in many vulnerable states. In Greece and Spain, the average duration of unemployment has reached nine and eight months respectively. This is likely to slow down labour market recovery due to deterioration of jobseekers' skills and increased pressure on the public coffer ⁽⁶⁴⁾.

EU trends in unemployment compared with other countries in the world

In 2014, the EU unemployment rate of 10.2% significantly exceeded the average for Organisation for Economic Co-operation and Development (OECD) countries (7.3%), the G7 ⁽⁶⁵⁾ (6.4%) and the United States (6.2%). Joblessness in the EU was also more than twice as high as in Japan (3.6%) and the Republic of Korea (3.5%) ⁽⁶⁶⁾. According to projections by the International Labour Organisation (ILO), only the US is expected to experience a sizable decline in unemployment figures in the medium term, whereas unemployment rates in other developed economies are expected to remain largely unchanged ⁽⁶⁷⁾.

Due to the significant spillover effects of weak growth in advanced economies, international labour markets were not immune to the economic downturn. According to ILO estimates, most of the increase in global unemployment in 2013 occurred in East Asia and South Asia, followed by Sub-Saharan Africa, whereas Latin American countries contributed only 1% to the rise in global unemployment ⁽⁶⁸⁾.

⁽⁶³⁾ European Commission (2013), *The Future of the Economic and Monetary Union: Commission proposes ideas to deepen social integration — IP/13/893*, Brussels 02/10/2013.

⁽⁶⁴⁾ ILO (2014), *Global Employment Trends 2014: Risk of a jobless recovery?*, International Labour Organisation, Geneva, p. 25.

⁽⁶⁵⁾ The G7 is a group of seven industrialised nations in the world formed by the United States, the UK, France, Germany, Italy, Canada and Japan.

⁽⁶⁶⁾ OECD data on harmonised unemployment rate. Available online at: <http://stats.oecd.org/index.aspx?i=32996>

⁽⁶⁷⁾ ILO (2014), *Global Employment Trends 2014: Risk of a jobless recovery?*, International Labour Organisation, Geneva, p. 18.

⁽⁶⁸⁾ *Id.*, p. 15.



What lies beneath this indicator?

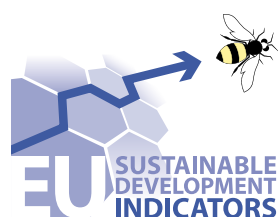
Paid employment contributes to individual well-being by providing the resources needed for decent living standards and the pursuit of personal goals and aspirations. High unemployment rates, on the other hand, can endanger social cohesion and increase the risk of poverty and social exclusion. Spells of prolonged unemployment among young people, in particular, can have adverse consequences for their career development as well as for the economy as a whole.

The unemployment rate measures the number of unemployed people as a percentage of the labour force. The labour force consists of all employed and unemployed persons in the 15 to 74 age group. Unemployed persons comprise people aged 15 to 74 who were: (1) without work during the reference week, (2) available to start work, (3) actively seeking work (i.e. who had taken specific steps in the four-week period ending with the reference week to seek paid employment or self-employment or who found a job to start within a period of at most three months).

Sustainable consumption and production

2





Overview of the main changes

Resource productivity in the EU has improved in both the long term since 2002 and in the short term since 2008. Developments in the underlying indicators — gross domestic product (GDP) and domestic material consumption (DMC) — over 2002 to 2013 suggest economic growth has been decoupling from resource use in the EU ⁽¹⁾. This is mainly due to the large drop in DMC since the economic crisis began. Temporary improvements were also visible in many other indicators in the ‘sustainable consumption and production’ theme during the economic slowdown; however, some of these trends started to reverse during the recent mild recovery. Therefore, it is debatable whether a shift towards more sustainable consumption and production patterns has actually occurred. This is particularly so for material use, generation of waste excluding major mineral wastes and, to a lesser extent, final energy consumption and electricity consumption. Hazardous waste has continued to show a clearly unfavourable trend. However, some long-term improvements can be seen in waste treatment, environmentally friendly production patterns and pollutant emissions of ammonia (NH₃), sulphur oxides (SO_x), nitrogen oxides (NO_x) and non-methane volatile organic compounds (NMVOC).

Table 2.1: Evaluation of changes in the sustainable consumption and production theme, EU-28 ⁽¹⁾

Indicator	Long-term evaluation (since 2000)	Short-term evaluation (last five-year period)
Resource productivity	⁽²⁾	
Resource use and waste		
Domestic material consumption	⁽²⁾	
Generation of waste excluding major mineral wastes	⁽³⁾	⁽⁴⁾
Hazardous waste generation	⁽⁴⁾	⁽⁴⁾
Recycled and composted municipal waste		
Atmospheric emissions		
Consumption patterns		
Electricity consumption of households		
Final energy consumption		
Production patterns		
Environmental management systems	⁽⁵⁾	⁽⁶⁾
Organic farming	:	⁽⁶⁾

⁽¹⁾ An explanation of the evaluation method and the meaning of the weather symbols is given in the Introduction and in Annex III. ⁽²⁾ From 2002. ⁽³⁾ From 2004. ⁽⁴⁾ Last four-year period. ⁽⁵⁾ From 2005; EU-27. ⁽⁶⁾ EU-27.

⁽¹⁾ See the Introduction chapter for an explanation of ‘decoupling’ (p. 13).



Key trends in sustainable consumption and production

Modest signs of material use decoupling from economic growth

In 2013, the EU generated an economic value of EUR 1.93 per kilogram of material consumed. This represents a considerable improvement in **resource productivity** since 2002, when the economic benefit created had only been EUR 1.52 per kg. This long-term efficiency gain occurred because GDP had been growing faster than **domestic material consumption** (DMC), in particular before the onset of the economic crisis. Since 2008, EU resource use has dropped sharply, putting DMC below levels observed a decade ago.

These divergent trends — GDP growing while DMC is falling — indicate **decoupling of economic growth from resource use** in the EU over the long-term period from 2002 to 2013. Decoupling has also taken place in the short term with material consumption falling sharply by 20.6% between 2008 and 2013, surpassing the 1.3% fall in GDP. Because the long-term trend was mainly due to positive short-term developments, the improvements in resource productivity are not likely to represent a major turnaround in resource use patterns, but rather mirror the impact of the economic crisis on resource-intensive industries such as construction.

Improvements in generation of waste excluding major mineral wastes, waste treatment and pollutant emissions, but hazardous waste continued to increase

The amount of **waste excluding major mineral wastes** generated per inhabitant in the EU was reduced by about 5.8% between 2004 and 2012. However, this development is not likely to represent a sustainable shift because the indicator started rising again during a mild economic recovery from 2010 to 2012. In 2012, generation of waste excluding major mineral wastes varied by a factor of 13 across Member States, with the leading countries generating large amounts of waste from their energy, refinery and wood processing sectors.

The amount of **hazardous waste** generated among the EU-28 increased considerably between 2004 and 2012, from 180 to 200 kg per capita. The highest increase was in 2012, when hazardous waste generation rose by 3.6% compared with 2010. In 2012, two sectors — the manufacturing industry and water supply, sewage, waste management and remediation — accounted for 46% of hazardous waste generated.

Waste treatment practices have improved considerably in the EU since 2000. Landfilling, the least environmentally friendly waste disposal method, has been gradually replaced by incineration and even more so by recycling and composting. In 2013, about 43% of the EU's generated municipal waste was recycled or composted. These improvements have been to a large extent driven by EU and national strategies prioritising efficient waste management through various instruments. However, huge variation in waste treatment remains across the EU. For example, Romania landfills more than 95% of its municipal waste and Malta, Croatia, Latvia and Greece more than 80%, whereas Germany, Sweden and Belgium dispose of less than 1% of their waste in this way.

Similar improvements have taken place in the area of **atmospheric emissions** of acidifying substances and ozone precursors. Due to almost continuous declines since 1990, man-made emissions of ammonia (NH₃), sulphur oxides (SO_x), nitrogen oxides (NO_x) and non-methane volatile organic compounds (NMVOC) in 2013 were between 1.4 and 7.5 times lower than in 1990. A strong reduction of emissions occurred in the short-term period between 2008 and 2013, with average annual reduction rates ranging from 9.2% for SO_x to 0.7% for NH₃.

Despite recent progress, sustainable consumption trends remain volatile

Electricity consumption of households has risen more or less continuously since 1990. Growth in the number of households has been a main driver of this trend. Increased ownership and usage of electric appliances, which has outstripped efficiency improvements of electronic devices, has also contributed to the increase in overall electricity consumption — a phenomenon known as the 'rebound effect'. Unlike other consumption-related indicators presented in this report, household electricity consumption proved to be rather unresponsive to the economic crisis, with the three major drops occurring before and after the economic downturn, in 2007, 2011 and 2013.

Similarly, **final energy consumption** in the EU has been rising since 1990. The year 2006, however, marked a turning point, with energy use stabilising and then experiencing strong fluctuations in the years after. The



strong contractions in final energy use in 2009 and 2011 not only brought final energy consumption in 2013 down to pre-2000 levels, but also pushed the EU ahead on its projected path to reaching the 20% energy saving target.

More environmentally friendly production patterns

Production patterns have also shown mixed trends in the EU over the past years. Although organisations have increasingly implemented a certified environmental management system according to the **Eco-Management and Audit Scheme (EMAS)** since 2005, this trend has reversed in the short term. Between 2009 and 2014, the number of EMAS-registered organisations fell by 5.8%.

In contrast, farming practices have become more and more sustainable in the EU since 2005, as illustrated by the increase in the share of **organic farming**. This dynamic development has also been reflected in growing sales of organic products on the EU food market.

Why do we focus on sustainable consumption and production?

Production and consumption of goods and services contributes to human well-being by satisfying physical and other needs such as food or shelter. However, current consumption and production patterns also harm the natural environment and human well-being. In particular they deplete the Earth's natural resources and damage ecosystems. Making consumption and production more sustainable means responding to basic needs and improving quality of life while using fewer natural resources such as raw materials, energy, land and water. This includes reducing or eliminating waste and pollutants or lowering overall consumption through better management systems, improved product and service design, best available technologies and supporting sustainable lifestyles. In doing so, more environmentally friendly agricultural practices and environmental management schemes can boost biodiversity, landscape preservation and water and soil quality.

All of these aspects of the sustainable consumption and production theme are closely interlinked. Material flows influence the amount of waste and emissions produced, which can affect the well-being of people and the environment. Air pollutants from industry, transport and agriculture damage health, and contribute to acidification, eutrophication and physical damage of materials. Certain air pollutants, such as ozone, reduce plant growth, which is ultimately linked to an ecosystem's health and performance. At the other end of the chain, waste levels are also influenced by waste treatment. Increasing waste recovery by recycling and composting reduces demand for raw materials and resources extraction. Linkages also exist between increases in consumption and production patterns and negative environmental and public health impacts. Inappropriate waste treatment can cause environmental pollution and expose humans to harmful substances and disease-causing organisms, damaging their health. Ever-increasing material consumption, leading to higher imports and exports, is also associated with more freight transport. As a result, increasing transport volumes lead to higher energy consumption and emissions of pollutants (including particulate matter and ozone precursors) and greenhouse gases.



How does the EU tackle sustainable consumption and production?

The EU Sustainable Development Strategy (EU SDS) dedicates one of its seven key challenges to sustainable consumption and production, with the overall objective of 'promoting sustainable consumption and production patterns'.

The EU SDS operational objectives and targets include:

- Promoting sustainable consumption and production by addressing social and economic development within the carrying capacity of ecosystems and decoupling economic growth from environmental degradation.
- Improving the environmental and social performance of products and processes and encouraging their uptake by business and consumers.
- The EU should seek to increase its global market share in the field of environmental technologies and eco-innovations.

The [Europe 2020 Strategy](#) unites two flagship initiatives under the sustainable growth priority to tackle the issue of sustainable consumption and production:

- 'Resource efficient Europe' helps decoupling economic growth from the use of resources. It supports the shift towards a low-carbon economy, an increased use of renewable energy sources, the modernisation of our transport sector and promotes energy efficiency. The [Roadmap to a resource efficient Europe](#) is one of the main building blocks of the resource efficiency flagship initiative.
- 'An industrial policy for the globalisation era' improves the business environment, notably for small and medium enterprises (SMEs) and supports the development of a strong and sustainable industrial base able to compete globally.
- In 2008 the European Commission presented the [Sustainable Consumption and Production and Sustainable Industrial Policy \(SCP/SIP\) Action Plan](#). It includes proposals on sustainable consumption and production that will contribute to improving the environmental performance of products and increase the demand for more sustainable goods and production technologies.

Further reading on sustainable consumption and production

European Commission (2014), *Towards a circular economy: A zero waste programme for Europe*, COM (2014) 398/final 2, Brussels.

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SWD (2014) 206, *Progress report on the roadmap to a resource efficient Europe*, European Commission, Brussels.

UNDESA (2011), *Transition to a Green Economy: Benefits, Challenges and Risks from a Sustainable Development Perspective*, United Nations, New York.

UNDESA (2010), *Trends Reports: Trends in Sustainable Development — Towards Sustainable Consumption and Production 2010–2011*, United Nations, New York.

Website on European Sustainable Consumption and Production Policies, DG Environment.

Website on the UN Marrakech Process, United Nations: DESA/DSD and UNEP.

Website on the UN 10-year framework of programmes on sustainable consumption and production patterns, United Nations.

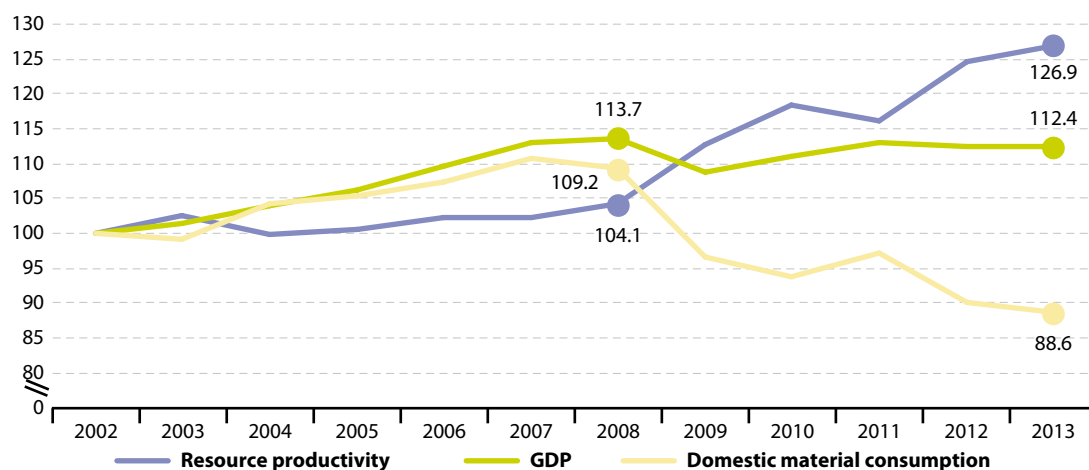
Website on EMAS — Eco-Management and Audit Scheme, DG Environment.

Website of the European Topic Centre on Sustainable Consumption and Production (ETC/SCP).

Resource productivity

Resource productivity increased by 26.9% in the long-term period between 2002 and 2013. This trend was mainly driven by a 21.8% rise in resource productivity between 2008 and 2013.

Figure 2.1: Resource productivity, EU-28, 2002–2013 ⁽¹⁾
(index 2002=100)



⁽¹⁾ Resource productivity and domestic material consumption: data are estimates (whole time series); 2013 data are provisional estimates.

Source: Eurostat (online data codes: tsdpc100, tsdpc230 and nama_10_gdp)

In the long term, between 2002 and 2013, the EU economy increased the amount of economic value generated (in terms of GDP) per unit of material used (in terms of DMC) by about 27%, from EUR 1.52 per kg in 2002 to EUR 1.93 per kg in 2013.

In the same period, GDP grew by 1.1% per year on average whereas DMC fell by an average of 1.1% per year, indicating a decoupling of material use from economic growth ⁽²⁾. This long-term trend was influenced by strong resource productivity growth in the years following the economic crisis of late 2008.

The short-term period between 2008 and 2013 was characterised by a pronounced reduction in material consumption (20.6%), which surpassed the fall in GDP (1.3%). This also pointed to decoupling of material use from economic growth.

Indications of resource use decoupling from economic growth in the EU

In the long-term period between 2002 and 2013, DMC in the EU fell by 11.4% while the economy grew by 12.4%, indicating decoupling of material consumption from economic growth. Decoupling means environmental pressure is stable or decreasing while the economic driving force is growing.

The largest productivity gains were recorded in the years following the start of the economic crisis of late 2008. During this period the resource productivity of the EU economy increased by 8.2%, 5.1% and 7.3% in 2009, 2010 and 2012 respectively. This trend was largely driven by the significant and persistent drop in DMC (20.6% from 2008 to 2013), which outstripped the fall of GDP during the economic downturn.

In the short-term period between 2008 and 2013 resource productivity continued to track the changes in economic output with the highest level of resource productivity increases coinciding with falls in GDP in 2009 and 2012. Overall, between 2008 and 2013 resource use fell by 20.6% while the economy shrank by 1.3% in absolute terms, indicating decoupling of resource consumption from economic growth also occurred in the short run. In this five-year period resource productivity recorded the strongest absolute increase since 2002 and exhibited the highest per annum growth rate.

⁽²⁾ See the Introduction chapter for an explanation of 'decoupling' (p. 13).



Long term
(since 2002)



Short term
(since 2008)

Progress in resource productivity appears moderate once other factors are considered

Nevertheless, caution needs to be exercised when drawing conclusions based on the observed trends. It is very likely that the large drop in DMC between 2008 and 2010 and the continued fall from 2012 to 2013 was strongly influenced by the impacts of the economic crisis ⁽³⁾. Therefore, the long- and short-term figures on decoupling of resource consumption from GDP are not likely to reflect a major transformation of the economy and sustainable improvements in resource efficiency.

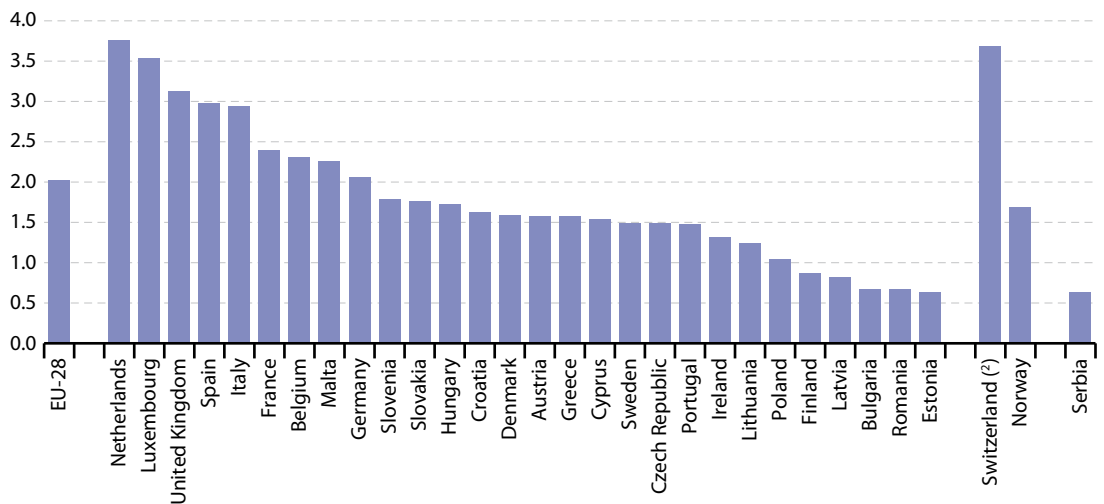
Furthermore, the raw materials embodied in the growing amount of imports of intermediate and final goods from the rest of the world need to be taken into account ⁽⁴⁾. Because DMC does not account for upstream 'hidden' material flows embodied in imported and exported products, Europe's progress regarding resource efficiency may be overstated because of the import-intensive nature of its economy (see the analysis of raw material consumption (RMC) on p. 84).

The EU has shown continuous growth in the amount of material extraction and primary production that it outsources to other countries ⁽⁵⁾. So while direct material resource use in Europe seems to have stabilised, an EU citizen's material 'footprint' is likely to be much more substantial at the global level.

How resource productivity varies across Member States

At the Member State level, values of resource productivity for the EU ranged from 3.76 to 0.63 purchasing power standards (PPS) ⁽⁶⁾ per kg in 2013. These large variations in resource productivity result from a combination of factors such as sectorial composition and national economic structure (strong service and knowledge/technology-based as opposed to primary sector industry or raw material processing), specific resource endowments, degree of outsourcing of production, existence of resource policies encouraging recycling and re-use of resources and others ⁽⁷⁾.

Figure 2.2: Resource productivity, by country, 2013 ⁽¹⁾
(PPS per kg)



⁽¹⁾ Provisional and/or estimated data for most countries.
⁽²⁾ 2012 data.

Source: Eurostat (online data code: [tsdpc100](#))

⁽³⁾ European Commission (2014), *Study on modelling of the economic and environmental impacts of raw material consumption*, p. 5.

⁽⁴⁾ European Environment Agency (2012), *Environmental Indicator Report 2012*, p. 101.

⁽⁵⁾ See footnote 3.

⁽⁶⁾ PPS is the technical term used by Eurostat for the common currency in which national account aggregates are expressed when adjusted for price level differences using purchasing power parity (PPP). Thus, PPPs can be interpreted as the exchange rate of the PPS against the euro.

⁽⁷⁾ SERI (2012), *Green Economies around the World? — Implications for Resource Use for Development and the Environment*, p. 50.

In general, Member States with relatively high GDP per capita tend to have resource productivity levels above the EU average of 2.02 PPS per kg (the Netherlands, Luxembourg, the United Kingdom, Spain, Italy, France, Belgium and Germany). This is likely to be due to the high 'value added' generated in the economy from less-resource-intensive sectors such as financial, high-tech innovation and other service sectors, as well as high environmental regulation standards. An exception is Malta, which has above EU-average resource productivity (2.26 PPS per kg) and relatively low GDP per capita. On the other hand, countries with a large share of primary resource extraction sectors (such as mining and agriculture), sectors at the first processing stages (metal industry, chemical industry) and the construction industry tend to have the most resource-intensive economies and hence lower resource productivity levels ⁽⁸⁾.

The biggest resource productivity increases between 2002 and 2013 have been observed in Spain (121%), Ireland (78%) and Slovenia (64%) ⁽⁹⁾. In some of these countries the improvements could be attributed to the drastic fall in DMC experienced after the building and construction booms. The EU Member States with lower per capita GDP show a significant potential for improvement, apart from frontrunners Cyprus, Malta and Slovenia. In most of these countries resource productivity has remained at relatively low levels.

EU trends in resource productivity compared with other countries in the world

Since 2000, many of the EU Member States have ranked among the highest G20 countries in terms of material productivity ⁽¹⁰⁾. In 2013, the Netherlands surpassed all other G20 members with a resource productivity of USD 5.6 per kg of non-energy material. Only Japan came close with USD 5.2 per kg ⁽¹¹⁾⁽¹²⁾. Despite their continuous growth in resource productivity, in 2010 the United States (USD 3.1 per kg), Korea (USD 2.7 per kg) and Russia (USD 2.3 per kg) still lagged behind the best performing EU Member States and Japan. In the same year, the rate of resource use per unit of economic activity in the large emerging economies such as China (USD 0.5 per kg), Brazil (USD 0.6 per kg) and India (USD 0.8 per kg) remained comparable only with the lower spectrum of the EU Member States' ranking.

What lies beneath this indicator?

Economic growth has usually been associated with increased material and energy use, which is generating pressure on the environment and affecting human health. The 'resource productivity' indicator, which is calculated by dividing GDP (deflated) by DMC, is used to monitor the relationship between resource use and economic growth. The indicator is an aggregate measure of an economy's material efficiency. It provides insights into whether decoupling between natural resource use and economic growth is taking place. In particular, the development and deployment of eco-innovative processes and products play an important role in increasing resource efficiency.

⁽⁸⁾ European Parliament (2008), *Eco-innovation — putting the EU on the path to a resource and energy efficient economy*, p. 9.

⁽⁹⁾ Note that for comparing the resource efficiency of Member States over time a different unit of the indicator has been used ('EUR per kg, chain linked volumes' instead of 'PPP per kg' as used in Figure 2.2).

⁽¹⁰⁾ The Group of Twenty (G20) is the premier forum for international co-operation on the most important issues of the global economic and financial agenda.

⁽¹¹⁾ OECD data on non-energy material productivity (USD / kg), extracted 12 March 2015. GDP is expressed at constant 2005 USD using PPPs.

⁽¹²⁾ The OECD data on non-energy material productivity is calculated as GDP generated per unit of materials consumed (USD/kg). Gross domestic product (GDP) is expressed at constant 2005 USD using PPP.



Domestic material consumption



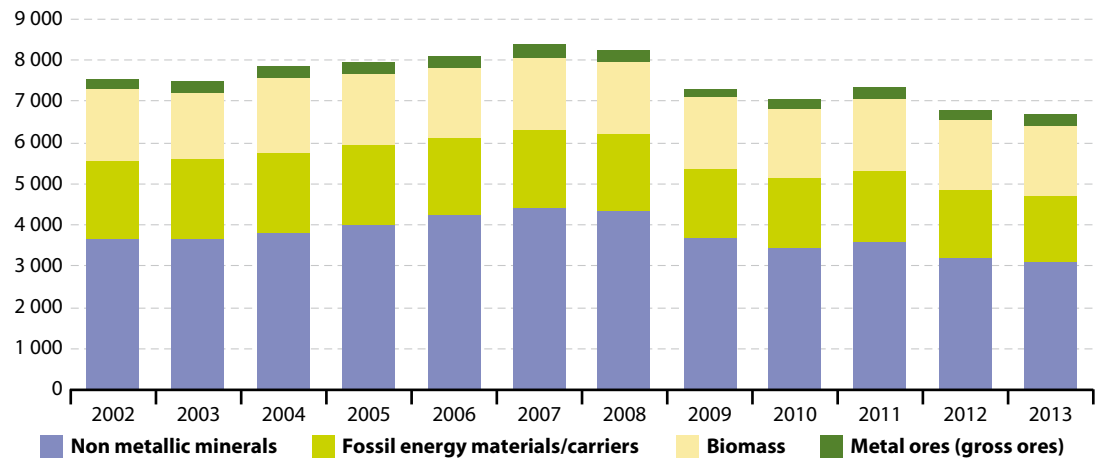
Long term
(since 2002)



Short term
(since 2008)

Domestic material consumption in the EU-28 fell by 11.4% over the long-term period between 2002 and 2013 and 18.9% over the short-term period between 2008 and 2013. The decline was mainly driven by decreased extraction after the economic downturn.

Figure 2.3: Domestic material consumption, by material, EU-28, 2002–2013 ⁽¹⁾
(million tonnes)



⁽¹⁾ Data are estimates and/or provisional.

Source: Eurostat (online data code: [tsdpc230](#))

In the long-term, between 2002 and 2013, DMC — the total amount of material directly used by the EU economy — fell by about 11%. The strongest reduction was observed in the short term, between 2008 and 2013, when the economy's domestic throughput fell by 4.1% per year on average. This rate of decline was about four times faster than its long-term average for the period 2002 to 2013.

The main driving force behind the increase in DMC between 2003 and 2007 was continued growth in affluence and per capita consumption. This was particularly so in European countries with high average incomes and other Member States that have been rapidly catching up. Ultimately, this has increased demand for energy and resources ⁽¹³⁾. In addition, globalisation and trade liberalisation have encouraged this surge in domestic demand by providing easier access to global resources.

The economic crisis strongly affected material consumption

After the peak in 2007, DMC dropped sharply, particularly between 2008 and 2009, due to the impacts of the economic slowdown ⁽¹⁴⁾. The downward trend in DMC was reversed only shortly in 2011, mainly driven by increased domestic extraction during the mild economic recovery. However, over the next two years DMC started falling again, by 7.3% in 2012 and 1.6% in 2013.

Impact of the crisis on the construction sector significantly reduced consumption of non-metallic minerals

Apart from metal ores, all other main material categories of DMC have fallen over the long term. Fossil energy materials and non-metallic materials recorded the largest reductions in the period 2002–2013 of 15.4% and 15.3% respectively. In the short term, consumption of all the main components of DMC reduced significantly, following the changes in economic activity during the crisis. Between 2008 and 2013,

⁽¹³⁾ European Environment Agency (2010), *The European Environment: State and Outlook 2010*, p. 4.

⁽¹⁴⁾ European Environment Agency (2012), *Consumption and the Environment — 2012 Update*, p. 21.

consumption of non-metallic minerals ⁽¹⁵⁾, which constitute the largest fraction of total DMC, fell by more than 28%. Their share of DMC also decreased from 53.1% to 46.5% between 2007 and 2013. This trend is not surprising given that non-metallic minerals (in particular sand and gravel) are widely used in construction, which has been heavily hit by the economic crisis. In Ireland, Greece and Spain, which all had construction booms before the crisis and property bubble bursts ⁽¹⁶⁾ afterwards, the demand for non-metallic minerals from 2007 to 2010 fell by 53.3%, 40.6% and 46.6% respectively.

Similar to non-metallic minerals, metal ores and fossil energy materials have also shown a sizeable reduction between 2007 and 2013 of 11.9% and 15.5% respectively, after their peak in 2007. The change in biomass in this period was negligible at 0.8%.

The downward trend in consumption of biomass, non-metallic minerals, metal ores and fossil energy materials was reversed in 2010–2011 when most European economies experienced a mild recovery from the crises. However, it moved back onto its previous track as economic activity slowed again in the following years.

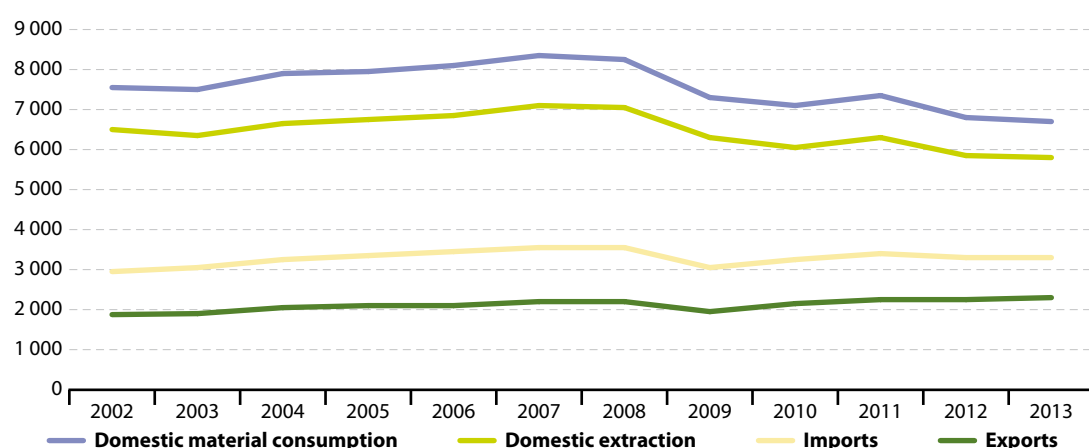
Decline in domestic material consumption was mainly driven by decreased extraction

DMC has been declining in both the long and the short term, however, the period between 2008 and 2013 witnessed the strongest reduction in material consumption of 4.1% per year compared with 1.1% for 2002–2013. A closer look at DMC shows the reduction in both periods was driven mainly by a slowdown in domestic extraction of 17.7% in the short term and 10.8% in the long term.

Domestic extraction — the amount of raw material (except for water and air) extracted from the natural environment — has followed the same trajectory as DMC. After declining steadily following the economic downturn, it recorded a significant upswing in 2011 before moving back to its downward trend in the following years. Changes in imports and exports have played a minor role.

This trend represents a considerable shift after the prolonged period of growth in domestic extraction and imports before the economic crisis, from 2003 to 2007. Since 2008 the growth of imports has been volatile. The downward trend in imports observed since the recovery from the economic crisis reversed for only a short period in 2010 and 2011, before declining again in the following two years. This implies that overall environmental impacts related to EU material consumption patterns have been decreasing outside the EU, but this trend does not seem to be stable and sustainable.

Figure 2.4: Components of domestic material consumption, EU-28, 2002–2013 ⁽¹⁾
(million tonnes)



⁽¹⁾ Data are estimates and/or provisional; breaks in time series in 2007 and 2008.

Source: Eurostat (online data code: tsdpc220)

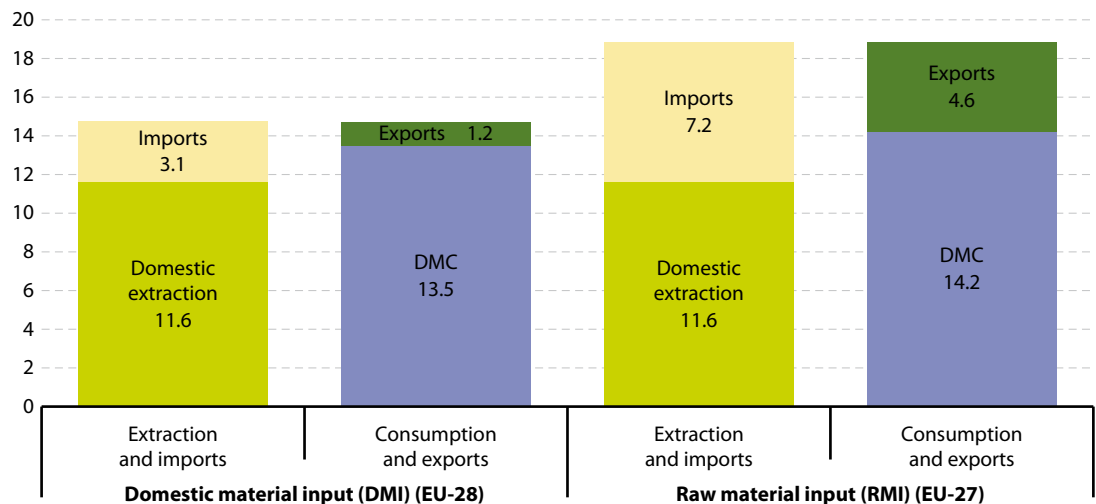
⁽¹⁵⁾ Non-metallic minerals include sand, gravel, limestone and fertiliser minerals (among others). A full classification for non-metallic minerals can be found here: Eurostat (2012), *Economy-wide Material Flow Accounts (EW-MFA) — Compilation Guide 2012*, p. 40.

⁽¹⁶⁾ Eurostat (2011), *Key figures on European business with a special feature on SMEs*, pp. 70–71; Eurostat (2009), *European Business — facts and figures*, pp. 346–348, 351.

Raw material consumption is a more comprehensive metric for measuring an economy's material throughput

Although the DMC indicator considers both imports (added) and exports (deducted) through their simple product weight when crossing borders, it does not fully account for the 'hidden flows' of raw materials embodied in the production of traded goods. These embodied materials represent the amount of raw material extracted to produce all the traded goods. Thus, the DMC indicator is not a comprehensive measure of the environmental pressure of material consumption and might make cross-country comparisons 'asymmetric'. The indicator raw material consumption (RMC) offers a more comprehensive metric by measuring the imports and exports in their raw material equivalents (RMEs). This measurement shows the equivalent amounts of all domestic extraction of raw materials needed to make the respective traded goods and services.

Figure 2.5: Comparison of actual material flow indicators with material flow indicators expressed in raw material equivalents (RME), 2012 ⁽¹⁾
(tonnes per capita)



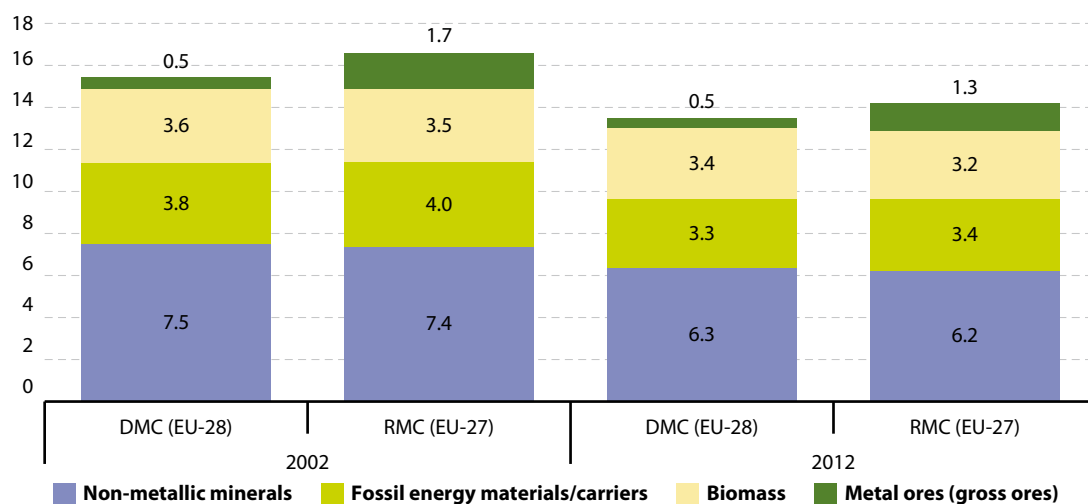
⁽¹⁾ Data are estimates.

Source: Eurostat (online data codes: [env_ac_mfa](#) and [env_ac_rme](#))

Figure 2.5 compares actual material flows per capita for the EU-28 with material flows expressed in RME per capita for the EU-27 in 2012. The first bar on the left shows domestic extraction (11.6 tonnes per capita) and the amount of direct imports in simple mass weight as they are actually crossing the border. These two components add up to direct material input (DMI) which accounts for all material resources used in production activities and available for all final uses (consumption and exports, shown in the second bar). The third and fourth bars show the same concepts expressed in raw material equivalents, which is the amount of raw material extraction carried out in the whole world to produce the traded products. The sum of domestic extraction and RME imports as well as the sum of RME exports and RMC represent raw material input (RMI). At 11.6 tonnes per capita, domestic extraction is the same for both DMI and RMI. However, RME of imports are estimated at 7.2 tonnes per capita and RME of exports at 4.6 tonnes per capita, which are much higher than actual imports (3.1 tonnes per capita) and actual exports (1.2 tonnes per capita). The difference between RME of imports and direct imports is mostly due to metal ores and the difference in exports is due to all material categories, with again metal ores a major factor. The amounts of gross metal ores needed to produce goods from this material category are several times higher than the weight of the traded goods ⁽¹⁷⁾. RMC is estimated at 14.2 tonnes per capita, 5 % higher than DMC. This difference is mainly a result of a much higher trade surplus of metal ores in RME, such as gold, copper and tin, than in the physical trade surplus.

⁽¹⁷⁾ Eurostat Statistics Explained: Material flow accounts — flows in raw materials equivalent.

Figure 2.6: Comparison of domestic material consumption (DMC) and raw material consumption (RMC) by material, 2002 and 2012 ⁽¹⁾
(tonnes per capita)

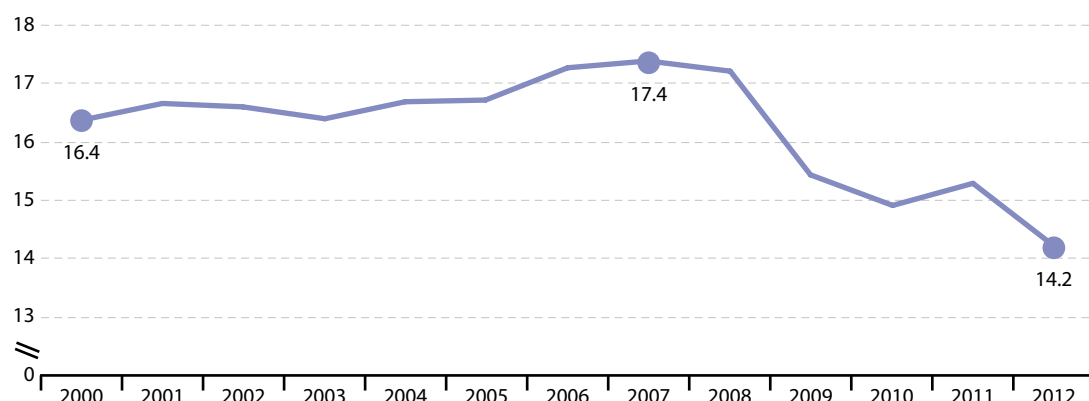


⁽¹⁾ Data are estimates.

Source: Eurostat (online data codes: [env_ac_mfa](#) and [env_ac_rme](#))

When taking fully into account the indirect material flows embodied in traded goods, the reduction in material consumption achieved over the long term seems even larger. While DMC per capita was reduced by 12.6% in the EU-28 between 2002 and 2012, RMC per capita recorded a slightly larger reduction of 14.4% in the same period. This indicates the EU economy consumes considerably fewer raw materials per capita. As shown in Figure 2.3, the main driver for the reduction in DMC per capita has been the estimated 15.6% fall in the actual use of non-metallic minerals. Although in the case of RMC per capita, metal ores have undergone the highest percentage reduction (21.4%), the 15.5% decrease from 7.4 to 6.2 tonnes per capita in the period 2002–2012 in non-metallic minerals has had a major impact on the development of total RMC per capita. Furthermore, since the physical trade of non-metallic minerals is small and the trade balance in RME per capita is close to zero, the development of total RMC per capita is mainly determined by domestic extraction of non-metallic minerals. Non-metallic minerals mainly comprise construction minerals such as sand and gravel. This explains why domestic extraction of non-metallic minerals tends to be closely linked to gross value added in construction.

Figure 2.7: Raw material consumption per capita, EU-27, 2000–2012 ⁽¹⁾
(tonnes per capita)



⁽¹⁾ Data are modelling estimates.

Source: Eurostat (online data code: [env_ac_rme](#))



An analysis of consumption per person in the EU shows that in 2012 RMC was 14.2 tonnes per capita for the EU-27 compared with a DMC of 13.5 tonnes per capita for the EU-28. RMC per capita, which captures the material footprint of individuals or the average amount of raw materials needed to produce the goods consumed by a person in the EU, has fallen by 14.4% over the long term between 2002 and 2012. Similarly to DMC, the largest drops were observed in the aftermath of the economic crises in 2009 (by 10.2%) and in 2012 (by 7%).

What lies beneath this indicator?

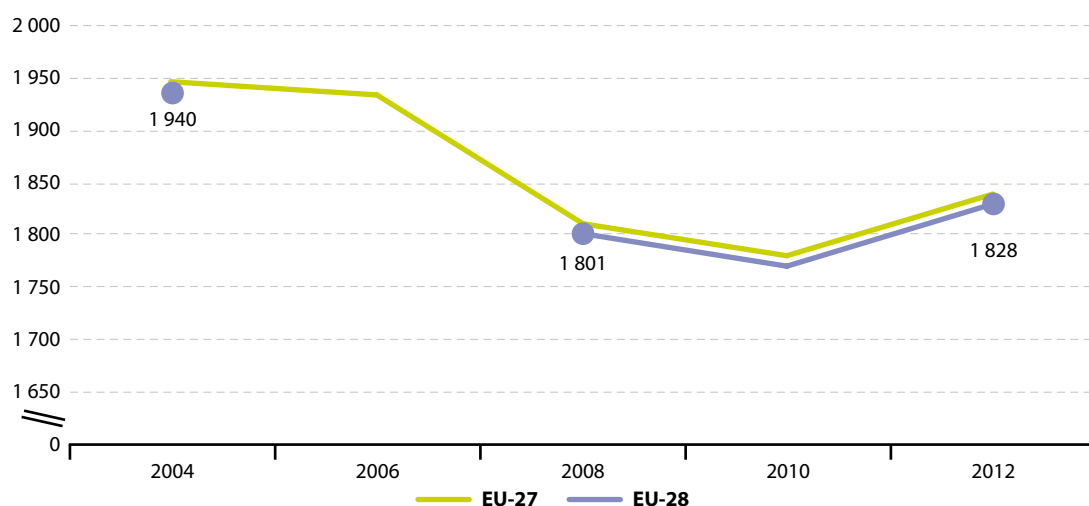
The normal functioning and prosperity of Europe's economy and society in general depend on the use of natural resources. These resources include renewables such as biomass and non-renewables such as fossil fuels, metals and minerals. At the same time, Europe's growing demand for materials puts its natural resource base at danger. It also creates environmental pressures including climate change, biodiversity loss, scarcity of fertile land, soil degradation and waste accumulation. In this respect, the efficient management and use of materials is essential for resource security and increased ecosystems resilience. To give an insight into these problem areas, the domestic material consumption (DMC) indicator measures the total amount of material directly used in an economy. DMC is complemented by another indicator — raw material consumption (RMC) — to fully account for the raw materials used in the complete production chain of consumed products, including imports and excluding exports. RMC measures the final domestic consumption of goods and services in terms of raw material equivalents (RME). Eurostat estimates the RME-based material flow indicators for the aggregated EU economy, such as imports and exports in RME, using an environmentally extended input-output model ⁽¹⁸⁾. The RME-based indicators are more prone to uncertainty than those based on actual physical flows.

⁽¹⁸⁾ For more details see Eurostat (2014), Project: Estimates for Raw Material Consumption (RMC) and Raw Material Equivalents (RME) conversion factors.

Generation of waste excluding major mineral wastes

The amount of waste excluding major mineral wastes generated in the EU-28 reduced by 5.8 % over the long term between 2004 and 2012. This trend was reversed in the short term, with waste excluding major mineral wastes rising by 1.5 % between 2008 and 2012.

Figure 2.8: Generation of waste excluding major mineral wastes, 2004–2012 ⁽¹⁾
(kg per capita)



⁽¹⁾ No 2006 data for EU-28.

Source: Eurostat (online data code: [tsdpc210](#))

In the long term, the amount of waste excluding major mineral wastes generated per inhabitant in the EU-28 declined at an annual average rate of 0.7 %, from 1.9 tonnes in 2004 to 1.8 tonnes in 2012. This reflects reductions in almost two-thirds of the Member States, with particularly strong declines in Cyprus and Croatia. In the short term, the indicator has started growing at a rate of 0.4 % per year, from 1.8 tonnes per capita in 2008.

The EU experienced a substantial drop in the amount of waste excluding major mineral wastes between 2006 and 2008 (6.5 %). This was most likely affected by the slowdown in economic activity during the economic crises. However, the falling trend in the period between 2006 and 2010 was reversed in 2012, with an increase of 3.3 %.

How waste excluding major mineral wastes varies across Member States

At Member State level, in 2012 the generation of waste excluding major mineral wastes varied by a factor of 13, from 0.6 tonnes per capita in Croatia to 8.6 tonnes per capita in Estonia. The exceptionally high rate in Estonia is mainly due to large amounts of waste coming from the energy and refinery sector as a result of enrichment and incineration of oil shale. This also explains the high amount of hazardous waste generated in Estonia (see the 'hazardous waste' indicator on p. 89). In addition, considerable amounts of wood waste contribute to the high figures in Finland, Austria and Sweden. Generation of waste excluding major mineral wastes decreased in 17 Member States between 2004 and 2012, with the strongest decreases occurring in Cyprus (63 %), Croatia (45 %) and Austria and Hungary (39 % each).



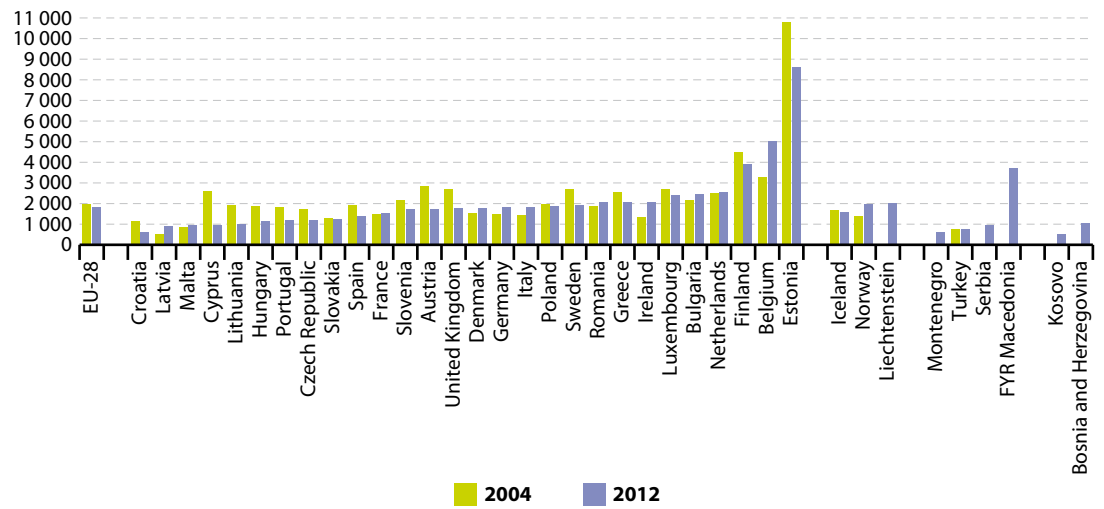
Long term
(since 2004)



Short term
(since 2008)



Figure 2.9: Generation of waste excluding major mineral wastes, by country, 2004 and 2012 (kg per capita)



Source: Eurostat (online data code: [tsdpc210](#))

What lies beneath this indicator?

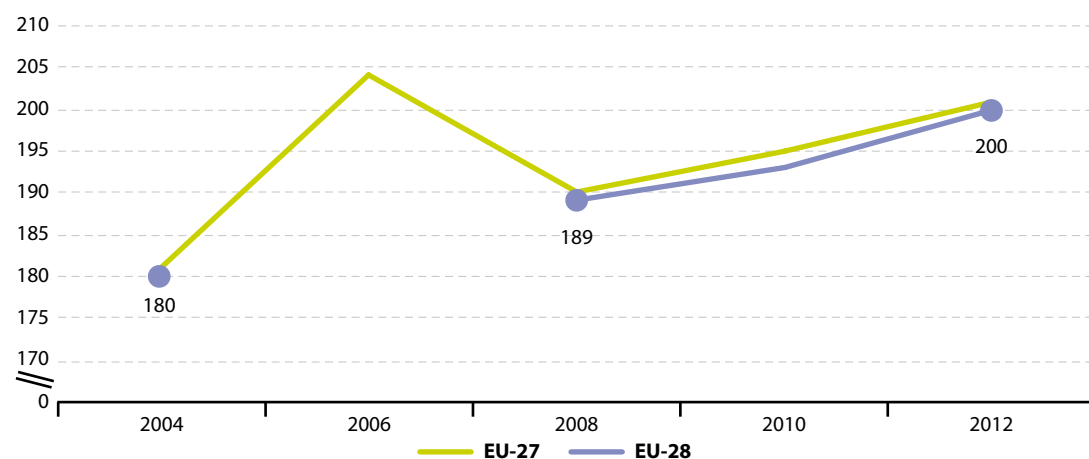
Waste excluding major mineral wastes is an important indicator for environmental policies because it covers most of the waste for which reduction is an important environmental objective. Although the indicator focuses on waste excluding major mineral wastes, it is considered to reflect the general trend in waste generation more accurately and in a more comparable way than the total including mineral waste. This is because of the strong fluctuations in waste generation in the mining and construction sectors, and their limited data quality and comparability. Moreover, for a considerable share of mineral wastes, prevention is not the main environmental objective.

This indicator presents the amount of waste excluding major mineral wastes generated, expressed in kilograms per capita and per year. The indicator covers hazardous and non-hazardous waste from all economic sectors, administrations and households, including waste from waste treatment (secondary waste) but excluding major mineral waste, contaminated soils and dredging spoil.

Hazardous waste generation

Output of hazardous waste increased by 11.1 % in the EU-28 over the long term between 2004 and 2012 and by 5.8 % over the short term between 2008 and 2012. Manufacturing and water supply, waste management and remediation activities were the two main sources of hazardous waste in 2012.

Figure 2.10: Generation of hazardous waste, 2004–2012
(kg per capita)



Source: Eurostat (online data code: [tsdpc250](#))

In the long term, between 2004 and 2012, the amount of hazardous waste generated by households and all sectors of the economy rose by 1.3 % per year on average, from 180 to 200 kg per capita. In the short term, between 2008 and 2012, the generation of hazardous waste per capita in the EU-28 has been increasing at the slightly higher rate of 1.4 % per year.

The period between 2004 and 2006 witnessed the largest increase in hazardous output (12.7 %). This trend was diverted during the height of the economic crises in 2008 when EU-27 hazardous waste generation was reduced by 6.9 %. However, this was most likely the result of reduced economic activity ⁽¹⁹⁾, as suggested by its return to growth in the following years with a rise of 2.6 % in 2010 and 3.1 % in 2012. In 2012 the amount of hazardous output generated per capita almost reached 2006 levels with 200 kg per capita in the EU-28 and 201 kg in the EU-27, respectively.

The manufacturing industry as well as water supply, sewage, waste management and remediation account for more than 90 % of hazardous waste generated

In 2012, the manufacturing industry accounted for more than a quarter of the hazardous waste generated in the EU (25.5 %). Water supply, sewerage, waste management and remediation activities were responsible for the second largest share of hazardous waste at 20.5 %. These were followed by the construction (16 %), mining and quarrying (13.5 %) and services sectors, excluding wholesale of waste and scrap (11 %).

Substantial increase in cross-border trade of hazardous waste

In recent years there has been a substantial growth in cross-border trade of waste, including hazardous waste. Exports of hazardous waste have more than doubled between 2000 and 2009. This rise has been driven by differences in national capacities to handle waste and variance in the costs of recovery or disposal in different locations ⁽²⁰⁾. Export of hazardous waste from the EU to non-OECD countries for recovery is

⁽¹⁹⁾ European Environment Agency (2012), *Movement of waste across the EU's external and internal borders*, p. 11.

⁽²⁰⁾ *Id.*, p. 5.



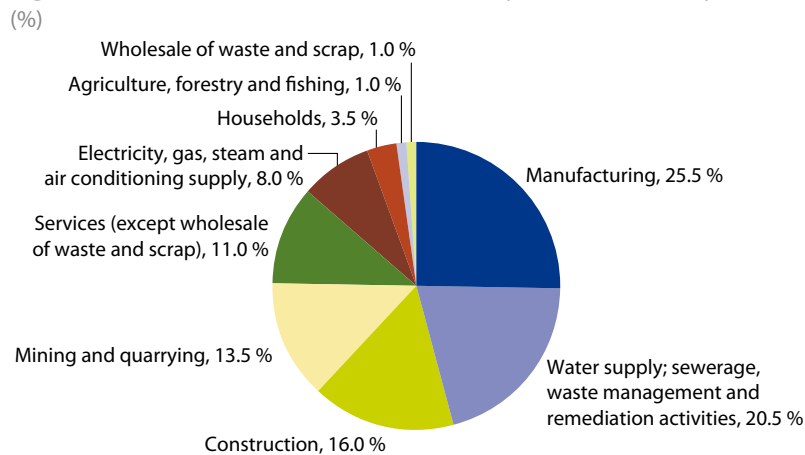
Long term
(since 2004)



Short term
(since 2008)

prohibited as these countries do not have the capacity to manage this type of waste flows. Although most hazardous waste exports have stayed within EU borders (97% in 2009), evidence is growing that a substantial share of Europe's electronic waste, which is normally classified as hazardous, is being exported to developing countries in West Africa and Asia disguised as used goods to avoid the costs associated with legitimate recycling ⁽²¹⁾. Treatment in these countries usually occurs in the informal sector, causing significant environmental pollution and health risks for local populations.

Figure 2.11: Generation of hazardous waste by economic activity, EU-28, 2012



Source: Eurostat (online data code: [tsdpc250](#))

Box 2.1: Hazardous waste

When mismanaged, hazardous waste can cause great harm to the environment and human health. As a result, this waste flow is subject to a stricter control regime, from the point of its production, to its movement, management and recovery or disposal. The sound management and control of hazardous waste is laid down in particular in Articles 17 to 20 of [Directive 2008/98/EC](#), which provides additional labelling, record keeping, monitoring and control obligations from the 'cradle to the grave' (from the waste producer to the final disposal or recovery). The Directive also bans the mixing of hazardous wastes in order to

prevent risks for the environment and human health.

The classification into hazardous and non-hazardous waste is based on the system for the classification and labelling of dangerous substances and preparations, which ensures the application of similar principles over their whole life cycle. The properties which render waste hazardous are laid down in Annex III of Directive 2008/98/EC, as last amended by [Commission Regulation \(EU\) No 1357/2014](#) of 18 December 2014, and are further specified by the Decision [2000/532/EC](#) establishing a 'List of Wastes' as last amended by Decision [2014/955/EU](#).

What lies beneath this indicator?

Hazardous waste poses a great threat to human well-being and the environment. The sources of hazardous waste are manifold and range from household wastes (such as lead acid batteries or fluorescent tubes) to industrial wastes (such as chemical wastes, acid, alkaline and saline wastes, combustion wastes and contaminated soils). The indicator 'generation of hazardous waste' presents the amount of hazardous waste generated in the EU and per Member State, expressed in kilograms per inhabitant and year. Hazardous waste covers all economic sectors and households, including waste treatment (secondary waste). The indicator comprises all waste categories that are classified as hazardous according to the definition of the Framework Directive on waste ⁽²²⁾ and, accordingly, excludes radioactive waste.

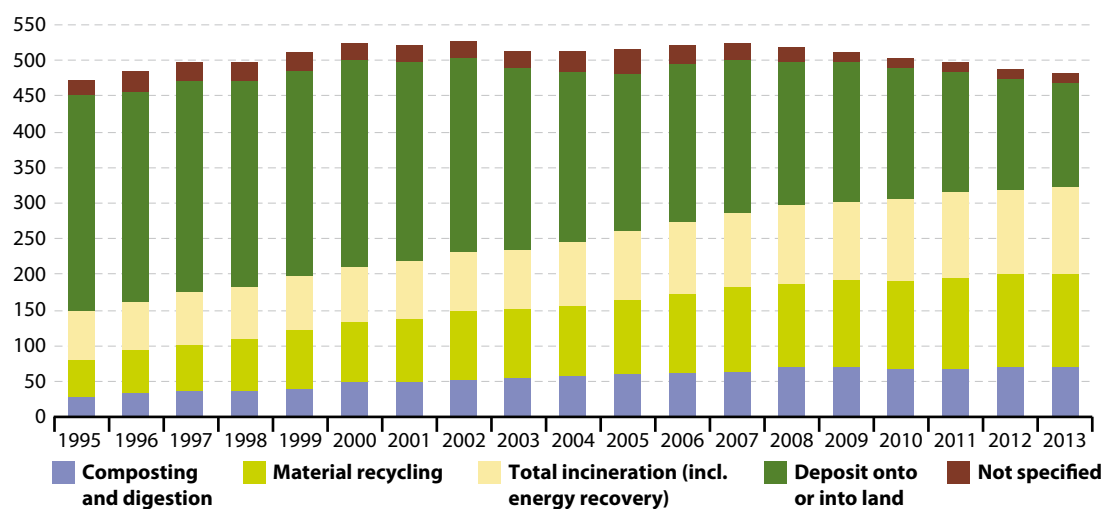
⁽²¹⁾ European Environment Agency (2012), *Movement of waste across the EU's external and internal borders*, p. 6 and p. 12.

⁽²²⁾ Directive 2008/98/EC of the European Parliament and of the Council on waste.

Recycled and composted municipal waste

The EU recovered and reprocessed 52 % more waste through recycling and composting in the long term, between 2000 and 2013. In the short term, the share of recycling and composting increased from 36.3 % in 2008 to 41.8 % in 2013. The shift away from disposal was driven by EU and national strategies for sustainable waste management.

Figure 2.12: Municipal waste generation and treatment, by type of treatment method, EU-28, 1995–2013 ⁽¹⁾
(kg per capita)



⁽¹⁾ Data for 1995–2006 refer to EU-27, data from 2007 onwards refer to EU-28.

Source: Eurostat (online data code: [tsdpc240](#))

Waste management in the EU improved significantly between 1995 and 2013. Not only did the amount of waste disposed of at landfill sites fall, but the amount of waste recovered and reprocessed through recycling and composting or transformed into energy through incineration also rose.



Long term
(since 2000)



Short term
(since 2008)

Box 2.2: A hierarchy of waste prevention and management

The revised EU Waste Framework Directive establishes a waste hierarchy, which sets out in order of priority how waste prevention and management should be addressed in legislation and policy. The top priority is to prevent and minimise waste, followed by treatment methods such as reuse and recycling, energy recovery through incineration and, last, disposal in the form of landfilling ⁽²³⁾.

In this respect, recycling and composting are the most environmentally friendly ways of treating waste. Recycling, for example, saves valuable resources (such as metals or glass) that can be reprocessed into new goods. Composting biodegradable waste produces valuable fertilisers for agricultural

production and is also useful for other purposes such as landscaping, improving soil structure, controlling erosion and others.

Overall, recycling and composting reduce the amount of waste that needs to be disposed of, and reduce demand for raw materials, leading to a reduction in primary resource extraction.

Waste incineration might reduce the amount of waste that needs to be disposed of, but valuable resources can also be lost in the process. Landfilling too leads to loss of valuable resources and, in addition, poses the danger of air, surface water bodies and groundwater pollution.

⁽²³⁾ Directive 2008/98/EC of the European Parliament and of the Council on Waste.



In the long term, the average amount of municipal waste generated per EU inhabitant fell from 1.43 kg per day in 2000 to 1.32 kg per day in 2013. Between 1995 and 2000 the amount of total municipal waste generated annually in the EU was gradually increasing, from 455 to 499 kg per inhabitant. In the following period, between 2000 and 2007, total EU municipal waste was more or less stable, fluctuating within the range of 514 and 523 kg per inhabitant. It was only in the short term, between 2008 and 2013, coinciding with the onset and aftermath of the economic and financial crises, that the total amount of generated municipal waste started to fall steadily, reaching 481 kg per person in 2013.

In 1995, 64% of municipal waste generated in the EU-28 — originating from everyday household waste and other sources such as commerce, offices and public institutions — was disposed at landfill sites. In 2000, more than half of municipal waste was still being landfilled (55.1%). But by 2013 there had been a clear shift towards recycling and composting (41.8%) and incineration with energy recovery (25.4%). Waste prevention — the top aim of European policy's 'waste hierarchy' — also seems to have been taken up across Member States, with 18 out of 31 countries having adopted waste prevention programmes by the end of 2013 as required by the EU Waste Framework Directive ⁽²⁴⁾. The observed improvements in waste management have been to a large extent driven by EU and national strategies prioritising efficient waste management through various instruments. These include setting targets for recycling and recovery, imposition of taxes and other restrictions on landfill waste ⁽²⁵⁾. The trend towards sustainable municipal waste management has also been reinforced by some external factors such as the increase in urbanisation and population densities and the rise in prices of raw material, recycled materials and fuels ⁽²⁶⁾.

Box 2.3: A European approach towards more sustainable waste management

The Thematic Strategy on Waste Prevention and Recycling ⁽²⁷⁾ as an overarching framework and accompanying Directives on Landfill ⁽²⁸⁾ and Incineration ⁽²⁹⁾ are considered the main pillars of EU waste policy.

The revised EU Waste Framework Directive sets a quantitative target for increasing recycling rates of households. It calls on Member States to recycle or prepare for reuse by 2020 at least 50% by weight of household and similar waste such as paper, metal, plastic and glass, and at least 70% by weight of non-hazardous construction and demolition waste ⁽³⁰⁾. In addition, the Directive provides a general waste

management framework, which prioritises waste prevention as the most effective way of decoupling waste generation from economic growth and environmental impacts.

To minimise the environmental pressures from municipal waste, the EU Directive on Landfill requires Member States to reduce the amount of heavily polluting biodegradable municipal waste sent to landfill to 50% of the total amount (by weight) of biodegradable municipal waste produced in 1995 or the latest year before 1995 for which standardised Eurostat data is available by 2009 and to 35% by 2016 ⁽³¹⁾.

How municipal waste generation and treatment vary between Member States

The amount of total municipal waste treatment in the EU varied from 747 kg per inhabitant in Denmark to 220 kg per inhabitant in Romania in 2013. Despite the large body of EU waste legislation, which has been in place for about 20 years, the dynamics of waste treatment vary greatly among Member States. Whereas Romania landfills more than 96.8% of its municipal waste and Malta, Croatia, Latvia and Greece more than 80%, Germany, Sweden and Belgium dispose of less than 1% in this way. In large part, the vast differences in countries' performance can be explained by their different starting positions, the existence of derogation periods for some, and the fact that some had started increasing municipal waste recycling long before they were required to by EU policies ⁽³²⁾. However, formal transposition of EU law into national legislation is often not sufficient for achieving EU's minimum target levels on waste management. In general, better

⁽²⁴⁾ European Environment Agency (2014), *Waste prevention in Europe — the status in 2013*, p. 30.

⁽²⁵⁾ European Environment Agency (2012), *Material resource and waste — 2012 update: The European Environment State and Outlook 2010*, p. 24.

⁽²⁶⁾ European Environment Agency (2012), *Consumption and the environment — 2012 Update*, p. 25.

⁽²⁷⁾ European Commission Communication (2005), *Taking sustainable use of resources forward: A Thematic Strategy on the prevention and recycling of waste*, COM (2005) 666.

⁽²⁸⁾ Council Directive 1999/31/EC on the landfill of waste.

⁽²⁹⁾ Directive 2000/76/EC on the incineration of waste.

⁽³⁰⁾ Directive 2008/98/EC of the European Parliament and of the Council on Waste, p. 13.

⁽³¹⁾ Council Directive 1999/31/EC on the landfill of waste.

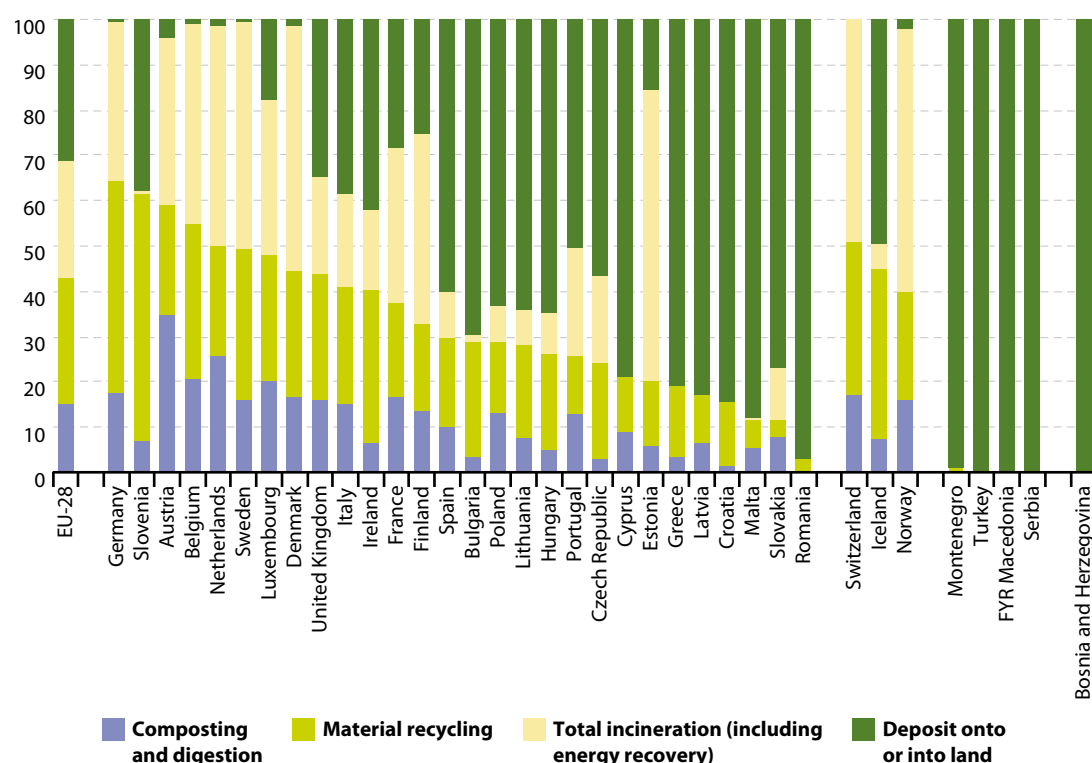
⁽³²⁾ European Environment Agency (2013), *Managing municipal solid waste — a review of achievements in 32 European countries*, p. 31.

performing countries in terms of landfilling and recycling tend to have a wider range of instruments and measures in place. These include active recycling policies in combination with 'landfill bans on biodegradable waste or non-pre-treated municipal waste; mandatory separate collection of municipal waste types, especially bio wastes; and economic instruments such as landfill and incineration taxes and waste collection fees that strongly encourage recycling'⁽³³⁾.

Member States with dedicated and diverse policy instruments and strict regulations on waste management, such as Sweden and the Netherlands, deliver relatively high recycling (including composting) and incineration rates, both above 45%. The large discrepancies across Member States reflect some gaps in the implementation of EU waste objectives into national legislation. These gaps are due to a series of technical, market or administrative barriers⁽³⁴⁾.

Figure 2.13: Municipal waste treatment, by type of treatment method, by country, 2013 (1)

(%)



(1) Estimated data for several countries for different treatment methods (too numerous to be listed).

Source: Eurostat (online data code: tsdpc240)

EU trends in municipal waste treatment compared with other countries in the world

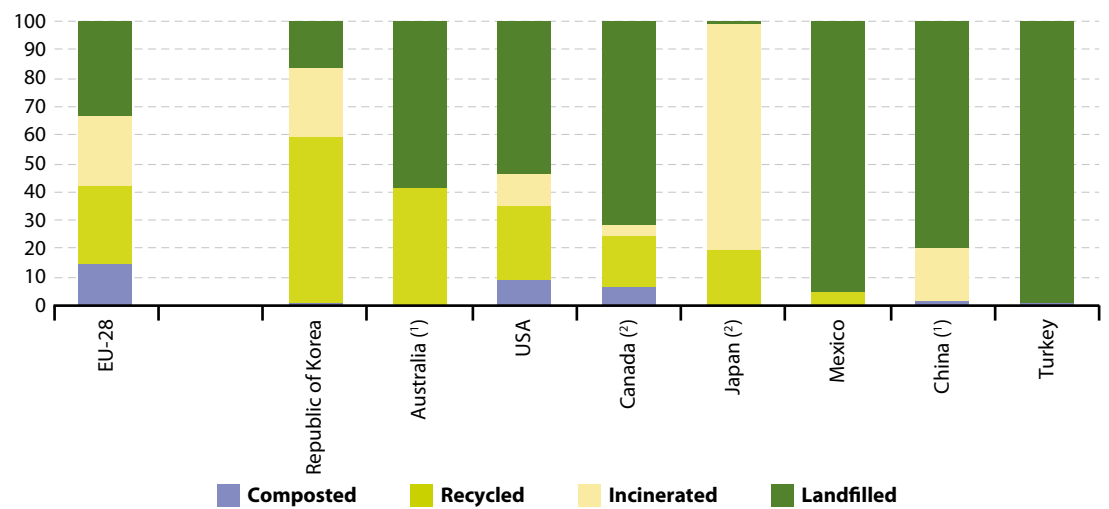
At the international level⁽³⁵⁾, Europe is outperforming countries such as the United States and Japan with regard to shifting waste management practices away from landfilling and incineration towards more environmentally friendly ones such as recycling. More than 40% of Europe's waste is recycled or composted. The only country to surpass Europe is the Republic of Korea with almost 60% of its municipal waste being treated through recycling or composting.

⁽³³⁾ European Environment Agency (2015), *The European Environment: State and Outlook 2015. Cross-country comparison*, p. 51.

⁽³⁴⁾ European Commission DG Environment (2011), *Implementing EU Waste Legislation for Green Growth*, pp. 11 and 20.

⁽³⁵⁾ The comparison is based on a selection of G20 countries in comparison to Eurostat EU-27 data.

Figure 2.14: Municipal waste treatment, by type of treatment method, by country, 2012 (%)



(1) 2009 data.

(2) 2010 data.

Source: OECD Statistics, Environment, Waste, Eurostat (online data code: [tsdpc240](#))

What lies beneath this indicator?

Waste has become increasingly recognised as an important material resource and potential energy source. In this respect, it can generate economic value and help to decouple resource use from economic growth⁽³⁶⁾. Environmentally friendly ways of waste management such as recycling and composting reduce negative environmental impacts on the environment and human health. Increasing the proportion of waste recycled and composted reduces the amount to be disposed of. It also reduces primary resource extraction.

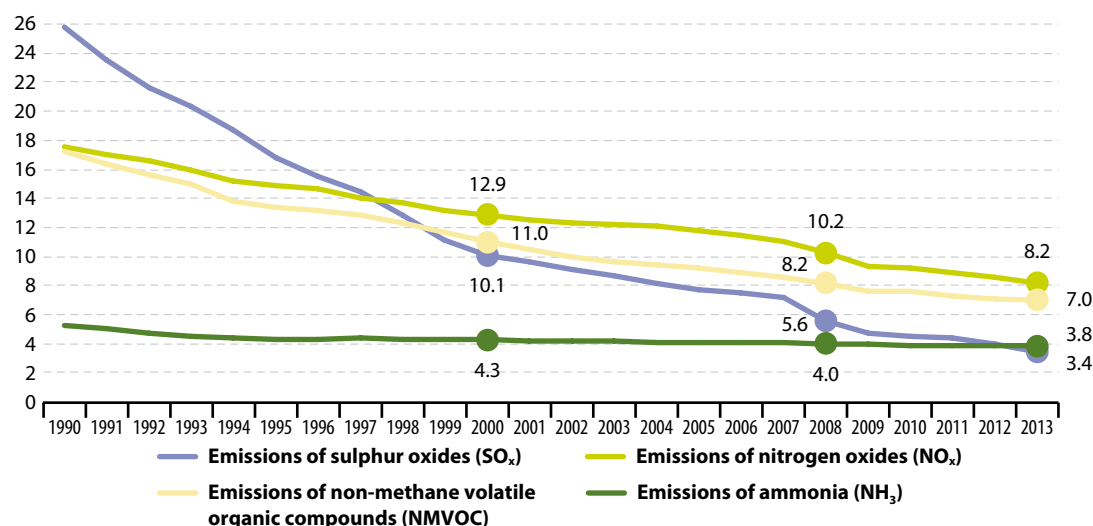
The municipal waste treatment indicator presents the amount of municipal waste recovered through recycling and composting as well as the amount disposed of through landfilling and through incineration.

⁽³⁶⁾ European Environment Agency (2012), *Consumption and the Environment — 2012 update*, p. 6.

Atmospheric emissions

Pollution pressure from emissions of SO_x , NMVOC, NO_x and NH_3 fell substantially in the long term between 2000 and 2012, with a strong decline occurring also in the short term from 2008 to 2013. Regulatory actions, in particular emission ceiling targets, contributed to the decline.

Figure 2.15: Atmospheric emissions, EU-28, 1990–2013 (million tonnes)



Source: European Environment Agency (online data codes: [tsdpc260](#), [tsdpc270](#), [tsdpc280](#) and [tsdpc290](#))

Overall, in the long term between 2000 and 2013 man-made emissions of ammonia (NH_3), sulphur oxides (SO_x), nitrogen oxides (NO_x) and non-methane volatile organic compounds (NMVOC), which lead to acidification, eutrophication and ground-level ozone, declined in the EU. A strong reduction in emissions occurred in the short-term period between 2008 and 2013, with average annual reduction rates ranging from 9.2% for SO_x to 0.7% for NH_3 . This trend of declining air pollution can be traced to 1990, when air pollution was between 1.4 and 7.5 times (in the case of SO_x emissions) higher than today. Reductions in emission of certain pollutants over the past decades have reduced the pressure of harmful pollutants on human health and the environment. However, the complex links between emissions and air quality means this effect might not always translate into corresponding improvement in the exposure of ecosystems to these pollutants⁽³⁷⁾.

A recent analysis suggests air pollution and its associated public health impacts will fall by 2020 across Europe as a result of improved regulatory actions. This might in turn lead to a reduction in public health costs⁽³⁸⁾. However, according to the latest conclusions of the World Health Organisation (WHO), air pollution continues to cause serious health impacts in Europe, contributing to much of the burden of lung cancer and respiratory and cardiovascular diseases⁽³⁹⁾⁽⁴⁰⁾. The WHO review indicates that large parts of the population are still being affected by less severe health impacts, such as continuous exposure in major cities. In this regard, the overall costs of the less severe health impacts may therefore be higher than the sum of the most severe effects.

⁽³⁷⁾ European Environment Agency (2015), *The European Environment — State and Outlook 2015*, Synthesis Report.

⁽³⁸⁾ J. Brandt, J., Silver, J. D., Christensen, J. H. et al. (2013), *Assessment of past, present and future health-cost externalities of air pollution in Europe and the contribution from international ship traffic using the EVA model system*, Atmospheric Chemistry and Physics Discussions, 13: 5923–5959.

⁽³⁹⁾ WHO (2013), *Review of evidence on health aspects of air pollution — REVIHAAP Project Technical report*, World Health Organization, Regional Office for Europe, Copenhagen, Denmark.

⁽⁴⁰⁾ IARC (2013), *Outdoor air pollution a leading environmental cause of cancer deaths*, Press Release No 221, 17 October 2013, International Agency for Research on Cancer, World Health Organization, Lyon, France.



Long term
(since 2000)



Short term
(since 2008)



Box 2.4: European legislation for air quality and emissions reductions

Overall, the EU Sustainable Development Strategy under the 'environment protection' key objective aims to 'prevent and reduce environmental pollution'.

More specifically, European legislation on atmospheric pollution has applied a twin-track approach of establishing air quality objectives together with measures to reduce emissions. The most prominent instruments are the EU Air Quality Directive⁽⁴¹⁾ and the thematic strategy on air pollution⁽⁴²⁾. They

include objectives and targets for health and environment up to 2020 as well as focusing on the most harmful pollutants and the sectors and policies that have the biggest impact⁽⁴³⁾. In this regard the National Emission Ceilings Directive (NECD) sets upper limits for each Member State⁽⁴⁴⁾ for the total emissions by 2010 of the four pollutants responsible for acidification, eutrophication and ground-level ozone (SO₂, NO_x, NMVOC and NH₃).

EU remains within the emission ceilings for the three main air pollutants

In 2013, overall EU-27 emission levels for SO_x and NMVOC were lower than the EU-27 emission ceilings outlined in the National Emission Ceilings Directive (NECD), Annex II⁽⁴⁵⁾⁽⁴⁶⁾⁽⁴⁷⁾. Based on 2013 provisional data, NO_x emissions were also slightly below the EU-27 target (by 2.5%), specified in Annex II to the NECD⁽⁴⁸⁾. For NH₃ emissions, for which no EU-27 emission ceiling target is defined in Annex II to the NEC, levels are below the aggregated emission ceiling of EU Member States given in Annex I.

At Member State level, 10 countries reported emissions above the ceiling of at least one pollutant based on the provisional 2013 data. However, all Member States reported declining NO_x emissions and more than three-quarters reported declining NMVOC and SO₂ emissions between 2010 and 2013. Less than two-thirds had reduced NH₃ emissions in the same period⁽⁴⁹⁾.

SO_x experienced major reductions due to cleaner energy sources

Of the four pollutants monitored here, SO_x emissions, which affect air, soil and water quality, decreased the most in the EU-28. Between 2000 and 2013 they fell by 66%, equal to a reduction of 8% per year. Energy production and use, in particular through burning fuel in public power and heat-generating plants, is the main source of SO_x emissions. It accounted for 75% of total SO_x emissions in 2013. Between 2000 and 2013 emissions from energy-related sources fell by almost 70%, due to a combination of factors such as the economic crisis and its impacts on energy demand, increased uptake of renewable energy, a switch away from high sulphur solid and liquid fuels to low sulphur fuels and the closure of certain power plants⁽⁵⁰⁾⁽⁵¹⁾.

Moreover, in the previous decade significant structural changes in eastern EU Member States since the early 1990s have contributed to lower SO_x emissions. In recent years, however, high energy prices have led power plants in some countries to start increasing coal use again⁽⁵²⁾.

⁽⁴¹⁾ Directive 2008/50/EC on ambient air quality and cleaner air for Europe.

⁽⁴²⁾ For analyses of trends in emissions of, and exposure to, particulate matter, see the chapters on 'public health' and 'sustainable transport'.

⁽⁴³⁾ Commission Communication, *Thematic Strategy on air pollution*, COM (2005) 446.

⁽⁴⁴⁾ Directive 2001/81/EC on national emission ceilings for certain atmospheric pollutants.

⁽⁴⁵⁾ European Environment Agency (2015), *NEC Directive status report 2014, Reporting by the Member States under Directive 2001/81/EC of the European Parliament and of the Council of 23 October 2001 on national emission ceilings for certain atmospheric pollutants*, EEA Technical report No 7/2015, p. 8; 2013 date are provisional.

⁽⁴⁶⁾ Annexes I and II to the NECD define aggregated emission ceilings for the EU-27. The Annex I EU-27 ceilings represent the aggregation of individual Member State ceilings defined in that annex. Annex II emission ceilings for the EU are stricter than the aggregated Member State emission ceilings given in NECD Annex I. There is no ceiling for NH₃ in Annex II of the NECD. Emission ceilings given in Annex II to the NECD are designed with the aim of attaining the interim environmental objectives set out in Article 5 of the NECD by 2010.

⁽⁴⁷⁾ 2013 provisional data are given. This is because at the end of 2014 Member States were required to report final emission data for the year 2012, and provisional estimates of emissions for 2013.

⁽⁴⁸⁾ European Environment Agency (2015), *NEC Directive status report 2014, Reporting by the Member States under Directive 2001/81/EC of the European Parliament and of the Council of 23 October 2001 on national emission ceilings for certain atmospheric pollutants*, EEA Technical report No 7/2015, pp. 9 and 16; 2013 date are provisional.

⁽⁴⁹⁾ *Id.*, pp. 17–18.

⁽⁵⁰⁾ European Environment Agency (2013), *European Union emission inventory report 1990–2011 under the Convention on Long-range Transboundary Air Pollution (LRTAP)*, EEA Technical report No 10/2013, p. 13.

⁽⁵¹⁾ European Environment Agency (2013), *Reducing air pollution from electricity-generating large combustion plants in the European Union*, EEA Technical report No 9/2013, pp. 5, 35–36.

⁽⁵²⁾ European Environment Agency (2010), *The European environment — state and outlook 2010: Air pollution*, European Environment Agency Copenhagen, p. 24.

Technology shifts and comprehensive environment legislation are mainly responsible for NO_x emission reductions

EU-28 emissions of nitrogen oxides mainly stem from transport and energy production and use, where NO_x is emitted during fuel combustion. In 2013 these two sources accounted for about 73 % of total NO_x emissions. The 3.4 % annual decline between 2000 and 2013, from 12.9 million tonnes to 8 million tonnes, was mainly driven by a 44.5 % reduction in transport emissions. The decline in the energy sector (energy use in industry and energy production) was less pronounced, at 34 % for the long-term period between 2000 and 2013. Overall, EU legislative instruments most relevant for NO_x emission reductions relate to emissions from motor vehicles (Euro emission standards) and fuel combustion in industry and power production ⁽⁵³⁾. In the transport sector in particular, reductions have been achieved mainly through legislative measures requiring abatement of vehicle tailpipe emissions ⁽⁵⁴⁾, although these standards have not delivered the scale of reduction originally anticipated. However, a considerable fraction of the vehicle fleet is still of conventional (pre-Euro) technology ⁽⁵⁵⁾. In the energy-related sources, measures such as combustion modification technologies, implementation of flue-gas abatement techniques and fuel-switching from coal to natural gas have helped reduce NO_x emissions ⁽⁵⁶⁾.

NMVOC reductions mainly due to stricter regulations and control of solvent use and emissions

Between 2000 and 2013 EU-28 emissions of NMVOCs, which are important ground-level ozone precursors, fell by 3.4 % per year, from 11 million tonnes in 2000 to 7 million tonnes in 2013. The main contributor to NMVOC emission reductions over this period was transport, with emissions falling by 73 %. The 'industrial processes and product use' sector remained the main source of NMVOC emissions. It accounted for about 50 % of total NMVOC emissions in 2013, after declining moderately by 23 % between 2000 and 2013. Overall, the decline in EU NMVOC emissions was mainly a result of the introduction of vehicle catalytic converters and legislative measures limiting solvent use and emissions in non-combustion sectors ⁽⁵⁷⁾.

Changes in livestock numbers and use of nitrogen fertilisers drive NH₃ reductions

Of the four air pollutants monitored here, EU-28 emissions of NH₃, which contribute to acidification and eutrophication and affect soil and water quality, declined the least. On average they fell by 0.9 % per year ⁽⁵⁸⁾, from 4.3 million tonnes in 2000 to 3.9 million tonnes in 2013. The transport and industrial sectors showed the biggest reductions, with emissions falling by 50 % and 17 % between 2000 and 2013, respectively. However, together they accounted for only 2.9 % of total NH₃ emissions in 2013. The vast majority of ammonia emissions come from activities such as manure storage, slurry spreading and use of synthetic nitrogenous fertilisers in the agricultural sector. Overall the agriculture sector was responsible for about 93 % of total NH₃ emissions in 2013. The average annual decline of almost 1 % between 2000 and 2013 in agricultural NH₃ emissions was primarily due to reduced livestock numbers across Europe (especially cattle), changes in the handling and management of organic manures and the decreased use of on nitrogenous fertilisers ⁽⁵⁹⁾. However, the large reductions achieved in the agricultural sector since 1990 (almost 29 %) have been slightly offset by the increase in emissions recorded over the same period in the road transport sector, and to a lesser extent, the 'solvent and product use' and 'non-road transport' sectors ⁽⁶⁰⁾.

⁽⁵³⁾ European Environment Agency (2012), *Air quality in Europe — 2012 report*, EEA Report No 4/2012, p. 62.

⁽⁵⁴⁾ European Environment Agency, (2013), *European Union emission inventory report 1990–2011 under the Convention on Long-range Transboundary Air Pollution (LRTAP)*, EEA Technical report No 10/2013, p. 13.

⁽⁵⁵⁾ European Environment Agency (2013), *Proportion of vehicle fleet meeting certain emission standards (TERM 034)*, Assessment published in March 2013, accessed on 20 June 2013.

⁽⁵⁶⁾ European Environment Agency (2013), *European Union emission inventory report 1990–2011 under the Convention on Long-range Transboundary Air Pollution (LRTAP)*, EEA Technical report No 10/2013, p. 13.

⁽⁵⁷⁾ European Environment Agency (2014), *European Union emission inventory report 1990–2012 under the Convention on Long-range Transboundary Air Pollution (LRTAP)*, EEA Technical report No 12/2014, p. 51.

⁽⁵⁸⁾ The majority of changes observed in the four indicators analysed here are clearly favourable. Although the long-term evaluation of NH₃ emissions would only be 'moderately favourable' (see the description of the evaluation method in the introductory chapter), the combined evaluation of all four atmospheric emissions indicators can be considered as 'clearly favourable'.

⁽⁵⁹⁾ European Environment Agency (2013), *Ammonia (NH₃) emissions (APE 003)*, Assessment published in January 2014, accessed on 16 March 2015.

⁽⁶⁰⁾ Ibid.



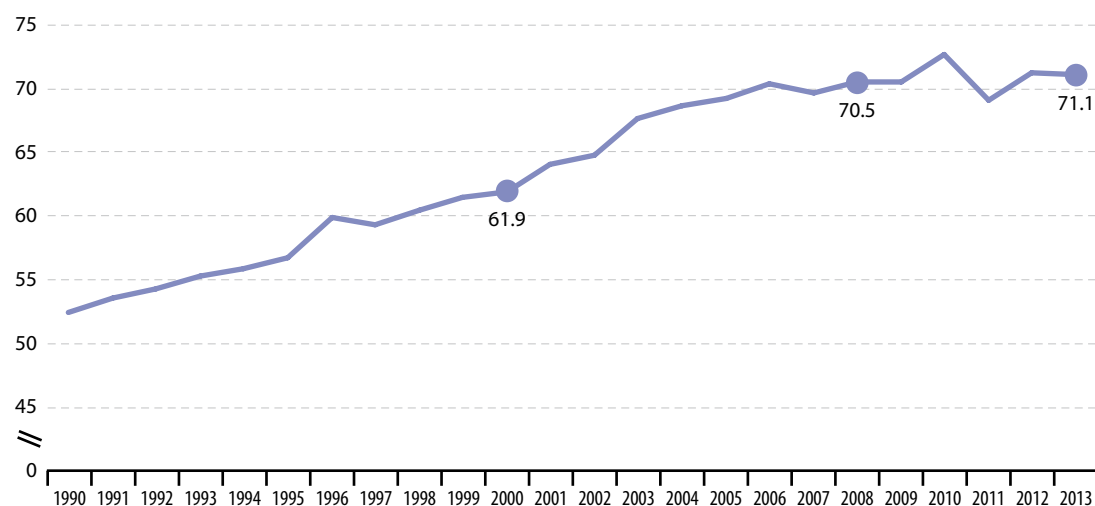
What lies beneath this indicator?

Air pollution, covering man-made atmospheric emissions of sulphur oxides (SO_x), nitrogen oxides (NO_x), non-methane volatile compounds (NMVOC) and ammonia (NH_3), damages human health and the environment. Effects on human health can range from minor respiratory irritation to cardiovascular diseases and premature death. Adverse environmental impacts include eutrophication and acidification of ecosystems, damage to ecosystems and crops through exposure to ozone, and damage to materials and cultural heritage, such as monuments, due to exposure to acidifying pollutants and ozone. Thus, the indicator measures the environmental pressures through atmospheric emissions.

Electricity consumption of households

Household electricity consumption rose by 14.8 % in the long-term period between 2000 and 2013. Growth in the short term has been much more limited, rising by only 0.9 % since 2008. A rising number of smaller households contributed to this trend.

Figure 2.16: Electricity consumption of households, EU-28, 1990–2013 (million tonnes of oil equivalent)



Source: Eurostat (online data code: tsdpc310)



Long term
(since 2000)



Short term
(since 2008)

In the short term between 2008 and 2013 household electricity consumption, accounting for nearly one-third of final electricity consumption in the EU, grew continuously at an average rate of 0.2 % per year. This growth rate, however, was considerably lower than the annual 1.1 % increase over the long term (2000–2013).

Since 2005, total electricity consumption of all households has increased by 2.6 %. This trend has been largely influenced by the rising number of smaller households. For example, between 2005 and 2013 the average number of people living in private households in the EU fell by 8 %, from 2.5 to 2.3, while the total number of households in the EU-28 rose by 9.8 % ⁽⁶¹⁾⁽⁶²⁾.

Increased usage and rising ownership outweigh efficiency gains

Energy efficiency is a key target under the Europe 2020 strategy. However, one factor that might undermine the success of energy efficiency measures in achieving a persistent reduction in domestic electricity consumption is the ‘rebound effect’. For example, although the energy efficiency of some home appliances has advanced significantly over the past two decades, this has also been accompanied by rising ownership and usage, driving an increase in overall electricity consumption ⁽⁶³⁾.

Slowdown in household electricity consumption

Since 1990 household electricity consumption has grown more or less steadily. However, after reaching a record high of 72.7 million tonnes of oil equivalent in 2010, EU domestic electricity use experienced two major reductions of 5 % and 0.2 % in 2011 and 2013 respectively. This sudden slowdown was largely driven by significant reductions in several Member States.

⁽⁶¹⁾ European Commission (2012), *Energy Efficiency Status Report*, p. 16.

⁽⁶²⁾ Eurostat data on number of private households by household composition (online data code: lfst_hhnhtych).

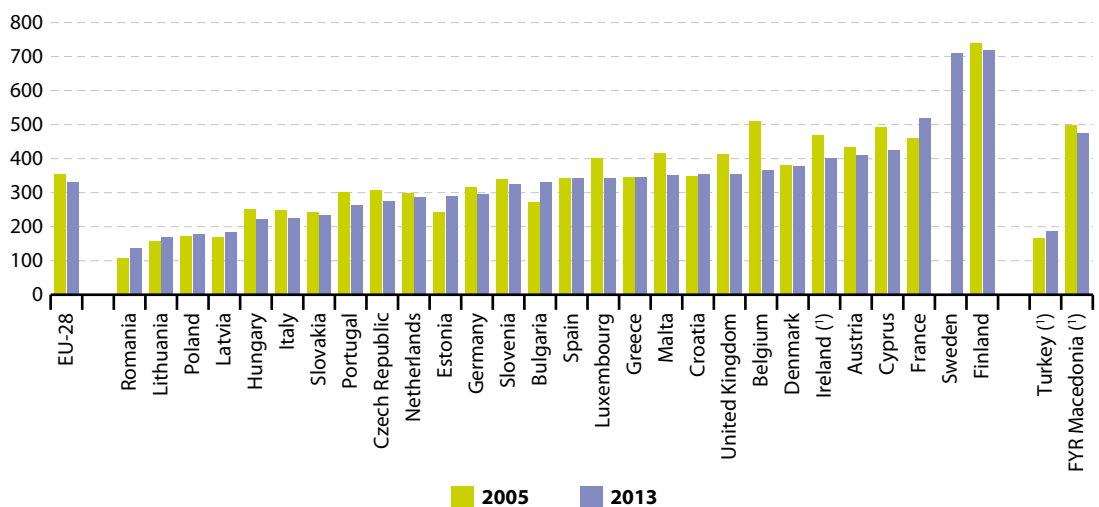
⁽⁶³⁾ European Environment Agency (2014), *Environmental Indicator Report 2014: Environmental Impacts of Production-consumption systems in Europe*, p. 137.

How electricity consumption of households varies between Member States

Overall, ten Member States experienced an increase in per household electricity consumption between 2005 and 2013. Romania, which has the lowest rate in the EU, recorded the highest increase of 27 % for this period, followed by Bulgaria with an increase of 23 %.

In 2013 large cross-country variations were still persistent, with the extreme being a five-fold difference in per household electricity consumption between Finland and Romania. These disparities are likely to be influenced by a number of socioeconomic factors including variations in disposable income and electricity prices, but also by climate, lifestyles, average household size and energy efficiency of dwellings, among others ⁽⁶⁴⁾.

Figure 2.17: Electricity consumption per household, by country, 2005 and 2013
(kg of oil equivalent per household)



⁽¹⁾ 2006 data (instead of 2005).

Source: Eurostat (online data codes: [tsdpc310](#) and [lfst_hhnhtych](#))

What lies beneath this indicator?

Electricity is an essential part of people's daily lives, enabling them to meet some of their basic human needs from lighting, cooking and heating to cleaning and entertainment. However, high and continuously growing domestic electricity consumption places pressure on the environment given that carbon-intensive sources still account for a considerable part of Europe's electricity generation mix. In this respect, measures targeting energy efficiency of everyday appliances can have the potential for achieving significant energy savings.

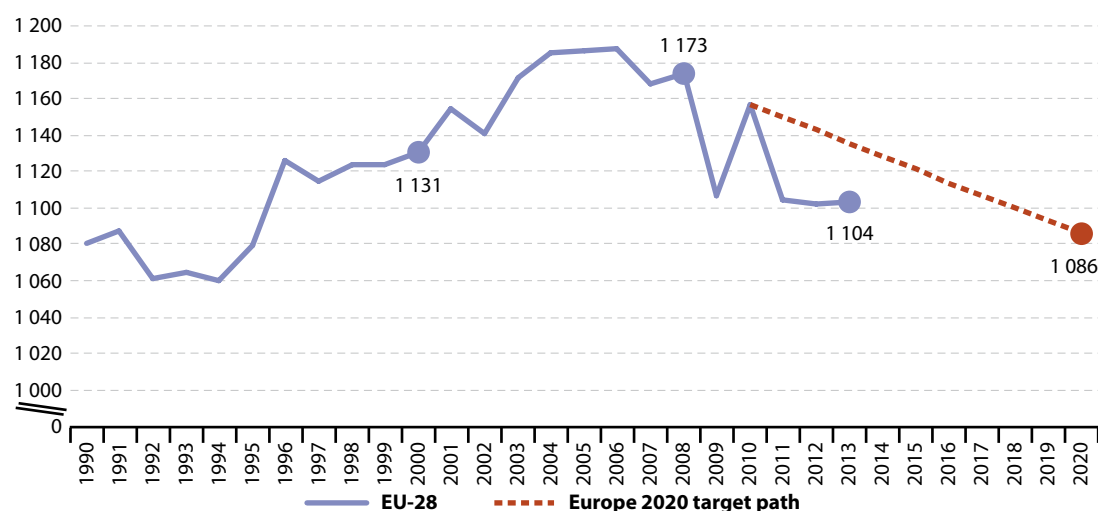
Electricity consumption of households represents the total amount of electricity consumed by all households.

⁽⁶⁴⁾ European Environment Agency (2012), *Consumption and the Environment — 2012 Update*, p. 32.

Final energy consumption

Final energy consumption in the EU has fallen by 2.4 % over the long-term period from 2000 to 2013 and by 5.9 % in the shorter term from 2008 to 2013. Progress was helped by the economic crisis, the shift from energy-intensive industries towards services and energy efficiency gains.

Figure 2.18: Final energy consumption, EU-28, 1990–2013
(million tonnes of oil equivalent)



Source: Eurostat (online data code: tsdpc320)

Between 1990 and 2013 the amount of energy consumed by all end-use sectors in the EU increased by 2.2%. This has offset the positive environmental impacts of improvements in the energy production mix and other technological developments achieved in the same period⁽⁶⁵⁾. Between 2000 and 2006 final energy consumption increased almost continuously. The year 2006, however, marked a turning point, with energy use stabilising and then falling in the years 2007, 2009, 2011 and 2012. The short-term period between 2008 and 2013 was characterised by a much stronger reduction in final energy consumption (1.2% per year) compared with the long-term period between 2000 and 2013 (0.18% per year). This trend pushed the EU further along its projected path to meeting the 20% EU energy saving target by 2020⁽⁶⁶⁾.

A number of EU policy objectives require a certain level of final energy reduction through improvements of energy efficiency and conservation.

Box 2.5: EU legislation on reductions in energy consumption

The Europe 2020 strategy includes specific headline targets for reducing greenhouse gas emissions by 20%, rising the share of renewable energy in final energy consumption to 20% and ensuring a 20% increase in energy efficiency by 2020 — the

so-called 20-20-20 targets. Moving towards these targets depends on innovations and technological improvements in the supply side of energy, but equally importantly in the promotion of sustainable energy consumption.

⁽⁶⁵⁾ European Environmental Agency (2013), *Final energy consumption by sector* (CSI 027/ENER 016).

⁽⁶⁶⁾ The EU Energy Efficiency Directive sets the objective (Article 1.1) 'to ensure the achievement of the Union's 2020 20% headline target on energy efficiency and to pave the way for further energy efficiency improvements beyond that date'. The 20% target is defined in Article 3.1(a) as a maximum of 1 483 million tonnes of oil equivalent of primary energy or 1 086 Mtoe of final energy consumption in 2020.



Long term
(since 2000)



Short term
(since 2008)

Energy demand constrained by the economic downturn, but energy efficiency policies have also played a role

After reaching a peak in 2006, final energy consumption started experiencing strong fluctuations. Not surprisingly, the strongest reduction in final energy consumption of 5.7% in 2009 coincided with the biggest contractions in the EU's GDP. This was followed by an increase in 2010 (4.6%), mainly attributed to the signs of mild recovery from the crisis between 2009 and 2010 ⁽⁶⁷⁾. However, after a second strong reduction of 4.6% in 2011, final energy consumption stabilised at a level similar to that of 2009.

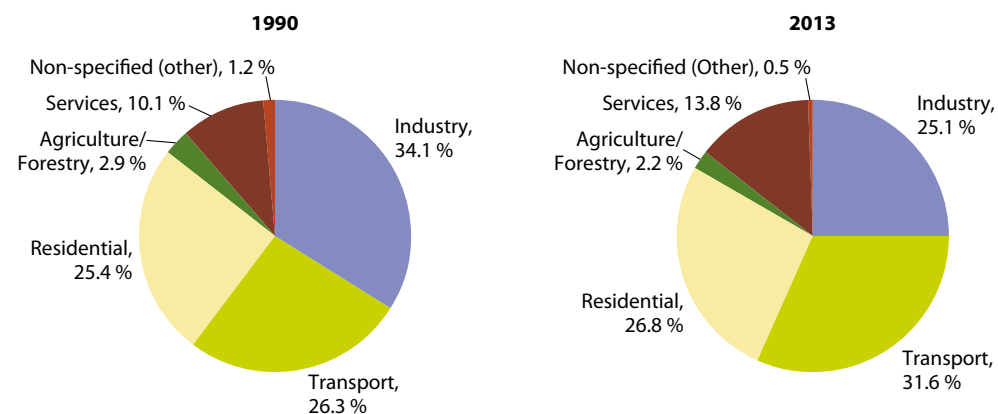
The fall in energy consumption over the past decades was partially influenced by the reduction in energy demand during the recent economic downturn, efficiency gains in the power sector and by end-consumers, and the shift from energy-intensive industries towards services with a higher value added ⁽⁶⁸⁾. Energy efficiency and conservation policies and measures also played an important role in bringing final energy consumption onto a sustainable track ⁽⁶⁹⁾.

Transport and services have driven final energy consumption over the past two decades

In 2013, as in previous years, transport continued to take the largest sectorial share in the final energy consumption mix, accounting for almost one-third, followed by households and industry amounting to 27% and 25% of final energy consumption, respectively. However, compared with the 1990s the transport and service sectors have undergone significant increases of more than 20% and 40% respectively. Increased energy use in the service sector has been attributed to the steady growth in the demand for electrical appliances (mainly information and communication technologies) and other energy-intensive technologies (air conditioning, for example) ⁽⁷⁰⁾. The increase in the transport sector, on the other hand, was mainly driven by increases in passenger and freight transport (as a result of changing lifestyles, growing demand for private car ownership and growing urban settlements), which largely offset improvements in fuel efficiency ⁽⁷¹⁾. The rapid increases in passenger aviation between 1990 and 2005 have considerably heightened transport demand. However, between 2007 and 2013 the final energy consumption in the transport sector decreased by 9% in the EU-28.

Figure 2.19: Final energy consumption, by sector, EU-28, 1990 and 2013

(%)



Source: Eurostat (online data code: [tsdpc320](#))

⁽⁶⁷⁾ European Environmental Agency (2015), *Final energy consumption by sector* (CSI 027/ENER 016).

⁽⁶⁸⁾ European Environmental Agency (2015), *Energy*, published on 18 February 2015, accessed on 17 March 2015.

⁽⁶⁹⁾ European Environmental Agency (2015), *The European Environment: State and Outlook 2015*, Synthesis Report, p. 97.

⁽⁷⁰⁾ European Environmental Agency (2015), *Final energy consumption by sector* (CSI 027/ENER 016).

⁽⁷¹⁾ Ibid.



Industrial and agricultural sectors have experienced substantial reductions since 1990

These unfavourable trends were to some extent compensated for by large reductions in energy use achieved in other areas between 1990 and 2013. Industrial and agricultural sectors reduced energy use by about 25 % each. This reflected EU Member States' gradual transition towards service-based economies, a shift towards less energy-intensive manufacturing modes and the negative impact of the financial and economic crisis ⁽⁷²⁾.

However, energy consumption should be seen within the bigger picture of other consumption patterns. The number of private cars in the EU in relation to the population (the motorisation rate) has increased in most Member States over the past few years, even during the crisis. This has also been the case for household consumption. The impact of the economic crisis on actual EU households' individual consumption was relatively moderate as government consumption at least partly counterbalanced a more significant contraction in household consumption ⁽⁷³⁾.

What lies beneath this indicator?

Our economies currently rely on energy to function and grow. However, if energy is produced and consumed in an unsustainable way, excessive use can place serious pressure on the environment. Increased energy consumption can also deplete fossil fuels and intensify EU's dependency on imported energy. One solution for relieving the environmental and economic pressures related to energy use is to reduce the overall scale of energy consumption through energy efficiency or conservation.

The indicator 'final energy consumption by sector' expresses the sum of energy supplied to the final consumer's door for all energy uses, broken down by consuming sector. It excludes deliveries to the energy transformation sector and the energy industries themselves. For example, it does not include the energy 'lost' during the transformation of fossil energy such as oil and natural gas into the electricity that is eventually delivered to the consumer.

⁽⁷²⁾ European Environmental Agency (2015), Final energy consumption by sector (CSI 027/ENER 016).

⁽⁷³⁾ Eurostat (2013), Statistics in focus 2/2013, *Analysis of EU-27 household final consumption expenditure*, p. 1.



Environmental management systems



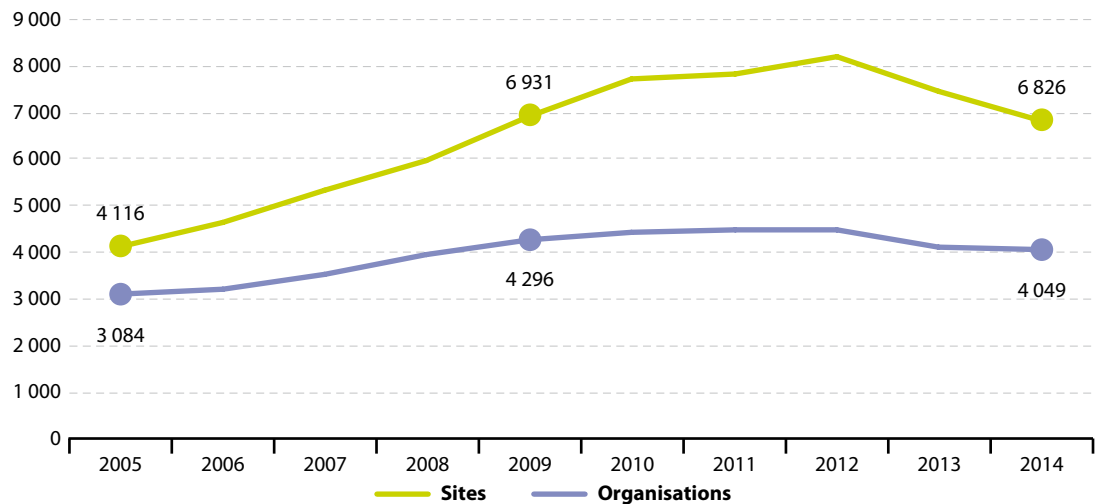
Long term
(since 2005)



Short term
(since 2009)

The number of organisations with Eco-Management and Audit Scheme (EMAS) registrations in the EU increased by 31% in long-term period between 2005 and 2014, but recorded a 5.8% decrease in the short term between 2009 and 2014. A number of European countries with relatively high numbers of EMAS registrations were the main contributors to this declining trend.

Figure 2.20: Organisations and sites with Eco-Management and Audit Scheme (EMAS) registration, EU-27, 2005–2014 (number)



Source: EU Commission, DG Environment (online data code: tsdpc410)

The number of organisations with an environmental management system, according to the ‘Eco-Management and Audit Scheme’ (EMAS) Regulation in the EU ⁽⁷⁴⁾⁽⁷⁵⁾, has increased significantly over the past years. This trend indicates growing interest from companies, public authorities and other organisations in environmental management systems. Whereas in the long term EMAS registrations by organisations in the EU have increased by 3.1% per year on average between 2005 and 2014, in the short term they have actually decreased by 1.2% per year between 2009 and 2014. The decline in several Member States with already high EMAS registration levels has been the main contributor to this trend reversal, including reductions of 90% in Finland, 74% in Sweden, 43% in Denmark and 30% in the United Kingdom. The number of sites with an environmental management system according to the EMAS Regulation has also increased since 2005, at an even higher annual rate of 5.8%. The highest increase of EMAS registrations was observed in 2008 (11.9%). Thereafter, participation increased at a diminishing rate until 2013. In 2013 and 2014, the number of EMAS registered organisations declined by 7.9% and 1.7% respectively, suggesting that companies withdrawing from EMAS outstrip the recent increase of EMAS uptake in mostly southern European countries.

The uptake of environmental management systems across Europe is in line with the wider effort at EU and Member State level to promote greater commitment to corporate social responsibility (CSR) among enterprises.

⁽⁷⁴⁾ The Eco-Management and Audit Scheme (EMAS) is a voluntary tool for organisations to report and improve their environmental performance.

⁽⁷⁵⁾ Regulation (EC) No 1221/2009 on the voluntary participation by organisations in a Community eco-management and audit scheme (EMAS).

Box 2.6: A series of instruments fostering EMAS at EU level

The EU has streamlined the wider endorsement of EMAS, in particular through a number of initiatives. These comprise among others the promotion of awareness-raising activities among organisations, stakeholders and the general public and the introduction of co-funding schemes for innovative EMAS projects through the Financial Instrument for the Environment (LIFE) Programme. Efforts have also been made to integrate EMAS into other EU environmental policies and legislations such as the Directive on Eco-design of Energy Using Products ⁽⁷⁶⁾, the Directive on Waste Electrical and Electronic Equipment ⁽⁷⁷⁾, the Public Procurement Directives ⁽⁷⁸⁾ and

others. In agreement with the principles of sustainable development that it promotes, the European Commission also decided to apply the EMAS Regulation into its own activities, thus setting an example for other organisations to follow ⁽⁷⁹⁾.

To further increase EMAS adoption among organisations, the European Commission set out a working plan to identify sector-specific best practices and benchmarks as well as indicators ⁽⁸⁰⁾. This tailored sector-specific approach helps and guides EMAS companies in a specific sector, contributing to a harmonised and enhanced application of the EMAS Regulation ⁽⁸¹⁾.

How registration of environmental management systems varies between Member States

A core group of EMAS front-runner countries have mainly driven the trend in EMAS registrations. Germany, Spain and Italy have an exceptionally high absolute number of registrations. In terms of numbers of EMAS-registered organisations per million inhabitants, the uptake is also impressive in Cyprus (62.5), Austria (29.9), Spain (23.5), Italy (17.3), Germany (15.2) and Denmark (10.0) ⁽⁸²⁾. However, a number of Member States with initially high absolute number of EMAS registrations, corresponding to their long-standing tradition of voluntary environmental management systems, have recorded considerable declines between 2005 and 2014. For instance, over this period the absolute number of registered organisations declined from 118 to 19 in Sweden, from 120 to 54 in Denmark, from 1619 to 1229 in Germany, from 41 to 4 in Finland, and from 25 to 5 in the Netherlands.

A partial explanation for this might be that long-term EMAS registrants face difficulties in meeting the ongoing demand for improvements in environmental performance, as required by the scheme. On the other hand, companies that have just introduced the scheme still have considerable potential for improvement ⁽⁸³⁾. However, this decline happened against the backdrop of a pronounced increase in the absolute number of EMAS registrations in a few central and southern European countries in the period 2005 to 2014, namely Poland (from 0 to 45), Hungary (from 1 to 23), Cyprus (from 0 to 51), Greece (from 6 to 39) and Italy (from 258 to 1 017).

What lies beneath this indicator?

By improving their environmental performance, for example by enhancing energy and resource efficiency, European companies and public organisations can take proactive action to overcome pressing environmental challenges. The Eco-Management and Audit Scheme (EMAS) and similar environmental management schemes also benefit companies by allowing them to monitor their resource use via environmental performance indicators, acquire public recognition and improve their reputation. Furthermore, EMAS enables companies to gain a competitive advantage by achieving cost reductions and demonstrating their serious commitment to reducing the environmental impacts of their operations.

⁽⁷⁶⁾ EuP Directive 2005/32/EC.

⁽⁷⁷⁾ WEEE Directive 2002/96/EC.

⁽⁷⁸⁾ Directive 2004/17/EC and 2004/18/EC.

⁽⁷⁹⁾ EMAS website http://ec.europa.eu/environment/emas/emas_ec/index_en.htm

⁽⁸⁰⁾ EMAS website http://ec.europa.eu/environment/emas/documents/sectoral_en.html

⁽⁸¹⁾ European Commission (2011), *Establishment of the working plan setting out an indicative list of sectors for the adoption of sectoral and cross-sectoral reference documents, under Regulation (EC) No 1221/2009 on the voluntary participation by organisations in a Community eco-management and audit scheme (EMAS)*, 2011/C 358/02, p. 1.

⁽⁸²⁾ 2015 data. Data available at <http://ec.europa.eu/environment/emas/register/reports/reports.do?sessionId=dmEn0e4sBJeof13XEhXJXqOHjmGd7f13iXL65ctXNbdUIH53RhBV!1242473038>

⁽⁸³⁾ Milieu Ltd and Risk and Policy Analysis Ltd (2009), *Final Report: Study of the Costs and Benefits of EMAS to Registered Organizations*, p. 62.



The indicator measures the number of companies registered for EMAS. It should be noted that the use of EMAS registrations for evaluating production patterns has some important limitations, namely the number of EMAS participating organisations is very low compared with the number of companies active in the EU.

Organic farming

The share of total agricultural area under organic cultivation in the EU has risen by 42.5 % in the short term between 2007 and 2012. Agricultural policy support measures at EU and national level, such as conversion and maintenance payments for organic production, have encouraged the development of the organic sector.



Short term
(since 2007)

Figure 2.21: Area under organic farming ⁽¹⁾, 2005–2012
(% of utilised agricultural area)



⁽¹⁾ Total fully converted and under conversion to organic farming.

Source: Eurostat (online data code: tsdpc440)

The agricultural area under organic cultivation in the EU has increased continuously by an average of 7.3 % per year in the short-term period between 2007 and 2012. The total area cultivated under EU standards for organic farming made up 5.7 % of the total utilised agricultural area in 2012, up from 3.6 % in 2005. This dynamic development was also reflected in the considerable growth in EU retail sales of organic products, which reached EUR 22.2 billion in 2013 compared with EUR 16 billion in 2007 ⁽⁸⁴⁾⁽⁸⁵⁾.

How organic farming varies between Member States

The country distribution of organic farmland in the EU does not seem to have changed much from 2005. The highest share of organic agricultural land (78 % in 2011) and holdings (83 % in 2011) is still held by Member States who joined the EU in 2004 or before, mainly as a result of the impact of European and national legislation on the development of the organic sector in these countries ⁽⁸⁶⁾. In 2012 Austria cultivated the largest share of organic land (18.6 %), followed by Sweden (15.8 %), Estonia (14.9 %) and the Czech Republic (13.1 %), as in previous years. Similarly, Malta and Bulgaria remained the countries with the smallest hectares of organically managed agricultural land, with only 0.3 % and 0.8 % respectively. However, the speed of growth in the organic agricultural sector from 2005 to 2012 differed substantially across countries.

Some of the Member States who joined the EU in 2004 or afterwards experienced the largest growth in the organic sector in the past few years, partly as a result of the support already provided to this type of production before their accession to the EU and its subsequent increase afterwards ⁽⁸⁷⁾. Between 2005 and 2012, the fastest uptake of organic farming was recorded in Poland and Bulgaria, with a four-fold increase (although starting from a low level of 1 % and 0.2 % respectively). This was followed by Cyprus, Romania and Malta.

⁽⁸⁴⁾ Organic Europe — European section of the organic world website: <http://www.organic-europe.net/home-europe.html?L=0>

⁽⁸⁵⁾ Research Institute of Organic Agriculture (FiBL) and IFOAM Organics International (2015), *The World of Organic Agriculture: Statistics & Emerging Trends 2015*, p. 181.

⁽⁸⁶⁾ European Commission (2014), *The Rapid Growth of EU Organic Farming. Key facts and Figures*. EU Agricultural Markets Briefs. No 3, p. 2.

⁽⁸⁷⁾ European Commission (2013), *Facts and Figures on Organic Agriculture in the European Union*, p. 9.

In 2012, five of the Member States who joined the EU in 2004 or afterwards (the Czech Republic, Estonia, Latvia, Slovenia and Slovakia) already exceeded the 5.7% EU average. Large disparities in the scale and development of organic farming between Member States are likely to be influenced by a number of factors. These include differences in organic production subsidies, regional production systems, market developments and existence of a 'facilitating' environment such as extension services, vocational training and agronomic research ⁽⁸⁸⁾⁽⁸⁹⁾. For example, between 2004 and 2005, 46% of the organic area in the EU benefitted from organic-specific support provided with agri-environmental measures. However, this varied greatly between Member States with more than 90% in Finland and less than 10% in the United Kingdom ⁽⁹⁰⁾.

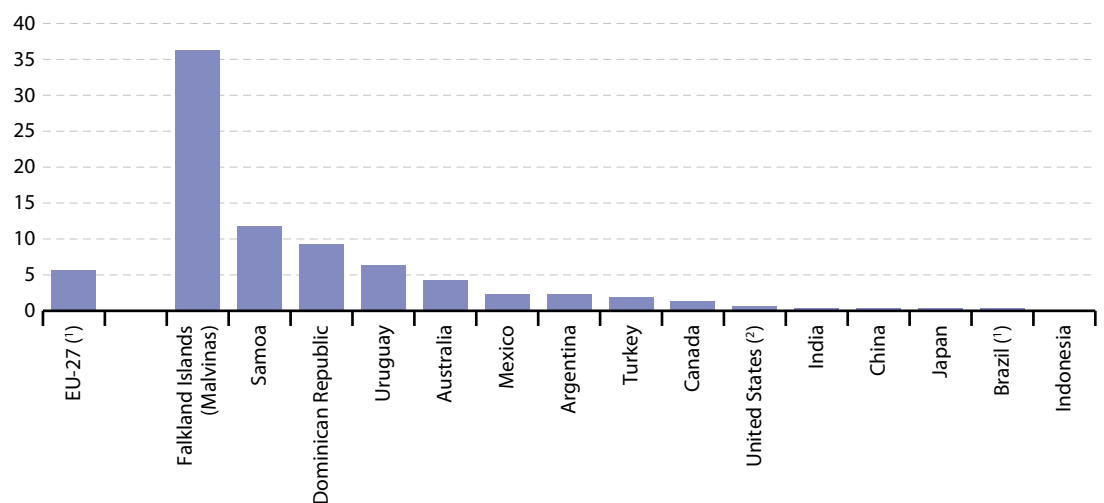
Barriers and incentives for organic farming

A number of factors may be holding back the development of organic farming in some countries. These include difficulty achieving high enough prices due to lack of demand, short-term surpluses of some products (such as a glut of organic milk in some Member States in 2000) or supply chain and institutional bottlenecks for organic producers ⁽⁹¹⁾. The EU has created a broad framework to help organic farming grow across Europe.

EU trends in organic farming compared with other countries in the world

At the international level, the EU continues to be a forerunner of organic farming. It outperforms by far a number of G20 countries such as the United States, Argentina or Australia. Whereas Australia and Argentina account for some of the highest shares among G20 countries with 2.7% and 2.6% respectively, the United States has only 0.5% of its agricultural area under organic production ⁽⁹²⁾. A driving force behind the dynamic expansion of Europe's organic farming sector is its long-standing history, strong consumer demand and extensive application of an EU-level legal framework for production, distribution, control and labelling of organic products ⁽⁹³⁾⁽⁹⁴⁾.

Figure 2.22: Certified organic agricultural area in the EU-27 and in other countries, 2013
(% of total agricultural area)



(1) 2012 data.
(2) 2011 data.

Source: FiBL and IFAOM (2015) *The World of Organic Agriculture — Statistics & Emerging Trends 2015* and Eurostat (online data code: tsdpc440)

⁽⁸⁸⁾ European Commission (2014), *The Rapid Growth of EU Organic Farming. Key facts and Figures*. EU Agricultural Markets Briefs. No 3, p 4.

⁽⁸⁹⁾ European Commission (2013), *Facts and Figures on Organic Agriculture in the European Union*, p. 20.

⁽⁹⁰⁾ European Commission Directorate General for Agriculture and Rural Development (2010), *An Analysis of the EU Organic Sector*, p. 3.

⁽⁹¹⁾ Id., p. 18–19.

⁽⁹²⁾ Data retrieved from FAO.

⁽⁹³⁾ Council Regulation (EC) No 834/2007 of 28 June 2007 on organic production and labelling of organic products and its implementing Regulations, Commission Regulations (EC) No 889/2008 and (EC) No 1235/2008.

⁽⁹⁴⁾ Research Institute of Organic Agriculture (FiBL) and IFOAM Organics International (2015), *The World of Organic Agriculture: Statistics & Emerging Trends 2015*, p. 174.

What lies beneath this indicator?

Organic farming is a method of production that helps protect natural resource and biodiversity by prohibiting or restricting the use of chemical-synthetic pesticides, chemical fertilisers, growth hormones, antibiotics and genetic modifications ⁽⁹⁵⁾. Compared with conventional agricultural practices it enhances soil health and natural fertility and reduces energy and water inputs while maintaining a comparable level of productivity ⁽⁹⁶⁾. In addition, organic farming promotes animal welfare and health by regulating the use of feed and using production methods that meet animals' specific behavioural needs. The high labour intensiveness of organic production also contributes to the economic and social development of many rural communities by creating jobs ⁽⁹⁷⁾. Last but not least, organic production helps to meet the growing demand of EU consumers for high-quality, natural and healthy products.

The indicator measures the share of total utilised agricultural area (UAA) occupied by organic farming (existing organically farmed areas and areas in the process of conversion).

Box 2.7: EU actions for fostering organic farming

The EU has implemented a number of initiative for promoting and strengthening the organic sector. The first European Action Plan for Organic Food and Farming with 21 actions, including the creation of the new EU organic production logo, was adopted in 2004 ⁽⁹⁸⁾. In 2007 the European Council of Agricultural Ministers agreed on a new Council Regulation ⁽⁹⁹⁾, setting out the principles, aims and overarching rules of organic production and defining how organic products were to be labelled.

On 24 March 2014, the European Commission proposed a new regulation on organic farming, the labelling of organic products, and a plan of 18 actions for the future of the organic sector up to 2020 ⁽¹⁰⁰⁾. The objective is to reinforce rules regarding testing and producing organic food sold in the EU and support growth in the sector. The Commission's

strategy on organic farming focuses on three priority domains. The first is to increase competitiveness of EU organic producers, by:

- Increasing awareness of and synergies with EU instruments targeting organic production.
- Addressing technical gaps in organic production, with research, innovation, and their dissemination.
- Increasing information on the organic production sector, as well as on the market and trade.

The second priority domain aims at ensuring consumer confidence in the European scheme for organic food and farming, as well as trust on the organic products imported, in particular as to the control measures. The objective of the third priority domain is to reinforce the external dimension of the EU organic production scheme.

⁽⁹⁵⁾ European Commission, *Agriculture and Rural Development — Organic Farming: A Guide for Stakeholders, Farmers, Processors and Distributors*.

⁽⁹⁶⁾ Pimentel, D., Hepperly, P., Hanson, J., Seidel, R. and Douds, D. (2005), *Organic and Conventional Farming Systems: Environmental and Economic Issues*, pp. 26–27.

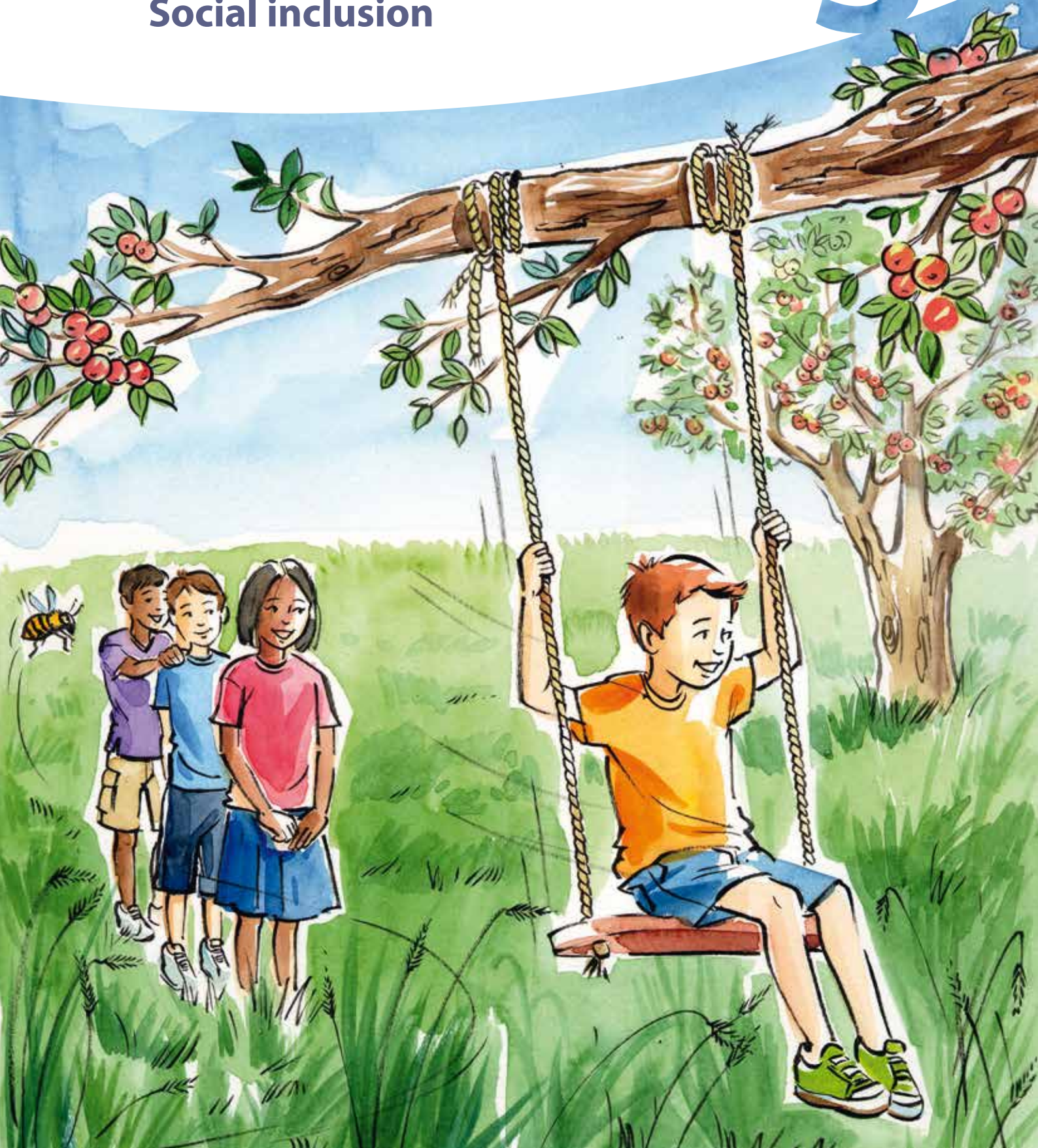
⁽⁹⁷⁾ http://ec.europa.eu/agriculture/organic/home_en

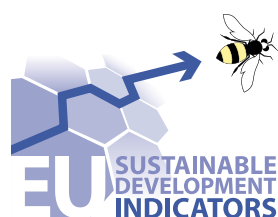
⁽⁹⁸⁾ European Commission (2004), *European Action Plan for Organic Food and Farming*, COM(2004) 415 final.

⁽⁹⁹⁾ Council Regulation (EC) No 834/2007.

⁽¹⁰⁰⁾ European Commission (2014), *Action Plan for the future of Organic Production in the European Union*, COM(2014) 179 final.

Social inclusion





Overview of the main changes

Until 2009, the number of people at risk of poverty or social exclusion had been falling steadily. However, in that year the trend reversed following the onset of the economic crisis. This unfavourable short-term trend has pushed the EU off its path to meeting the Europe 2020 strategy's target of lifting at least 20 million people out of the risk of poverty or social exclusion by 2020. The economic crisis has also influenced many of the other indicators in the social inclusion theme. Trends have deteriorated in the short term, in particular after 2009, with an increasing number of people being affected by one or more forms of poverty, namely monetary poverty, severe material deprivation and very low work intensity. The same holds true for long-term unemployment. In contrast, trends have been favourable for most of the education indicators, in particular regarding early school leavers and tertiary education. However, trends in adult education, as monitored through participation in lifelong learning, are less encouraging.

Table 3.1: Evaluation of changes in the social inclusion theme, EU-28 ⁽¹⁾

Indicator	Long-term evaluation (since 2000)	Short-term evaluation (last five-year period)
People at risk of poverty or social exclusion	⁽²⁾	⁽³⁾
Monetary poverty and living conditions		
Risk of poverty after social transfers	⁽²⁾	⁽³⁾
Severe material deprivation	⁽²⁾	⁽³⁾
Income inequalities	⁽²⁾	⁽³⁾
Access to labour market		
Very low work intensity	⁽²⁾	⁽³⁾
Working poor	⁽²⁾	⁽³⁾
Long-term unemployment	⁽⁴⁾	
Gender pay gap	:	⁽³⁾
Education		
Early leavers from education and training	⁽⁵⁾	
Tertiary education	⁽⁴⁾	
Lifelong learning	⁽⁵⁾	
Education expenditure	:	:

⁽¹⁾ An explanation of the evaluation method and the meaning of the weather symbols is given in the Introduction and in Annex III. ⁽²⁾ Evaluation based on EU-27; from 2005. ⁽³⁾ Evaluation based on EU-27. ⁽⁴⁾ From 2002. ⁽⁵⁾ From 2003.



Key trends in social inclusion

Almost every fourth person at risk of poverty or social exclusion

Between 2005 and 2013, 2.7 million people were lifted out of the **risk of poverty or social exclusion** in the EU-27. This number fell consistently between 2005 and 2009 but started to rise again with the onset of the economic crisis. In 2012, the number of people at risk of poverty or social exclusion in the EU-28 peaked at more than 124 million, before falling back by more than one million in 2013.

Still almost one in four people in the EU were at risk of poverty or social exclusion in 2013. The overall slow progress endangers the Europe 2020 strategy's target of lifting at least 20 million people out of the risk of poverty or social exclusion by 2020.

Monetary poverty increasing and living conditions deteriorating

Monetary poverty remains the most prevalent form of poverty in the EU, with 16.6 % of the total population affected. The number of people **at risk of poverty after social transfers** in the EU-28 has risen by 1.8 % since 2010.

The number of people affected by **severe material deprivation** fell overall between 2005 and 2013. However, the favourable trend had started to reverse in 2009 with the onset of the economic crisis. In 2013, 48.3 million people in the EU-28 were living in conditions severely constrained by a lack of resources. This was equal to 9.6 % of the total EU population.

Income inequality barely changed between 2008 and 2013. In 2013, the richest 20 % of the population earned about five times as much as the poorest 20 %.

Labour market has experienced less inclusive development

The number of people affected by **very low work intensity** increased by 5.3 % in the EU-28 between 2010 and 2013. Economic inactivity substantially increases the risk of being poor.

Poverty and social exclusion do not only affect economically inactive or unemployed people. The share of **working poor** increased between 2005 and 2013 by 8.5 %. In general, men were more at risk of in-work poverty than women.

The EU-28's **long-term unemployment** rate fell between 2004 and 2008. However, this favourable trend started to reverse with the onset of the economic crisis from 2008 onwards. Until 2013 the long-term unemployment rate climbed to a high of 5.1 % and remained at this level in 2014.

The hourly gross earnings of women are slowly catching up with those of men. Between 2006 and 2013, there was a 1.3 percentage point drop in the **gender pay gap**.

Improvements in education

The share of **early leavers from education and training** has fallen steadily since 2003, reaching 11.1 % in 2014. If this trend can be sustained, the target to reduce early school leaving rates to less than 10 % by 2020 appears in reach.

The share of the population aged 30 to 34 with **tertiary educational attainment** has been continuously increasing since 2002. The trend suggests the Europe 2020 target of increasing this share to at least 40 % by 2020 will be reached.

Participation in **lifelong learning** increased by 27.4 % between 2003 and 2014. Nevertheless, progress is slow and the EU benchmark of at least 15 % of adults participating in lifelong learning in 2020 may be difficult to reach.

Why do we focus on social inclusion?

In line with the sustainable development agenda, the EU aims to actively include every citizen, notably the most disadvantaged, fully in society, including in work. By doing so, it endeavours to tackle various challenges: poverty, social exclusion, labour market segregation, long-term unemployment and gender inequalities. Thus in the EU the poverty and social inclusion concepts are closely interlinked.

A substantial proportion of the EU population is at risk of poverty or social exclusion, but not all are affected in the same way. Some have a low income compared with other residents in the same country, but this does not necessarily imply a low standard of living. Social transfers help a subset of this group achieve an income above the poverty threshold. Another form of poverty is material deprivation. Those affected cannot pay unexpected expenses or afford some items considered to be desirable or necessary to lead an adequate life. Reducing inequalities between the highest and the lowest incomes contributes to the Sustainable Development Strategy's goal of achieving a high level of social cohesion. Differences between the earnings of men and women are also an issue.

Income status and education level are closely linked. Tertiary education and lifelong learning enable citizens to gain and update knowledge, skills and competences needed for employment, social inclusion and personal fulfilment. Early school leavers and adults with low educational attainment are more likely to experience very low work intensity or be among the working poor.

Social inclusion also links to the wider theme of socioeconomic development. Public expenditure on education helps foster economic growth and productivity. Poverty and unemployment represent a non-realisation of human capital and thereby a social and economic loss to society. Furthermore, gender pay gaps reduce work and education incentives for women, hindering overall economic performance. More highly educated people have a greater potential to contribute to the economy. In turn, a well-performing economy and good labour market performance fosters employment, decreases monetary poverty and strengthens social inclusion. A strong economy also has more resources for social transfers to help people who still live in poverty. Poverty and unemployment affect people's health and are thus a challenge for national budgets.

How does the EU tackle social inclusion?

The EU Sustainable Development Strategy (EU SDS) ⁽¹⁾ dedicates one of its seven key challenges to social inclusion, demography and migration. The overall objective is to 'create a socially inclusive society' and 'to secure and increase the quality of life of citizens'. Its operational objectives and targets include:

- Pursuing the EU objective of taking steps to decisively reduce the number of people at risk of poverty or social exclusion by 2010 with a special focus on reducing child poverty.
- Ensuring a high level of social and territorial cohesion at EU level and in Member States as well as respect for cultural diversity.

One of the EU headline targets of the Europe 2020 strategy aims to fight poverty and social exclusion ⁽²⁾:

- 'At least 20 million fewer people in or at risk of poverty or social exclusion'.

The EU also aims to boost inclusive growth through two of the seven flagship initiatives of the Europe 2020 strategy:

- The 'European platform against poverty and social exclusion' ensures economic, social and territorial cohesion. It guarantees respect for the fundamental rights of people experiencing poverty and social exclusion, and mobilises support to help people integrate in the communities where they live.
- The 'Agenda for new skills and jobs' helps people acquire new skills, adapt to a changing labour market and make successful career shifts. The initiative also modernises labour markets to raise employment levels, reduce unemployment, raise labour productivity and ensure the sustainability of the EU's social models.

⁽¹⁾ Council of the European Union (2006), *Review of the Sustainable Development Strategy (EU SDS) — Renewed Strategy*, 10917/06.

⁽²⁾ Overview of Europe 2020 targets.



Further reading on social inclusion

European Commission (2015), *Social Europe — Aiming for inclusive growth*, Annual Report of the Social Protection Committee on the social situation in the European Union (2014), Publications Office for the European Union, Luxembourg.

Eurostat (2015), *Quality of life — Facts and views*, 2015 edition, Publications Office of the European Union, Luxembourg.

European Commission (2015), *Employment and Social Developments in Europe 2014*, Publications Office of the European Union, Luxembourg.

European Commission (2014), *Investing in people: EU funding for employment and social inclusion*, Social Europe guide, Volume 7, Publications office of the European Union, Luxembourg.

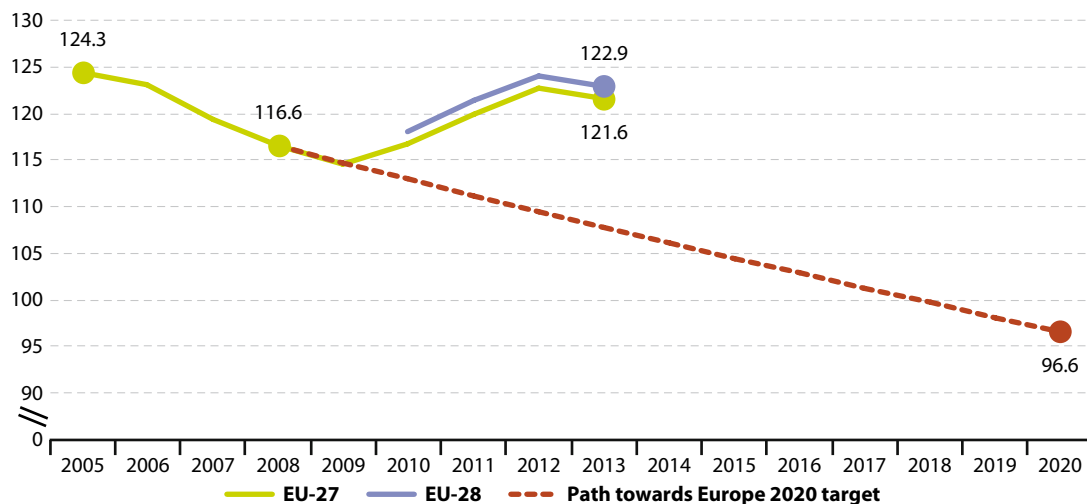
European Commission (2013), *Social Europe — Current challenges and the way forward*, Annual Report of the Social Protection Committee (2012), Publications Office of the European Union, Luxembourg.

OECD (2014), *Society at a Glance 2014: OECD Social Indicators*, OECD Publishing, Paris.

People at risk of poverty or social exclusion

About 2.7 million people in the EU-27 were lifted out of the risk of poverty or social exclusion in the long-term period between 2005 and 2013. However, the situation has deteriorated in the shorter term since 2008, pushing the EU off its path to meeting the Europe 2020 strategy's poverty target.

Figure 3.1: People at risk of poverty or social exclusion, 2005–2013 ⁽¹⁾⁽²⁾
(million people)



⁽¹⁾ 2005–2006 data are estimates. ⁽²⁾ The overall EU target is to lift at least 20 million people out of the risk of poverty or social exclusion by 2020. Due to the structure of the survey on which most of the key social data is based (the EU Statistics on Income and Living Conditions), a large part of the main social indicators available in 2010, when the Europe 2020 strategy was adopted, referred to 2008 data for the EU-27 as the most recent data available. This is why monitoring of progress towards the Europe 2020 strategy's poverty target takes EU-27 data from 2008 as a baseline year.

Source: Eurostat (online data code: [tsdsc100](#))

The headline indicator 'people at risk of poverty or social exclusion' shows the number of people affected by at least one of three forms of poverty: monetary poverty, material deprivation or very low work intensity. People can suffer from more than one dimension of poverty at a time.

The number of people at risk of poverty or social exclusion in the EU-27 had been decreasing steadily before the economic crisis. It reached its lowest level in 2009, with about 114.5 million people at risk in the EU-27. However, the impact of the economic crisis on Member States' financial and labour markets led to a considerable worsening of the situation in the following years. The number of people at risk of poverty or social exclusion reached a peak in 2012, with about 122.6 million people affected in the EU-27, before falling slightly to 121.6 million people in 2013. The EU-28, for which data are only available from 2010 onwards, followed a similar trend as the EU-27 but at a slightly higher level.

The steep increase between 2009 and 2012 and the slight reduction in 2013 means 25.0 million people in the EU-27 still need to be lifted out of the situation of being at risk of poverty or social exclusion in order to meet the target set for 2020.

The three dimensions of poverty

The 122.9 million people who were at risk of poverty or social exclusion in the 28 EU Member States in 2013 were affected by one or more dimensions of poverty. As shown in Figure 3.2, monetary poverty was the most widespread form of poverty in 2013, with 83.4 million people living at risk of poverty after social transfers. This was followed by material deprivation, affecting 48.3 million people, and very low work intensity, affecting 40.7 million people.



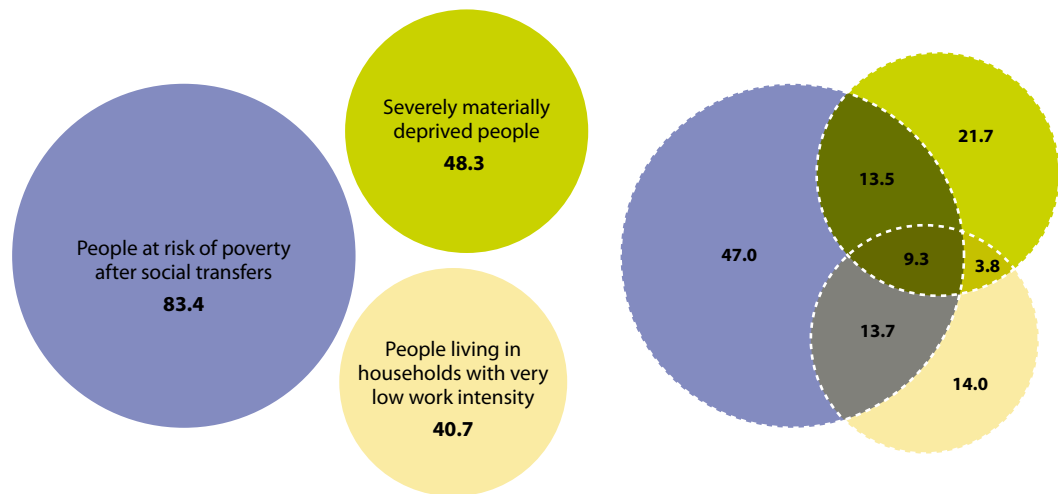
Long term
(since 2005)



Short term
(since 2008)



Figure 3.2: Aggregation of sub-indicators of ‘people at risk of poverty or social exclusion’, EU-28, 2013
(million people)



Source: Eurostat (online data code: [ilc_pees01](#))

Box 3.1: What do we mean by ‘social exclusion’?

The EU concept of poverty is very distinctive compared with the rest of the world because it goes hand in hand with the concept of social exclusion. Thus, when we talk about poverty in the EU we are concerned with issues that go beyond just income. Among others, these include lack of access to jobs, education and health care. With regard to issues such as social isolation, for instance, we are equally concerned with the way that damaged personal relationships can harm individual well-being.

Although the headline indicator ‘people at risk of poverty or social exclusion’ measures primarily economic shortages, within the general European political context social exclusion is perceived as a broader concept, encompassing a number of complex and multifaceted issues. According to one working definition by the European Commission, social exclusion can be described as ‘a process whereby certain individuals are pushed to the edge of society and prevented from participating fully by virtue of their poverty, or lack of basic competencies and lifelong learning opportunities, or as a result of

discrimination. This distances them from job, income and education and training opportunities, as well as social and community networks and activities. They have little access to power and decision-making bodies and thus often feel powerless and unable to take control over the decisions affecting their day-to-day lives’ (3).

Another important definition of the concept is presented in the Commission’s 1992 communication ‘Towards a Europe of solidarity’, where social exclusion is described as the result of ‘mechanisms whereby individuals and groups are excluded from taking part in the social exchanges, from the component practices and rights of social integration and of identity. Social exclusion goes beyond participation in working life; it is felt and shown in the fields of housing, education, health and access to services’ (4).

It should be noted that the social inclusion chapter in this current publication is based on the wider concept of social exclusion, which is also used to frame the European policy agenda (5).

(3) European Commission (2012), Directorate-General for Employment, Social Affairs and Inclusion, *Employment and Social Developments in Europe 2011*, Publications Office of the European Union, Luxembourg, p. 144.

(4) Commission Communication, *Towards a Europe of solidarity. Intensifying the fight against social exclusion, fostering integration*, COM(92) 542 final, 23 December 1992.

(5) For further explanations about the EU’s concept of poverty and social exclusion, please see the video ‘Poverty in Europe — beyond just income’ on the Eurostat website.

Of all the people at risk of poverty or social exclusion in 2013, 40.3 million people, or almost one-third (32.7%), were affected by more than one dimension of poverty. Of these, 13.5 million people suffered from monetary poverty and material deprivation, 3.8 million were both materially deprived and living in households with very low work intensity, and 13.7 million were affected by low work intensity and monetary poverty. Another 9.3 million people were affected by all three forms (see Figure 3.2).

The three sub-indicators — monetary poverty, material deprivation and very low work intensity — have developed quite unevenly over the past few years. As a result they have had a similarly uneven effect on the changes in the overall ‘people at risk of poverty or social exclusion’ headline indicator. The sub-indicators and their trends are analysed in more detail in the following sections of this chapter.

Box 3.2: How does the EU fight poverty and social exclusion?

Under its ‘inclusive growth’ priority, the Europe 2020 strategy has set the target of ‘promoting social inclusion, in particular through the reduction of poverty, by aiming to lift at least 20 million people out of the risk of poverty or social exclusion’ by 2020.

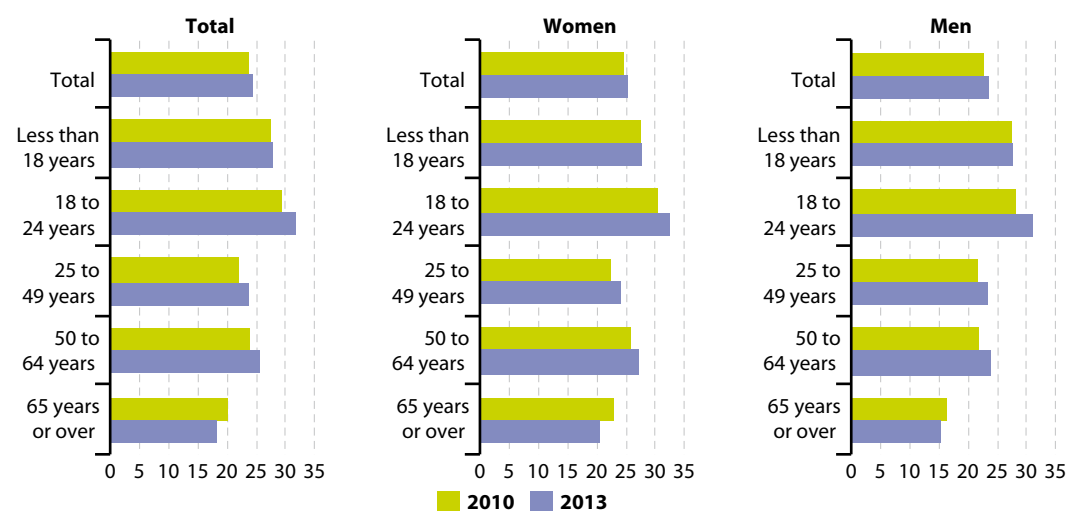
To underpin this objective, the European Commission has launched two flagship initiatives under the ‘inclusive growth’ priority: the ‘Agenda for new skills and jobs’ and the ‘European platform against poverty and social exclusion’.

Women are more likely to live in poverty and social exclusion than men

In 2013, 25.4% of women were at risk of poverty or social exclusion across the EU compared with 23.6% of men. This put the EU-wide gender gap at 1.8 percentage points. Women were worse off in all countries except Spain and Portugal where the risk of poverty or social exclusion was slightly lower for women than for men in 2013. The gaps were widest in Lithuania (4.7 percentage points), Germany (3.1 percentage points), the Czech Republic and Sweden (3 percentage points each), and Bulgaria (2.9 percentage points). Portugal, Finland and Denmark were the most egalitarian countries in terms of risk of poverty or social exclusion, with gender gaps of less than or about 0.5 percentage points. The gender gap narrowed in most countries between 2008 and 2013, except in the Netherlands, Lithuania and Sweden.

The disparities between women and men become more distinct when looking at age groups. Among men, young people aged 18 to 24 were most at risk (31.1%) in 2013 compared with older people aged 65 or over (15.3%). In contrast, women were more likely to be at risk of poverty or social exclusion in all age groups. The risk was most unequal between men and women among the older people aged 65 or over. In this age group the gender gap was 5.2 percentage points in 2013.

Figure 3.3: People at risk of poverty or social exclusion, by sex and age group, EU-28, 2010 and 2013 (% of population)



Source: Eurostat (online data code: [ilc_peps01](#))



Young people aged 18 to 24 are more at risk than other age groups

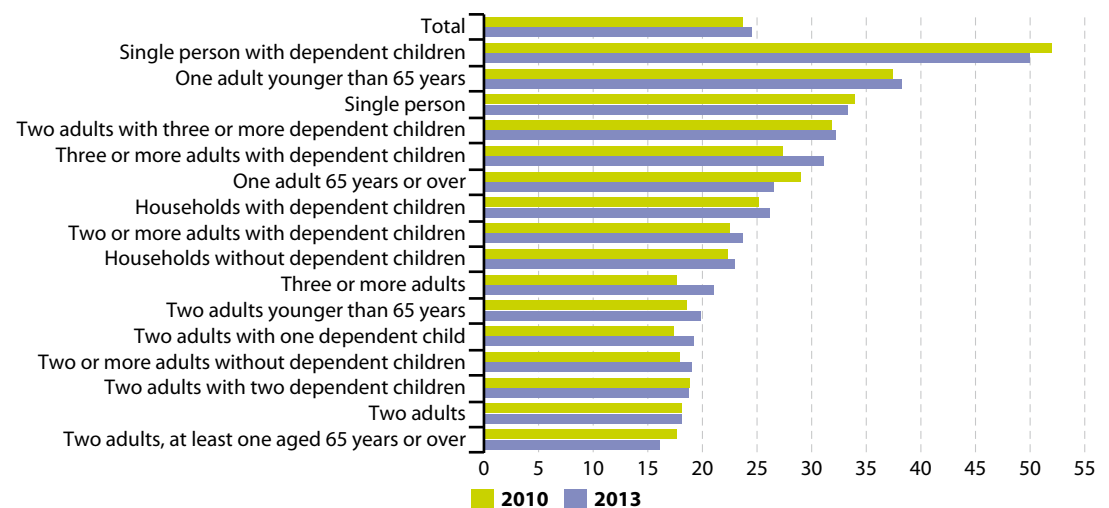
For both men and women, young people aged 18 to 24 are most likely to be at risk of poverty or social exclusion. More than 30% were at risk in 2013 (31.1% for men and 32.7% for women). People younger than 18 years of age were the next high-risk group, at 27.7%. Moreover, the situation of young people aged 18 to 24 has not improved compared with 2010. Although their risk of poverty or social exclusion had been falling until 2009, it climbed back in the following years.

In contrast, older people aged 65 or over showed the lowest rates of 18.2% (15.3% for men and 20.5% for women) in 2013. The rates of this age group have shown a steady decline over the period 2010 to 2013 (see Figure 3.3). As a result the differences of the at-risk-of-poverty rate between young and older people have increased. This indicates that the burden of the financial crisis has fallen more heavily on those already belonging to the most vulnerable groups of society. The widening of the gap between young people aged 18 to 24 and older people aged 65 or over can also be seen in most Member States. The gap increased in almost all countries, in some cases massively, between 2008 and 2013. In Denmark, the differences increased by about 18 percentage points. This was due to the number of young people at risk of poverty or social exclusion rising by 11 percentage points and the number of elderly at risk falling by about seven percentage points.

Single parents face the highest risk of poverty or social exclusion

Almost 50% of single people with one or more dependent children were at risk of poverty or social exclusion in 2013. This was double the average and higher than in any other household type or group analysed. Figure 3.4 shows that the situation for single parents at the EU level has improved only marginally since 2010 when 52.0% of single-parent households were at risk of poverty or social exclusion. However, it should be noted that single-parent households only account for 4.6% of all households. The group with the lowest poverty rate in 2013, and showing the most improvement since 2005, were households with two adults where at least one person was aged 65 years or over.

Figure 3.4: People at risk of poverty or social exclusion, by household type, EU-28, 2010 and 2013 (% of population)

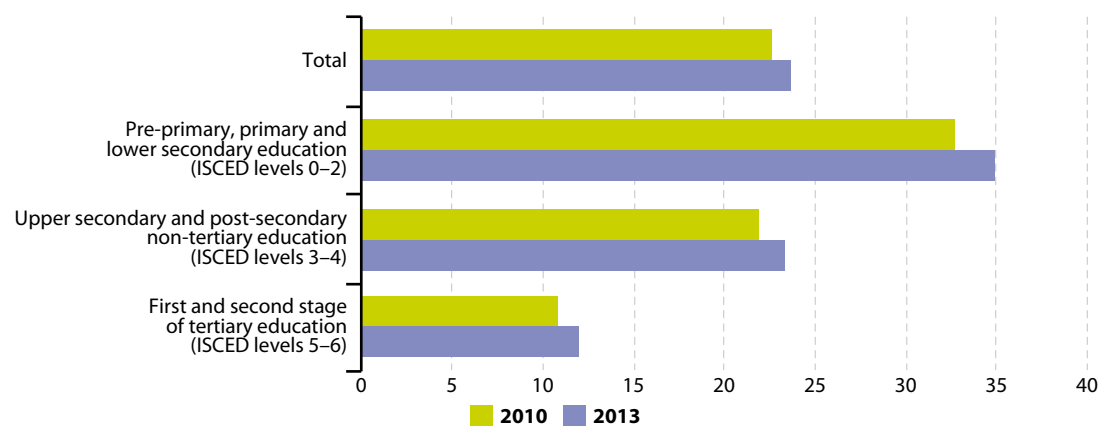


Source: Eurostat (online data code: [ilc_peps03](#))

People with low educational attainment are more likely to be at risk

In 2013, 34.8% of people with at most lower secondary educational attainment were at risk of poverty or social exclusion (see Figure 3.5). In comparison, only 11.9% of people with tertiary education were in the same situation. This indicates that the least educated people were about three times more likely to be at risk than those with the highest education levels.

Figure 3.5: People at risk of poverty or social exclusion, by education level, EU-28, 2010 and 2013
(% of population aged 18 and over)



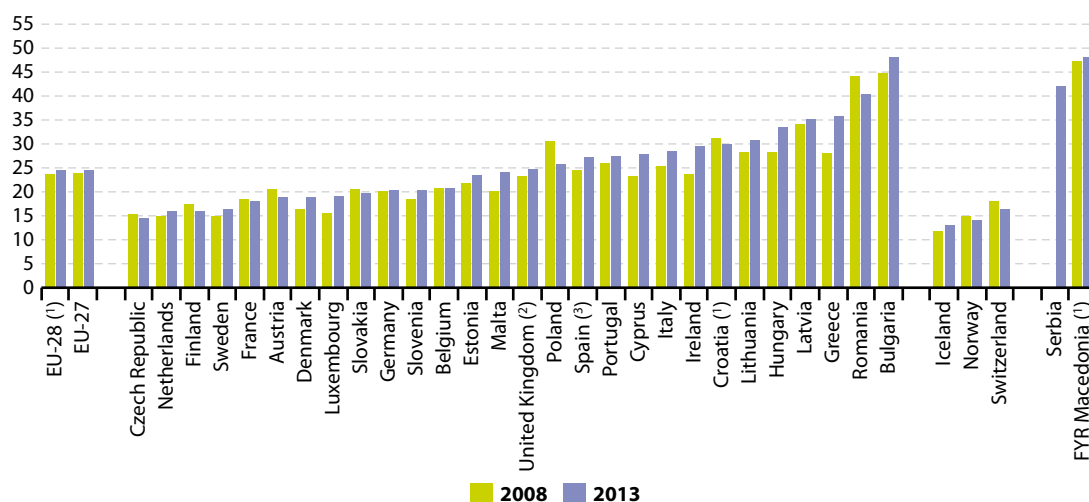
Source: Eurostat (online data code: [ilc_peps04](#))

How risk of poverty and social exclusion varies across Member States

Overall, 24.5% of the EU population was at risk of poverty or social exclusion in 2013. However, this conceals considerable variations among Member States in both the level and dynamics of this indicator (see Figure 3.6). In Bulgaria almost half of the population (48.0%) was at risk in 2013. In the Czech Republic (14.6%), the Netherlands (15.9%) and Finland (16.0%) the rate was about three times lower. In the EU as a whole, and in most Member States, the number of people at risk of poverty or social exclusion reached its lowest level in 2009 before rising again.

Significant differences between Member States could be seen during the period 2008 to 2013. Some countries made clear progress in integrating their most vulnerable members into society. Reductions in the number of people at risk of poverty or social exclusion ranged from 2% to 15% in Poland (-15%), Romania (-9%), Austria (-9%), Finland (-8%), Slovakia (-4%), Czech Republic (-5%) and France (-2%). A number of countries, however, experienced an increase in the number of people at risk. In Cyprus, Greece, Malta and Luxembourg the number increased by more than 20% or even by more than 30%.

Figure 3.6: People at risk of poverty or social exclusion, by country, 2008 and 2013
(% of population)



(1) 2010 data (instead of 2008). (2) Break in time series in 2012. (3) Break in time series in 2009.

Source: Eurostat (online data code: [tsdsc100](#))



One reason for the disparity in poverty rates across the EU is the uneven impact of the economic crisis on Member States. Differences in the structure of labour markets, welfare systems, the fiscal position and fiscal consolidation measures have also played a role ⁽⁶⁾.

Relative and absolute measures of poverty

The three forms of poverty developed quite distinctly between 2005 and 2013. One possible explanation for the divergence of monetary poverty on the one hand and material deprivation and very low work intensity on the other is the different structure of the indicators. While monetary poverty is measured in relative terms, material deprivation and very low work intensity are absolute measures. The relativity of monetary poverty means the at-risk rate may remain stable or even increase even if a country's average or median disposable income increases. Absolute poverty measures, however, are likely to decrease during economic recoveries. For further details see the following sections on risk of poverty after social transfers, severe material deprivation and very low work intensity.

What lies beneath this indicator?

Measuring poverty and social exclusion requires a multidimensional approach. Household income is a key determinant of living standards, but other aspects preventing full participation in society such as access to labour market and material deprivation also need to be considered. Therefore, the European Commission adopted a broad 'at-risk-of-poverty or social exclusion rate' indicator to serve the purposes of the Europe 2020 strategy. This indicator is an aggregate of three sub-indicators: (1) monetary poverty, (2) material deprivation and (3) very low work intensity. People are only counted once even if they are present in several sub-indicators.

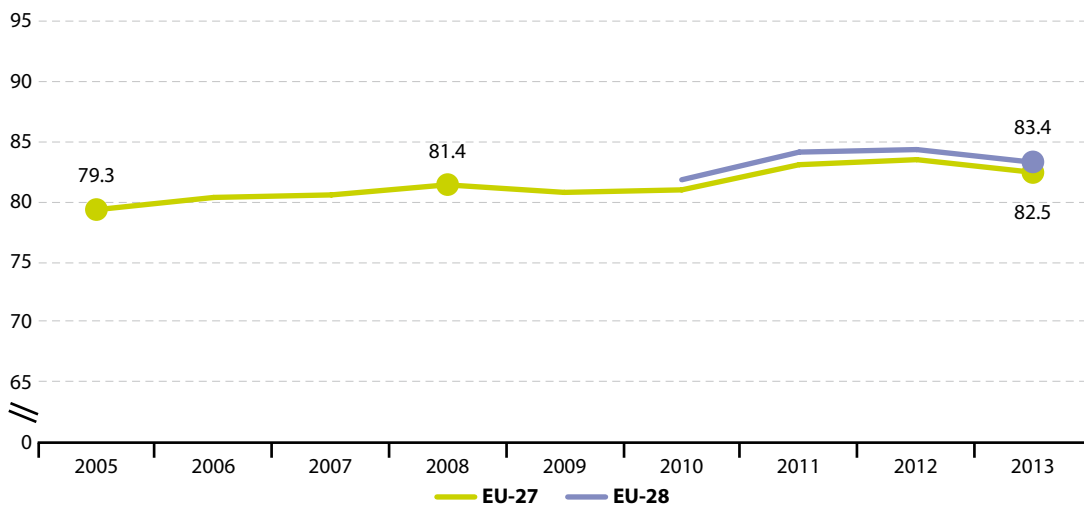
People are considered at risk-of-poverty if they have an equivalised disposable income below the risk-of-poverty threshold, which is set at 60% of the national median equivalised disposable income (after social transfers). Material deprivation covers issues relating to economic strain and durables. Severely materially deprived persons have living conditions constrained by a lack of resources. They cannot afford at least four out of the following nine items: i) to pay rent or utility bills, ii) to keep their home adequately warm, iii) to face unexpected expenses, iv) to eat meat, fish or a protein equivalent every second day, v) a week-long holiday away from home, vi) a car, vii) a washing machine, viii) a colour TV, or ix) a telephone. People living in households with very low work intensity are those aged 0 to 59 living in households where the adults (aged 18 to 59) have worked less than 20% of their total work potential during the past year.

⁽⁶⁾ European Commission (2013), *Social Europe — Current challenges and the way forward. Annual Report of the Social Protection Committee (2012)*, Publications Office for the European Union, Luxembourg, p. 18.

Risk of poverty after social transfers

There were 83.4 million people at risk of poverty after social transfers in the EU-28 in 2013. In the EU-27, a rise of 4 % has been observed over the long term since 2005, as well as a short-term increase of 1 % since 2008. Monetary poverty remains the most prevalent form of poverty in the EU.

Figure 3.7: People at risk of poverty after social transfers, 2005–2013 ⁽¹⁾
(million people)



⁽¹⁾ 2005–2007 data are estimates.

Source: Eurostat (online data code: [tsdsc280](#))

People are considered to be at risk of monetary poverty when their equivalised disposable income (after social transfers) is below the at-risk-of-poverty threshold, which is set at 60 % of the national median equivalised disposable income after social transfers. To support people at risk of poverty, governments provide social security in the form of social transfers, such as benefits relating to education, housing, pensions or unemployment.

The number of people at risk of poverty after social transfers in the EU-27 has increased by about 4.0 % over the long term, from 79.3 million in 2005 to 82.5 million in 2013. However, the rate of increase has slowed in the short term, rising by just 1.3 % between 2008 and 2013. The EU-28 has shown a similar tendency since 2010 but on a slightly higher level. In contrast to other poverty-related indicators in this chapter, the number of people at risk of poverty after social transfers had already increased before the economic crisis began.

Social transfers alleviate the prevalence of monetary poverty

The 83.4 million people being at risk of poverty after social transfers in 2013 translate into a share of 16.6 % of the total EU population. Without the cushioning effect of social transfers, the share of people at risk of poverty would be even higher: in 2013, the share of the EU-28 population at risk of poverty before social transfers was 24.5 %. There is a wide gap in performance between the welfare systems in different EU countries. Some countries have managed to reduce the risk of poverty by more than 50 % and some by less than 20 % (EU average 32 %).



Long term
(since 2005)



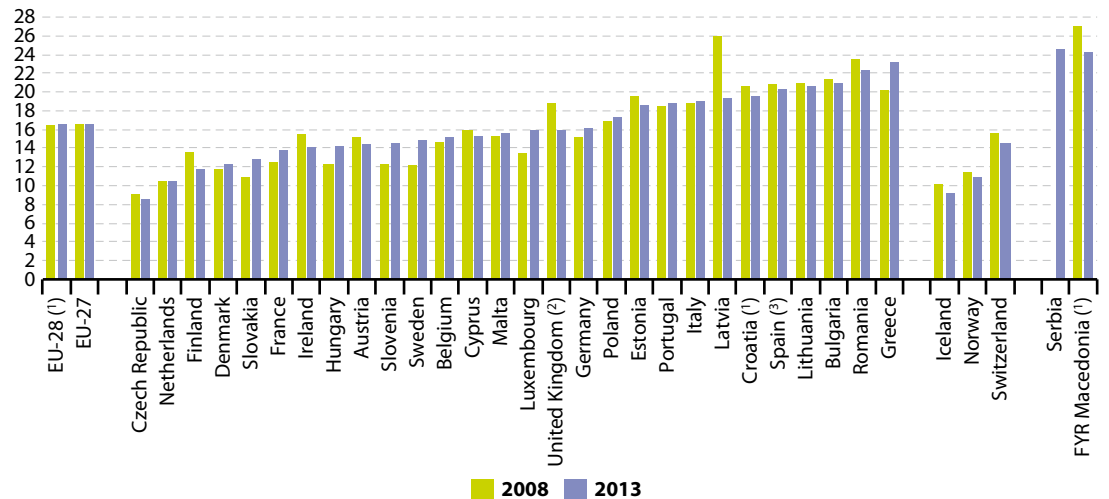
Short term
(since 2008)



How the share of people at risk of poverty after social transfers varies across Member States

Across the EU, Greece (23.1%), Romania (22.4%) and Bulgaria (21.0%) reported the highest rates of people at risk of poverty after social transfers in 2013. On the other side of the spectrum, the Czech Republic (8.6%), the Netherlands (10.4%) and Finland (11.8%) performed best in terms of the percentage of the population living in monetary poverty in 2013.

Figure 3.8: People at risk of poverty after social transfers, by country, 2008 and 2013 (% of population)



(*) 2010 data (instead of 2008).

(*) Break in time series in 2012.

(*) Break in time series in 2009.

Source: Eurostat (online data code: [tsdsc280](#))

What lies beneath this indicator?

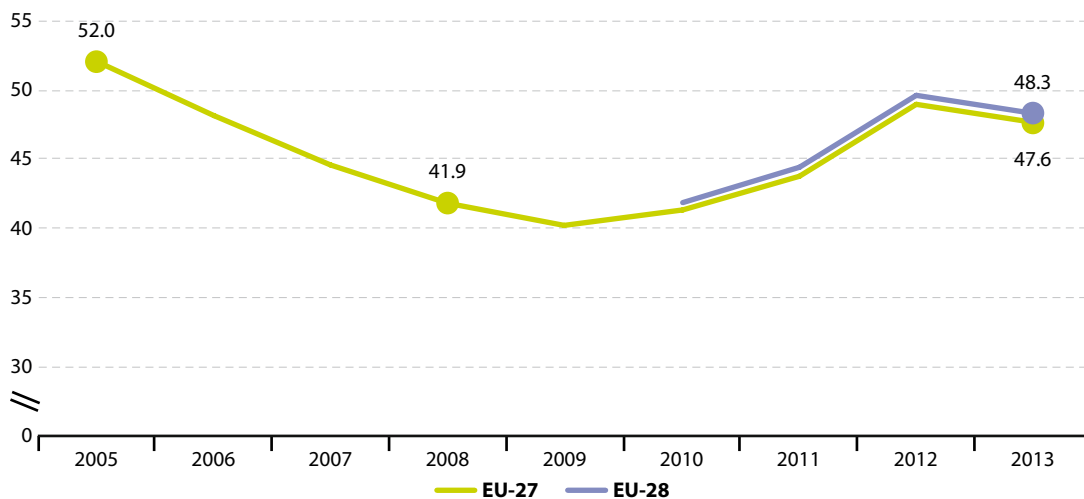
The indicator is one of three components of the Europe 2020 strategy's headline indicator 'people at risk of poverty or social exclusion'. It reflects the definition of poverty adopted by the European Council in 1975 which defined the 'poor' as 'those individuals or households whose resources are so low as to exclude them from the minimum acceptable way of life in the country where they live'. The indicator is a relative measure of income poverty and is responsive to the employment, education and welfare policies that are mobilised to fight poverty.

The indicator 'at-risk-of-poverty rate after social transfers' measures the share of persons at risk of monetary poverty. To take into account the impact of differences in household size and composition, the total disposable household income is 'equivalised'. The equivalised income attributed to each member of the household is calculated by dividing the total disposable income of the household by an equivalisation factor. People at risk-of-poverty are those with an equivalised disposable income below the risk-of-poverty threshold, which is set at 60% of the national median equivalised disposable income (after social transfers).

Severe material deprivation

The number of people affected by severe material deprivation has fallen by 8.5% in the EU-27 over the long term since 2005. However, the economic crisis reversed this favourable trend in the short term, resulting in a 13.8% rise in the number of people affected between 2008 and 2013. Severe material deprivation remains the second most prevalent form of poverty in the EU.

Figure 3.9: Severely materially deprived people, EU-27 and EU-28, 2005–2013 ⁽¹⁾
(million people)



⁽¹⁾ 2005–2006 and 2009 data are estimates.

Source: Eurostat (online data code: [tsdsc270](#))

Material deprivation covers issues relating to economic strain, durables and housing, and the environment of dwellings. Severely materially deprived people have living conditions greatly constrained by a lack of resources. In 2013, 48.3 million people in the EU-28 were living in such conditions. This was equal to 9.6% of the total EU population or every tenth person, making severe material deprivation the second most common form of poverty in the EU.

Between 2005 and 2009 the number of people living in conditions of severe material deprivation in the EU-27 fell gradually by 22.7%. This favourable trend was reversed with the start of the economic crisis in late 2008. Between 2009 and 2012 the number of affected people rose by 21.9% before falling back by 2.8% in 2013. As a result of the gradual fall before the crisis, the trend has developed favourably over the long term since 2005, but has been clearly unfavourable in the short term since 2008 due to the steep increase after the onset of the crisis.



Long term
(since 2005)



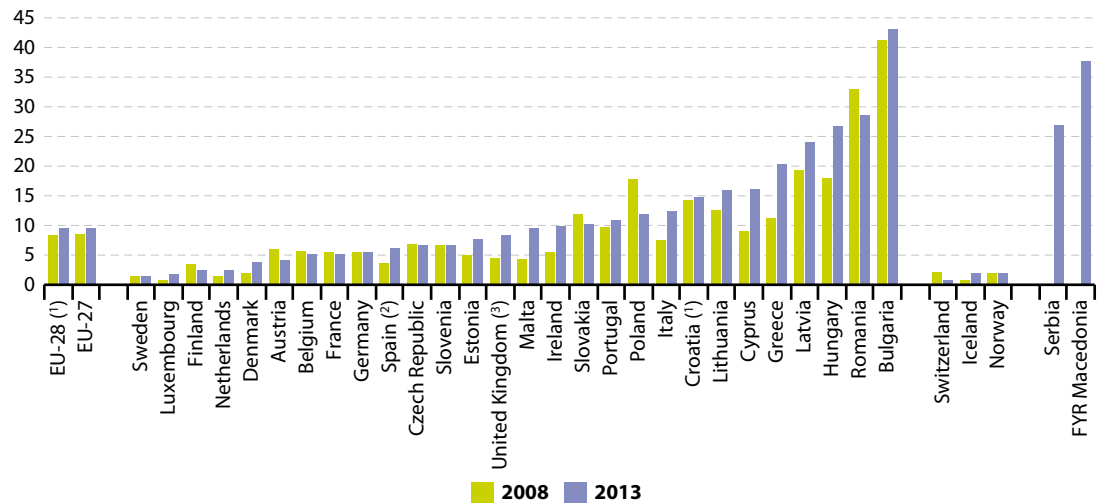
Short term
(since 2008)



How the share of severely materially deprived persons varies across Member States

In 2013, the levels of severe material deprivation differed widely across the EU, from 43 % in Bulgaria to as low as 1.8 % in Luxembourg and 1.4 % Sweden.

Figure 3.10: Severely materially deprived people, by country, 2008 and 2013
(% of population)



(1) 2010 data (instead of 2008); (2) Break in time series in 2009; (3) Break in time series in 2012.

Source: Eurostat (online data code: tsdsc270)

A combination of factors is likely to cause these persistent disparities between Member States. Differences in living standards, levels of development and social policies all play a part (?). In a few Member States the share of people living in poor conditions is much higher than the share of people at risk of monetary poverty. For example, in Bulgaria the proportion of people living in severely deprived conditions is almost twice as high as the share of the population living in monetary poverty. On the other hand, in a number of countries with higher standards of living, such as Sweden, Luxembourg and Denmark, monetary poverty appears more prevalent than severe material deprivation.

Since 2008 the number of people living in severe material deprivation has increased in the majority of Member States. The rate has fallen in nine countries and remained stable in two. In general, these were countries with initially low rates, below or around 5.9 %, such as Austria, Finland, Belgium, France, Germany and Sweden. In Romania the rate also decreased by 4.4 percentage points, from 32.9 % in 2008. The most distinct improvement, however, took place in Poland, which reduced its share of severely materially deprived people by 5.8 percentage points, from 17.7 % in 2008.

What lies beneath this indicator?

The indicator is one of three components of the Europe 2020 strategy's headline indicator 'people at risk of poverty or social exclusion'. Severely materially deprived persons are living in conditions severely constrained by a lack of resources. They are unable to afford at least four out of the following nine items: to pay rent or utility bills; to keep their home adequately warm; to pay unexpected expenses; to eat meat, fish or a protein equivalent every second day; a week's holiday away from home; a car; a washing machine; a colour TV; or a telephone. The indicator thus measures poverty in absolute terms and therefore complements the relative (income-related) indicator on monetary poverty.

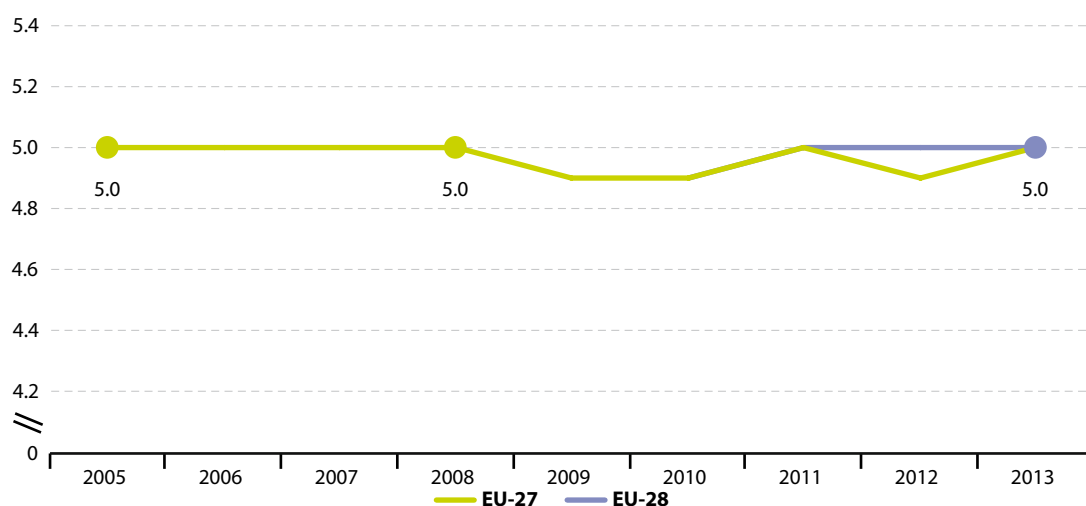
(?) European Commission (2013), *Social Europe: Current challenges and the way forward, Annual Report of the Social Protection Committee — 2012*, Publications Office of the European Union, Luxembourg, p. 27.



Income inequalities

Inequality of income distribution remained unchanged in the EU between 2005 and 2013. The richest 20% of the population still earn about five times as much as the poorest 20%.

Figure 3.11: Inequality of income distribution, 2005–2013 ⁽¹⁾
(income quintile share ratio)



⁽¹⁾ 2006 data are Eurostat estimates.

Source: Eurostat (online data code: [tsdsc260](#))

The income quintile share ratio compares the income received by the 20% of the population with the highest disposable income to that received by the 20% of the population with the lowest disposable income. Between 2008 and 2013, income inequality has remained stable in the EU, with the richest 20% of the population earning about five times as much as the poorest 20%.

How income inequalities varies across Member States

There are considerable differences among Member States in terms of income inequality. In 2013, Romania, Greece and Bulgaria recorded the highest inequality in income distribution. In all three of these Member States the total income of the richest 20% of the population was almost seven times as high as the income of the poorest 20%. On the other hand the Czech Republic and the European Free Trade Association countries Norway and Iceland recorded the most equal distribution of income across Europe, with income quintile share ratios below 3.5.



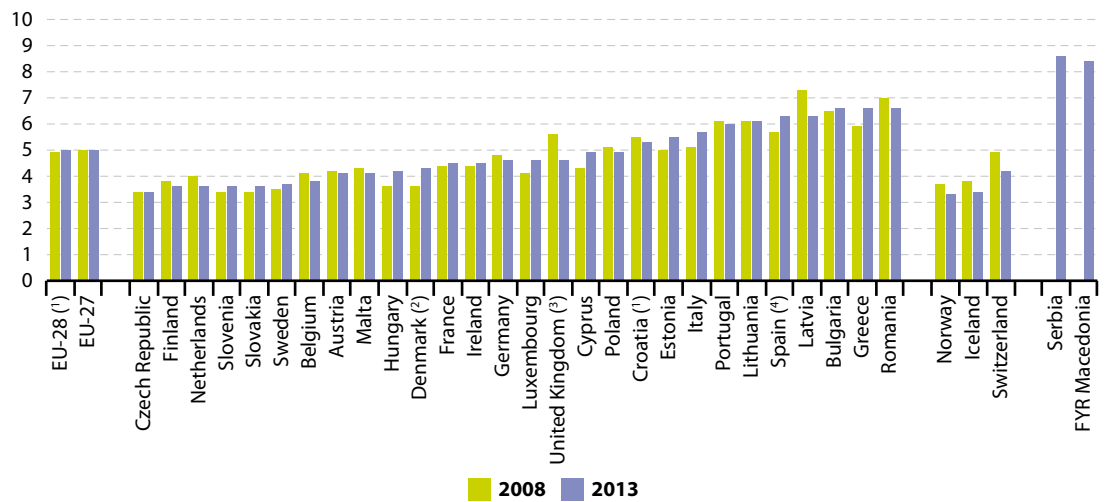
*Long term
(since 2005)*



*Short term
(since 2008)*



Figure 3.12: Inequality of income distribution, by country, 2008 and 2013
(income quintile share ratio)



(1) 2010 data (instead of 2008).
(2) Break in time series in 2010.
(3) Break in time series in 2012.
(4) Break in time series in 2009.

Source: Eurostat (online data code: tsdsc260)

EU trends in income inequality compared with other countries in the world based on the Gini coefficient

The Gini coefficient is another commonly used measure for monitoring trends in income inequality. A coefficient of 100 expresses total inequality (meaning all the income is earned by one person) and a coefficient of 0 expresses perfect equality (meaning everyone earns the same income). In 2013 the Gini coefficient for the EU-28 stood at 30.5, similar to previous years (8). Income inequality according to this measure was lowest in Norway, Slovakia, Slovenia, the Czech Republic and Sweden, with coefficients of less than 25. On the other hand, in Bulgaria, Latvia and Lithuania the index exceeded the EU average by four points, indicating relatively high income inequality in these countries. At the global level, income is far more unequally distributed than within the EU. According to OECD data from 2012, the Gini coefficient, and therefore income inequality, was highest in Mexico (48.2) and the United States (38.9) and lowest in Iceland (25.2) (9).

What lies beneath this indicator?

Reducing inequalities contributes to the EU Sustainable Development Strategy's goal of achieving a high level of social cohesion. The quintile share ratio focuses on the gap between the poorest and richest strata of society. It does not measure inequalities that occur in the middle segment or within the poorest or richest segments. If income were completely evenly distributed, each household would have the same income and therefore the same share of the total income. However, in reality, income is unevenly distributed.

The income quintile share ratio (S80/S20) is the ratio of the total income received by the 20% of the country's population with the highest disposable income (top quintile) to that received by the 20% of the country's population with the lowest disposable income (bottom quintile). The higher the ratio, the greater the income inequality.

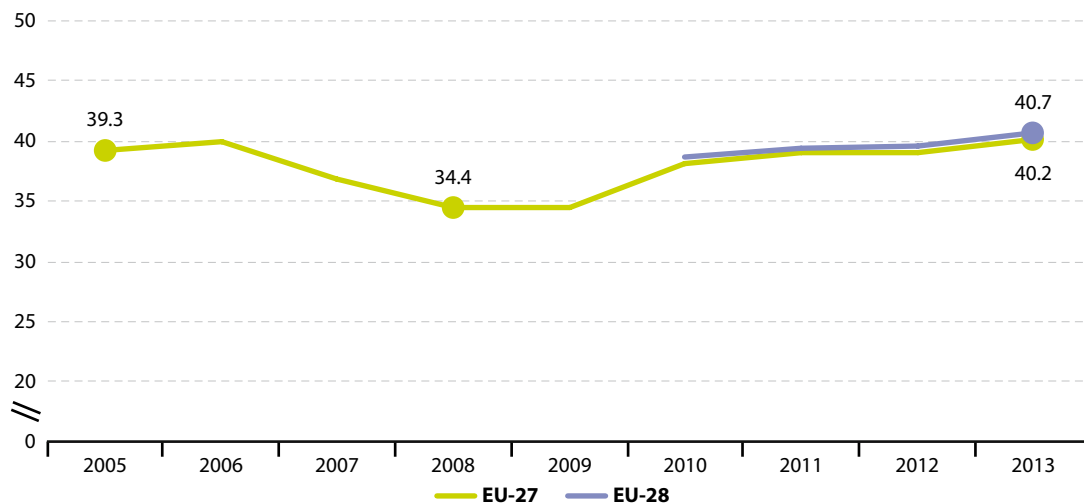
(8) See <http://ec.europa.eu/eurostat/product?mode=view&code=tessi190>

(9) OECD, *Income Distribution and Poverty*, Gini coefficient (at disposable income, post taxes and transfers).

Very low work intensity

The number of people affected by very low work intensity in the EU-27 has increased by 16.8% over the short term since 2008. However, a smaller increase of 2.3% was recorded over the longer term since 2005. Lack of employment is a major driver of monetary poverty and material deprivation.

Figure 3.13: People living in households with very low work intensity, EU-28 and EU-27, 2005–2013 (*) (million people)



(*) 2005–2006 data are Eurostat estimates.

Source: Eurostat (online data code: [tsdsc310](#))

In 2013, 10.8% (or 40.2 million) of the EU-27 population aged 0 to 59 were living in households with very low work intensity. This means the working age members of the household worked less than 20% of their potential during the previous year. Very low work intensity increased between 2005 and 2006 before declining until 2008. It then remained stable for one year before increasing gradually again in parallel with the rising unemployment levels as a result of the crisis. The EU-28 trend has followed a similar path since 2010.

How very low work intensity varies across Member States

Across Europe, the share of people living in households with very low work intensity has ranged from 6.4% in Romania and 6.6% in Luxembourg to 23.9% in Ireland (see Figure 3.14). Between 2008 and 2013 Greece, Ireland and Spain reported the highest increases in the amount of households with very low work intensity, by 10.7, 10.2 and 9.1 percentage points respectively. On the other side of the spectrum, improvements were observed in Romania (1.9 percentage points), Germany (1.8 percentage points), France (0.9 percentage points), Poland (0.8 percentage points) and the Czech Republic (0.3 percentage points).



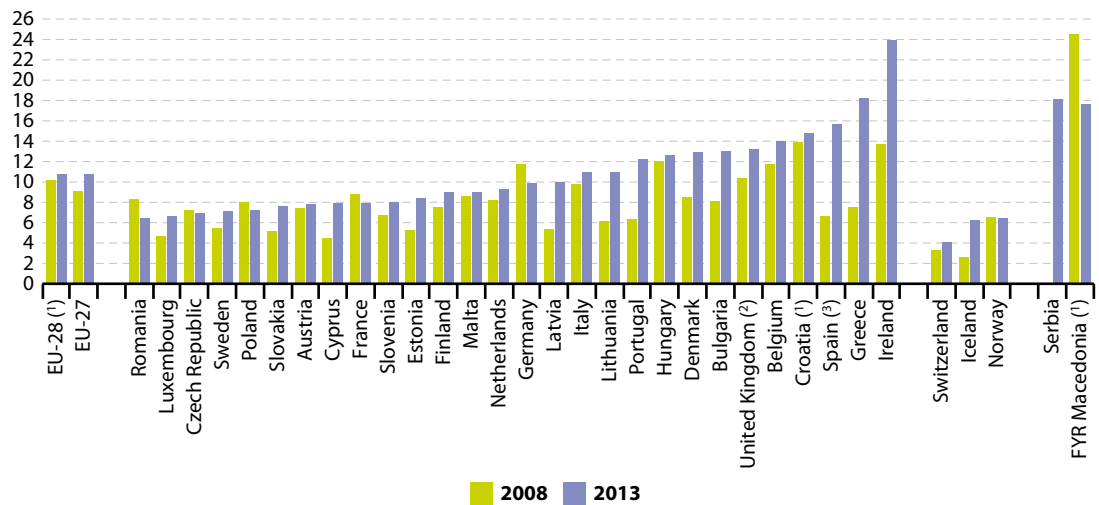
Long term
(since 2005)



Short term
(since 2008)



Figure 3.14: People living in households with very low work intensity, by country, 2008 and 2013
(% of population aged less than 60)



⁽¹⁾ 2010 data (instead of 2008).

⁽²⁾ Break in time series in 2012.

⁽³⁾ Break in time series in 2009.

Source: Eurostat (online data code: [tsdsc310](#))

In some countries the share of people living in households with very low work intensity has increased by an amount similar to the decrease in their employment rate. In some cases such as in Greece and Spain the increase has been even stronger. This indicates that the most vulnerable households have been hit the hardest by falling employment rates⁽¹⁰⁾. However, in many countries the lack of access to labour does not seem to correspond to the prevalence of other forms of poverty or social exclusion: material deprivation and monetary poverty. Ireland, for example, in 2013 had a high proportion of households with very low work intensity (23.9%) despite its risk of monetary poverty (14.1%) being below the EU average. In contrast, Romania had one of the highest proportions of its population living at risk of monetary poverty in 2013 (22.4%) and at the same time one of the lowest shares of households with very low work intensity (6.4%).

What lies beneath this indicator?

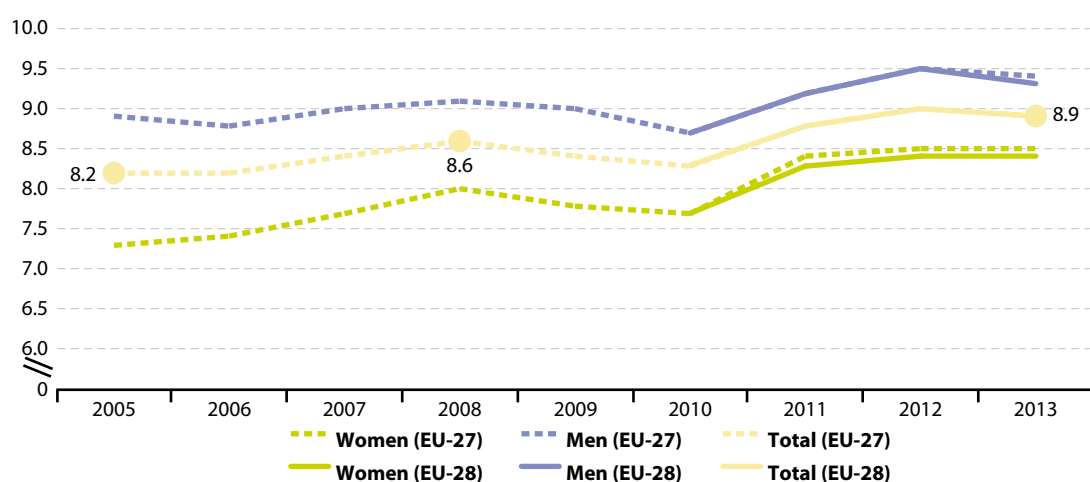
The very low work intensity indicator is one of three components of the Europe 2020 strategy's headline indicator 'people at risk of poverty or social exclusion'. People are defined as living in households with very low work intensity if they are aged 0 to 59 and the working age members in the household worked less than 20% of their potential during the past year.

⁽¹⁰⁾ European Commission (2013), *Social Europe: Current challenges and the way forward*, Annual Report of the Social Protection Committee — 2012, Publications Office of the European Union, Luxembourg, p. 28.

Working poor

In 2013, 8.9% of employed people in the EU-28 were considered to be working poor. The share of working poor in the EU-27 increased by 0.7 percentage points in the long-term period between 2005 and 2013 and by 0.3 percentage points in the shorter term between 2008 and 2013, mostly as a result of a strong increase since 2010. Men were more at risk of in-work poverty than women.

Figure 3.15: In work at-risk-of-poverty rate, by sex, EU-28, 2005–2013 (¹)
(% of employed people aged 18 or over)



(¹) 2005–2006 data are estimates.

Source: Eurostat (online data code: [tsdsc320](#))

Poverty and social exclusion do not only affect those who are economically inactive or unemployed. Between 2005 and 2013, the share of so-called 'working poor' in the EU-27 increased by 0.7 percentage points. The strongest increase was recorded between 2010 and 2012. In 2013, the in-work poverty rate fell back slightly by 0.1 percentage points.

Who is most at risk of in-work poverty?

Certain groups among the working population face high risks of being poor. Factors affecting in-work poverty rates include household type, type of contract, working time and hourly wages, among others. Multi-person adult households without dependent children are much less at risk of in-work poverty than households with dependent children and single-person households. Single parents are the most at risk, with one out of five affected in 2013. Part-time employment can also lead to this form of poverty. In general men were more affected by in-work poverty than women (9.3% compared with 8.4%) in 2013. The situation was the opposite for young workers aged 18 to 24 years. In this case women were more affected with 12.5% at risk of in-work poverty compared with 10.6% for men. Of all age groups, young workers have shown the highest in-work at-risk-of-poverty rates.

What lies beneath this indicator?

Poverty is often associated with the absence of a paid occupation. Nevertheless, low wages can also push some working people below a given poverty line.

Employed persons are defined as working poor if they are aged 18 or over and have an equivalised disposable income below the national risk-of-poverty threshold, which is set at 60% of the national median equivalised disposable income (after social transfers).



Long term
(since 2005)



Short term
(since 2008)



Long-term unemployment



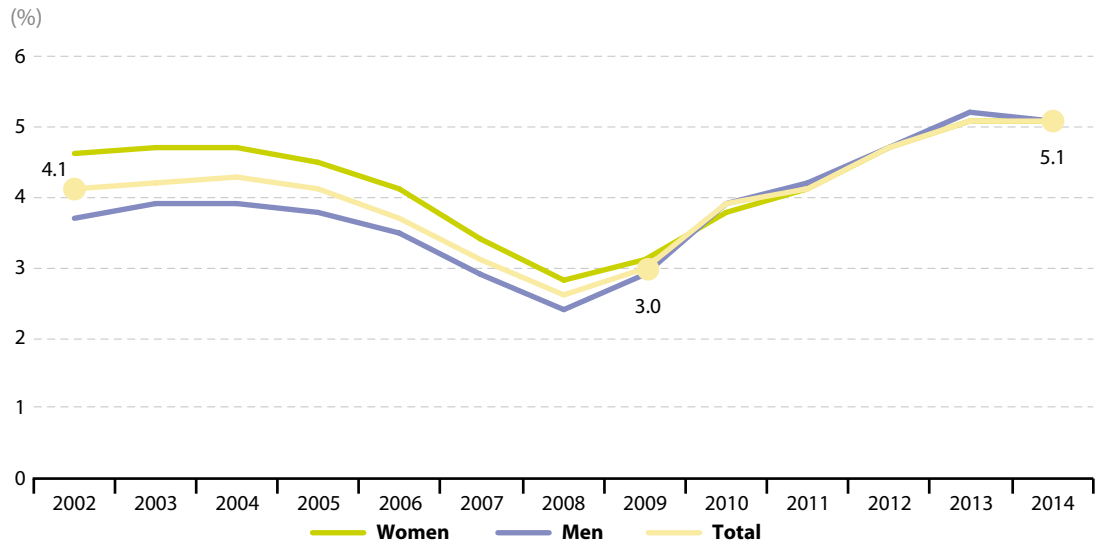
Long term
(since 2002)



Short term
(since 2009)

The EU's long-term unemployment rate has risen by 24 % in the long-term period since 2002. The trend tended to be favourable until 2008, but then worsened considerably with the onset of the economic crisis.

Figure 3.16: Long-term unemployment rate, by sex, EU-28, 2002–2014



Source: Eurostat (online data code: [tsdsc330](#))

Long-term unemployment describes people aged 15 or over who have been unemployed for longer than a year. These people usually find it harder to obtain a job than people who have been unemployed for shorter periods, thus they face a higher risk of social exclusion. The generally favourable trend of falling long-term unemployment in the early 2000s reversed after the onset of the economic crisis. From 2009 to 2014 the share of long-term unemployed in the EU increased considerably, by 2.1 percentage points. In 2014, 5.1 % of the economically active population had been unemployed for longer than a year. Differences between men and women have disappeared over the past five years.

What lies beneath this indicator?

A large number of long-term unemployed people generate huge social and economic costs in terms of passive labour market expenditure and on social assistance systems, which provide support when the long-term unemployed exhaust their rights to unemployment benefits. Long-term unemployed people are also at a high risk of social exclusion.

A period of unemployment of one year or more is the main criterion for determining long-term unemployment. The unemployment rate comprises people aged 15 to 74 who did not work for pay or profit during the reference week, who are available for work and were actively seeking work.



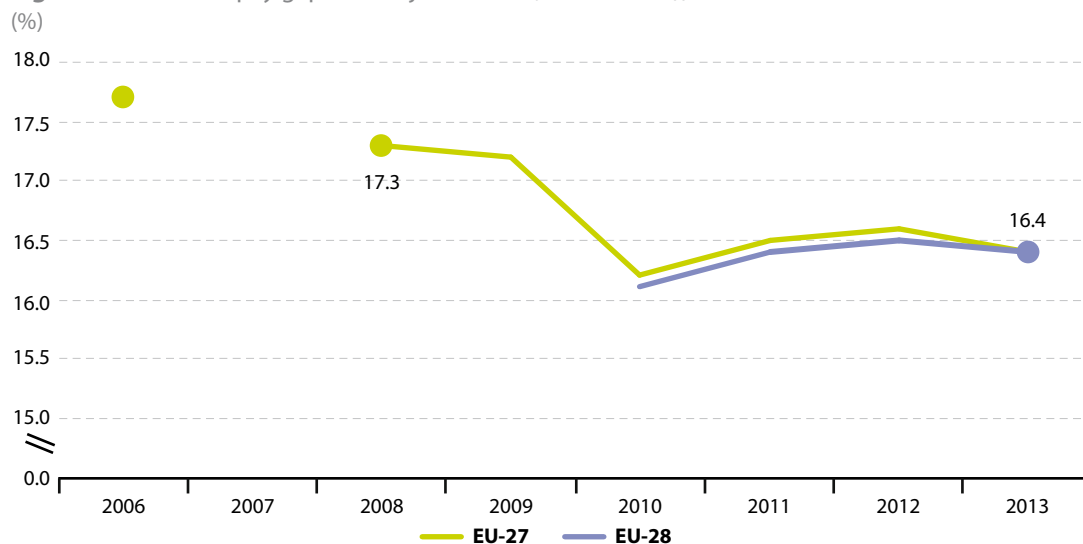
Gender pay gap

The gap between women's and men's earnings fell by 1.3 percentage points in the EU-27 between 2006 and 2013. This means the hourly gross earnings of women are catching up with those of men.



Short term
(since 2008)

Figure 3.17: Gender pay gap in unadjusted form, 2006–2013 ⁽¹⁾



⁽¹⁾ 2009 and 2011–2013 data are provisional.

Source: Eurostat (online data code: [tsdsc340](#))

The gap between women's and men's earnings decreased in the EU-27 between 2006 and 2010, and was rather stable between 2010 and 2013. In 2013, women's hourly gross earnings were 16.4% lower than those of men. The development in the EU-28 was very similar for the period for which data are available.

What lies beneath this indicator?

Occupational segregation of the sexes is one of the most commonly cited reasons for the gender pay gap. On the one hand, women tend to be employed in predominantly low-valued and low-paid sectors. This is often linked to gender stereotyping, occupational possibilities for part-time employment, traditions and societal norms, which affect educational and career choices. On the other hand there is a lack of women in senior and executive level positions. This is commonly related to caring responsibilities, personality differences and lack of progression opportunities in part-time jobs ⁽¹⁾. Due to the impact of the gender pay gap, women earn less over their lifetimes compared with men. This results in lower pensions and a risk of poverty in old age.

The unadjusted gender pay gap (GPG) represents the difference between average gross hourly earnings of male and female paid employees as a percentage of average gross hourly earnings of male paid employees. All employees working in firms ⁽²⁾ with ten or more employees are included.

⁽¹⁾ New JNCHEs Equality Working Group (2011), *The Gender Pay Gap — A Literature Review*.

⁽²⁾ Firms: the whole economy except agriculture, fishing, public administration, private households and extra-territorial organisations.



Early leavers from education and training



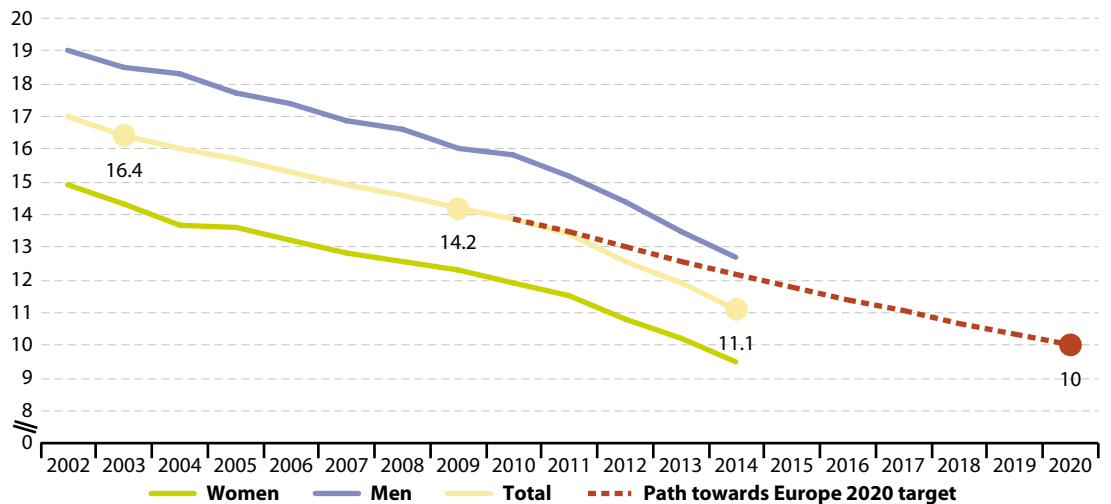
Long term
(since 2003)



Short term
(since 2009)

The share of early leavers from education and training fell by 5.3 percentage points in the EU-28 between 2003 and 2014. If this trend can be sustained, the Europe 2020 target to reduce the rate of early leavers from education and training to less than 10% by 2020 should be within reach.

Figure 3.18: Early leavers from education and training, by sex, EU-28, 2002–2014 ⁽¹⁾
(% of the population aged 18 to 24)



⁽¹⁾ Break in time series in 2003 and 2014; Europe 2020 target: less than 10%.

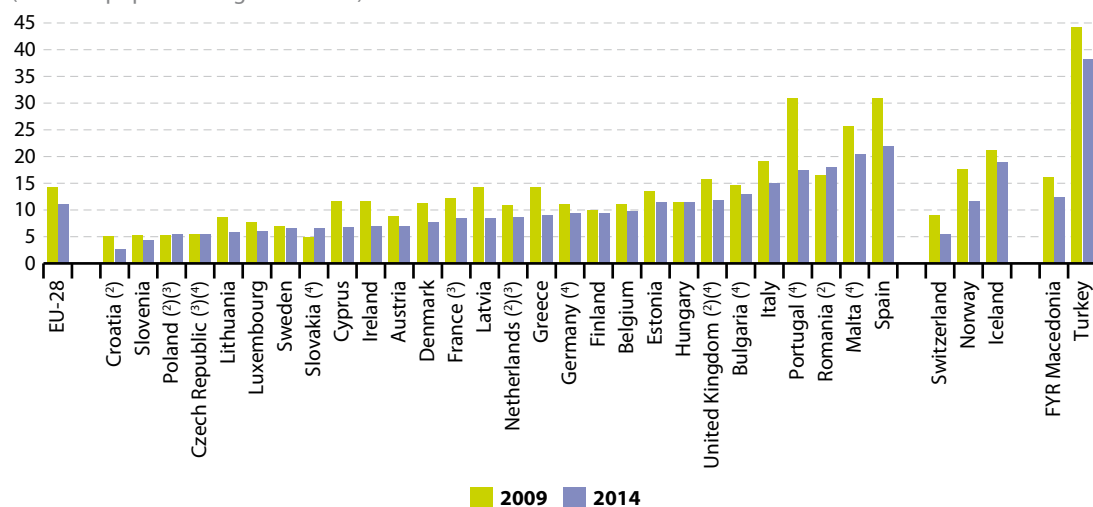
Source: Eurostat (online data code: [tsdsc410](#))

Since 2003 the share of the population aged 18 to 24 with at most lower secondary education and not in further education or training has fallen continuously in the EU-28. This trend mirrors reductions in almost all Member States for both men and women. If these dynamics can be sustained, the Europe 2020 targets of reducing the share of early leavers from education and training to less than 10% should be within reach. In the EU-28 as a whole, rates of early leavers from education and training are about three percentage points higher for men than for women. Since 2002, this gap has closed only slightly.

How the share of early leavers from education and training varies across Member States

In 2014, rates of early leavers from education and training varied by a factor of eight across Member States, from 2.7% in Croatia to 21.9% in Spain. The lowest proportions of early leavers were observed in Croatia, Slovenia, Poland, the Czech Republic and Lithuania with rates of less than 6%. The share was highest in Spain, Malta, Romania and Portugal, with rates of 17% or more.

Figure 3.19: Early leavers from education and training, by country, 2009 and 2014 ⁽¹⁾
(% of the population aged 18 to 24)



⁽¹⁾ Break in time series for all countries in 2014.

⁽²⁾ Break in time series in 2010.

⁽³⁾ Break in time series in 2013 ⁽³⁾.

⁽⁴⁾ Break in time series in 2011.

Source: Eurostat (online data code: [tsdsc410](#))

Between 2009 and 2014 strong falls in rates of early leavers from education and training took place in southern European countries, especially Portugal (from 30.9% to 17.4%), Spain (from 30.9% to 21.9%), Malta (from 25.7% to 20.4%) and Cyprus (from 11.7% to 6.8%), as well as in Latvia (from 14.3% to 8.5%). In 2014, 19 Member States had early school leaving rates below the 11.1% EU average and had met the overall EU target of 10%.

Box 3.3: How does the EU tackle early school leaving?

The Europe 2020 strategy calls for intensified efforts to reduce the proportion of early leavers from education and training to less than 10% by 2020. The 10% target is stated as one of five headline targets to be reached by 2020. The EU Sustainable

Development Strategy encompasses the same target, with the additional aim of ensuring that at least 85% of 22 year olds have completed upper secondary education.

What lies beneath this indicator?

Young adults who lack a basic education are more likely to be unemployed or work in low-wage jobs, and are less likely to progress in their career. A basic education may allow people to adapt to a changing labour market.

The indicator is a headline indicator of the Europe 2020 strategy and shows the share of the population aged 18 to 24 with at most lower secondary education and not in further education or training.

⁽³⁾ See footnote 15 below for a description of the changes in the figures for France related to an extensive revision of the questionnaire of the Labour Force Survey by INSEE, the French Statistical Office.



Tertiary education



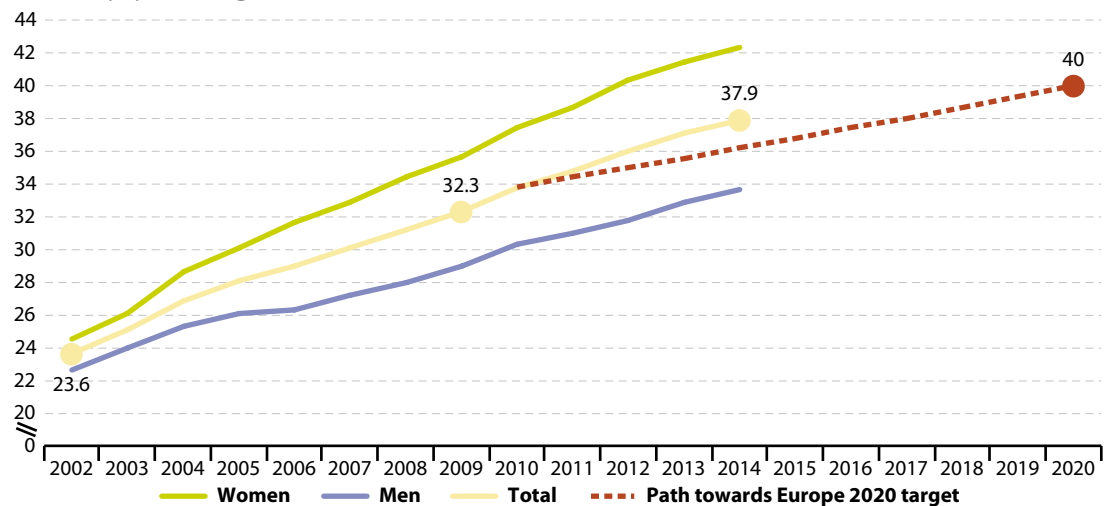
Long term
(since 2002)



Short term
(since 2009)

Tertiary educational attainment has risen by more than 60% in the EU over the long term since 2002. The EU seems to be on track to meeting its target of increasing the share of 30 to 34 year olds having completed tertiary education to at least 40% by 2020.

Figure 3.20: Tertiary educational attainment, by sex, EU-28, 2002–2014 ⁽¹⁾
(% of the population aged 30 to 34)



⁽¹⁾ Break in time series in 2014; Europe 2020 target: at least 40%.

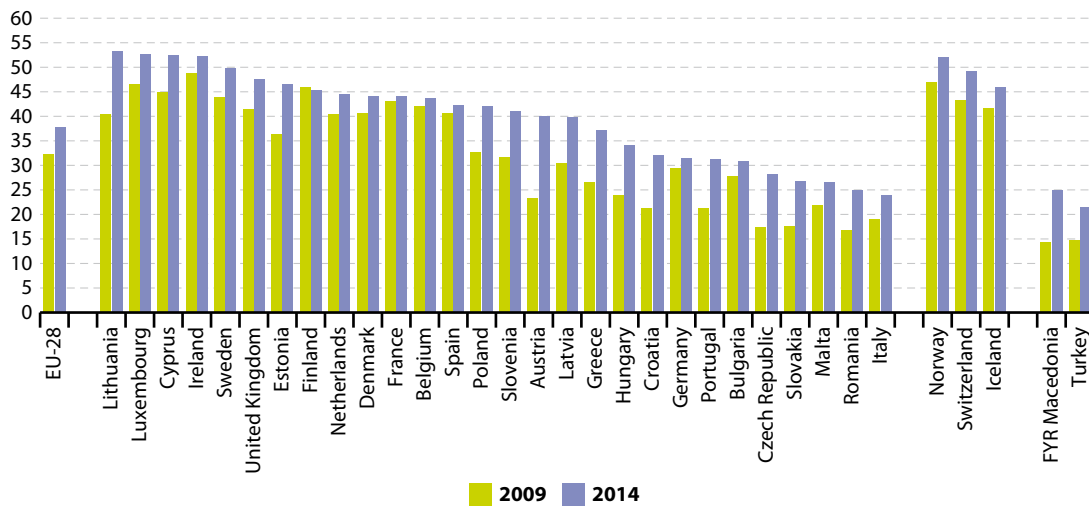
Source: Eurostat (online data code: [tsdsc480](#))

The share of 30 to 34 year olds who have attained tertiary education has increased continuously in the long term, from 23.6% in 2002 to 37.9% in 2014. Short-term developments have also been positive, with tertiary educational attainment increasing by more than five percentage points between 2009 and 2014. Disaggregated by gender, the data reveal that growth in the share of tertiary graduates has been considerably faster for women, who have already met the Europe 2020 target eight years early and continue to show improvements. Progress has been slower for men: by 2014, only 33.6% of 30 to 34 year old men had attained tertiary education. Provided these positive trends continue, the EU seems to be on track to meeting its target of increasing the share of the population aged 30 to 34 that have completed tertiary education to at least 40% by 2020.

How tertiary educational attainment varies across Member States

Between 2002 and 2014, the tertiary educational attainment rates of 30 to 34 year olds increased in all Member States. In 2014, 16 Member States already exceeded the Europe 2020 target of 40%, the majority of them being countries from northern and central Europe. At the other end of the scale, the lowest tertiary educational attainment rates — of less than 30% — have been observed in the Czech Republic, Slovakia, Malta, Romania and Italy.

Figure 3.21: Tertiary educational attainment, by country, 2009 and 2014 (*)
(% of the population aged 30 to 34)



(*) Break in time series for all countries in 2014 (*).

Source: Eurostat (online data code: tsdsc480)

Box 3.4: How does the EU foster tertiary education?

The Europe 2020 strategy includes the target of 'increasing the share of 30 to 34 year olds having completed tertiary or equivalent education to at least 40%' by 2020. 'Tertiary' education means

university or university-like education according to UNESCO's International Standard Classification of Education (ISCED 2011) level 5 to 8.

What lies beneath this indicator?

The importance of fostering higher education is illustrated in forecasts by the European Centre for the Development of Vocational Training (Cedefop) concerning the skills required by the labour market until 2025. Between 2013 and 2025, some 20 million jobs requiring medium or high-level qualifications are estimated to be created, whereas positions only requiring low qualifications are expected to decline by nearly 12 million.

The indicator is a headline indicator of the Europe 2020 strategy and is defined as the percentage of the population aged 30 to 34 who have successfully completed tertiary studies (for example at universities and higher technical institutions).

(*) Data until 2013 are classified according to ISCED 1997 and data from 2014 according to ISCED 2011, which is the reason behind the break in time series in 2014. The time series is comparable for all countries with the exception of AT where there was a level shift break due to a reclassification.



Lifelong learning



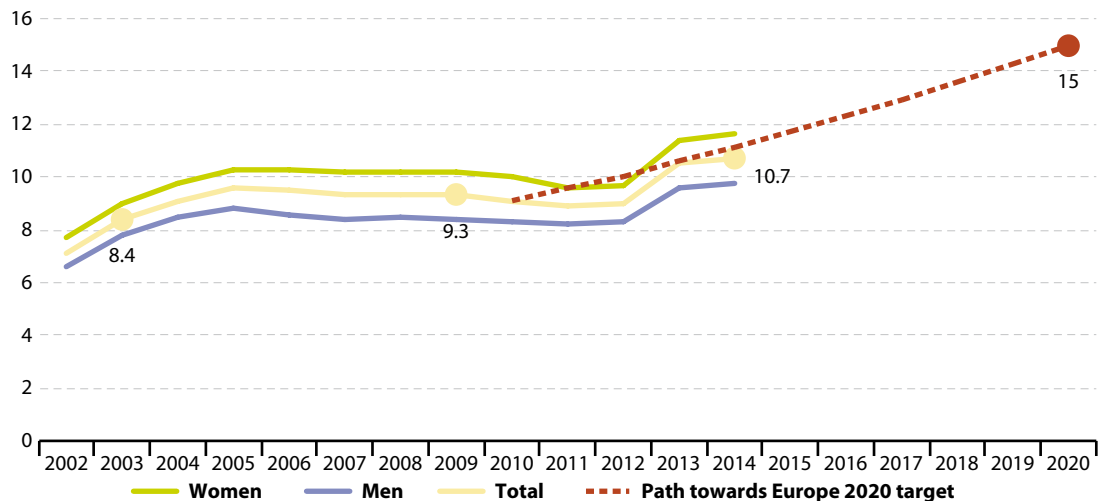
Long term
(since 2003)



Short term
(since 2009)

A 27.4% increase has been recorded in lifelong learning in the EU since 2003. Nevertheless, progress is slow and the EU benchmark of at least 15% of adults participating in lifelong learning in 2020 may be difficult to reach.

Figure 3.22: Lifelong learning, by sex, EU-28, 2002–2014⁽¹⁾
(% of population aged 25 to 64)



⁽¹⁾ Break in time series in 2003 and 2013.

Source: Eurostat (online data code: [tsdsc440](#))

Between 2003 and 2009 the share of the EU adult working population participating in continued education and training increased from 8.4% to 9.3%. Between 2009 and 2012, participation in lifelong learning declined from 9.3% to 9.0%. This slowed progress towards the benchmark set in the EU's Strategic Framework for Education and Training (ET 2020), which aims to increase the share of adults participating in lifelong learning to at least 15% by 2020. However, between 2012 and 2014, the ratio of adults involved in lifelong learning increased again to 10.7%. This rise is mainly influenced by a methodological change to the French Labour Force Survey⁽¹⁵⁾. There is still a 4.3 percentage point gap to overcome to reach the 2020 target, which might be difficult to achieve without further measures.

⁽¹⁵⁾ INSEE, the French Statistical Office, has carried out an extensive revision of the Labour Force Survey questionnaire. The new questionnaire was used from 1 January 2013 onwards. It impacts significantly the level of various French LFS-indicators. Detailed information on these methodological changes and their impact is available on INSEE's website <http://www.insee.fr/fr/themes/info-rapide.asp?id=14> Box 'Pour en savoir plus'. Due to this revision, comparisons with the past should be avoided, both for the French data and for the EU aggregates, which are also affected. In particular, the variable EDUCSTAT (participation in regular/formal education during the last four weeks) has been calculated from 2013 based on a question on formal education (and no longer on initial education); this has some (rather minor) impact on the number of students aged 25–64. The variable COURATT (participation in non-formal education during the last four weeks) from 2013 covers all non-formal education and training activities (four questions are asked instead of one question = the implementation of the variable in the questionnaire changed and now covers/catches these activities better). As a result the participation in non-formal activities triples for the age group 25–64, and this change explains the change in the overall lifelong learning indicator. The online table 'trng_lfs_09' provides the breakdown by formal/non-formal and age group for further evaluation of the change in the percentages. Given the share of France in the population aged 25–64 in 2013 (about 12.2%) the impact of this methodological change in France has been assessed by Eurostat as having had an impact of about 1.5% on the EU-28 average.



Box 3.5: EU initiatives to promote lifelong learning

The Europe 2020 flagship initiative 'Agenda for new skills and jobs' presents concrete actions aimed at helping the EU reach its employment target of having 75 % of the working-age population (20 to 64 years) in work by 2020. One of these actions — 'Equipping people with the right skills for the jobs of today and tomorrow' — is directly linked with

lifelong learning. The Europe 2020 flagship initiative 'Youth on the move' also supports lifelong learning as one of its four main lines of action, to develop key competences and quality learning outcomes, in line with labour market needs. This also means tackling the high level of early school leaving.

What lies beneath this indicator?

Lifelong learning measures participation in formal and in non-formal education and training on an ongoing basis with the aim of improving knowledge, skills and competence. Lifelong learning is indispensable for improving and developing skills, advancing careers, adapting to technological development and returning to the labour market.

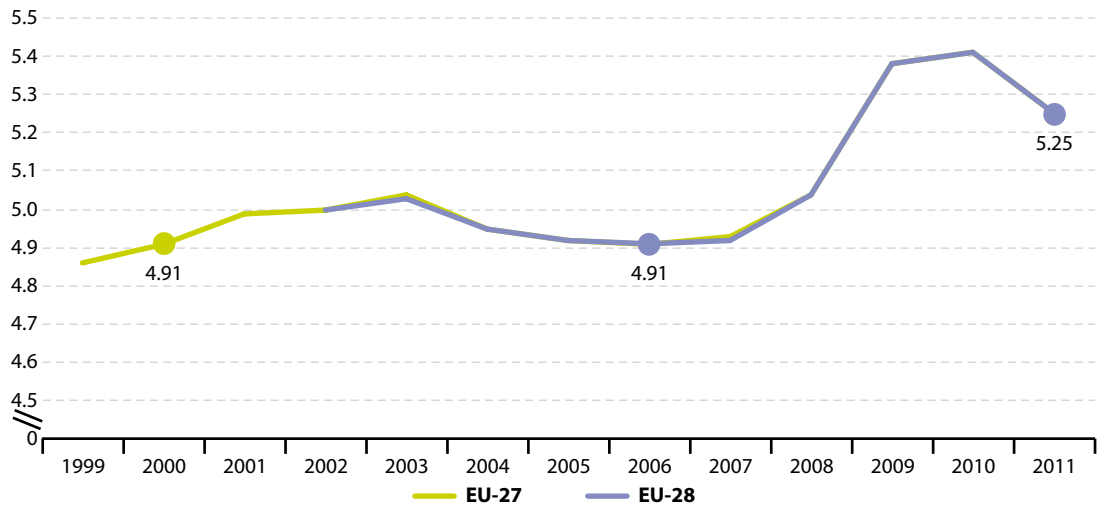
The indicator lifelong learning refers to people between 25 and 64 who stated that they received education and training in the four weeks before the survey compared with the total population of the same age group.



Education expenditure

Expenditure on education has increased by 0.34 percentage points in the EU-28 since 2006. Investment in education is essential for addressing the long-term impacts on unemployment.

Figure 3.23: Public expenditure on education, 1999–2011 (°)
(% of GDP)



(°) Data are estimates.

Source: Eurostat (online data code: [tsdsc510](#))

Public expenditure on education as a percentage of GDP increased slightly in the EU-27, from 4.91 % in 2000 to 5.25 % in 2011. This average figure conceals considerable cross-country variations in the allocation of public resources for education, ranging from 2.53 % in Lithuania to 8.75 % in Denmark in 2011. The EU-28, for which data are available from 2002 onwards only, has followed a similar trend to the EU-27.

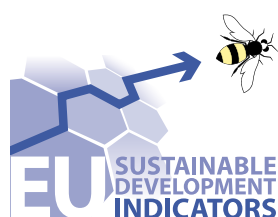
What lies beneath this indicator?

Public expenditure on education as a percentage of GDP is often considered an indicator of how committed a government is to developing skills and competences. Investment in education is essential for facing economic crises and the challenges posed by an ageing population. It helps foster economic growth and productivity, and enhances innovation and competitiveness. While fiscal and monetary policies can counteract the adverse effects of the crisis in the short run, investment in education is a necessary policy measure for addressing its long-term impacts on unemployment.

The indicator is defined as total public expenditure on education, expressed as a percentage of GDP.

Demographic changes
















Overview of the main changes

The employment rate of older people has increased in both the long term since 2002 and the short term since 2009. The positive trend has been consistent for both men and women over the entire time period. Because the employment rate for older women has grown faster than for older men, the gap between men and women has narrowed slightly. Trends for other indicators in the 'demography' sub-theme have varied. Life expectancy at age 65 showed only moderate improvements in both the long and short terms. The fertility rate developed less favourably. Population growth varied strongly in the long run and short run. Net migration generally increased but dipped substantially after the onset of the economic crisis. Old-age dependency has increased in the long term, with even stronger growth in the short term. In contrast, the 'old-age income adequacy' showed continuous progress. Trends in the sub-theme 'public finance sustainability' have been mixed. Government debt rose substantially, while the duration of working life has slightly but steadily progressed in both the long and short terms. From 2000 to 2008 the impact of ageing on public expenditure remained steady.

Table 4.1: Evaluation of changes in the demographic changes theme, EU-28 ⁽¹⁾

Indicator	Long-term evaluation (since 2000)	Short-term evaluation (last five-year period)
Employment rate of older workers	 ⁽²⁾	
Demography		
Life expectancy and healthy life years at age 65	 ⁽³⁾	
Population growth	:	:
Total fertility rate	 ⁽⁴⁾	
Migration	:	:
Old-age dependency	:	:
Old-age income adequacy		
Income level of over-65s compared to before	 ⁽⁵⁾	 ⁽⁶⁾
Public finance sustainability		
Government debt	:	 ⁽⁷⁾
Retirement		
The impact of ageing on public expenditure	:	:
Pension expenditure projections	:	:

(¹) An explanation of the evaluation method and the meaning of the weather symbols is given in the Introduction and in Annex III. (²) From 2002. (³) From 2004. (⁴) From 2001. (⁵) From 2005; Evaluation based on EU-27. (⁶) Evaluation based on EU-27. (⁷) Last three-year period.



Key trends in demographic changes

Half of older workers have jobs and the gender employment gap for this group is closing

On average, 51.8% of older workers in the EU were employed in 2014. Since 2002 the **employment rate of older people aged 55 to 64** has slightly but continuously increased. As a result, the original 50% target set in the Lisbon strategy — the predecessor to Europe 2020 — to be met by 2010 was achieved finally in 2013.

Overall the employment rates of older women and older workers in total have resisted the effects of the economic slowdown, as shown by their steady upward trends. In 2014 the employment rate of older women remained roughly 13.7 percentage points lower than that of older men, with 45.2% of older women in employment compared with 58.9% of older men. However, a narrowing of the gender gap for this indicator can be observed. While the employment rate of older men has increased by 10.7 percentage points since 2002 and 4.3 percentage points since 2009, the increase was clearly higher for women, rising by 16.1 percentage points since 2002 and 7.5 percentage points since 2009.

Population structure trends confirm demographic challenges

Life expectancy at age 65 in the EU was 21.1 years for women and 17.7 years for men in 2012. Since 2002 the expected years to live have increased continuously for both sexes and the gap between men and women has declined. However, from 2011 to 2012 life expectancy has fallen slightly for both women (by 0.9%) and men (by 0.6%). Despite the overall improvements, the years to live without any activity limitation have not followed the same positive trend. In 2012, both women and men aged 65 were expected to live on average 8.5 years in a healthy condition.

In 2013, the total EU population grew by 3.4 per 1 000 persons. The crude rate of **population change** has been volatile over time. An increase after 2002 was followed by a temporary dip in the short term, after 2008, caused by a slowdown in both net migration plus adjustment and natural population growth. Furthermore, a considerable divergence in this indicator is visible across Member States.

In 2013, the EU **total fertility rate** was at 1.55 children per woman, far below the replacement level of 2.1 children per woman. The indicator has increased by 6.2% since 2001 (1.46 children per woman), but has fallen by 3.7% since 2008 (1.61). After a period of stabilisation at 1.6 children per woman until 2011, the indicator has since slightly decreased further.

In contrast to the fertility rate, the crude rate of **net migration plus adjustment** in the EU seems to be recovering after a dip following the economic crisis. In 2013 it was 3.2 per 1 000 persons, similar to the crude rate of 2002.

The EU **old-age-dependency ratio**, that is the ratio between the elderly population aged 65 and over and the population of working persons aged 15 to 64 years, increased continuously between 2001 and 2014 to 28.1%. EuroPop2013 population projections ⁽¹⁾ point towards further increases, up to 50% in 2055.

Income levels of pensioners have improved continuously

In 2013 the average income level of pensioners in the EU was 55% of the earnings of the working population aged 50 to 59. The **aggregate replacement ratio** has followed a moderate upward trend both in the long term, since 2005, and the short term, since 2008. Across Member States the ratio of income levels from pensions of elderly people relative to the income level from earnings of those aged 50 to 59 ranged from 37% in Ireland to 79% in Luxembourg.

Government debt levels are rising and drifting apart across Member States

Government debt in the EU increased substantially between 2011 and 2014, from 80.9% to 86.8%. A recovery from the onset of the economic crisis has yet to be seen. Government debt levels varied significantly across the EU in 2014, ranging from 10.6% of gross domestic product (GDP) in Estonia to 177.1% in Greece. Compared with 2009, the range between the lowest and the highest general government gross debt level of Member States has slightly increased.

⁽¹⁾ Population projections are what-if scenarios that aim to provide information about the likely future size and structure of the population. EuroPop2013, the latest Eurostat's population projection is one of several possible population developments scenarios based on a set of assumptions for fertility, mortality and net migration.

Many Member States reformed their pension systems to extend their population's **duration of working life** and subsequently reduce the costs for pension payments by the state. Between 2000 and 2013 the duration of working life in the EU increased by 2.2 years. In 2013, men worked on average 37.7 years and women 32.5 years during the course of their life.

The **social protection expenditure on care for the elderly** in the EU-27 has increased from 0.37 % of GDP in 2000 to 0.50 % in 2008 and further to 0.56 % in 2012.

Pension expenditure in the EU is projected to remain stable at around 11 % of GDP, from 11.3 % in 2013 to 11.2 % in 2060.

Why do we focus on demographic changes?

The EU is facing major demographic changes, including an ageing population, low birth rates, changing family structures and migration. These currently pose challenges for social policy and are likely to become even more important in the future. While the global population is predicted to rise significantly, Europe's share is shrinking. Nevertheless, the current demographic situation in the EU is characterised by continuous population growth, even if the pace of increase has varied over time.

Net migration — the difference between people entering the EU and those leaving — is for now the most important factor for population growth, and might be even more so in future. Economically productive migrants contribute to the economy through labour and taxes. Furthermore, migrant workers may alleviate the negative effects of population ageing and increasingly be needed to maintain the sustainability of pension systems. The EU Sustainable Development Strategy (EU SDS) recognises the contribution of positive net migration to meeting the challenges of demographic changes. However, because migration also occurs between Member States, it may put increasing demographic pressure on those countries where more people have left than have arrived.

To a lesser extent, EU population growth is caused by natural increase, defined as the surplus of live births over deaths during a year. It is supported by moderate improvements in the life expectancy of people aged 65 and an increase in the total fertility rate over the last decade. Still, the average number of children per woman is far below the 'replacement level', which is the fertility level needed to keep the population size constant without inward or outward migration. Because people live longer and births are not enough to replace the elderly population, the EU's population is growing older.

The shrinking proportion of working-age population combined with the rising number of retirees puts pressure on public finances. This is reflected by the old-age dependency ratio, which has been continuously increasing over the last decade and is expected to grow by up to 50 % in 2060. The EU is bound to tackle these challenges by increasing the participation of older workers in the labour market. Substantial progress has already been made in the employment rate of older workers (aged 55 to 64). In order to reach the target of an employment rate of 75 % for the total working-age population, set in the Europe 2020 strategy, the labour market integration of older workers has to be further improved. In this respect, the provision of incentives to work longer, an increase in the retirement age and continuous development of skills and life-long learning are all becoming more important.

Healthy public finances, reflected by general government gross debt, are essential to meet the needs of ageing populations and to promote economic growth while preventing debt from being handed down to future generations. In addition to pensions, which make up a big part of public expenditure, other expenditure might be needed to provide adequate old-age care and social protection. With an ageing population, the EU is facing trade-offs between pensions that are sustainable, on the one hand, and adequate, on the other. Besides addressing poverty, pension systems play a role in allowing retirees to maintain living standards comparable to those achieved during their working lives, thus preventing social exclusion of the elderly (?). The shift towards longer working lives (later retirement) in the EU is essential to support the sustainability and adequacy of pension systems.

(?) The Europe 2020 strategy has set a target to lift at least 20 million people out of the risk of poverty and social exclusion by 2020.



How does the EU tackle demographic changes?

The EU Sustainable Development Strategy (EU SDS) ⁽³⁾ dedicates one of its seven key challenges to demographic change. The objective is 'to create a socially inclusive society by taking into account solidarity between and within generations and to secure and increase the quality of life of citizens as a precondition for lasting individual well-being'.

The EU SDS has set the following operational objectives and targets:

- Supporting the Member States in their efforts to modernise social protection in view of demographic changes.
- Significantly increasing the labour market participation of women and older workers according to set targets, as well as increasing employment of migrants by 2010.
- Continuing developing an EU migration policy, accompanied by policies to strengthen the integration of migrants and their families, taking into account the economic dimension of migration.

The Europe 2020 strategy, set out by the European Commission in 2010 ⁽⁴⁾, does not include demographic change as one of its main topics. However, two EU targets under the inclusive growth priority ⁽⁵⁾ refer to the issue. They are further specified in two flagship initiatives:

Agenda for new skills and jobs:

- To reach the objective of an employment rate of 75 % for women and men aged 20 to 64 by 2020; labour market integration of underrepresented categories (such as older workers and legal migrants) has to be improved.
- To promote a forward-looking and comprehensive labour migration policy, which would respond in a flexible way to the priorities and needs of labour markets.

European platform against poverty and social exclusion:

- The Europe 2020 strategy has set a target to lift at least 20 million people out of being at risk of poverty or social exclusion by 2020. The income level of pensioners is an indicator of the demographic changes theme that is affected by this poverty target.

The 2015 Work Programme of the European Commission has stressed migration as one of ten priorities:

The European Agenda on Migration:

- Developing a holistic approach covering both legal migration, to make the EU a more attractive destination for highly skilled people and companies, and improving the management of migration into the EU through greater co-operation with third countries, solidarity among our Member States and fighting human trafficking.

Further reading on demographic changes

European Commission (2013), *EU Employment and Social Situation, Quarterly Review (March 2013)*, Special Supplement on Demographic Trends, Publications Office of the European Union, Luxembourg.

Council of Europe (2012), *Demographic trends in Europe: turning challenges in to opportunities*, Parliamentary Assembly, Doc. 12817, Strasbourg.

European Foundation for the Improvement of Living and Working Conditions (2013), *Employment trends and policies for older workers in the recession*, EF/12/35/EN, Publications Office of the European Union, Luxembourg.

Eurostat website: *Key to European statistics, Population (Demography, Migration and Projections)*.

⁽³⁾ Council of the European Union (2006), *Review of the EU Sustainable Development Strategy (EU SDS) — Renewed Strategy*, 10917/06, Brussels.

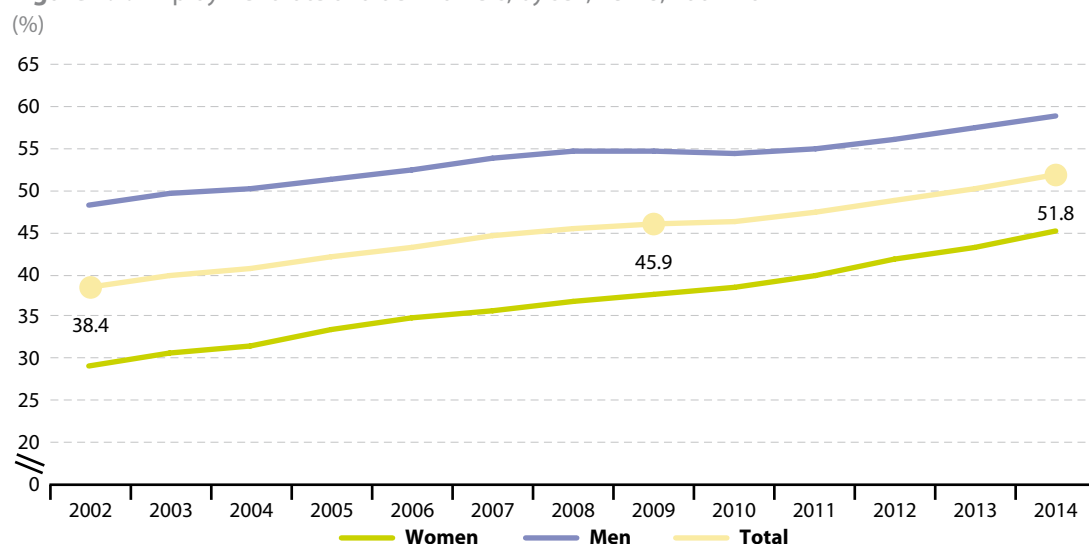
⁽⁴⁾ European Commission (2010), *Europe 2020 — A strategy for smart, sustainable and inclusive growth*, COM (2010) 2020 final, Brussels.

⁽⁵⁾ European Commission website: *Europe 2020 in a nutshell*, Targets.

Employment rate of older workers

The proportion of 55 to 64 year olds in employment in the EU has increased by 13.4 percentage points over the long term since 2002 and by 5.9 percentage points in the short term since 2009. Employment rates of older women have caught up slightly with that of older men.

Figure 4.1: Employment rate of older workers, by sex, EU-28, 2002–2014



Source: Eurostat (online data code: tsdde100)

In 2014, 51.8% of people aged 55 to 64 in the EU were in employment. This is a 13.4 percentage point increase compared with the 2002 level of 38.4%. The positive trend has been consistent over the entire period observed for both men and women. The employment rate for older women increased substantially between 2002 and 2014, from 29.1% to 45.2%. In contrast, the increase for older men was smaller from 48.2% to 58.9% over the same period. The stronger performance of older women helped to close the gender gap in this indicator slightly.

Despite substantial improvement in the employment rates of workers aged 55 to 64 in many countries over the last decade, there is still enormous potential for further growth ⁽⁶⁾.

Until 2011, the employment rate of older workers had been evaluated against the target set out in the Lisbon strategy and the EU SDS, to 'increase the average EU employment rate among older women and men (55 to 64) to 50% by 2010'. Since the target has expired, and in the absence of a new target specifically for older workers in the Europe 2020 strategy or in a revised EU SDS, the evaluation is only based on the trend over time in the 2013 and 2015 editions of the *Sustainable development in the European Union* monitoring reports.

Despite increasing significantly in 2014, the employment rate of older workers is still well below the rates of other age groups. While 51.8% of older people (aged 55 to 64) were employed in 2014, the employment rate of prime-aged workers (aged 25 to 54) was significantly higher at 77.5%. However, as the employment rate of prime-aged workers has stagnated since 2002 and even slightly decreased since 2008, the rates of older employees and prime-aged workers have converged.

Increasing the employment rates of older workers has become a focus of policy actions because it is considered a promising answer to the demographic challenge of structural longevity ⁽⁷⁾. A longer working life can both support the sustainability and adequacy of pensions, as well as bring growth and general welfare gains to an economy ⁽⁸⁾.

⁽⁶⁾ European Commission (2012), *Employment and Social Developments in Europe 2012*, Publications Office of the European Union, Luxembourg, p. 57.

⁽⁷⁾ Ibid.

⁽⁸⁾ Ibid.



Long term
(since 2002)



Short term
(since 2009)



Box 4.1: Labour market participation of older workers in the EU SDS and the Europe 2020 strategy

Concerns about insufficient participation of older workers in the labour market were previously identified at the Lisbon European Council in 2000. The EU Sustainable Development Strategy also set the operational objective to 'increase the average EU employment rate among older women and men (55 to 64) to 50% by 2010'. There are no specific targets for older workers in the Europe 2020 strategy. Instead the group is mentioned in a more general

way. To reach the target of an employment rate of 75% for working population, labour market integration of older workers also has to be improved.

Although the employment rate for older workers has grown significantly, it is still considerably below the level of other age groups. Hence people aged 55 to 64, especially women, are in the focus for progressing towards the Europe 2020 strategy's employment target ⁽⁹⁾.

Employment rates of older workers have grown throughout the economic crisis, although at a slower pace

The economic crisis has generally not affected the proportion of older people in employment in the EU. However, the rise in the share of older workers in employment slowed temporarily during the post-crisis period. While the year-on-year increase was one percentage point or more between 2005 and 2008, it fell to 0.4 percentage points between 2009 and 2010. From 2011 onwards, the employment rate of older workers increased by more than one percentage point again, up to a rise of 1.7 percentage points in 2014. The stagnation between 2009 and 2011 was mainly caused by lower growth in the employment rate of older men. In contrast, the employment rate of older women increased steadily over the same period.

Employment rates of older workers were less affected by the crisis than the rates of prime-aged and younger workers. This may be because older workers are more experienced and better integrated into the labour market. They are also more often employed on open-ended contracts. This has led to an increase in the average ages of workers in employment.

However, there is a risk that this positive trend could weaken in the future. Because older workers often tend to work in the public administration, health and education sectors, they might be more likely to lose their jobs due to future public spending cuts ⁽¹⁰⁾. This seems already to be the case in Greece where the employment rate of older workers since 2012 has been below the 2000 level.

How the employment rate of older workers varies across Member States

Employment rates of older workers have slightly converged across Member States since 2002. In 2014 employment rates ranged from 34.0% in Greece to 74.0% in Sweden. The spread has fallen by 5.2 percentage points compared with 2002, when country rates ranged between 22.8% (Slovakia) and 68.0% (Sweden). In 2014, the employment rate of older workers was 50% or higher in 12 countries. The other 16 Member States had less than half of their older workers in employment and were still to reach the EU SDS target of 2010.

In most Member States the employment rate of older workers increased in line with the general increase in the EU. Countries recording the largest increases over the long term since 2002 include Germany, Bulgaria, Slovakia and the Netherlands. In contrast, rates fell in Greece, Portugal and Cyprus over the same period. In terms of short-term developments since 2009, the strongest growth in employment rates of older people has been observed in Italy, Poland, Hungary, Germany, Malta and France. In contrast, employment rates of older people fell in Cyprus, Greece, Croatia, Portugal and Slovenia. These short-term reductions are in line with falls in the employment rate of the total workforce aged 20 to 65, but are less pronounced.

Discrepancies between countries are caused by several factors such as different employment sectors, retirement ages and policy initiatives ⁽¹¹⁾. Sectorial distribution influences the employment rates by providing

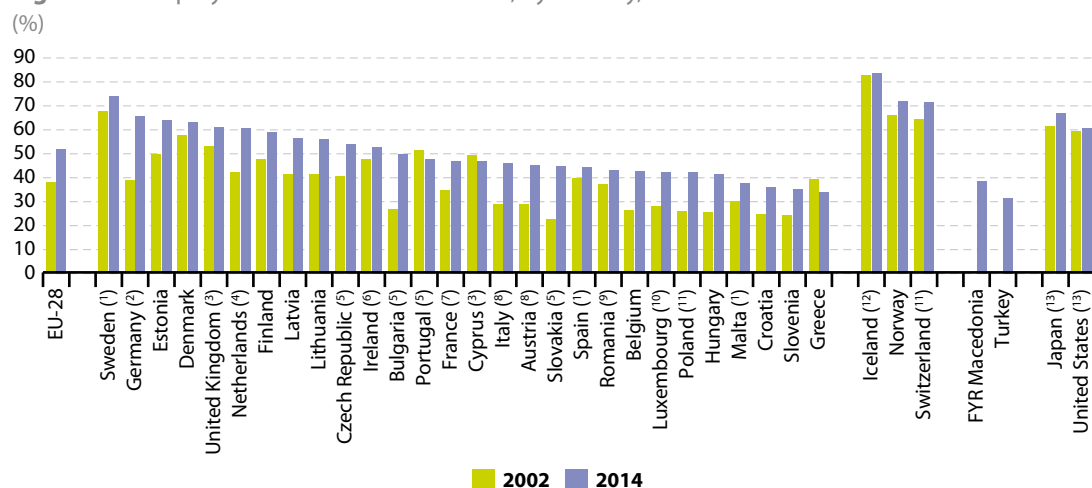
⁽⁹⁾ European Commission website: [Europe 2020 targets, employment rate target](#).

⁽¹⁰⁾ Eurofound (2012), *Employment trends and policies for older workers in the recession*, p. 1.

⁽¹¹⁾ Hartlapp, M. and Schmid, G. (2012), *Employment risks and opportunities for an ageing workforce in the EU*, Berlin, Wissenschaftszentrum Berlin für Sozialforschung (WZB), Discussion Paper SP, 105, p. 8.

more or fewer opportunities to find a job or to remain employed. Older workers are mainly employed in manufacturing (14%), human health and social work activities (11%), education (9%) and public administration (9%). They tend in particular to be overrepresented in farming and the public sector (education, health and public administration) compared with young and prime-aged groups ⁽¹²⁾. The service sector, which employs more than 30% of older workers, is of particular interest when it comes to efforts to improve the employment prospects of this age group ⁽¹³⁾. Differences in incentives to work longer, retirement ages, opportunities for early and partial retirement and retention of older workers also have an impact on employment rates. Furthermore, many Member States have focused on continuous skills development (employability) and provided incentives to employees and employers to ensure lifelong learning ⁽¹⁴⁾.

Figure 4.2: Employment rate of older workers, by country, 2002 and 2014



(1) Break in time series in 2005.

(2) Breaks in time series in 2005 and 2011.

(3) Break in time series in 2009.

(4) Breaks in time series in 2010 and 2013.

(5) Break in time series in 2011.

(6) Break in time series in 2007.

(7) Breaks in time series in 2003 and 2013.

(8) Break in time series in 2004.

(9) Breaks in time series in 2003 and 2010.

(10) Breaks in time series in 2003 and 2007.

(11) Break in time series in 2010.

(12) 2003 data (instead of 2002).

(13) 2013 data (instead of 2014).

Source: Eurostat (online data code: tsdde100)

EU trends in employment rate of older workers compared with other countries in the world

Compared with other countries, the average employment rate of older workers in the EU is considerably lower than in the United States and Japan. In 2013 the employment rate of older workers in the EU was 51.8%, compared with 60.9% in the United States and 66.8% in Japan. Among EU Member States, six countries (Germany, Estonia, Denmark, the United Kingdom, the Netherlands and Finland) had similar employment rates of older workers to the US and Japan. Norway and Switzerland had higher rates at 72.2% and 71.6% respectively, which were comparable to Sweden's rate of 74.0%. Iceland had the highest employment rate of older people in the countries observed, at 83.6%.

⁽¹²⁾ Eurofound (2012), *Employment trends and policies for older workers in the recession*, p. 5.

⁽¹³⁾ Hartlapp, M. and Schmid, G. (2008), *Employment risks and opportunities for an ageing workforce in the EU*, Berlin, Wissenschaftszentrum Berlin für Sozialforschung (WZB), Discussion Paper, No SP 2008-105. p. 10

⁽¹⁴⁾ Eurofound (2012), *Employment trends and policies for older workers in the recession*, p. 8–9.



What lies beneath this indicator?

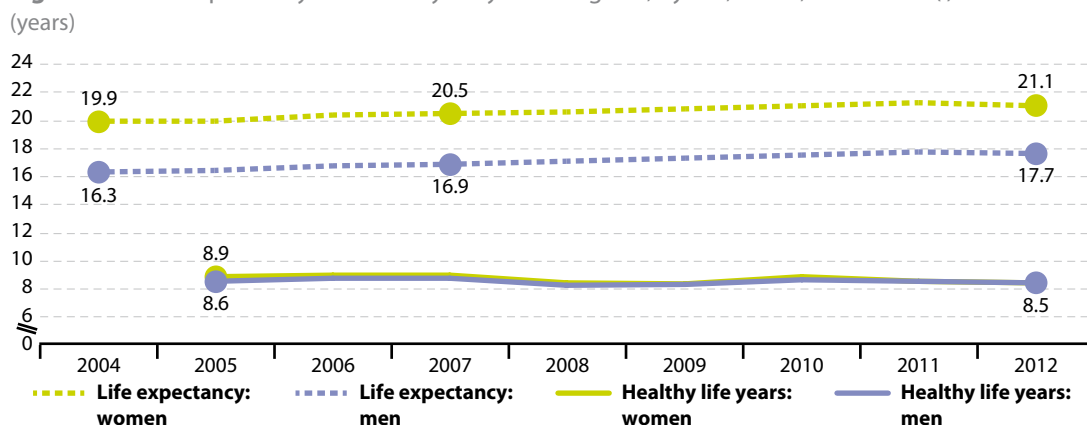
Participation of older people in the labour market indicates the adaptability of the EU labour market to population ageing. It also addresses in part how to provide adequate pensions and social protection systems to the elderly while guaranteeing healthy public finances. Either people will need to retire later in life and pension contributions will need to be increased, or pensions will need to be indexed with a demographic correction factor, which reduces the amount of pensions accordingly. Strategies to encourage a higher exit age from employment include life-long learning schemes that provide workers with new skills demanded by the labour market.

The employment rate of older workers measures the proportion of people in the 55 to 64 age group who were in employment. The employed population consists of those people who, during the reference week, did any work for pay or profit for at least one hour, or were not working but had jobs from which they were temporarily absent.

Life expectancy and healthy life years at age 65

Life expectancy at age 65 increased by 6.0% for women and 8.6% for men in the long term between 2004 and 2012. Short-term developments since 2007 have been overall positive, although a recent change in the trend indicates a step back. Improvements are further compromised by a stagnation in the number of years to be lived in healthy condition.

Figure 4.3: Life expectancy and healthy life years at age 65, by sex, EU-28, 2004–2012 ⁽¹⁾



⁽¹⁾ Life expectancy: breaks in time series in 2007, 2011 and 2012; Healthy life years: data for 2005–2009 refer to EU-27; data for 2005 and 2006 are estimates.

Source: Eurostat (online data code: [tsdph220](#))

The expected number of years left to live at the age of 65 increased for men and women in the long-term period between 2004 and 2012 as well as in the short term between 2007 and 2012. For women life expectancy at age 65 increased only slightly over the entire period observed, from 19.9 to 21.1 years. Life expectancy for men started from a lower level of 16.3 years and reached 17.7 in 2012. Following an overall increase between 2005 and 2011, life expectancy fell again from 2011 to 2012 by 0.9% for women and by 0.6% for men. The gap between men and women's life expectancy remained around 3.4 to 3.6 years over the entire period.

Healthy life years at age 65 did not increase in line with longer life expectancy

In spite of the slight increase in life expectancy, the years of life without any activity limitation have not improved. In 2012, both women and men aged 65 were expected to live another 8.5 years on average in a healthy condition.

The statistics show that 65 year old men and women are likely to live the majority of their remaining lives with activity limitations. The trends are more unfavourable for women. For them, improvements in overall life expectancy have not led to a higher number of healthy life years, but to a higher proportion of remaining life lived with activity limitation or disability. In 2012, women at the age of 65 could expect to live another 21.1 years on average, with only 8.5 of them in good health.

How life expectancy at age 65 varies across Member States

The gap between Member States with the lowest and those with the highest life expectancy at age 65 stayed more or less the same for both sexes in the long-term period since 2004 and over the shorter term since 2007. In 2013 the difference between countries was slightly lower for men (5.4 years) than for women (5.7 years).

Over the entire time period the average life expectancy stayed lowest in Bulgaria, Romania, Hungary, Slovakia, Latvia, Croatia, Lithuania and Czech Republic. In 2013, the expected number of years left to live for women at age 65 ranged from 17.9 years in Bulgaria to 23.6 years in France. For men the lowest level was in Latvia with 13.9 years to live and the highest was in France with 19.3 years.

Some of these observed differences might be due to preventable mortality (such as lifestyle factors or accidents) or treatable mortality (deaths caused by certain conditions for which effective medical treatments



Long term
(since 2004)

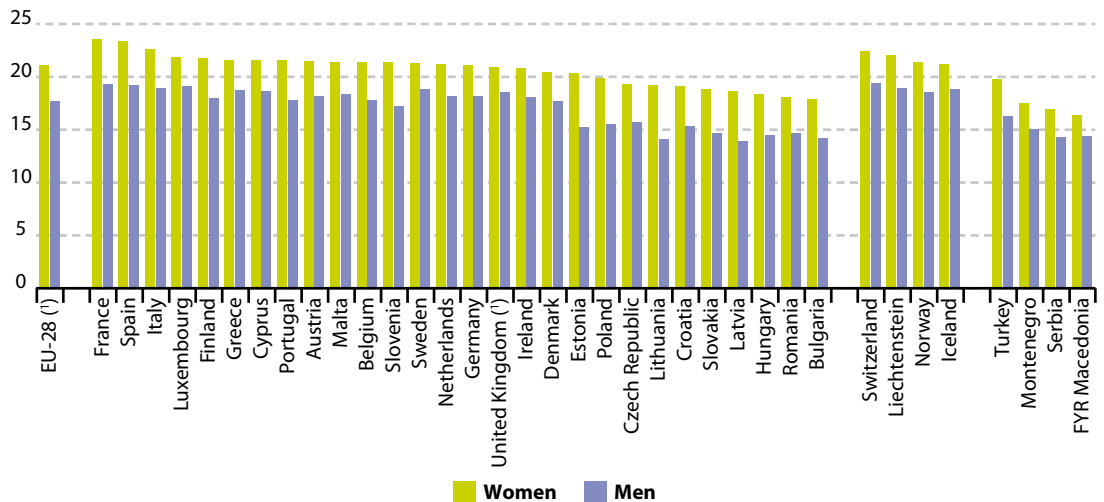


Short term
(since 2007)



are available) ⁽¹⁵⁾. People with lower socioeconomic status or lower education level tend to have a lower life expectancy. To a large extent this can be explained by structural factors such as a more stressful lives and unhealthier lifestyles ⁽¹⁶⁾.

Figure 4.4: Life expectancy at age 65, by sex, by country, 2013 (years)



(1) 2012 data (instead of 2013).

Source: Eurostat (online data code: [tsdph220](#))

In 2012, the average life expectancy of EU citizens aged 65 was below levels observed for women and men in Liechtenstein, Switzerland, Iceland and Norway in 2013. Life expectancies in these countries were similar to the ones observed in the highest ranked Member States: France, Spain, Italy and Finland. In Turkey, the life expectancies of women and men aged 65 were 19.8 and 16.3 years respectively in 2013, slightly below the 2012 EU average. In contrast, life expectancies in the Balkan countries Montenegro, FYR Macedonia and Serbia were comparable to the life expectancies in the lowest ranked EU Member States.

Longer life expectancy and public spending

The ageing EU population and longer life expectancies may in general lead to higher public spending on older people. However, elderly people are not just recipients of pensions or health and long-term care; rather the public health-care costs for older people depend on their health status. Because elderly people are often the ones who provide care for other elderly people, improvements in their health status may mean they are able to provide more care to others (for example, to a spouse or a parent). Furthermore, elderly people often engage in volunteer work or help look after grandchildren, thus providing important services to society that would otherwise have to be purchased in the marketplace ⁽¹⁷⁾.

What lies beneath this indicator?

The EU SDS encourages active and healthy ageing strategies as part of actions to respond to ‘social inclusion, demography and migration’ challenges. Thus the indicator reflects improvements in wealth, nutrition and health care for older people. It also reflects challenges for the sustainability of public finances as a result of ageing populations. Increased life expectancy — without a change in retirement age — implies more demand for pensions and health and long-term care.

Life expectancy at age 65 is defined as the average number of years that a woman or a man who has reached the age of 65 can expect to live, based on current mortality conditions.

⁽¹⁵⁾ Commission of the European Communities (2007), *Europe's demographic future: Facts and Figures*, p. 43.

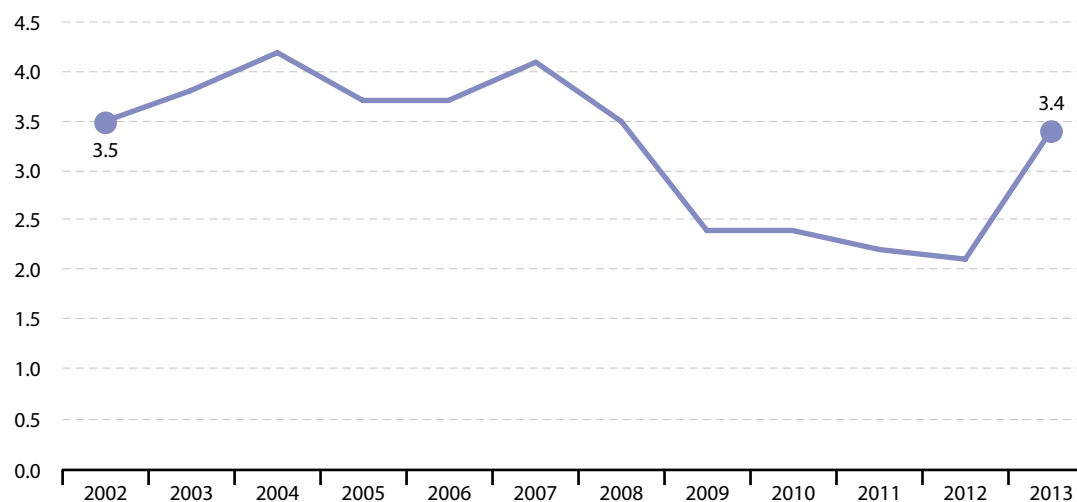
⁽¹⁶⁾ Ibid.

⁽¹⁷⁾ Rechel, B., Y. Doyle, E. Grundy and McKee, M. (2009), *How can health systems respond to population ageing?*, Health Systems and Policy Analysis, WHO Regional Office for Europe and European Observatory on Health Systems and Policies, Policy Brief 10, p. 15.

Population growth

Since 2002 the EU population has been continually growing, with crude rates of population change varying between 4.2 and 2.2 per 1 000 persons. Strong population growth between 2002 and 2007 was followed by a temporary dip in the period up to 2013, caused by a slowdown of net migration and natural growth.

Figure 4.5: Crude rate of population change, EU-28, 2002–2013 ⁽¹⁾
(per 1 000 persons)



⁽¹⁾ Breaks in time series in 2007, 2011 and 2012; 2013 data are provisional estimates.

Source: Eurostat (online data code: [tps00006](#))

In 2013 the EU population increased by 3.4 people per 1 000 persons. In the long term, from 2002 to 2013, the crude rate of population change remained positive, indicating continuous population growth. However, the crude rate of population change has been volatile over time: an increase in the rate between 2002 and 2007 was followed by a temporary dip after 2008. This dip in the short term was caused by a slowdown of both net migration ⁽¹⁸⁾ and natural growth, possibly driven by the harsher economic conditions. As a result, in 2013, the crude rate of population change was close to the levels of 2002 and 2008 (3.5 per 1 000 persons in both years).

Population growth in the EU is mainly driven by positive net migration (indicating that immigration is exceeding emigration), but also, for some countries, by positive natural change (live births exceeding deaths). In 2013, the crude rate of net migration was 3.3 per 1 000 persons and the crude rate of natural change 0.2 per 1 000 persons. From 2002 to 2013, net migration contributed more to population growth than natural growth as a result of two factors. First, net migration has increased since the mid-1980s. Second, the number of live births has fallen, while deaths have increased.

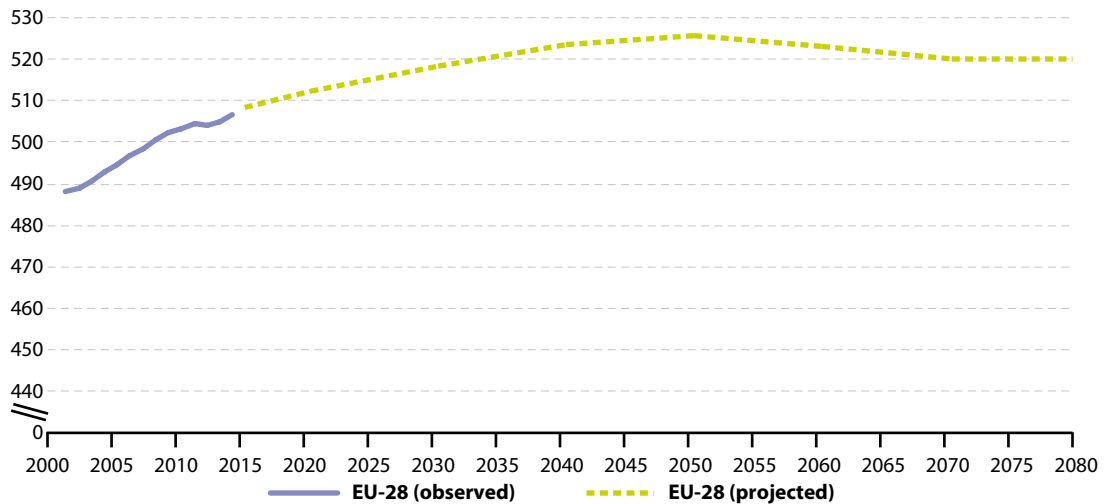
⁽¹⁸⁾ Note that 'crude rate of net migration plus statistical adjustment' includes statistical inaccuracies, which cannot be attributed to births, deaths, immigration and emigration. For the sake of readability, 'net migration' is used in this section instead of the statistically correct term 'net migration plus adjustment'. All data nevertheless refers to 'net migration plus adjustment' (see the 'What lies beneath' section for details).



EU population grew in absolute terms

In absolute terms, the total population of the EU grew between 2001 and 2014, from 488.2 million people to 506.8 million. In the short term since 2008 the EU population has continued to grow, but at a slower pace.

Figure 4.6: Actual and projected population, EU-28, 2001–2080 ⁽¹⁾
(million people)



⁽¹⁾ Breaks in time series in 2010, 2011 and 2012; data for 2012–2014 are provisional; data for 2015–2080 are based on Eurostat 2013 population projections.

Source: Eurostat (online data codes: [tps00001](#) and [tsp00002](#))

EU population is projected to peak at 525.5 million people around 2050

From 2015 to 2080 the number of people in the EU is likely to increase by 2.3% from 508.2 million people to 520.0 million, according to Eurostat 2013 population projections based on a set of assumptions of future developments in fertility, mortality and net migration. Around the year 2050 the population is projected to reach 525.5 million people, which is 3.7% more than in 2014.

At the same time, demographic ageing is accelerating. The share of people aged 65 and over in the total population will increase significantly in the coming decades, as a greater proportion of the post-war baby-boomer generation will reach retirement. Under the assumption that fertility will increase but still remain at a relatively low level, negative natural change (more deaths than live births) would be inevitable in the future. Positive net migration is expected to be the only factor contributing to long-term population growth.

How population growth varies across Member States

From 2002 to 2013 crude rates of population change diverged considerably across Member States, ranging from –9.0 to 19.1 per 1 000 persons in 2002 and from –11.1 to 23.3 per 1 000 persons in 2013.

In 2013, the population of 15 Member States increased. Population growth in terms of crude rates was strongest in Luxembourg (23.3 per 1 000 persons) and Italy (18.2), followed by Malta (9.5) and Sweden (9.3). High population growth was mainly caused by migration flows into these countries, indicated by the highest crude rates of migration among Member States in 2013. To a minor extent also natural change contributed to population growth in Luxembourg (crude rate of natural change of 4.2 per 1 000 persons), Sweden (2.4 per 1 000 persons) and Malta (1.9 per 1 000 persons). Italy experienced negative natural change (crude rate of –1.4 per 1 000 persons).

In contrast, 13 Member States, mostly in southern and eastern Europe (Bulgaria, Cyprus, Czech Republic, Estonia, Greece, Spain, Croatia, Hungary, Lithuania, Latvia, Poland, Portugal and Romania) experienced shrinking populations in 2013. In six of these countries (Cyprus, Greece, Poland, Portugal and Czech Republic and Croatia), the crude rate of population change initially followed a positive trend between 2002



and 2008 but then turned negative in the years following the economic crisis. This was largely caused by the outward migration of citizens from these countries towards other Member States and by declining fertility rates in the countries hit hardest by the economic crisis ⁽¹⁹⁾. Also in Ireland, which in 2007 had the highest crude rate of population change among Member States (26.7 per 1 000 persons), the rate decreased to a much lower level (3.1 per 1 000 persons) in 2013. This was caused by emigration far exceeding immigration, which is indicated by the negative crude rate of net migration since 2009 ⁽²⁰⁾.

In 2013, EU average population growth in terms of crude rates was below the population growth in Switzerland (12.8 per 1 000 persons), Iceland (11.4), Norway (11.2) and Liechtenstein (7.9). Higher population growth in these countries was caused by comparably higher net migration as well as higher rates of natural increase. In Turkey, strong population growth (13.7 per 1 000 persons) was caused primarily by a very high natural increase (crude rate of 12.0 per 1 000 persons).

What lies beneath this indicator?

Europe needs to make full use of its labour potential to face the challenges of ageing societies. Population growth can help achieve this goal by helping to increase the size of the working age population. In contrast, a shrinking population due to an outward migration of young people, leaving behind higher proportions of retired people, puts additional pressure on the economy. The EU SDS responds to population changes indirectly by promoting greater involvement of women and better integration of migrants in the work force.

Population change in a given year is the difference between the population size on 1 January of the following year and on 1 January of the given year. The crude rate of population change is then calculated by dividing this difference by the average population in the year. Population change consists of two components: natural change (the difference between live births and deaths) and net migration (the difference between total population change and natural change).

Population on 1 January is the number of people having their usual residence in a country on that date. When these figures are not available, countries may report legal or registered residents.

Population projections are 'what if' scenarios that aim to provide information about the likely future size and structure of the population. *Europop2013*, the latest Eurostat population projection, is one of several possible population developments scenarios based on a set of assumptions for fertility, mortality and net migration.

⁽¹⁹⁾ Eurostat (2013), Statistics in focus 13/2013, *Towards a 'baby recession' in Europe?*

⁽²⁰⁾ DG Employment, Social Affairs and Inclusion/Eurostat, *Demography Report 2010*, 2011, p. 91.



Total fertility rate



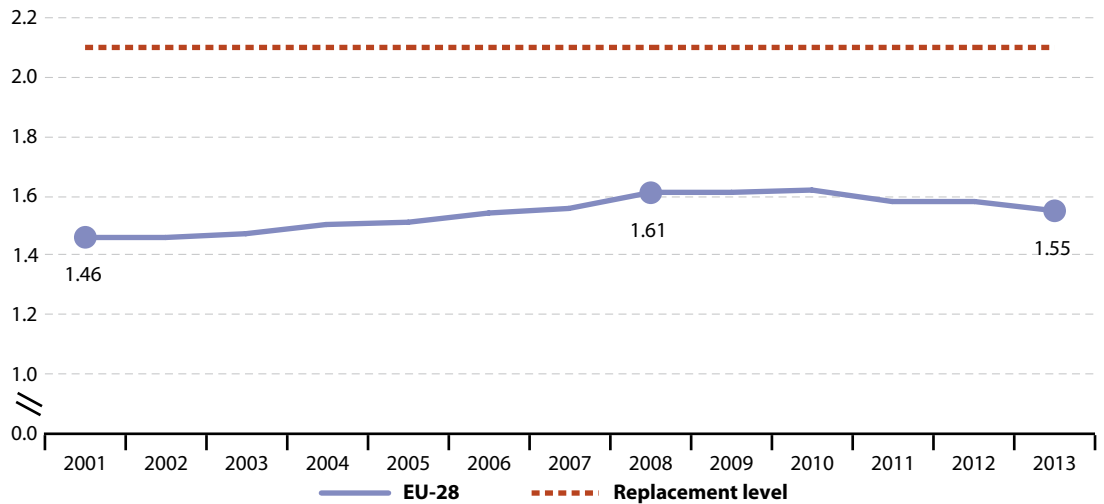
Long term
(since 2001)



Short term
(since 2008)

The total fertility rate in the EU has increased by 6.2% in the long term since 2001 but decreased by 3.7% in the short run since 2008. In 2013, there were 1.55 children for every woman.

Figure 4.7: Total fertility rate, EU-28, 2001–2013 ⁽¹⁾
(number of children per woman)



⁽¹⁾ Breaks in time series in 2011 and 2012; 2013 data are provisional.

Source: Eurostat (online data code: [tsdde220](#))

From 2001 to 2013 the EU's total fertility rate rose by 6.2% from an average of 1.46 children per woman to 1.55 children per woman. After stabilising around 1.6 children per woman in 2008, the indicator, however, decreased by 3.7% to 1.55 children per woman in 2013.

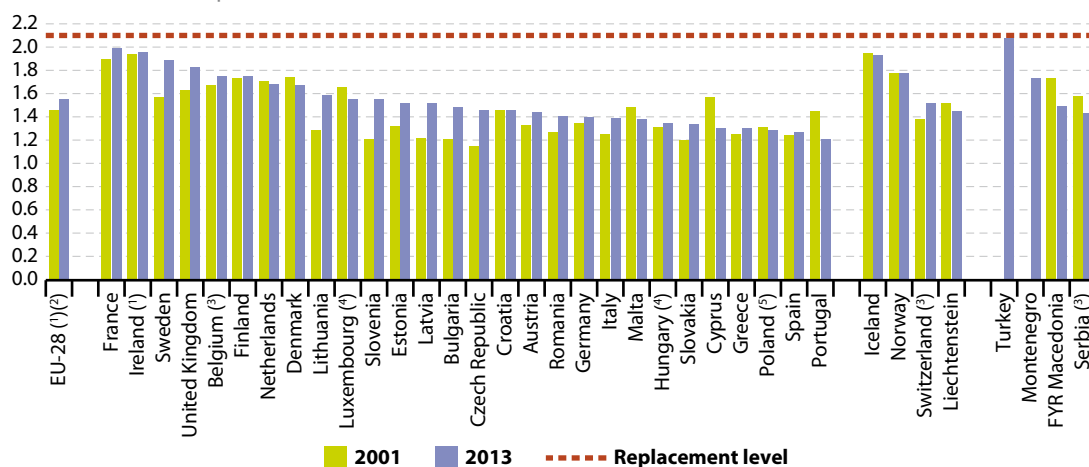
Uncertainty over future prospects due to the economic crisis may have had an influence on individual decisions to have children. The peak of the crisis (in terms of geographical reach) in 2009 was accompanied by a stagnation of total fertility rates in several countries, followed by a distinct fall. Some of the biggest declines occurred in countries hardest hit by the economic crisis. The crisis may have affected the total fertility rate in various ways. In some countries, the recession caused migrants, some of whom had high fertility rates, to return home. Certain factors, such as education level, immigration status and employment status, determine the extent to which the crisis impacts different population groups ⁽²⁾.

How total fertility rates vary between Member States

In 2013, the highest fertility rates in the EU were reported in France (1.99 children per woman), Ireland (1.96), Sweden (1.89), the United Kingdom (1.83), Belgium (1.75) and Finland (1.75). In these countries the rates were close to but still below the replacement level of 2.1 children per woman. In 2013, 18 Member States had fertility rates below the EU average of 1.55 children per woman. The lowest rates were reported in Portugal (1.21), Spain (1.27), Poland (1.29), Greece (1.3), Cyprus (1.3), Slovakia (1.34) and Hungary (1.35).

⁽²⁾ Eurostat (2013), Statistics in focus 13/2013, *Towards a 'baby recession' in Europe?*.

Figure 4.8: Total fertility rate, by country, 2001 and 2013
(number of children per woman)



(1) 2013 data are provisional. (2) breaks in time series in 2011 and 2012. (3) break in time series in 2009.

Source: Eurostat (online data code: tsdde220)

More children due to changing family models, wealth effects and childcare provision?

Family structures are changing, influenced by fewer marriages, more divorces and an increasing share of children born outside marriage. From 2001 to 2012 live births outside marriage in the EU increased from 28.5% of total live births to 40.0% (22). The possibility of a flexible and less traditional family life seems to have a positive impact on individual child-bearing decisions. Countries with high rates of extramarital births even tend to have higher fertility rates than others. For example, in Belgium, Bulgaria, Denmark, Estonia, France, Slovenia and Sweden more than 50% of children were born to unmarried women in 2012. All of these countries had total fertility rates above the EU average of 1.55 children per woman, except Estonia (1.52) and Bulgaria (1.48).

Furthermore in the EU — and generally among developed countries — fertility tends to rise with wealth. The traditional stereotype of poorer families having several children seems to have given way to a resumption of pre-industrial revolution patterns whereby better-off families tend to have more children. Nevertheless, at the other end of the income range, there is a persistent association between poverty and number of children.

Last but not least, child-care provision has been identified as a very important determinant of fertility levels across the EU (23). In general, Member States that were implementers of policies to promote gender equality and participation of women in employment display higher fertility rates.

What lies beneath this indicator?

A fertility rate of 2.1 children per woman is considered necessary to maintain a constant population size, in the absence of inward or outward migration. It is referred to as the replacement level. All other things remaining equal, a total fertility rate below the replacement level will lead to a shrinking population and, in the long term, to a relative fall in the size of the working age population. Immigration could be an additional answer to a low fertility rate. On the other hand, a total fertility rate above the replacement level would provide a potential solution to the expected future unsustainability of pensions, health and long-term care expenditure. However, high total fertility rates may lead to over-population and place additional pressures on the environment and resource base.

The indicator is defined as the mean number of children that would be born alive to a woman during her life-time, if she were to pass through her childbearing years conforming to the fertility rates by age of a given year.

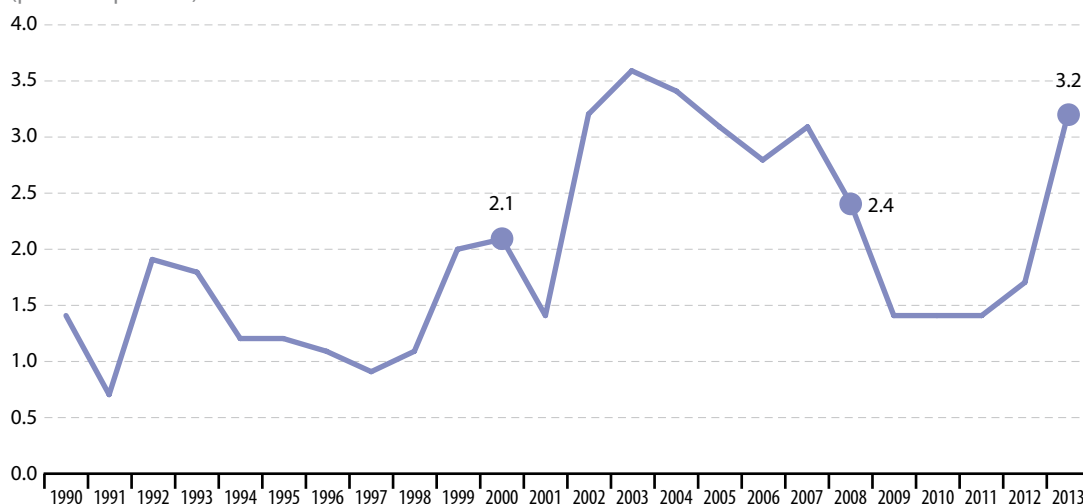
(22) Eurostat (online data code: tps00018).

(23) European Commission and Eurostat (2011), *Demography Report 2010*, ISSN1831-9440, pp. 69.

Migration

Net migration plus adjustment has been fluctuating over time. The rate increased by 52 % in the long-term period between 2000 and 2013. Due to changes in labour migration patterns, the migration rate fell to 1.4 following the onset of the economic crisis in 2008, but it rose again steeply in 2013.

Figure 4.9: Crude rate of net migration plus adjustment, EU-28, 1990–2013 (¹)
(per 1 000 persons)



(¹) Break in time series in 2001, 2010, 2011 and 2012; data for 2013 are provisional estimates.

Source: Eurostat (online data code: [tsdde230](#))

In 2013 the crude rate of net migration plus adjustment was 3.2 per 1 000 persons, indicating that EU population increased due to higher immigration than emigration ⁽²⁴⁾. In the long term, net migration increased by 52 %, from 2.1 per 1 000 persons in 2000 to 3.2 per 1 000 persons in 2013. In the short term, from 2008 to 2013, the rate increased by 33 %.

In the period between 1990 and 2001 net migration in the EU followed a volatile trend, with rates ranging between 0.7 and 1.4 per 1 000 persons. It then increased steeply to 3.6 per 1 000 persons in 2003, before falling back between 2004 and 2009. The drop was especially steep between 2008 and 2009, which could be attributed to the economic crisis. Immigration levels have slowed while emigration has increased in some EU countries. This seems to be the case particularly in countries that had large inflows of labour migrants in the pre-crisis period ⁽²⁵⁾. Whether the increase of net migration in 2013 is a turnaround or just a temporary rise cannot yet be determined.

Migration is influenced by a combination of economic, political and social factors: either in the migrant's country of origin (push factors) or in the country of destination (pull factors). In the EU, both intra-EU and external migration flows have occurred. There is some evidence that migrants from other EU countries left in larger numbers than non-EU foreigners during the economic downturn. The differing migration response among EU and non-EU foreigners may be partly due to the fact that EU migrants face fewer barriers to re-enter the European labour market compared with non-EU migrants ⁽²⁶⁾.

⁽²⁴⁾ Note that 'crude rate of net migration plus statistical adjustment' includes statistical inaccuracies, which cannot be attributed to births, deaths, immigration and emigration. For the sake of readability, 'net migration' is used in this section instead of the statistically correct term 'net migration plus adjustment'. All data nevertheless refers to 'net migration plus adjustment' (see the 'What lies beneath' section for details).

⁽²⁵⁾ International Organisation for Migration (2010), *Migration and the Economic Crisis in the European Union: Implications for Policy*, p. 4.

⁽²⁶⁾ Id., pp. 3–4.

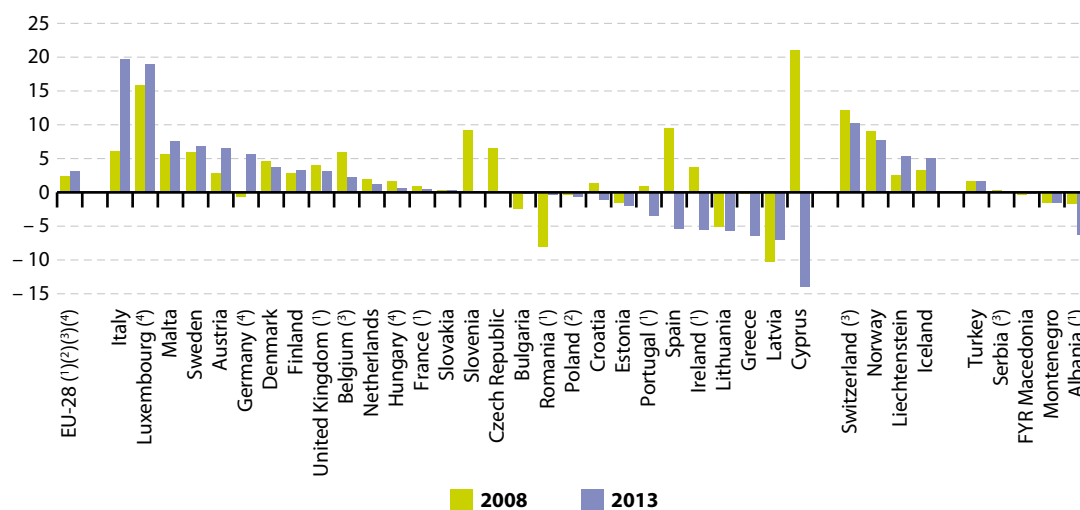
How migration varies across Member States

In 2013, 15 Member States reported positive net migration. Relative to the size of the population, the highest levels were reported in Italy (19.7 per 1 000 persons) and Luxembourg (19.0), followed by Malta (7.6), Sweden (6.9) and Austria (6.5).

In contrast, in 13 Member States emigrants have outnumbered immigrants. In 2013, the lowest crude rates of net migration were reported in Cyprus (-14 per 1 000 persons), Latvia (-7.1), Greece (-6.4), Lithuania (-5.7), Ireland (-5.5) and Spain (-5.4). In six countries (Cyprus, Czech Republic, Croatia, Ireland, Portugal and Spain) net migration rates have changed from positive to negative in the years following the economic crisis (since 2008).

Compared with other countries, the EU average crude rate of net migration is below the rate in Switzerland (10.2 per 1 000 persons), Norway (7.7), Liechtenstein (5.4) and Iceland (5.1) in 2013. However, it is higher than in Turkey (1.7). The Balkan countries Serbia (0.0), FYR Macedonia (-0.2), Montenegro (-1.5) and Albania (-6.3) experienced zero to negative net migration in 2013.

Figure 4.10: Crude rate of net migration plus adjustment, by country, 2008 and 2013 (per 1 000 persons)



(1) 2013 data are estimates and/or provisional. (2) Break in time series in 2010. (3) Break in time series in 2011. (4) Break in time series in 2012.

Source: Eurostat (online data code: tsdde230)

How does migration contribute to demographic change?

Migration affects demographic changes in various ways. In several Member States, immigration has already been beneficial in postponing population decline. First, the participation of migrants in the labour force is important for fuelling the labour market. It is especially valuable for solving specific labour market shortages in destination countries. Second, migration counteracts the ageing of societies. Migrants coming to the EU in 2012 were, on average, much younger than the population already resident in the destination countries (27). Migrants are also often found to have higher fertility rates than the local population and therefore may boost natural population growth (28). However, migration alone will almost certainly not reverse the ongoing trend of population ageing experienced in many parts of the EU (29).

(27) Eurostat website: *Statistics Explained, Migration and migrant population statistics*.

(28) Commission of the European Communities (2007), *Europe's demographic future: Facts and Figures*, p. 177.

(29) Eurostat website: *Statistics Explained, Migration and migrant population statistics*.



What lies beneath this indicator?

The EU SDS recognises the contribution that positive net migration makes to meet the challenges of demographic changes. It also emphasises the need for migration policies that attract skilled foreign workers, strengthen integration and facilitate access to the labour market for migrants and their families.

Migrants who are economically productive contribute to the economy in terms of labour and taxes, but there is a risk in relying too heavily on migrant workers to attain public financial sustainability. Through the direction of the Stockholm Programme, Member States have agreed to a set of guidelines to converge country variations through policies, including co-operation to satisfy labour market demands, and to work more closely with non-EU countries to organise migration flows ⁽³⁰⁾.

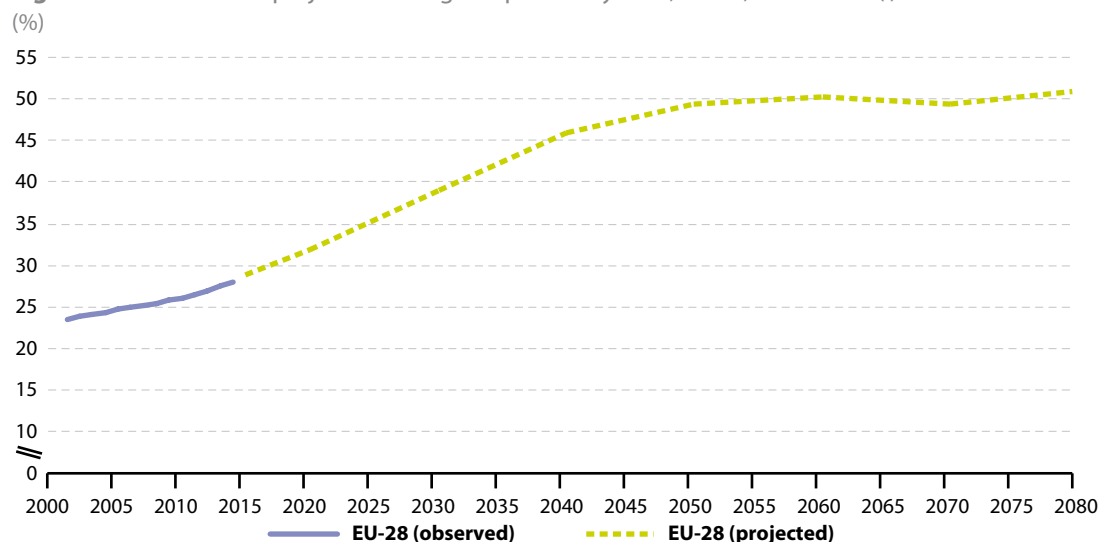
Net migration is the difference between the number of immigrants and the number of emigrants. In the current context, however, Eurostat produces net migration figures by taking the difference between total population change and natural change. This concept is referred to as net migration plus statistical adjustment. The statistics on 'net migration plus statistical adjustment' are therefore affected by all the statistical inaccuracies in the two components of this equation, especially population change. From one country to another 'net migration plus statistical adjustment' may cover, apart from the difference between inward and outward migration, other changes observed in the population figures between 1 January in two consecutive years which cannot be attributed to births, deaths, immigration and emigration. The crude rate is defined as the ratio of net migration plus adjustment during the year to the average population in that year, expressed per 1 000 persons.

⁽³⁰⁾ European Council (2010), *The Stockholm Programme: An Open and Secure Europe Serving the Citizen*, Official Journal of the European Union, C 115, 4 May 2010.

Old-age dependency

From 2001 to 2014 the old-age dependency ratio in the EU increased by 4.6 percentage points to 28.1 %. Since 2009 the increase has accelerated. Population projections point towards an even stronger dependency of older people on persons of working age, as the ratio is expected to increase to 50 % in 2060.

Figure 4.11: Actual and projected old-age-dependency ratio, EU-28, 2001–2080 ⁽¹⁾



⁽¹⁾ Breaks in time series in 2011, 2012 and 2014; 2014 data are provisional estimates; data for 2015–2080 are based on Eurostat 2013 population projections.

Source: Eurostat (online data codes: [tsdde510](#) and [tsdde511](#))

The ratio of elderly people (aged 65 and over), who are generally economically inactive, to the working age population (aged 15 to 64) in the EU was at 28.1% in 2014. In the long run, between 2001 and 2014, the old-age-dependency ratio increased steadily from 23.5% to 28.1%, on average by 0.35 percentage points per year. This means that while there were 4.3 people of working age for every dependent person over 65 in the EU in 2001, this number has fallen to 3.6 people in 2014. In the short term, the ratio has increased on average by 0.46 percentage points per year since 2009. The strongest increases have occurred since 2011, on average by 0.6 percentage points per year.

The trend towards a growing share of older people (aged 65 and over) in the population and a shrinking working-age population (aged 15 to 64 years) has been observed for a long time. Population ageing is a major driver of the expected increase in pension expenditure in the EU.

Projected old-age dependency ratio

Eurostat 2013 population projections indicate that from 2014 to 2080 the EU's old-age dependency ratio will continue to increase at an accelerating pace, reaching 51.0% in 2080. The old-age dependency ratio is projected to peak at 50% around 2060 and to remain close to this level until 2080. The projected increase in the old-age dependency ratio is caused by a continuous rise in the share of elderly people in the total population in the coming decades, as a greater proportion of the post-war baby-boomer generation reaches retirement. The number of people aged 65 and over in the EU is projected to rise by 58.4%, from 94.1 million in 2014 to 149.1 million in 2080. The number of oldest-old people (aged 80 and over) is projected to increase by even more, to more than double, from 26.1 million in 2014 to 63.9 million in 2080, that represents an increase of 7.1 percentage points in the share of total population. This, in turn, is expected to increase the burden on the working age population to provide for social expenditure to support the ageing population.

Several Member States have undertaken reforms in recent years to limit the increasing effect of an ageing society on public pension expenditure. In many cases, these reforms involved abolishing or restricting



early retirement schemes, increasing statutory retirement ages or providing incentives to stay in the labour market beyond the legal retirement age on a voluntary basis ⁽³¹⁾. Reforms of Member States' pension systems are promoted in the National Reform Programmes in response to the recommendations of the European Council ⁽³²⁾.

What lies beneath this indicator?

The old-age dependency ratio reflects the balance between the elderly population (age 65 and over) and the population of working age (aged 15 to 64 years). It provides a rough indication of the potential pressure that an ageing population could exert on public finances, depending on the age of retirement and the scale in which pension systems depend on tax-payers or public funding. A high old-age dependency ratio can generate strain in payroll tax-funded pension systems, especially when coupled with relatively early retirement ages ⁽³³⁾.

The old-age dependency ratio provides useful information for monitoring the sustainability and adequacy of pensions in the context of EU demographic changes. The old-age dependency ratio is an important indicator to assess the impact of ageing on budgetary expenditure, particularly on its pension component.

The old-age dependency ratio is defined as the ratio between the (projected) total number of elderly persons (aged 65 and over) and the (projected) total number of persons of working age (from 15 to 64).

⁽³¹⁾ European Commission, *The 2015 Ageing Report, Economic and budgetary projections for the 28 EU Member States (2013–2060)*, p. 88

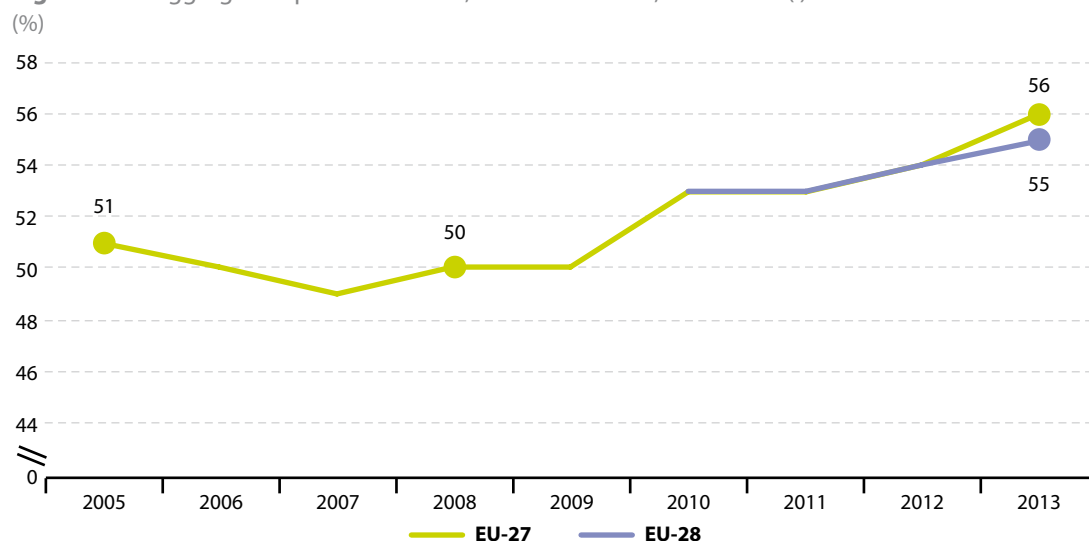
⁽³²⁾ European Commission, European Semester 2015.

⁽³³⁾ Council of the European Union (2010), *Draft Joint report on Social Protection and Social Inclusion*.

Income level of over-65s compared to before

The average income of people aged 65 and over in the EU-27 relative to the earnings of people in their 50s has increased by five percentage points in the long-term period since 2005 and by six percentage points in the short term since 2008.

Figure 4.12: Aggregate replacement ratio, EU-27 and EU-28, 2005–2013 ⁽¹⁾



⁽¹⁾ 2005–2006 data are estimates.

Source: Eurostat (online data code: [tsdde310](#))

In 2013, pensioners in the EU aged 65 to 74 had on average incomes equal to 55 % of the average earnings of people close to retirement (aged 50 to 59). This is measured by the aggregate replacement ratio. In the EU-27, the ratio increased from 51 % to 56 % between 2005 and 2012. During this period there was only a slight dip to 49 % in 2007.

Given the pressure on pension funds due to the effects of demographic ageing and the economic crisis, it is very unlikely that pensions of elderly people would actually increase. The increase in the replacement ratio might rather be a result of decreasing incomes of the working population due to the crisis.

Besides addressing poverty, pension systems play a role in allowing retirees to maintain adequate living standards comparable with those achieved during their working lives ⁽³⁴⁾. Over the past decade most Member States have reformed their pension systems to improve their medium and longer term sustainability as a precondition for delivering on adequacy objectives ⁽³⁵⁾. However, Member States have to face trade-offs and difficult choices when trying to reconcile and optimise sustainability and adequacy concerns. Achieving the goal of cost-effective and safe delivery of adequate benefits that are sustainable is quite challenging ⁽³⁶⁾.

Older people aged 65 and above are less at risk of poverty

The share of people at risk of poverty among older people aged 65 and above has fallen continuously in the long term and the short term ⁽³⁷⁾. Compared with other age groups, older people in the EU had lower at-risk-of-poverty rates of 13.8 % (11.4 % for men and 15.6 % for women) in 2013. In contrast, young people aged 18 to 24 have been increasingly affected by the risk of poverty, with an at-risk-of-poverty-rate of 22.6 % in 2013 (21.9 % for men, 23.4 % for women) ⁽³⁸⁾. Thus, the age gap has widened over the past years.

⁽³⁴⁾ Joint Report on Pensions: Progress and key challenges in the delivery of adequate and sustainable pensions in Europe, European Economy, Occasional Papers 71, November 2010.

⁽³⁵⁾ European Commission and the Social Protection Committee (2012), *Pension Adequacy in the European Union 2010 to 2050*, p. 11.

⁽³⁶⁾ Ibid.

⁽³⁷⁾ Eurostat (online data code: [ilc_li02](#)), At-risk-of-poverty rate by poverty threshold, age: 65 years and over.

⁽³⁸⁾ Eurostat (online data code: [ilc_li02](#)), At-risk-of-poverty rate by poverty threshold, age: 18 to 24 years.



Long term
(since 2005)



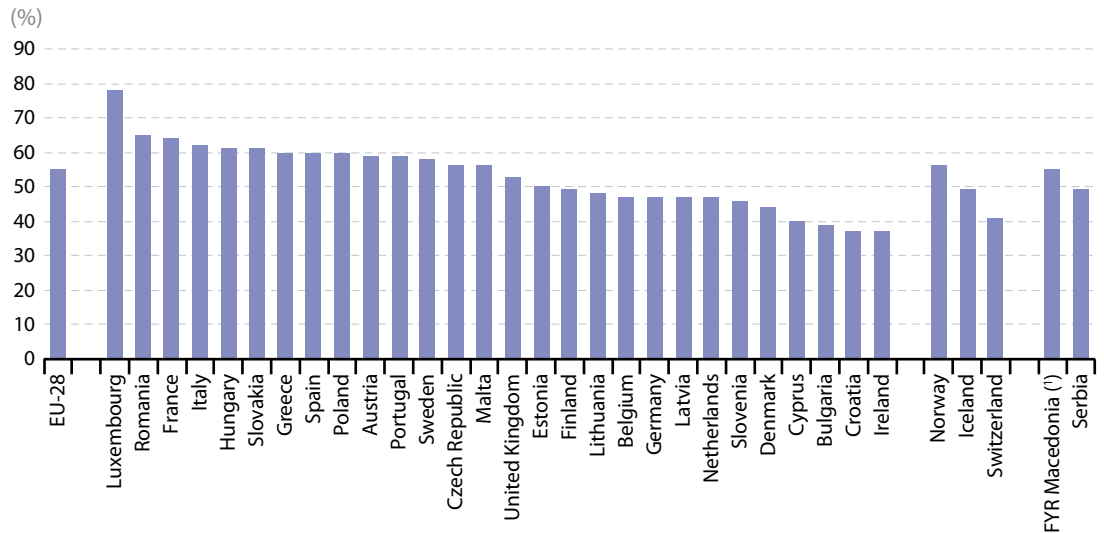
Short term
(since 2008)



How the aggregate replacement ratio varies across Member States

In 2013, the replacement ratio in the 28 Member States ranged from 37% in Ireland to 78% in Luxembourg. Compared with the year 2005, when country rates were between 29% (Cyprus) and 70% (Austria), disparities across the EU stayed similar, at 41 percentage points. In 2013, Luxembourg had by far the highest aggregate replacement ratio (78%), followed by Romania (65%), France (64%) and Italy (62%). A total of 14 Member States had relative income levels of the over-65s above the EU average. The lowest rates were reported in Ireland and Croatia (37% each), Bulgaria (39%) and Cyprus (40%).

Figure 4.13: Aggregate replacement ratio, by country, 2013



(*) 2012 data (instead of 2013).

Source: Eurostat (online data code: [tsdde310](#))

In 2013 the income levels of over 65 year olds compared to before in Norway (56%), Iceland (49%), Switzerland (41%), Macedonia (55%) and Serbia (49%) were in the same range as in EU Member States. Similar to the EU average (55%), an increasing trend has been observed in these countries since 2005.

What lies beneath this indicator?

The EU SDS underlines the importance of the adequacy of pensions in the framework of social inclusion. Thus the indicator is linked to the overall objective of securing and increasing the quality of life of citizens as a precondition for lasting individual well-being. The Europe 2020 strategy has set a target to lift at least 20 million people out of the risk of poverty and social exclusion by 2020. The income level of pensioners is one of the factors that determine their risk of poverty and social exclusion. In this regard the aggregate replacement ratio is an important indicator to monitor these risks for the older population living on their pension.

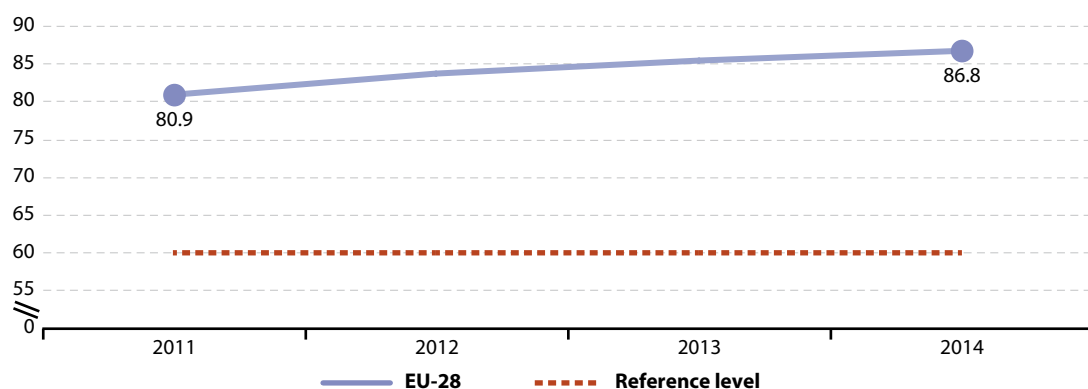
The indicator compares pensioner incomes with the work earnings of people in the decade before retirement. It is defined as the ratio of the median individual gross pensions of 65 to 74 year olds relative to median individual gross earnings of 50 to 59 year olds. Other social benefits are excluded. EU aggregate figures represent the average of the national values, weighted by their population.

Government debt

The general government gross debt in the EU has increased sharply from 80.9% in 2011 to 86.8% in 2014. There have been no signs of recovery since the onset of the economic crisis.

Figure 4.14: General government gross debt, EU-28, 2011–2014

(% of GDP)



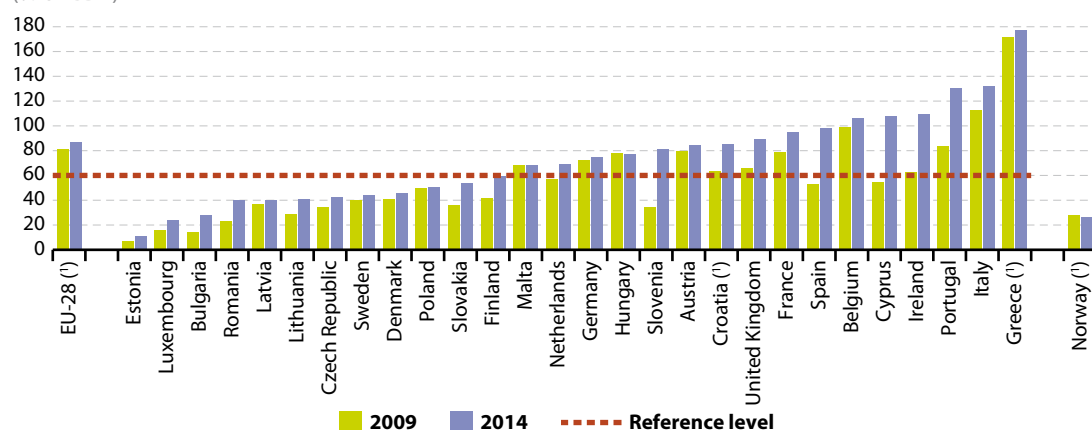
Source: Eurostat (online data code: [tsdde410](#))

Between 2011 and 2014, general government gross debt in the EU as a share of GDP at current market prices increased by 5.9 percentage points from 80.9% to 86.8%. The indicator monitors progress towards the EU reference value for government debt of 60% of GDP. The current provisions are defined in the 2012 consolidated version of the Treaty on the Functioning of the European Union ⁽³⁹⁾.

In comparison, between 2000 and 2007 government debt in the EU was close to the reference level of 60% of GDP, but with the start of the economic crisis the trend deteriorated and government debt increased considerably. This rise in the debt-to-GDP ratio is a consequence of several factors: revenue shortfalls due to the decline in economic activity, measures to support the economy, including large-scale interventions in some Member States to support the financial sector, as well as the effect of negative or very low economic growth. Recognising that high levels of government debt are not sustainable in the long term, the new European Commission put greater emphasis on reviving growth in Europe.

Figure 4.15: General government gross debt, by country, 2009 and 2014

(% of GDP)



(1) 2011 data (instead of 2009).

Source: Eurostat (online data code: [tsdde410](#))

⁽³⁹⁾ Consolidated version of the Treaty on the Functioning of the European Union, 2012.



Short term
(since 2011)



How government debt varies across Member States

In 2014 general government debt-to-GDP ratios across Member States ranged from 10.6 % in Estonia to 177.1 % in Greece. Since 2009 (respectively since 2011 for Croatia and Greece), government debt-to-GDP ratios increased in all Member States except in Hungary (– 1.3 percentage points). In 16 Member States (Malta, the Netherlands, Germany, Hungary, Slovenia, Austria, Croatia, the United Kingdom, France, Spain, Belgium, Cyprus, Ireland, Portugal, Italy and Greece) debt-to-GDP ratios stood above the 60 % reference value in 2014.

The debt crisis has revealed underlying weaknesses in the fiscal situation of Member States. Member states where the debt-to-GDP ratios increased most (by more than 50 percentage points of GDP) between 2007 and 2014 are Ireland, Greece, Spain, Portugal, Slovenia and Cyprus. The variation among the Member States also has strongly increased during the crisis years. The countries that have experienced the greatest deterioration in their public finances since the onset of the crisis had already displayed high and rising macro-financial or fiscal risks in the years before its onset ⁽⁴⁰⁾. The current increases are occurring from historically high starting levels as EU countries have experienced a number of large debt increase episodes, which have tended to start from higher levels of debt each time ⁽⁴¹⁾.

From 2009 to 2013 Norway lowered its general government gross debt from 27.5 % of GDP to 26.4 %, following an even more substantial decrease in the years before. Compared with the EU average, Norway is better off, with a debt-to-GDP ratio comparable to that of Luxembourg and Bulgaria.

What lies beneath this indicator?

The indicator reflects the sustainability of public finances. It is one of the main parameters used in EU budgetary surveillance, which includes monitoring progress towards the EU reference value for government debt of 60 % of GDP. By strengthening public finances and implementing structural reforms to raise employment rates and productivity, current high rates of debt could be brought to more sustainable levels, without compromising on welfare. The EU SDS supports Member States' efforts to modernise social protection systems and ensure their sustainability, which is essential to meet the increasing needs of ageing populations, to promote economic growth, to prevent debt being handed down to future generations or other nations' taxpayers, and to avoid the risk of sovereign default.

The indicator is defined (in the 2012 consolidated version of the Treaty on the Functioning of the European Union) ⁽⁴²⁾ as the ratio of total gross debt at nominal value outstanding at the end of the year to GDP at current market prices. Gross debt refers to the stock of borrowing by the general government to support its financing requirements. The general government sector comprises the subsectors of central government, state government, local government and social security funds. Basic data are expressed in national currencies, converted into EUR using end-year exchange rates.

⁽⁴⁰⁾ European Commission (2010), *Public Finances in EMU-2010*, European Economy No 4/2010.

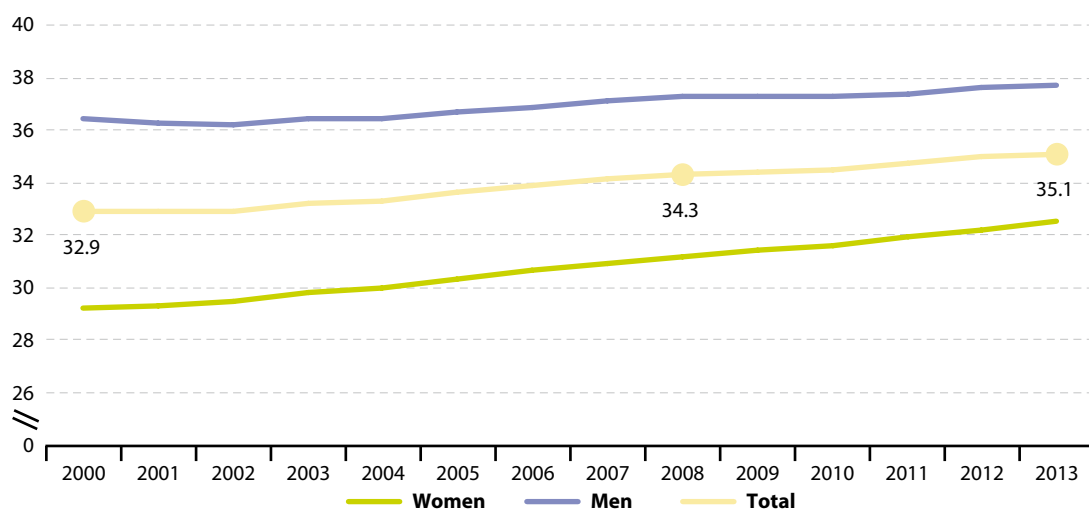
⁽⁴¹⁾ *Report on public Finances in EMU 2014*, European Economy No 9/2014.

⁽⁴²⁾ Consolidated version of the Treaty on the Functioning of the European Union, 2012.

Retirement

Duration of working life in the EU increased on average by 2.2 years in the long term between 2000 and 2013. This trend was also visible in the short term with an increase of 0.8 years between 2008 and 2013. Women have been slowly but continuously catching up with men in terms of duration of working life.

Figure 4.16: Duration of working life, by sex, EU-28, 2000–2013 ⁽¹⁾
(years)



⁽¹⁾ Data calculated with probabilistic model combining demographic data and labour market data.

Source: Eurostat (online data code: tsdde420)

In 2013 the number of years a person could be expected to be active in the labour market throughout his or her life was 35.1 years on average, and 37.7 years for men and 32.5 years for women. Between 2000 and 2013 the total duration of working life increased by 2.2 years from 32.9 to 35.1 years.

Over the whole period (2000 to 2013), the duration of working life was higher for men than for woman. For women the number of years worked increased from 29.2 years in 2000 to 32.5 years in 2013. Over the same period, the working life for men started from a higher level of 36.4 years and slightly increased to 37.7 years. A slight convergence between the two sexes is visible over time, with the gap narrowing by two years between 2000 and 2013.

Narrowing the gap in working life of women between Member States

For women, the duration of working life has converged across Member States. Since 2000, the difference between the highest and the lowest number of working years for women has decreased by 7.9 years. In comparison, the differences for men increased by only 0.6 years over the same period.

In 2013, the duration of working life of women ranged from 24.9 years in Malta to 43.9 years in Sweden. For men, the lowest level was observed in Hungary with 33 years and the highest in the Netherlands with 42.4 years. In six countries (Croatia, Cyprus, Greece, Ireland, Portugal and Romania) the duration of working life for men decreased between 2000 and 2013. Romania is the only Member State where the expected years to work for women decreased as well (by five years).



Long term
(since 2000)



Short term
(since 2008)



Box 4.2: Policy reforms to keep older workers in employment

The National Reform Programmes to the 2015 European Semester ⁽⁴³⁾ translate the Europe 2020 strategy into each Member States' policies and measures. The reports unveil how each Member States responds to the country-specific recommendations of the European Council. Measures and reforms are presented to improve the long-term sustainability of pension systems.

As a result of recent reforms in pension systems in many Member States, retirement ages for males and females will gradually converge for all Member States except for Bulgaria and Romania ⁽⁴⁴⁾. Pension reforms are projected to have a sizeable impact on the labour market participation of older workers (aged 55 to 74) ⁽⁴⁵⁾. Measures with a direct age management focus are ⁽⁴⁶⁾⁽⁴⁷⁾:

- Increasing retirement ages
- Harmonisation of retirement ages of men and women
- Required contribution period for full pensions
- Restrictions on early and disability pensions
- Abolishment or restriction of early retirement schemes
- Financial incentives to stay longer in the labour market, for example, to be entitled to a higher amount of pensions after retirement
- Increasing employment opportunities for older workers
- Applying penalties and bonuses in the pension calculation for those who exit the market earlier/later
- Gradual/phased/partial retirement schemes
- Other options for flexible working for older workers.

What lies beneath this indicator?

The EU SDS stresses the importance of 'solidarity between and within generations' to the overall objective of addressing the 'social inclusion, demography and migration' challenge. The average exit from the labour market reflects whether the EU is shifting towards longer working lives, which are essential to ensuring the sustainability and adequacy of pension systems, which in turn are important to support health and long-term care.

The duration of working life measures the number of years a person aged 15 is expected to be active in the labour market throughout his or her entire life.

⁽⁴³⁾ European Commission, *European Semester 2015*.

⁽⁴⁴⁾ European Commission, *The 2015 Ageing Report, Economic and budgetary projections for the 28 EU Member States (2013–2060)*, p. 66.

⁽⁴⁵⁾ *Id.*, p. 31.

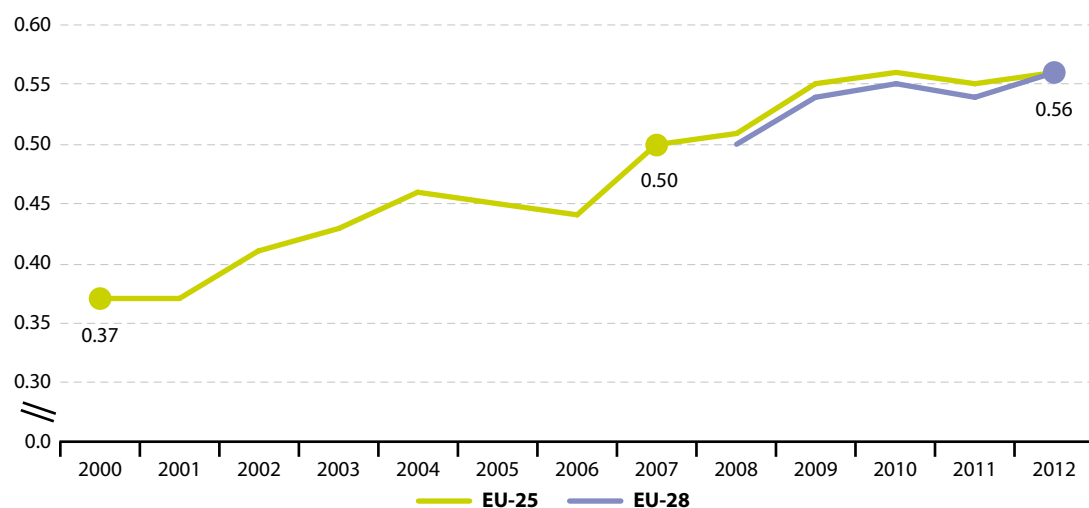
⁽⁴⁶⁾ *Ibid.*

⁽⁴⁷⁾ Eurofound (2012), *Employment trends and policies for older workers in the recession*, pp. 1 and 7.

The impact of ageing on social protection expenditure

In 2012, social protection expenditure on care for the elderly in the EU-25 was at 0.56 % of GDP, higher than in 2007 (0.50 %) and in 2000 (0.37 %).

Figure 4.17: Expenditure on care for the elderly, 2000–2012
(% of GDP)



NB: 2010–2012 data are provisional.

Source: Eurostat (online data code: tsdde530)

In the EU-28 and the EU-25 the share of social protection expenditure devoted to old-age care ⁽⁴⁸⁾ in GDP was at 0.56 % in 2012. In the EU-25 the share increased from 0.37 % of GDP in 2000 to 0.50 % in 2007, decreasing just slightly in the intermediate years (2004 to 2006). From 2007 onwards, the share of social protection expenditure devoted to old-age care has kept increasing. The decrease from 2004 to 2006 may be explained by the relatively strong GDP growth rate in a number of Member States, including the Baltic countries, during the economic upturn which lasted until 2007 ⁽⁴⁹⁾, while spending on care for the elderly remained consistent.

What lies beneath this indicator?

The ‘impact of ageing on social protection expenditure’ indicator reflects the pressures on social protection systems resulting from increases in the expenditure required to provide adequate care. Increases in expenditure on care for the elderly are not necessarily generated by more demand for care. They can also result from rising costs in services provision (also due to the introduction of better quality services).

Expenditure on care for the elderly monitors the relative level of financial resources required to provide social protection to older people, other than pensions, which can vary significantly across Member States. The indicator is linked to the need for ensuring that social services contribute actively to social inclusion, recognised in the EU SDS. It is included as a contextual indicator, providing background information which is helpful for understanding the topic.

The indicator is defined as the percentage share of social protection expenditure devoted to old-age care in GDP. These expenditures cover ‘care allowances’, ‘accommodation’ and ‘assistance in carrying out daily tasks’ ⁽⁵⁰⁾.

⁽⁴⁸⁾ More precisely, the indicator is the sum of expenditure for ‘care allowances’, ‘accommodation’ and ‘assistance in carrying out daily tasks’, as defined according to the ESSPROS methodology.

⁽⁴⁹⁾ See the indicator ‘real GDP per capita’ in the ‘socioeconomic development’ chapter.

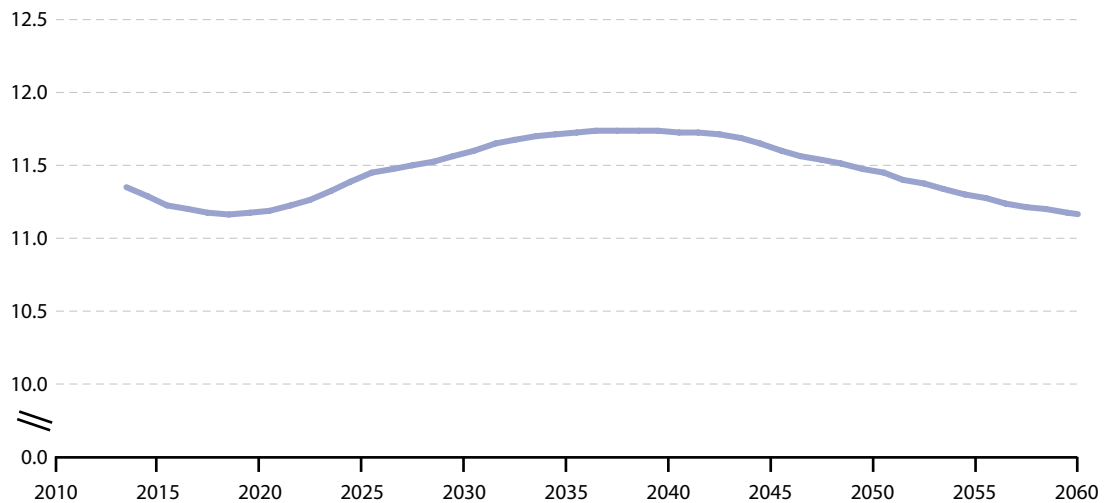
⁽⁵⁰⁾ The indicator does not include the ESSPROS items ‘other cash benefits’ and ‘other benefits in kind’.



Pension expenditure projections

Pension expenditure in the EU is projected to remain slightly above 11 % of GDP over the next decades. After a projected peak in 2037, expenditure is expected to decrease again.

Figure 4.18: Pension expenditure projections (baseline scenario), EU-27, 2013–2060 ⁽¹⁾
(% of GDP)



⁽¹⁾ Projections made on the basis of Eurostat's population projection EUROPOP2013.

Source: Economic Policy Committee (online data code: [tsdde520](#))

Public pension expenditure at the EU level is expected to continue increasing over the next decades and to peak in 2037 at 11.7% of GDP, before decreasing to 11.2% of GDP in 2060. Implemented reforms will help to counteract the impact on pension expenditure of an ageing population. However, as these reforms are usually phased-in gradually, over several decades, the downward impact will become apparent only late in the projection period. In 2060 Denmark, Estonia, Italy, Latvia, Poland and Portugal will have lower pension expenditure as a share of GDP than in 2015.

What lies beneath this indicator?

The EU SDS calls for actions to create a socially inclusive society, maintaining sustainable public expenditure. Pension expenditure projections illustrate the likely evolution of expenditure on pensions. They are indicative of the future adequacy of needs combined with future sustainability of public finances and are included as contextual indicators providing background information helpful to an understanding of the topic.

The pension expenditure indicator includes gross public pensions (before taxes and compulsory social security contributions) as a percentage of GDP. It is the sum of different categories of pension benefits, some of which (for example, disability pensions) may be paid to people who have not reached the standard retirement age. The projections are made on the basis of Eurostat's population projection EuroPop2013 and have been made by applying commonly agreed assumptions and methodologies uniformly to all Member States, as agreed by the Economic Policy Committee (EPC) ⁽⁶¹⁾. The projections for pensions were run by the Member States using their own national models, reflecting current pension legislation. In this way, the projections benefit from capturing the country-specific circumstances prevailing in the different Member States as a result of different pension legislation, while at the same time consistency is ensured by basing the projections on commonly agreed underlying assumptions ⁽⁶²⁾.

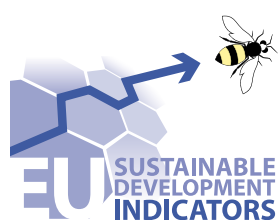
⁽⁶¹⁾ European Commission, *The 2015 Ageing Report, Economic and budgetary projections for the 28 EU Member States (2013–2060)*, p. xvii.

⁽⁶²⁾ Ibid.

Public health

5



















Overview of the main changes

The headline indicator in the 'public health' thematic area shows people are tending to live longer. This is also evident in the steadily decreasing amount of people dying from chronic diseases before the age of 65. However, the expected amount of years lived without activity limitations has not risen. This indicates that the extra years of life gained are not necessarily spent in good health.

Other public health trends generally show a moderately favourable picture. Progress can be seen in two determinants of health: the production of toxic chemicals and the share of people residing in living quarters exposed to excess noise.

No improvements are visible in the amount of people reporting unmet needs for health care due to monetary constraints. The share of people unable to afford health care has risen since the onset of the economic crisis in 2008. Little or no progress can also be seen in the share of people suffering from long-standing illnesses or health problems and exposure to air pollution by particulate matter and ozone. Improving these indicators and reducing health inequalities thus remain challenges for the EU.

Table 5.1: Evaluation of changes in the public health theme (EU-28) ⁽¹⁾

Indicator	Long-term evaluation (since 2000)	Short-term evaluation (last five-year period)
Life expectancy and healthy life years	 ⁽²⁾	
Health and health inequalities		
Deaths due to chronic diseases	 ⁽³⁾	
Unmet needs for medical health care	:	 ⁽⁴⁾
Long-standing illnesses or health problems	 ⁽⁴⁾⁽⁵⁾	 ⁽⁴⁾
Determinants of health		
Production of toxic chemicals	 ⁽²⁾	
Exposure to air pollution by particulate matter		
Exposure to air pollution by ozone		
Annoyance by noise	:	 ⁽⁴⁾

⁽¹⁾ An explanation of the evaluation method and the meaning of the weather symbols is given in the Introduction and in Annex III.

⁽²⁾ From 2004.

⁽³⁾ From 2002.

⁽⁴⁾ Evaluation based on EU-27.

⁽⁵⁾ From 2005.



Key trends in public health

Increases in life expectancy but not in years lived without activity limitations

Girls born in the EU in 2013 could expect to live 83.3 years on average — 5.5 years more than boys. This is an improvement in **life expectancy** for both sexes. However, the number of **healthy life years** that girls or boys born in 2013 could expect to live has not changed compared with 2005. This indicates that people on average do not get to spend the years gained without activity limitations.

Health inequalities between social groups persist, but evidence suggests that disproportionate health problems in different groups declined between 2004 and 2010. Over the same period, the inequalities between Member States in terms of life expectancy at birth fell for men and women.

Improvements in health indicators have slowed since the onset of the economic crisis and inequalities persist

Out of every 100 000 people in the EU, 129.9 died due to chronic diseases before the age of 65 in 2012 ⁽¹⁾. This is a fall of 21.0% compared with 2002. Such **premature deaths due to chronic diseases** differ widely across the EU, especially for men.

Overall, the share of people reporting **unmet needs for health care** due to monetary constraints grew from 2.1% in 2008 to 2.4% in 2013. Inequalities between income groups persist as those in the lowest income quintile were more likely to report unmet medical needs.

Between 2005 and 2013 the share of people in the EU suffering from a **long-standing illness** or health problems increased slightly from 30.6% to 32.4%. The increase was more pronounced between 2010 and 2013. Long-standing illnesses remain more prevalent among the lower income groups.

Progress in determinants of health such as toxic chemical production or noise annoyance, but poor improvement in particulate matter and ozone exposure

Between 2004 and 2013 the **production volume of toxic chemicals** fell by 13.8%, from 234.0 million tonnes to 201.8 million tonnes. The decline in the production of chemicals classified as ‘carcinogenic, mutagenic and reprotoxic’ (CMR) — the most toxic chemicals — was less pronounced, with their share of total chemical production remaining close to 10%. At the same time, total production of non-toxic chemicals remained stable at about 120 million tonnes over the period 2004 to 2013.

There was an increase in the exposure to **air pollution by very fine particulate matter (PM_{2.5})** — the most hazardous to human health — from 14.3 micrograms per cubic metre in 2000 to 16.9 in 2012. In spite of the rise in PM_{2.5}, overall exposure to air pollution by fine particulate matter (PM₁₀) fell by 3.6 micrograms per cubic metre over the same period, with PM₁₀ concentrations reaching 24.9 micrograms per cubic metre in 2012.

Overall urban **exposure to air pollution by ozone** rose by 555 micrograms per cubic metre between 2000 and 2012, reaching 3 502 micrograms per cubic metre in 2012. However, the trend was volatile due to the influence of weather on ozone levels.

Last, there was a drop in the **share of the population inhabiting living quarters exposed to noise**, from 21.9% in 2008 to 19% in 2013. Whether this implies an actual reduction in noise levels or a change of people’s subjective perception of noise is not clear. Across the EU, an estimated 90 million people in urban areas and 35 million outside of these are exposed to excessive noise.

⁽¹⁾ These numbers refer to standardised death rates and not crude death rates. The (age-) standardised death rate is a weighted average of age-specific mortality rates, whereas the crude death rate describes mortality in relation to the total population.

Why do we focus on public health?

The first principle of the Rio Declaration on Environment and Development states ‘Human beings are at the centre of concerns for sustainable development. They are entitled to a healthy and productive life in harmony with nature’ ⁽²⁾. This illustrates that public health is a key component of sustainable development.

Healthy people are more productive and have more resources to contribute to communal life. Thus a society in good health represents added value for the economy and social development. As a result, sustainable development cannot be ensured in societies marked by widespread disease.

Countries at different levels of development face different public health threats and challenges. While ‘traditional health threats’ are associated with a lack of development, ‘modern health threats’ are caused by rapid development that lacks health and environmental precautions and leads to unsustainable consumption of natural resources. Examples of such modern risks include increased road traffic, air pollution and use of toxic chemicals ⁽³⁾, but also social conditions such as income inequality, unemployment or social isolation ⁽⁴⁾.

One of the major challenges for policy makers posed by modern health threats is that a long period may pass before health effects manifest themselves ⁽⁵⁾. For instance, a cancer-causing chemical released into the environment today may not reach a person until it has passed through the food chain for months or years. This means that understanding the pathways through which the hazards move is particularly important. In such cases, the ‘precautionary principle’ is applied. This states that when human activities could lead to morally unacceptable harm that is scientifically plausible but uncertain, actions have to be taken to avoid or diminish that harm ⁽⁶⁾.

How does the EU tackle public health?

The protection from health threats is an explicit objective in the EU Sustainable Development Strategy (EU SDS) ⁽⁷⁾. ‘Public health’ is one of seven key challenges of the strategy, with the overall objective to ‘promote good public health on equal conditions and improve protection against health threats’. At the global level, the Agenda 21 adopted at the 1992 Rio Earth Summit ⁽⁸⁾ has been one of the most significant points in establishing an international policy framework for health in sustainable development.

Promoting good health is furthermore an integral part of Europe 2020 ⁽⁹⁾, being particularly important for the strategy’s priority on smart and inclusive growth. It is specifically addressed through the European Innovation Partnership on Active and Healthy Ageing ⁽¹⁰⁾. This pilot scheme aims to increase the average healthy lifespan of EU citizens by two years by 2020.

In addition, the EU health strategy ‘Together for Health’ ⁽¹¹⁾ supports the overall Europe 2020 strategy. The EU health strategy is based on four core principles: (i) shared health values, (ii) health is the greatest

wealth, (iii) health in all policies and (iv) strengthening the EU’s voice in global health. It puts forward three main objectives:

- Fostering good health in an ageing Europe
- Protecting citizens from health threats
- Supporting dynamic health systems and new technologies

The 2013 report by the European Commission *Investing in Health* showed how health investments should contribute to the Europe 2020 objective of smart, sustainable and inclusive growth ⁽¹²⁾. The three main proposals for smart investment in health were:

- Spending smarter but not necessarily more in sustainable health systems
- Investing in people’s health, particularly through health promotion programmes
- Investing in health coverage as a way of reducing inequalities and tackling social exclusion.

⁽²⁾ Council of the European Union (2009), *Review of the EU Sustainable Development Strategy — Presidency report*, 16818/09.

⁽³⁾ WHO, *Traditional Hazards, New Risks*.

⁽⁴⁾ WHO (2003), *Social determinants of health: the solid facts*.

⁽⁵⁾ Martens and Michael (2003), *Environmental change, climate and health. Issues and research methods*, Cambridge University Press.

⁽⁶⁾ UNESCO (2005), *The Precautionary Principle*, World Commission on the Ethics of Scientific Knowledge and Technology (COMEST), http://europa.eu/legislation_summaries/consumers/consumer_safety/132042_en.htm

⁽⁷⁾ Council of the European Union (2009), *Review of the EU Sustainable Development Strategy — Presidency report*, 16818/09.

⁽⁸⁾ United Nations (1998), *Rio declaration on environment and development*.

⁽⁹⁾ Commission Communication (2010), *Europe 2020 — A strategy for smart, sustainable and inclusive growth*, COM(2010) 2020 final.

⁽¹⁰⁾ See http://ec.europa.eu/health/ageing/innovation/index_en.htm

⁽¹¹⁾ See http://ec.europa.eu/health/strategy/policy/index_en.htm

⁽¹²⁾ European Commission (2013), *Investing in health*, Commission Staff Working Document Social Investment Package.



There is a strong link between health and other issues related to sustainable development. Health is influenced by environmental issues associated with climate change and energy (such as greenhouse gas emissions), sustainable transport (such as annoyance by noise), sustainable production and consumption (such as atmospheric emissions), and the management of natural resources. A second link can be seen between socioeconomic development and health. Improved living conditions and the reduction of inequalities greatly contribute to better health. For poorer people, cost may be an obstacle to gaining access to health services and leading a healthy lifestyle. Generally, socially included people benefit from the support of their environment. Finally, economic activity or employment greatly contribute to mental health stability. These issues are addressed in the EU Sustainable Development Strategy's key challenges of 'public health', 'social inclusion', 'demography and migration' and 'fighting global poverty'.

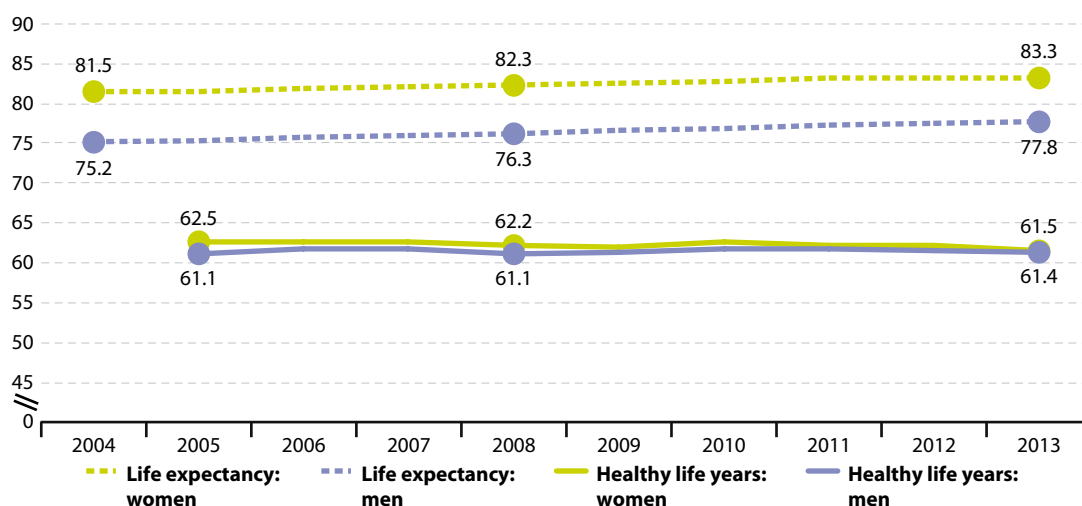
Further reading on public health

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Life expectancy and healthy life years

Life expectancy in the EU has increased by 1.8 years for women and 2.6 years for men between 2004 and 2013. However, people do not necessarily live longer without any activity limitations. In particular women's healthy life expectancy fell by one year between 2005 and 2013.

Figure 5.1: Life expectancy and healthy life years at birth, by sex, EU-28, 2004–2013 ⁽¹⁾ (years)



⁽¹⁾ Life expectancy: break in time series in 2009, 2011 and 2012; Healthy life years: data for 2005–2009 refer to EU-27; data for 2005, 2006, 2010 and 2013 are estimates, break in time series in 2008.

Source: Eurostat (online data code: tsdph100)

Girls born in the EU in 2004 could expect to live 81.5 years. This was 6.3 years longer than boys born in the same year. In the long term, between 2004 and 2013, life expectancy for both women and men increased moderately, by 1.8 and 2.6 years, respectively. The stronger gain for men indicates the life expectancy gender gap has been closing. Men also experienced a stronger short-term gain of 1.5 years compared with one year for women between 2008 and 2012. According to a recent report by the Organisation for Economic Co-operation and Development (OECD), this can at least partly be attributed to women adopting similar risk-increasing behaviours as men, such as smoking, and to a sharp reduction in deaths from cardiovascular diseases among men ⁽¹³⁾.

Women live longer than men but spend more years with a disability or disease

In contrast to overall life expectancy, the disability- or disease-free life expectancy measured by the healthy life years indicator does not show a gender gap. Girls born in 2013 could expect to spend 61.5 years in good health. At 61.4 years, the healthy life expectancy for boys born in the same year was only slightly lower. Given that healthy life expectancy does not differ between men and women, yet women's overall life expectancy considerably exceeds that of men, women can on average be assumed to spend a greater share of their lives with a disability or a disease.

Moreover, healthy life expectancy has not improved over time. Between 2005 and 2013 it fell by 1.0 years for women, while it grew by 0.3 years for men. This shows that people are not spending the extra life years gained without activity limitations. Instead they have to live with some kind of disability or disease.

⁽¹³⁾ OECD (2014), *Health at a Glance: Europe 2014*, pp. 16 and 17.



Long term
(since 2004)



Short term
(since 2008)

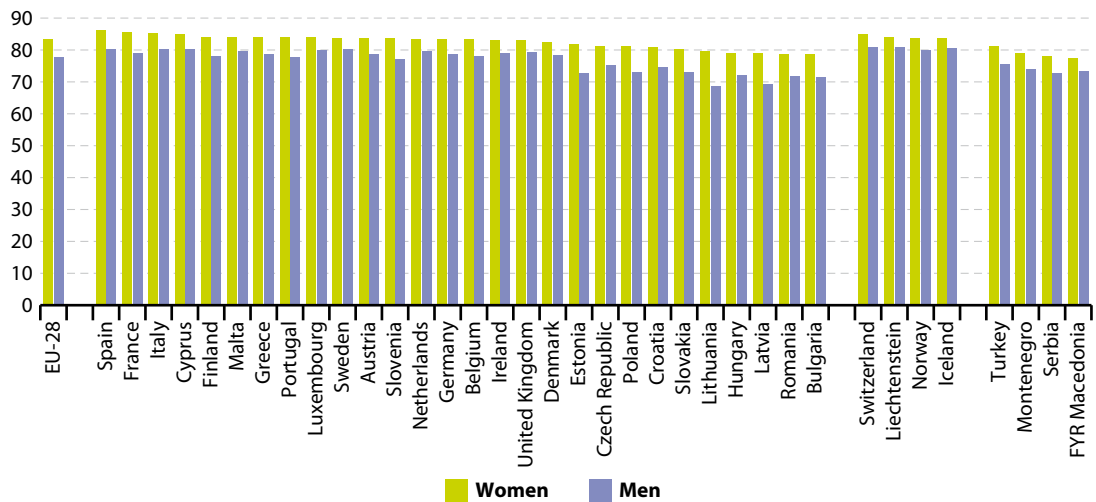


How life expectancy and healthy life years vary between Member States

In 2013, girls born in Spain had the highest life expectancy, at 86.1 years. This was 2.8 years longer than the EU average and 7.5 years more than in Bulgaria, which has the lowest life expectancy in the EU. In 2013, women in nine Member States had a lower life expectancy than the EU average in 2004. This includes the newest Member State, Croatia.

Disparities in life expectancy among countries are even larger for men. In 2013, boys born in Italy had the highest life expectancy at 80.3 years, which was 2.5 years above the EU average and 11.8 years above the Member State with the lowest male life expectancy, Lithuania. Men in the same nine countries that had the lowest life expectancy for women, as well as Estonia, also had a lower life expectancy in 2013 than the EU average in 2004. However, the increase in life expectancy in these countries clearly exceeded the EU average between 2004 and 2013 and was especially high between 2007 and 2013, indicating they have been catching up to the rest of the EU.

Figure 5.2: Life expectancy at birth, by sex, by country, 2013 (years)

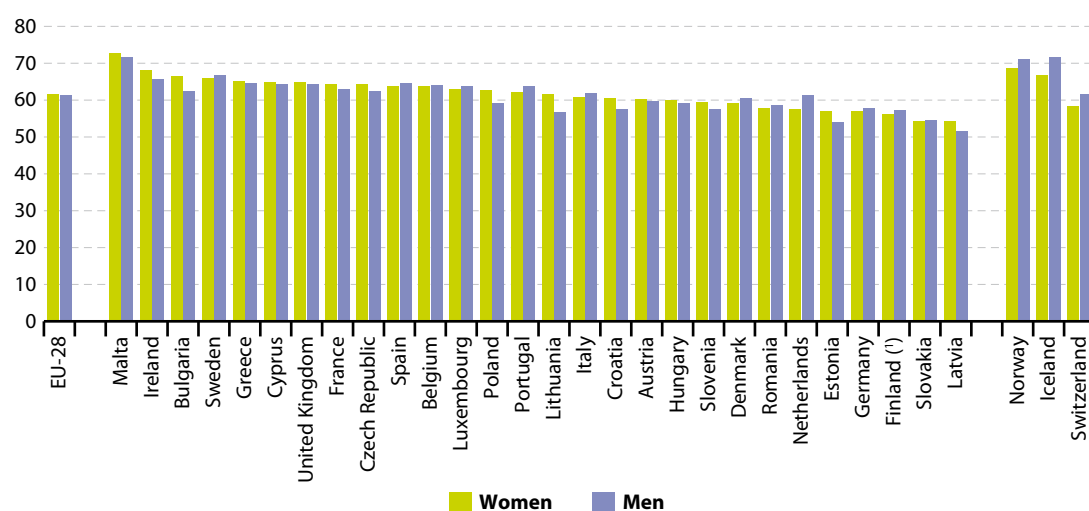


Source: Eurostat (online data code: [tsdph100](#))

Differences in healthy life years⁽¹⁴⁾ across Member States are more pronounced than for life expectancy. In 2013, the country with the highest healthy life expectancy for both men and women was Malta. There, boys and girls born in 2013 could expect to live about ten years more without activity limitations than the EU average. Furthermore, in Latvia, the country with the fewest expected healthy life years for men and women in 2013, women were expected to spend 7.3 fewer years without any activity limitations and men 9.7 fewer than the EU average. Thus the difference in healthy life expectancy across the EU varies by up to almost 20 years.

⁽¹⁴⁾ The county breakdown of the indicator healthy life years must be handled with care as treatment and use of medical care as well as mortality registration methods may vary across countries.

Figure 5.3: Healthy life years at birth, by sex, by country, 2013
(years)



(1) 2012 data.

Source: Eurostat (online data code: [tsdph100](#))

Health inequalities in the EU

Over the past few years the gap between the Member State with the highest life expectancy at birth for men compared with the lowest has tightened by about 11 %, from 13.3 years in 2008 to 11.8 years in 2013. Over the same period, the gap for women also declined by about 4 % from 7.8 years to 7.5 years. The Gini coefficient, used as a measure of inequality between Member States, has declined as well ⁽¹⁵⁾. From 2000 to 2010 the Gini coefficient of male life expectancy at birth was reduced by 3.5 % and the female coefficient by 10.4 % ⁽¹⁶⁾. This decrease is partly due to a fall in the inequality in infant mortality across European countries. From 2000 to 2010, the Gini coefficient of infant mortality decreased by 26.4 % ⁽¹⁷⁾.

Health inequalities between social groups are due to many factors, including behavioural factors and differences in living and working conditions, but also in access to and quality of health care. A European Commission report on health inequalities in the EU shows that whichever indicator of socioeconomic status is considered — education, income or material deprivation — reporting of poor general health and long-standing health problems tend to be less frequent in the most advantaged group and increasingly common as disadvantage worsens. Of these, the strongest association is between material deprivation and health as well as between education and health. For instance, although women are more likely to report being in bad health than men, when controlling for education, the odds of reporting so decrease. This suggests that socioeconomic disadvantages experienced by women largely account for differences in general health between men and women ⁽¹⁸⁾. Finally, both at a regional level and between Member States the level of health can be associated with GDP, however, this connection is far stronger for countries with lower levels of GDP ⁽¹⁹⁾.

What lies beneath these indicators?

An improvement in healthy life years is one of the main health goals for the EU; the European Innovation Partnership on Active and Healthy Ageing aims to increase the average healthy lifespan of Europeans by

⁽¹⁵⁾ The Gini coefficient is used as an indicator of inequality. Although it is mainly used to measure income inequality, it can also be applied to health. It can take values from 0 (perfect equality) to +1 (perfect inequality). For details on the method of calculation, see Regidor E, 'Measures of health inequalities: part 1', *Journal of Epidemiology and Community Health* 2004; 58:pp. 858–861; also see European Commission Directorate General for Health and Consumers (2011), *Expert review and proposals for measurement of health inequalities in the European Union — Full Report*, p. 27.

⁽¹⁶⁾ European Commission (2013), *Report on health inequalities in the European Union*, p. 23. and European Commission (2013), *Health inequalities in the EU — Final report of a consortium*. Consortium lead: Sir Michael Marmot, p. 29.

⁽¹⁷⁾ European Commission (2013), *Health inequalities in the EU — Final report of a consortium*. Consortium lead: Sir Michael Marmot, p. 20.

⁽¹⁸⁾ *Id*, pp. 53–62.

⁽¹⁹⁾ OECD (2011), *Life expectancy at birth, in Health at a Glance 2011: OECD Indicators*, OECD Publishing, p. 24.



two years by 2020 ⁽²⁰⁾. While life expectancy is a conventional and solid indicator to reflect general health and health care conditions in different countries, the indicator of healthy life years is increasingly used to include the concept of quality of life. The indicator combines information on both the quality and length of life. Therefore, it reflects that the emphasis has shifted from seeing health simply in terms of longevity to also considering well-being in terms of the absence of morbidity.

Life expectancy is defined as the mean number of years still to be lived by a person at birth or a certain exact age, if subjected throughout the rest of his or her life to the current mortality conditions.

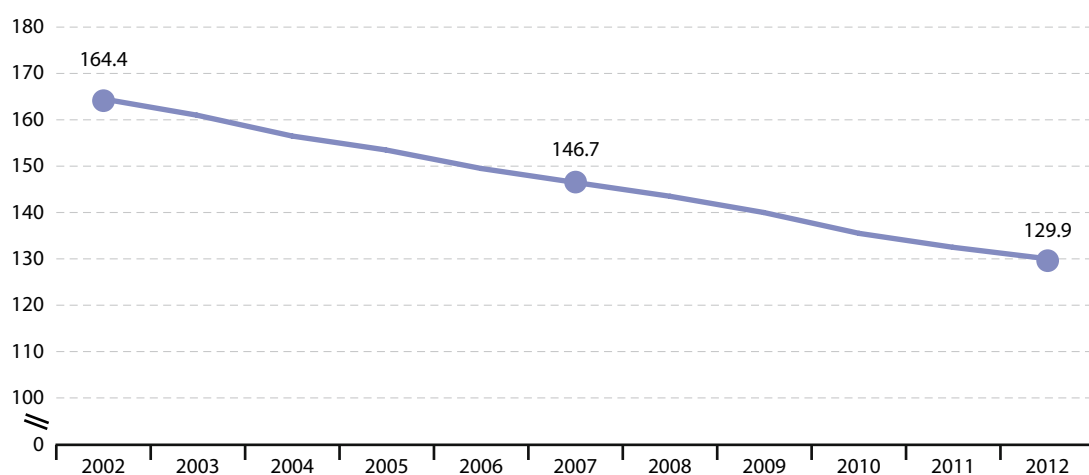
Healthy life years are defined as the number of years a person is expected to live in a healthy condition. It is compiled separately for males and females, at birth. The indicator combines information on mortality and morbidity. It is based on age-specific prevalence (proportions) of the population in healthy and unhealthy conditions and age-specific mortality information (age-specific probabilities of dying). A healthy condition is defined by the absence of disability or limitations in functioning.

⁽²⁰⁾ See http://ec.europa.eu/health/ageing/innovation/index_en.htm

Deaths due to chronic diseases

A 21.0% drop in the death rate due to chronic diseases before the age of 65 was experienced between 2002 and 2012. The decrease remained steady throughout the long- and short-term period. In 2012 chronic diseases accounted for almost 60% of all premature deaths and were more common among men than women.

Figure 5.4: Death rate due to chronic diseases, population aged under 65, EU-28, 2002–2012 ⁽¹⁾ (deaths per 100 000 persons)



⁽¹⁾ 2010 data are provisional.

Source: Eurostat (online data codes: [hlth_cd_asdr](#) and [hlth_cd_asdr2](#))

According to the European Health Report 2012 by the World Health Organization (WHO), chronic diseases such as cardiovascular diseases, cancer and chronic obstructive pulmonary diseases accounted for 80% of all deaths in the EU in 2009. Death due to chronic diseases is considered premature if it occurs before the age of 65. The WHO report shows that about 30% of deaths in the EU in 2009 occurred before the age of 65, and the most frequent cause of these were chronic diseases ⁽²⁾.

Out of every 100 000 people, 164.4 prematurely died of a chronic disease in 2002. This rate steadily decreased to 129.9 deaths per 100 000 persons in 2012. This constitutes a reduction of 21.0% in the long run between 2002 and 2012. Moreover, the decrease remained constant throughout the short and the long run.

How deaths due to chronic disease vary between Member States

Standardised premature death rates due to chronic diseases vary strongly across the EU. In 2012 Hungary had the highest death rate for people under the age of 65 due to a chronic disease, with 272.8 deaths per 100 000 people. This was more than three times as high as in Sweden, the Member State with the lowest rate. Notably, among countries below the EU average (129.9 premature deaths per 100 000 people), differences in premature death rates were substantially smaller than among the countries above the EU average. For example, almost twice as many people below the age of 65 died of a chronic disease in Hungary than in Slovenia, the Member State just above the EU average.

Of the 11 countries where premature death rates due to chronic diseases were above the EU average, ten also had an overall premature death rate that exceeded the EU average. Yet, similar to the situation of the EU average, premature deaths due to chronic diseases accounted for about 60% of all premature deaths in these countries. This shows that premature chronic deaths, among all premature deaths, are not more common in these countries, but are a result of the overall higher premature death rate.

⁽²⁾ WHO (2012), *The European health report 2012. Charting the way to well-being*.



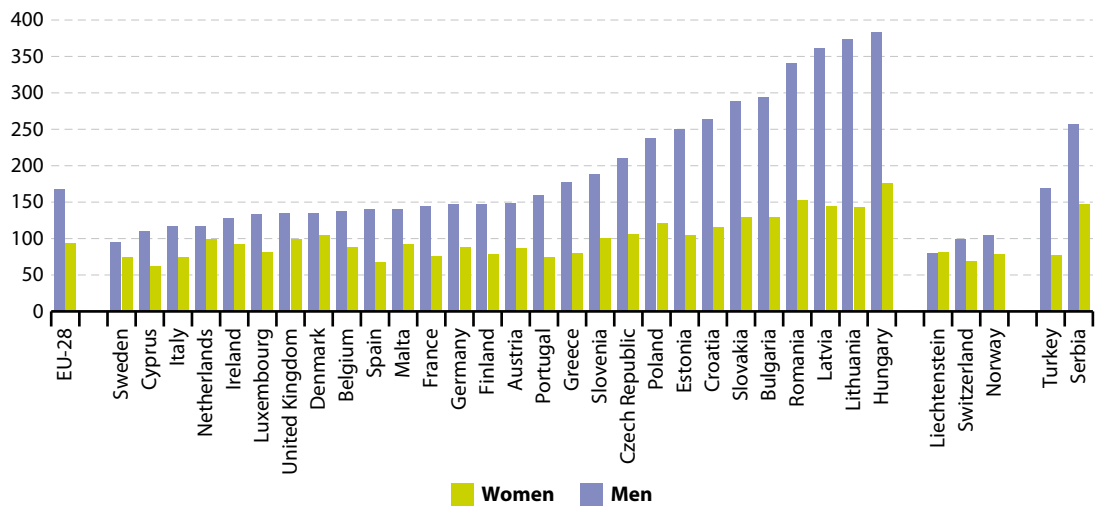
Long term
(since 2002)



Short term
(since 2006)



Figure 5.5: Death rate due to chronic diseases, population aged under 65, by sex, by country, 2012 (deaths per 100 000 persons)



Source: Eurostat (online data code: [hlth_cd_asdr2](#))

Premature deaths due to chronic diseases are far more common for men than for women

In 2012, the distribution of premature death rates among men strongly corresponded to the overall distribution of premature death rates, where the same 11 countries as well as Greece were above the EU average. Conversely, the premature death rates for women differed far less across Member States and showed a rather different distribution than overall premature death rates. Thus, the inter-country differences in premature death rates among men were the main driver behind the differences in overall premature death rates.

The premature death rate due to chronic diseases among men exceeded that of women in all Member States. An exception is the European but non-EU-member Principality of Liechtenstein, where women were slightly more likely to die prematurely of a chronic disease than men. Lower death rates translate into higher life expectancy and explain the gender gap in the headline indicator 'life expectancy' (see p. 177). Cancer and cardiovascular diseases were the most common chronic disease causing premature death both for men and women in the EU ⁽²²⁾.

What lies beneath this indicator?

In many cases chronic diseases are caused or worsened by a number of risk factors: smoking, obesity, lack of physical activity, poor diet and alcohol consumption. Air pollution by particulate matter is also associated with premature mortality from cardiovascular disease and certain cancers. The high mortality of chronic diseases, combined with the fact that many cases are preventable, has led to increasing efforts to prevent lifestyle-related risk factors. These include, for example, national and EU-level awareness initiatives and increasing efforts in implementing chronic disease management programmes in primary care.

The death rate due to chronic diseases is defined as the standardised death rate of certain chronic diseases below the age of 65. It is calculated by dividing the number of people under 65 dying due to a chronic disease by the total population under 65. This value is then weighted with the European Standard Population ⁽²³⁾. Thus standardised death rates take into account the fact that countries with larger shares of older inhabitants also have higher death rates. Chronic diseases included in the indicator are malignant neoplasms, diabetes mellitus, ischaemic heart diseases, cerebrovascular diseases, chronic lower respiratory diseases and chronic liver diseases.

⁽²²⁾ Nichols M., Townsend N., Luengo-Fernandez R., Leal J., Gray A., Scarborough P., Rayner M. (2012), *European Cardiovascular Disease Statistics 2012*, European Heart Network, Brussels, European Society of Cardiology, Sophia Antipolis, p. 25.

⁽²³⁾ Eurostat (2013), *Revision of the European Standard Population. Report for Eurostat's task force.*

Unmet needs for medical health care

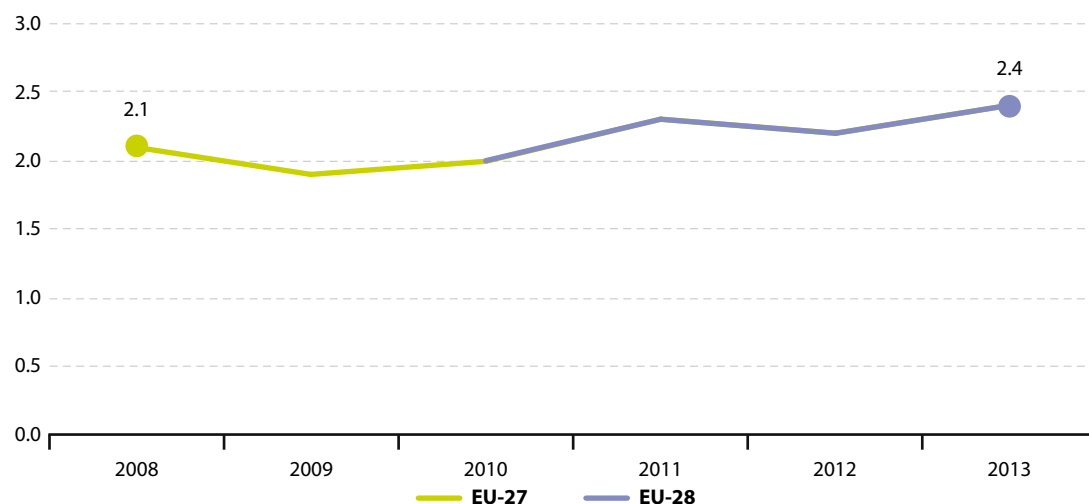
A 0.3 percentage point increase in the share of people reporting unmet needs for medical health care due to monetary constraints was recorded in the EU between 2008 and 2013. Differences between income groups persist.



*Short term
(since 2008)*

Figure 5.6: Self-reported unmet need for medical examination or treatment due to monetary constraints, 2008–2013

(%)



Source: Eurostat (online data code: [tsdph270](#))

In 2013, 2.4% of the EU population reported being unable to afford medical treatment or examination in the past 12 months ⁽²⁴⁾. This represents an unfavourable 0.3 percentage point increase since the onset of the financial crisis in 2008, indicating that economic struggles have hindered access to medical care.

The more people are faced with economic constraints, the more often they report unmet medical needs

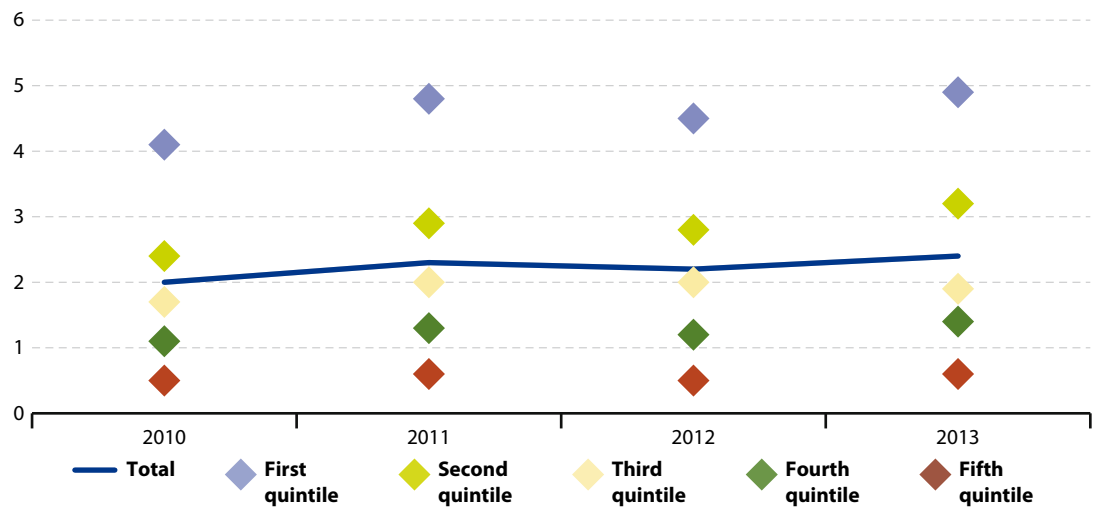
The relationship between economic hardship and unmet needs for medical health care becomes apparent when comparing people from different income quintiles. While only 0.6% of people in the highest income quintile reported unmet needs for medical care due to monetary constraints in 2013, the lower the income quintile, the higher this share becomes. At a rate of 4.9% of the population, people in the lowest income quintile were more than eight times as likely to report unmet needs for medical care due to monetary reasons as in the highest income quintile.

⁽²⁴⁾ The comparability of the indicator between countries is limited as national questions on self-reported unmet need for medical care due to monetary constraints are not completely harmonised, differences in national health systems limit the comparability and indicators based on self-reporting incorporate individual subjective cultural effects and perceptions. The indicator should be interpreted carefully.



Figure 5.7: Self-reported unmet need for medical examination or treatment due to monetary constraints, by income quintile, EU-28, 2010–2013

(%)



Source: Eurostat (online data code: tsdph270)

Box 5.1: Income quintiles

Income quintiles are obtained by dividing the population into five income groups from lowest to highest such that 20% of the population is in every group.

The first income quintile then consists of 20% of the population with the lowest incomes; the fifth quintile of 20% of the population with the highest income.

What lies beneath this indicator?

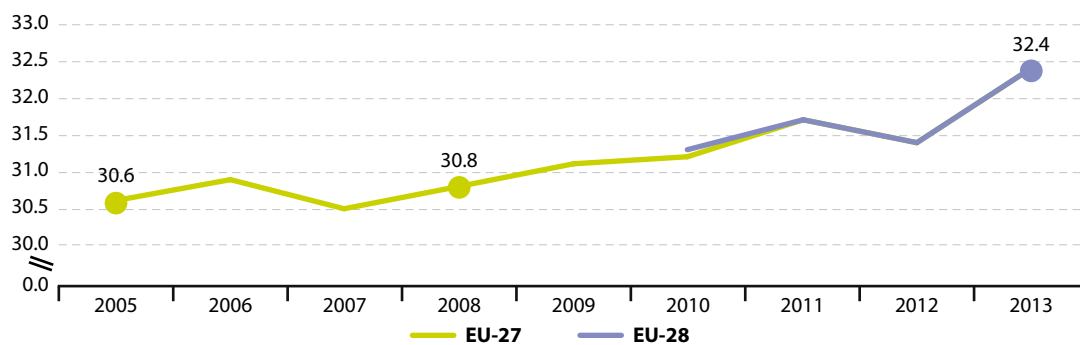
Unequal access to health care leads to inequalities in health, which in turn hinder social cohesion and economic development.

The indicator shows inequalities in access to medical care between income quintiles. It is defined as the share of the population reporting that they could not afford medical examination or treatment at least once in the previous 12 months. Income quintiles represent the income of respondents relative to the national population. Income quintiles are recognised as the main indicator of socioeconomic disparities.

Long-standing illnesses or health problems

The amount of people suffering from a long-standing illness or health problem grew by 1.8 percentage points in the long term between 2005 and 2013. This increase has been even stronger in the short run between 2008 and 2013. Differences between income groups persist.

Figure 5.8: People having a long-standing illness or health problem, 2005–2013 ⁽¹⁾
(%)



⁽¹⁾ Data for 2005 and 2006 are estimates.

Source: Eurostat (online data code: [hlth_silc_11](#))

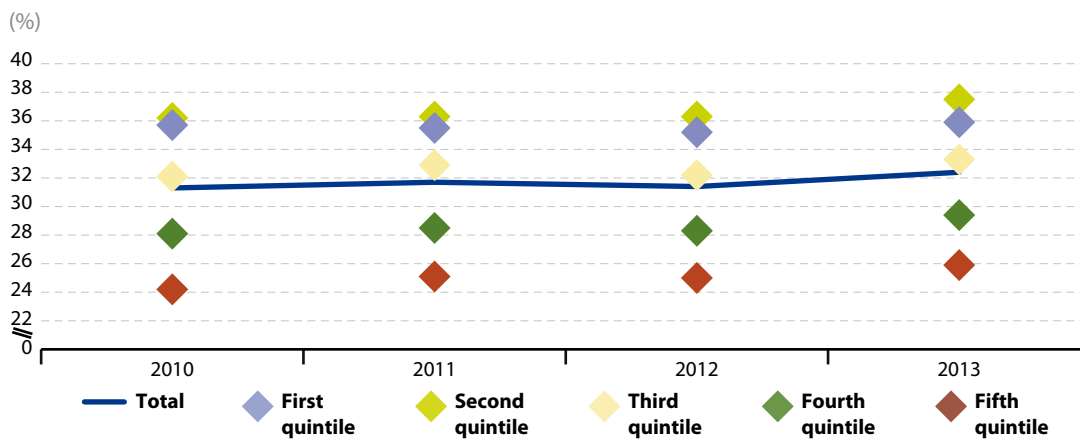
In 2013, 32.4% of the EU population suffered from a long-standing illness or health problem. Although this value rose moderately, by 1.8 percentage points, in the long-term period between 2005 and 2013, most of the increase occurred in the short term between 2008 and 2013.

The lower their income, the more likely people are to report long-standing health issues

In 2013, 25.9% of people in the highest income quintile reported having suffered from long-standing illnesses or health problems. This is in contrast with 35.9% of people in the lowest and 37.5% of people in the second lowest income quintile. This reveals a difference between income groups that seems to have remained stable for the entire period from 2010 to 2013.

In addition, women are more likely to report long-standing health issues than men. In 2013, 34.6% of women indicated dealing with long-standing health issues compared with 30.1% of men. Also, the likelihood of reporting such health issues increased with age for both sexes.

Figure 5.9: People having a long-standing illness or health problem, by income quintile, EU-28, 2010–2013
(%)



Source: Eurostat (online data code: [hlth_silc_11](#))



Long term
(since 2005)



Short term
(since 2008)



Box 5.2: Focus on the reduction of health inequalities within EU policies

Reducing health inequalities within and between Member States is one of the objectives of the EU Sustainable Development Strategy. The EU envisions achieving this goal by addressing wider determinants of health such as environmental pollution, food and feed quality, animal health and welfare, quality of life, and strengthening and developing health promotion and disease prevention strategies. In designing health-related programmes and actions, special attention is given to vulnerable groups, especially children ⁽²⁵⁾. In 2009 the European Commission laid down a framework for tackling health inequalities by focusing on reductions of economic and social disparities ⁽²⁶⁾.

In 2010 the European Commission launched the Europe 2020 strategy for smart, sustainable and inclusive growth. Public health is an important

component in four of the seven flagship initiatives and reducing health inequalities is addressed in one specific flagship programme ⁽²⁷⁾:

- Innovative Union: Developing innovative ways to promote active and healthy ageing.
- Digital Agenda for new skills and jobs: Use of information and communication technologies (ICTs) to improve the quality of care, reduce medical costs and foster independent living among people who are sick and disabled.
- An Agenda for New Skills and Jobs: Highlighting the economic role of mental health and that of the workforce.
- The European Platform against Poverty: Boosting health promotion and prevention with a focus on reducing health inequality.

What lies beneath this indicator?

People with health problems or disability do not only have on average fewer financial resources (12 % below the average national income in OECD countries ⁽²⁸⁾), but a large disease burden also heavily impacts overall labour markets and productivity ⁽²⁹⁾.

The indicator shows the share of the population having suffered from long-standing illnesses or health problems (long-standing refers to lasting or being expected to last for six months or more) and is a widely used measure of general health.

⁽²⁵⁾ Council of the European Union (2009), *Review of the EU Sustainable Development Strategy — Presidency report*, 16818/09.

⁽²⁶⁾ Commission Communication Solidarity in Health (2009), *Reducing health inequalities in the EU*. COM(2009) 567, 2009; and European Commission (2013), *Report on Health Inequalities in the EU*, SWD(2013)328.

⁽²⁷⁾ See *Europe 2020 — for a healthier EU*.

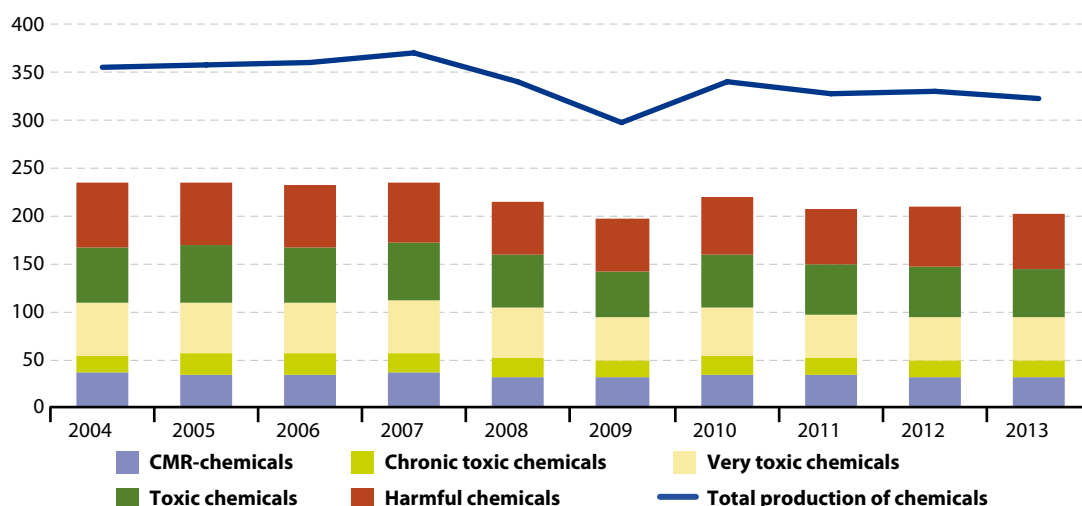
⁽²⁸⁾ OECD (2009), *Background Paper: Sickness, Disability and Work Keeping on track in the economic downturn*, p. 12.

⁽²⁹⁾ WHO (2013), *Promoting health, preventing disease: is there an economic case?*

Production of toxic chemicals

Between 2004 and 2013 total production of toxic chemicals fell by 13.8%. The short-term trend since 2008 confirms this favourable development. Although the share of non-toxic chemicals in total production increased by 3.3%, the share of the most toxic chemicals remained unchanged.

Figure 5.10: Production of toxic chemicals, by toxicity class, EU-28, 2004–2013 ⁽¹⁾
(million tonnes)



⁽¹⁾ Due to a change in the methodology the data presented in this 2015 edition of the *Sustainable development in the European Union* monitoring report differ from those presented in previous editions (for further details see the 'What lies beneath this indicator' section below).

Source: Eurostat (online data code: tsdph320)

In 2013, 321.8 million tonnes of industrial chemicals were produced in the EU. Of these, 201.8 million tonnes were toxic to human health to varying degrees. The production volume of toxic industrial chemicals in 2013 was 32.2 million tonnes below the volume in 2004 and 13.7 million tonnes below that in 2008, representing a rather favourable decrease in the long and the short term. This development is in line with the goals of the Regulation for the registration, evaluation, authorisation and restriction of chemicals (REACH) ⁽²⁰⁾ to reduce the total volume of toxic chemicals ⁽²¹⁾.



Long term
(since 2004)



Short term
(since 2008)

Box 5.3: EU objectives on management of chemicals

Toxic chemicals pose threats to human health and the environment. To address this the EU Sustainable Development Strategy includes an objective that by 2020 chemicals, including pesticides, are produced, handled and used in ways that do not significantly threaten human health and the environment. In this

context, the adoption of the risk management measures implemented under the REACH Regulation in 2006 ⁽²²⁾ represent an important milestone for the sound management of chemicals in the EU, contributing to ensure a high level of human health and environmental protection.

⁽²⁰⁾ Regulation (EC) No 1907/2006 of the European Parliament and of the Council of 18 December 2006 concerning the Registration, Evaluation, Authorisation and Restriction of Chemicals (REACH), establishing a European Chemicals Agency, amending Directive 1999/45/EC and repealing Council Regulation (EEC) No 793/93 and Commission Regulation (EC) No 1488/94 as well as Council Directive 76/769/EEC and Commission Directives 91/155/EEC, 93/67/EEC, 93/105/EC and 2000/21/EC.

⁽²¹⁾ ECHA — Implementing REACH in practice; see <http://www.eubusiness.com/topics/chemicals/echa-reach-guide/>

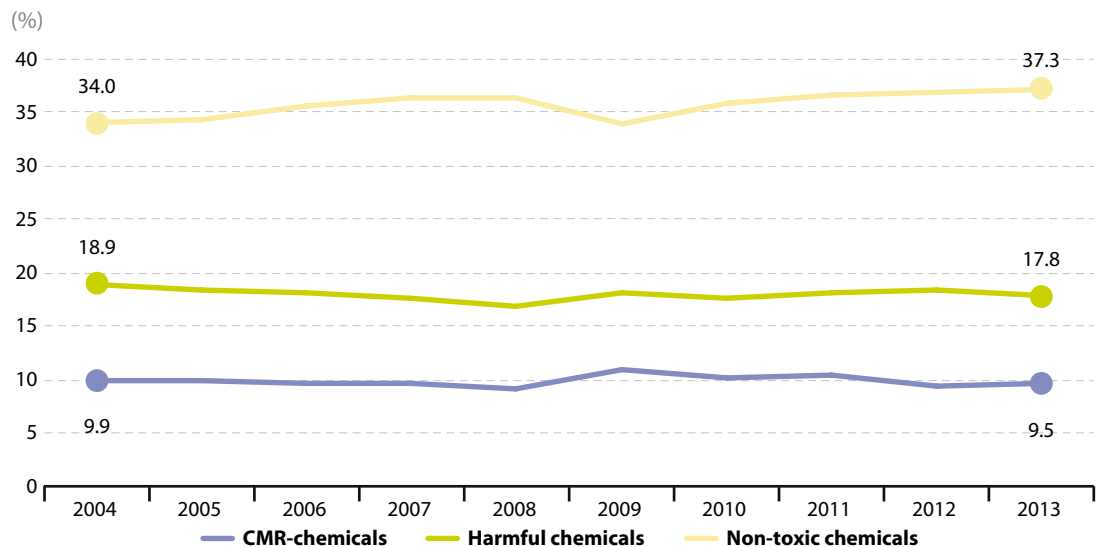
⁽²²⁾ See footnote 32.



While the production share of non-toxic chemicals increased, the share of the most toxic chemicals remained unchanged

As a favourable result of the decline in the production of toxic chemicals, the share of non-toxic chemicals produced increased modestly, reaching 37.3% in 2013, with a production volume at around 120 million tonnes. The share of industrial chemicals toxic to human health fell slightly from 66.0% in 2004 to 62.7% in 2013 (see Figure 5.11). This is also mirrored in the production of chemicals classified as 'harmful', the share of which fell by 1.1 percentage points from 2004 to 2013. 'Very toxic' chemicals showed a similar fall over the same period. The decline in the production of the most toxic chemicals — those classified as 'carcinogenic, mutagenic and reprotoxic' (CMR) — was, however, less pronounced. While production volumes of CMR chemicals fell by 12.3% between 2004 and 2013, their share in total chemical production remained close to 10% over the same period.

Figure 5.11: Share of production of non-toxic chemicals, CMR-chemicals and harmful chemicals in EU-28, 2004–2013



Source: Eurostat (online data code: [tsdph320](#))

Box 5.4: In focus — substances of very high concern (SVHC)

The 'Roadmap for SVHC Identification and Implementation of REACH Risk Management measures from now to 2020' ⁽³³⁾ (called the SVHC Roadmap) gives an EU-wide commitment for having all relevant currently known 'substances of very high concern' (SVHCs) included in the so-called 'Candidate List for Authorisation' by 2020. The objective of the SVHC Roadmap is to present a credible process to make sure this objective is achieved. The SVHC Roadmap outlines a methodology for working towards achieving this objective, with clear deliverables, planning and sharing of responsibilities.

In 2013–2014 ⁽³⁴⁾ work focused on substances known to be carcinogenic, mutagenic and toxic for reproduction (CMRs). All of these substances were screened, the registered ones were further scrutinised and work is ongoing to identify structurally similar substances that need to be assessed further. This work resulted in 145 substances being included in the Candidate List due to their CMR properties, out of which 29 were included in the REACH Authorisation List.

⁽³³⁾ European Chemicals Agency (ECHA), SVHC Roadmap to 2020 implementation.

⁽³⁴⁾ Roadmap for SVHC Identification and Implementation of REACH Risk Management Measures — Annual report 2014.



What lies beneath this indicator?

The EU Sustainable Development Strategy includes the objective of ensuring that by 2020 chemicals are produced, handled and used in ways that do not pose significant threats to human health and the environment. The aim is to eventually replace substances of high concern with suitable alternative substances or technologies.

The indicator represents the trend in aggregated production volumes of toxic chemicals that can be broken down into five toxicity classes. These classes, starting with the least dangerous, are: harmful chemicals, toxic chemicals, very toxic chemicals, chronic toxic chemicals, and carcinogens, mutagens and reprotoxicants (CMRs). It should be noted that due to a change in the methodology behind this indicator, the evaluation in the 2015 *Sustainable development in the European Union* monitoring report cannot be compared with previous editions ⁽³⁵⁾.

⁽³⁵⁾ The change in the methodology refers to the switch from the 'R-phrases' to the hazard statements according to the CLP Regulation. The description of toxic characteristics according to the 'old' risk phrases ('R-phrases') of the Dangerous Substances Directive was changed to the hazard statements according to the international Globally Harmonized System (GHS), as implemented in Europe by the CLP Regulation, also taking into account self-classifications under REACH (additional information from registration dossiers submitted under REACH).



Exposure to air pollution by particulate matter



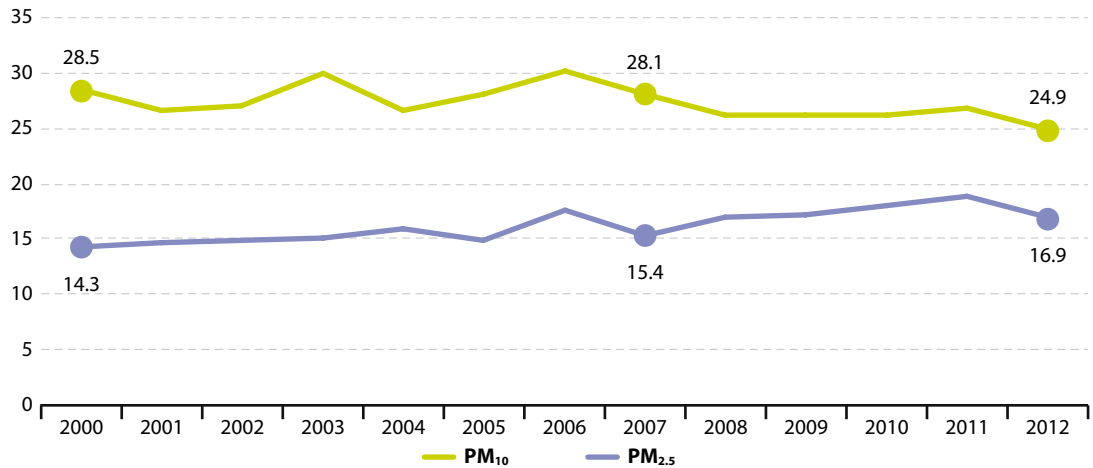
Long term
(since 2000)



Short term
(since 2007)

Exposure to air pollution by the finest and therefore most hazardous particulate matter (PM_{2.5}) increased by 2.6 micrograms per cubic metre in the EU between 2000 and 2012. Despite this negative development, the overall concentration of fine particulate matter (PM₁₀) has fallen by 3.6 micrograms per cubic metre since 2000.

Figure 5.12: Urban population exposure to air pollution by particulate matter, EU-28, 2000–2012 (micrograms per cubic metre)



Source: European Environment Agency, Eurostat (online data code: tsdph370)

The amount of particulate matter smaller than 10 micrometres (PM₁₀) fell by 3.6 micrograms per cubic metre over the long-term period between 2000 and 2012. Yet given the year-on-year variation, it is difficult to discern a clear trend. Most of this reduction took place in the most recent years between 2007 and 2012. Within the PM₁₀ category, the particulate matter that is smaller than 2.5 micrometres (PM_{2.5}) poses the strongest risk factor for mortality. In contrast to PM₁₀, the amount of PM_{2.5} increased both in the long term and short term. Overall, since 2000 the amount of PM_{2.5} has increased by 2.6 micrograms per cubic metre, reaching 16.9 micrograms per cubic metres in 2012.

Severe heat waves partially explain peaks in particulate matter exposure

Peaks in particulate matter exposure in 2003 and 2006 were partially due to severe summer heat waves. The hot, dry conditions led to stagnant air in which pollutants accumulated. In 2003, conditions were exacerbated by wildfires in south-western Europe, which produced large quantities of particulates that were then transported to the northern and eastern parts of Europe ⁽³⁶⁾.

Particulate matter takes higher toll on urban zones than rural areas

A report on Air Quality in the EU by the European Environment Agency showed that in 2012, 21 % of the EU population lived in areas where the daily limit values for PM₁₀ were exceeded ⁽³⁷⁾. According to the EU Air Quality Directives, the daily limit value for PM₁₀ was set at 50 micrograms per cubic metre, not to be exceeded on more than 35 days per year, and the target value for PM_{2.5} was set at 25 micrograms per cubic metre per year ⁽³⁸⁾. In 2012 the PM₁₀ daily limit value was exceeded at 27 % of urban measuring sites and even at 7 % of rural sites. The PM_{2.5} target value was also exceeded more in urban areas (13 %) than in rural areas (4 %) ⁽³⁹⁾.

⁽³⁶⁾ Hodzic A., Madronich, S., Bohn, B., Masiie, S., Menut, L., and Wiedinmyer, C. (2007), *Wildfire particulate matter in Europe during summer 2003: meso-scale modeling of smoke emissions, transport and radiative effects*, Atmospheric Chemistry and Physics, Vol. 7, pp. 4705–4760.

⁽³⁷⁾ European Environment Agency (2014), *Air quality in Europe — 2014 Report*.

⁽³⁸⁾ <http://eur-lex.europa.eu/legal-content/EN/TXT/?uri=CELEX:32008L0050>

⁽³⁹⁾ See footnote 39.

Box 5.5: Objectives on the reduction of particulate matter in the Air Quality Directives and the Thematic Strategy on Air Pollution

In 1996 the Environment Council adopted the Framework Directive on ambient air quality assessment and management ⁽⁴⁰⁾. The first Daughter Directive ⁽⁴¹⁾ relating to limit values for PM₁₀ and other pollutants in ambient air fixed an annual limit value of 40 micrograms of PM₁₀ per cubic metre and a daily limit value of 50 micrograms of PM₁₀ per cubic metre, not to be exceeded on more than 35 days per year. More recently, these Directives were replaced by the

Directive 2008/50/EC ⁽⁴²⁾, which kept the limit values for PM₁₀. However, new environmental objectives were introduced for PM_{2.5}, including an annual target value of 40 micrograms per cubic metre.

The Thematic Strategy on Air Pollution ⁽⁴³⁾ includes a long-term objective to, by 2020, achieve a 47% reduction in loss of life expectancy as a result of exposure to particulate matter by reducing primary PM_{2.5} emissions by 59% compared with the year 2000.

What lies beneath this indicator?

This indicator shows the population-weighted annual mean concentration of PM₁₀ and PM_{2.5} to which the urban population is potentially exposed. It represents the average annual exposure level of the average resident to particulate matter. The measures are taken at urban background stations.

Particulate matter can cause or aggravate illnesses such as heart attacks, cardiovascular and lung diseases, cancer and arrhythmias. It can also affect the central nervous system and the reproductive system and can lead to premature death. Furthermore, it can also act as a greenhouse gas and have a meteorological impact, for instance by altering rainfall patterns ⁽⁴⁴⁾.

Box 5.6: What is particulate matter?

Particulate matter is tiny pieces of solid or liquid matter in the atmosphere. The main sources in urban areas are diesel-engined road vehicles and industrial, public, commercial and residential combustion. PM₁₀, which is less than 10 micrometres in diameter, can be

carried deep into the lungs. This can cause inflammation and a worsening of the condition of people with heart and lung diseases. Particulate matter that is smaller than 2.5 micrometres in diameter (PM_{2.5}) is especially hazardous to health ⁽⁴⁵⁾.

⁽⁴⁰⁾ Council Directive 96/62/EC of 27 September 1996 on ambient air quality assessment and management.

⁽⁴¹⁾ Council Directive 1999/30/EC of 22 April 1999 relating to limit values for sulphur dioxide, nitrogen dioxide and oxides of nitrogen, particulate matter and lead in ambient air.

⁽⁴²⁾ Council Directive 2008/50/EC of 21 May 2008 on ambient air quality and cleaner air for Europe.

⁽⁴³⁾ European Commission (2005), *Thematic Strategy on air pollution*, COM(2005) 446 final.

⁽⁴⁴⁾ European Environment Agency (2014), *Air pollution fact sheet 2013*, European Union (EU-28).

⁽⁴⁵⁾ AQEG (2005), *Particulate Matter in the UK: Summary*. Defra, London, p. 3.



Exposure to air pollution by ozone



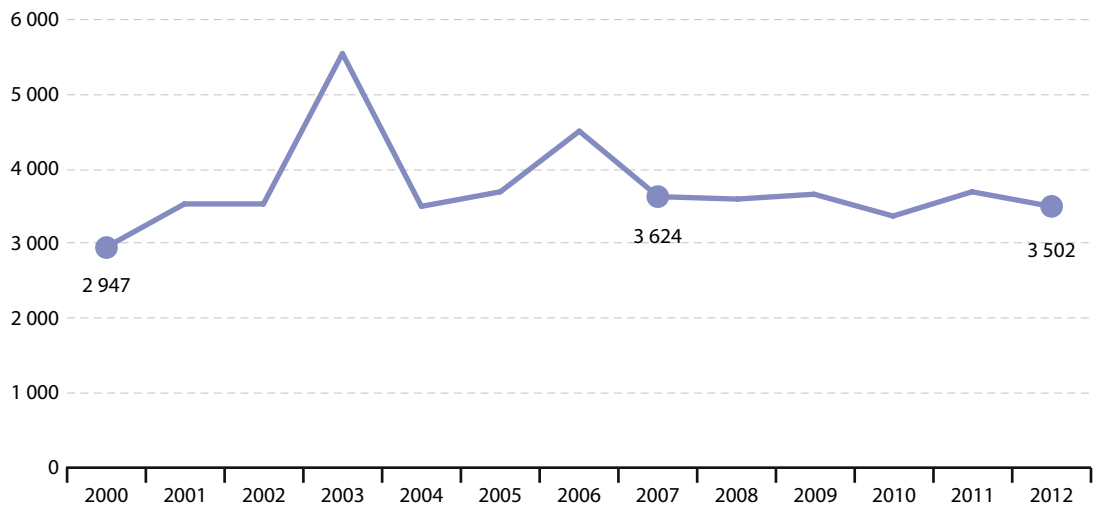
Long term
(since 2000)



Short term
(since 2007)

Exposure to air pollution by ozone increased by about 550 micrograms per cubic metre in the EU between 2000 and 2012. Changing weather patterns have contributed to yearly and regional differences in ozone concentrations. There was a slight decrease between 2007 and 2012 with smaller annual variations.

Figure 5.13: Urban population exposure to air pollution by ozone, EU-28, 2000–2012 (micrograms per cubic metre day)



Source: European Environment Agency, Eurostat (online data code: [tsdph380](#))

Overall exposure to air pollution by ozone increased by 555 micrograms per cubic metre in the long-term period between 2000 and 2012. However, the trend was very unstable, particularly between 2000 and 2007. In contrast to the negative long-term trend, exposure to air pollution by ozone in the short term, between 2007 and 2012, decreased slightly and followed a smoother path. High exposure in the year 2003 is related to a heat wave in that summer⁽⁴⁶⁾. A smaller peak also occurred in 2006 for similar reasons.

Urban exposure to ozone varies widely between countries, partly due to differences in climate and vegetation. In general, southern countries with hotter summers show higher exposure levels than cooler northern countries. Nevertheless, peaks occurred throughout the EU in 2003 and 2006 due to exceptionally high temperatures. This increase was most pronounced in northern countries, which showed higher relative increases compared with countries in the south.

Box 5.7: How is ozone formed?

Ozone is not emitted directly into the air, but is formed by gases called ozone precursors, such as nitrogen oxides (NO_x) and volatile organic compounds (VOCs) that in the presence of heat and sunlight react to form ozone. Ground-level ozone forms readily in the atmosphere, usually during hot

weather. NO_x is emitted from motor vehicles, power plants and other combustion sources. VOCs are emitted from a variety of sources, mainly the use of solvents, but also including motor vehicles, chemical plants, refineries, factories, consumer and commercial products, and other industrial sources.

⁽⁴⁶⁾ Johnson H., Kovats S., McGregor, G., Stedman, J., Gibbs, M., and Walton, H. (2005), *The impact of the 2003 heatwave on daily mortality in England and Wales and the use of rapid weekly mortality estimates*, Euro Surveillance, Vol. 10, pp. 168–171.



What lies beneath this indicator?

Ozone causes serious health problems and damage to the ecosystem, agricultural crops and materials. When inhaled even at very low levels, ozone can cause acute respiratory problems, asthma, and inflammation of lung tissue. It can also impair the body's immune system defences, making people more susceptible to respiratory illnesses, including bronchitis and pneumonia.

The indicator shows the population-weighted SOMO35 value of ozone to which the urban population is potentially exposed. SOMO35 represents the sum of days in which the maximum daily eight-hour mean ozone concentration was above the threshold of 70 micrograms per cubic meter. The measure is taken at urban background stations and the indicator is population-weighted, meaning it represents the average annual exposure level of the average resident to ozone.

Box 5.8: Objectives on the reduction of ozone in the first Daughter Directive and the Thematic Strategy on Air Pollution

In 1996, the Environment Council adopted the Framework Directive ⁽⁴⁷⁾ on ambient air quality assessment and management. The third Daughter Directive ⁽⁴⁸⁾ relating to ozone was adopted on 12 February 2002 with a long-term objective of 120 micrograms of ozone per cubic metre as a maximum daily eight-hour mean within a calendar year. More recently, Directive 2008/50/EC ⁽⁴⁹⁾ replaced the

previously mentioned Directives, in which the environmental objectives for ozone were kept.

The Thematic Strategy on Air Pollution ⁽⁵⁰⁾ includes a long-term ozone-reduction objective for 2020, namely a 10 % reduction in acute mortalities from exposure to ozone. This entails the following emissions reductions: nitrogen oxides by 60 % and volatile organic compounds by 51 % compared with the year 2000.

⁽⁴⁷⁾ Council Directive 96/62/EC of 27 September 1996 on ambient air quality assessment and management.

⁽⁴⁸⁾ Council Directive 2002/3/EC of 12 February 2002 relating to ozone in ambient air.

⁽⁴⁹⁾ Council Directive 2008/50/EC of 21 May 2008 on ambient air quality and cleaner air for Europe.

⁽⁵⁰⁾ European Commission (2005), *Thematic Strategy on air pollution*, COM(2005) 446 final.



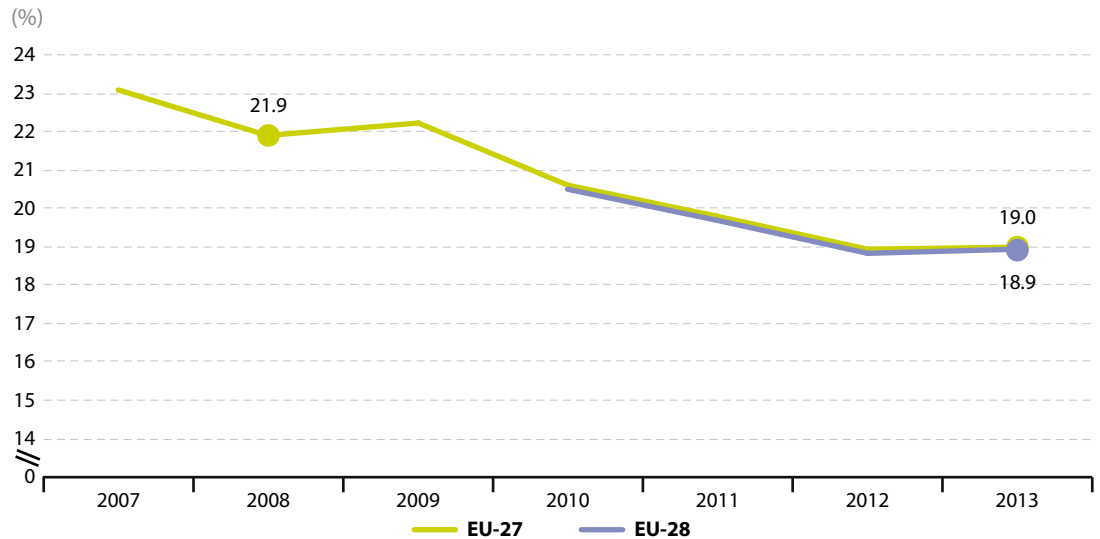
Annoyance by noise



Short term
(since 2008)

The share of people inhabiting living quarters exposed to noise dropped by 3.0 percentage points between 2008 and 2013. It is, however, unclear whether this reduction is due to a change in conditions or in people's perceptions.

Figure 5.14: Proportion of population living in households considering that they suffer from noise, EU-27 and EU-28, 2007–2013



Source: Eurostat (online data code: [tsdph390](#))

In 2013, 18.9% of the EU population reported they suffered from noise in their living arrangements ⁽⁵¹⁾. This represents a 3.0 percentage point reduction since 2008 ⁽⁵²⁾. This could be explained by quieter cars resulting from EU legislation ⁽⁵³⁾. However, because the indicator shows the subjective assessment of noise, it is not clear if the reduction is due to a change in conditions or in people's perceptions.

The five countries in which people were most likely to indicate they suffer from noise in their living quarters are Malta, Romania, Cyprus, Germany and the Netherlands. Countries where the opposite holds true are Croatia, Estonia, Bulgaria, Norway and Iceland. Thus no geographic pattern of suffering from noise can be discerned. The European Environment Agency mapped noise in the EU based on the location of major roads, railways, airports and agglomerations. It found that road transport is the most widespread noise source and estimated that about 90 million people in urban areas and 35 million people outside of these areas are exposed to excess noise ⁽⁵⁴⁾.

⁽⁵¹⁾ Some care is needed when interpreting this indicator due to the subjective assessment of noise. What is actually measured is the compound effect of noise when it interacts with people's standards of what level they consider to be acceptable. An increase in the value of the indicator may not necessarily indicate a similar increase in noise and/or pollution levels; it could also show a decrease of the levels that European citizens are willing to tolerate. In fact, there is empirical evidence that perceived environmental quality by households is not always consistent with the actual environmental quality assessed using 'objective' indicators, particularly for noise.

⁽⁵²⁾ While this number refers to EU-28 data in 2013, it is based on EU-27 data in 2008.

⁽⁵³⁾ For example, *Directive 92/97/EEC on the approximation of the laws of the Member States relating to the permissible sound level and the exhaust system of motor vehicles.*

⁽⁵⁴⁾ European Environment Agency (2014), *Noise in Europe.*



Box 5.9: General Union Environment Action Plans to reduce noise pollution

The EU's 7th Environmental Action Programme (EAP), entitled 'Living well, within the limits of our planet', set a goal to reduce noise pollution in the EU by 2020 and thus approach WHO recommended levels ⁽⁵⁵⁾.

Fighting noise pollution was already part of the 5th and 6th EAPs. The 6th EAP also resulted in a Directive on environmental noise (END). This aims to reduce

the harmful effects of exposure to environmental noise with the following steps:

- Determining exposure through noise mapping
- Ensuring that information on environmental noise and its effects are available
- The adoption of action plans by the Member States based on the results of the noise maps ⁽⁵⁶⁾.

What lies beneath this indicator?

The indicator measures the proportion of household accommodations for which noise levels are considered not acceptable by household members.

Hazardous noise exposure is an increasingly important public health problem. Noise can cause hearing impairment, interfere with communication, disturb sleep, cause cardiovascular and psycho-physiological effects, reduce cognitive performance, and provoke annoyance responses and changes in social behaviour. Estimations by the European Environment Agency suggest environmental noise causes at least 10 000 cases of premature death in Europe each year ⁽⁵⁷⁾. Furthermore, a harmful effect on wildlife has been seen as many species rely on acoustic communication for finding food or locating a mate ⁽⁵⁸⁾.

⁽⁵⁵⁾ European Commission (2014), *General Union Environment Action Programme to 2020: living well, within the limits of our planet*, p. 51.

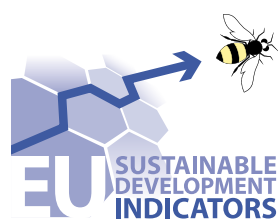
⁽⁵⁶⁾ European Environment Agency (2014), *Noise in Europe*, pp. 6 and 7.

⁽⁵⁷⁾ *Id.*, p. 5.

⁽⁵⁸⁾ *Id.*, pp. 7–9.

Climate change and energy





Overview of the main changes

The EU has made steady progress towards its climate and energy targets. Greenhouse gas (GHG) emissions have decreased both in the short term since 2008 and over the long run since 2000. In 2020, the EU is likely to surpass its 20% reduction target compared with 1990 levels. While primary energy consumption has risen in the past, reaching a peak in 2006, the trend has reversed in recent years and the short-term trend is therefore clearly positive. Some of the favourable trend can be attributed to the economic crisis, with a continuous economic downturn in some EU countries driving down industrial production, transport volumes and energy demand between 2007 and 2013 (with the exception of a limited rebound in 2010). Therefore, further action will be needed to continue improving energy efficiency up to 2020, particularly to avoid a bounce back in energy demand that is expected once economic growth picks up again.

Other indicators in the 'climate change and energy' theme also show positive trends — at least over the short-term — but will require additional effort in the future. For example, renewable energy provides a growing share of the EU's energy consumption. At the same time, the economic difficulties together with policy changes have recently led to a slump in renewable energy investments after years of rapid growth. Despite these challenges, the recent progress demonstrates that EU and national climate and energy policies have an impact on the energy system. Improvements in energy efficiency and higher shares of renewables have lowered carbon emissions per unit of energy and per unit of gross domestic product (GDP). These trends have helped to stabilise the level of energy dependence and contributed to the sizable reduction in emissions between 2005 and 2012.

Table 6.1: Evaluation of changes in the climate change and energy theme, EU-28⁽¹⁾

Indicator	Long-term evaluation (since 2000)	Short-term evaluation (last five-year period)
Greenhouse gas emissions		
Primary energy consumption		
Climate change		
Greenhouse gas emissions by sector	:	:
Global surface average temperature	:	:
Greenhouse gas emissions intensity of energy consumption		
Energy		
Energy dependence		
Consumption of renewables	(?)	
Electricity generation from renewables	(?)	
Share of renewable energy in transport	(?)	

⁽¹⁾ An explanation of the evaluation method and the meaning of the weather symbols is given in the Introduction and in Annex III.

^(?) From 2004.



Key trends in climate change and energy

Greenhouse gas emissions and primary energy consumption are nearing 2020 targets

In 2012, EU **greenhouse gas emissions**, including emissions from international aviation, were down by 17.9% compared with 1990 levels. This has put the EU within reach of meeting the Europe 2020 target of reducing GHG emissions by 20% by 2020 eight years ahead of schedule. With average emissions 11.8% below base-year levels in the period 2008–2012, the EU-15 has also overachieved its commitment under the Kyoto Protocol to reach an average emission reduction of 8% in 2008–2012 compared with the base year ⁽¹⁾.

All sectors, except for transport and international aviation and shipping, contributed to the reductions between 1990 and 2012. While economic restructuring in eastern European countries and a switch from coal to natural gas primarily drove emission reductions in the 1990s, recent progress can partly be attributed to energy efficiency improvements and the expansion of renewable energies. Persistent low economic growth and a shift from industry to services also played a role. Despite the decreasing trend, projections show that much steeper annual emission reductions will be required to achieve the EU's 2030 target of cutting GHG emissions by 40% ⁽²⁾ as well the long-term objective of reaching 80% to 95% GHG emission reductions by 2050 ⁽³⁾ (both compared with 1990 levels).

With the exception of a rebound from crisis levels in 2010, **primary energy consumption** has been falling continuously since 2006. In 2013, it fell below 1990 levels for the first time since 1995 and was 8.3% lower than in 2005 ⁽⁴⁾. If the average annual decline of 1.5% achieved between 2008 and 2013 can be maintained, the EU would overachieve its 2020 target of reducing energy consumption by 20% compared with the 'business as usual' projections dating from 2007. Stricter efficiency standards for cars, buildings and other energy consuming devices appear to have played a role in driving down energy use and more efficient power plants and higher shares of renewables also had a positive effect. However, low economic performance also contributed to the trend.

Global average temperature keeps rising

EU GHG emissions represent about 10% of **global emissions**. Steep rises in emissions in other parts of the world, in particular China, have largely overcompensated for GHG emission reductions that were achieved in the EU since 1990 and the United States since 2005. Together with past emissions, these increases push up GHG concentrations in the atmosphere. Although there is a time lag between emissions and temperature increases, the continuous upward trend in **average global surface temperature** is unequivocal. Together with 2010, 2005 and 1998, the year 2014 counts among the warmest years on record.

Steady expansion of renewables but energy dependence remains high

The EU energy sector shows positive trends on a range of indicators. Between 1990 and 2012, the EU has achieved absolute decoupling of GHG emissions from gross inland energy consumption. Compared with 1990, the EU emitted 20.1% less **greenhouse gas for each unit of energy** in 2012. While the dominant driver in the 1990s was the switch from coal to natural gas, the strong growth of renewable energy generation has contributed to the reduction in emission intensity between 2000 and 2012.

In 2013, **renewables** provided 15% of gross final energy consumption in the EU, up from 8.3% in 2004. The steady growth was possible due to effective support schemes, shrinking costs and lower energy consumption which statistically increases the renewable energy share. The annual growth rate observed over the past decade puts the EU on track to achieve its 2020 target of sourcing 20% of all final energy consumption from renewables. However, a recent investment slump due to policy uncertainty and an unfavourable economic climate points to the need to intensify efforts to promote renewable energy expansion in all sectors.

The expansion of renewable capacity in the power sector has been dynamic. Gross **electricity generated from renewable sources** more than doubled between 2000 and 2013 and provided more than a quarter of

⁽¹⁾ This figure excludes emissions from land use, land-use change and forestry (LULUCF) and international aviation, in line with the Parties' commitments under the Kyoto Protocol.

⁽²⁾ Council of the European Union (2014), *Council Conclusions (23–24 October 2014)*, European Union, Brussels.

⁽³⁾ Council of the European Union (2009), *Council Conclusions on EU Position for the Copenhagen Climate Conference (7–18 December 2009)*, European Union, Brussels, p. 2.

⁽⁴⁾ Time series used in the summary differ because data on energy consumption were available up to the year 2013, while data on greenhouse gas emissions were only available for the period up to 2012 at the time of publication.



all electricity in 2013. Hydro power still provided 43.4% of all renewable electricity in 2013, but it is losing in importance relative to wind power (27.5%), biomass and biogas (16.2%) and solar energy (10%).

Renewables provided 5.4% of all **energy in transport** in 2013, up from 1% in 2004. After rapid growth up to 2010, the share of renewable energy in transport grew at a slower pace over the following three years. This slowdown can partly be attributed to the fact that not all Member States have fully transposed the Renewable Energy Directive's sustainability criteria for biofuels and because only certified biofuels have been counted towards the indicator since 2010.

The EU still relies heavily on **energy imports** from non-EU countries, which provided 53.2% of all energy consumed in 2013. However, after increasing steadily since 2002, the share of energy imports peaked in 2008 and has since declined slightly. Greater use of domestic renewables and lower energy demand explain this stabilisation.

Why do we focus on climate change and energy?

Climate change is a threat to sustainable development. Higher temperatures, rising sea levels and more frequent weather extremes have already been observed in the EU and globally. After years of extensive research, the scientific community agrees that man-made GHG emissions are the dominant cause of Earth's average temperature increases over the past 250 years ⁽⁵⁾. The most recent Assessment Report of the Intergovernmental Panel on Climate Change (IPCC) projects that, depending on future levels of GHG emissions, global mean surface temperature could increase by 0.3°C to 4.8°C by the end of the 21st century relative to 1986–2005 ⁽⁶⁾. Rapid climate change puts many coastal communities, food security, human health and ecosystems at risk and can intensify existing conflicts. To avoid such negative consequences, the international community has committed itself to limit the mean global temperature rise to 2°C above pre-industrial levels ⁽⁷⁾.

Man-made GHG emissions are primarily a by-product of the burning of fossil fuels in power plants, cars or homes. Farming, forest clearing and waste decaying in landfills are also sources of GHG emissions, but in the EU energy consumption is by far the largest emitter. Therefore, measures to transform the sector are at the heart of climate change mitigation efforts.

Two main measures for building a sustainable energy sector are replacing fossil fuels by renewable energy sources and reducing energy consumption ⁽⁸⁾. These measures can also help reduce the EU's dependence on non-EU energy sources. The EU is the world's largest energy importer and is exposed to the risks of supply disruptions and volatile world market prices that come with import dependence. Using less energy and generating more of it from domestic resources would cut the EU's import bill which stood at around EUR 400 billion in 2013 ⁽⁹⁾.

The push towards a climate-friendly economy holds many opportunities for Europe: the demand for better green technologies can spur innovation and create jobs. By mastering new technologies such as smart grids, energy storage or electric vehicles, the EU can strengthen its exports in a growing global market. At the same time, more efficient energy use also lowers production costs, thereby increasing competitiveness of EU businesses.

The climate change and energy theme is linked to other areas of sustainable development in many ways. Since energy is used in virtually every economic activity, climate change and energy policies have an impact on a wide range of economic activities. A more sustainable energy sector can thus have synergies with actions covered in the areas of sustainable consumption and production and transport. For example, lower transport volumes, a modal shift from vehicles to trains and public transport or lower material consumption help reduce energy consumption and therefore GHG emissions. Climate change also plays a key role in development assistance as developing countries and poor people in particular tend to be affected most by climate change impacts. Adaptation to ongoing and expected future changes in precipitation, vegetation, diseases and extreme events is therefore a key element of poverty alleviation and economic development.

⁽⁵⁾ IPCC (2014), *Climate Change 2014 Synthesis Report*, Geneva: Intergovernmental Panel on Climate Change, p. SPM-4.

⁽⁶⁾ Id., p. SPM-10.

⁽⁷⁾ United Nations (2009), United Nations Framework Convention on Climate Change, *Copenhagen Accord*, United Nations, Copenhagen.

⁽⁸⁾ European Commission (2011), *A roadmap for moving to a competitive low carbon economy in 2050*, COM(2011) 112.

⁽⁹⁾ European Commission (2015), *A Framework Strategy for a Resilient Energy Union with a Forward-Looking Climate Change Policy*, COM(2015) 80 final, p. 2.



How does the EU tackle climate change and energy?

The EU Sustainable Development Strategy (EU SDS) ⁽¹⁰⁾ dedicates one of its seven key challenges to climate change and energy, with the overall objective to 'limit climate change and its costs and negative effects to society and the environment'. The operational objectives in the EU SDS relating to climate change and energy are:

- Kyoto Protocol commitments for the EU-15 to reduce GHG emissions by 2008–2012 by 8% compared with 1990 levels (excluding emissions from land use, land-use change and forestry [LULUCF] and international aviation). The aim is for global surface average temperature not to rise by more than 2 °C compared with the pre-industrial level.
- Energy policy should be consistent with the objectives of security of supply, competitiveness and environmental sustainability. Energy policy is crucial when tackling the challenges of climate change.
- Adaptation to, and mitigation of, climate change should be integrated into all relevant European policies.

The Europe 2020 strategy ⁽¹¹⁾ sets three headline targets for climate and energy policy, to be reached by 2020:

- Reducing GHG emissions by 20% compared with 1990 levels.
- Increasing the share of renewables in final energy consumption to 20%.
- Moving towards a 20% increase in energy efficiency.

- Additionally, the Europe 2020 strategy points out that the EU is committed to move to a 30% reduction by 2020 compared with 1990 levels. The condition is that other developed countries commit themselves to comparable emission reductions and that developing countries contribute adequately according to their responsibilities and respective capabilities.

The 20% emission reduction target also serves as the EU commitment under the second period of the Kyoto Protocol, which covers the period 2013–2020 ⁽¹²⁾. The EU intends to fulfil its commitment jointly with Iceland ⁽¹³⁾.

In October 2014, the European Council ⁽¹⁴⁾ adopted new climate and energy targets for 2030:

- Reducing domestic GHG emissions by at least 40% compared with 1990.
- Increasing the share of renewable energy consumption to at least 27%.
- Improving energy efficiency by at least 27% compared with projections of future energy consumption. The target will be reviewed by 2020, having in mind an EU level of 30%.

The 2030 climate and energy targets are a key component of the EU's wider Energy Union strategy adopted in February 2015. The Energy Union's main objectives are to improve security of energy supply, to ensure that energy is affordable and to drive decarbonisation of the energy sector ⁽¹⁵⁾.

⁽¹⁰⁾ Council of the European Union (2006), *Review of the EU Sustainable Development Strategy (EU SDS) — Renewed Strategy*, 10917/06, Brussels.

⁽¹¹⁾ European Commission (2010), *Europe 2020 — A strategy for smart, sustainable and inclusive growth*, COM(2010) 2020 final, Brussels, p. 11.

⁽¹²⁾ Conference of the Parties serving as the meeting of the Parties to the Kyoto Protocol (2013), *Amendment to the Kyoto Protocol pursuant to its Article 3, paragraph 9 (the Doha Amendment)*, Decision 1/CMP.8.

⁽¹³⁾ European Commission (2015), *EU and Iceland sign agreement for joint fulfilment of second phase of Kyoto Protocol*, Press release DG CLIMA 01/04/2015.

⁽¹⁴⁾ Council of the European Union (2014), *Council Conclusions (23–24 October 2014)*, European Union, Brussels.

⁽¹⁵⁾ European Commission (2015), *A Framework Strategy for a Resilient Energy Union with a Forward-Looking Climate Change Policy*, COM(2015) 80 final.



Further reading on climate change and energy

European Commission (2015), *A Framework Strategy for a Resilient Energy Union with a Forward-Looking Climate Change Policy*, COM(2015) 80 final, Brussels.

European Commission (2014), *A policy framework for climate and energy in the period from 2020 to 2030*, COM(2014) 15 final, Brussels.

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European Commission (2015), *Renewable energy progress report*, COM(2015) 293 final, Brussels.

European Commission (2013), *An EU Strategy on adaptation to climate change*, COM(2013) 216, Brussels.

European Environment Agency (2014), *Annual European Union greenhouse gas inventory 1990–2012 and inventory report 2014*, EEA Report No 09/2014, Copenhagen.

European Environment Agency (2014), *Trends and projections in Europe 2014: Tracking progress towards Europe's climate and energy targets until 2020*, EEA Report No 06/2014, Copenhagen.

European Environment Agency (2014), *Why did greenhouse gas emissions decrease in the EU between 1990 and 2012?*, Copenhagen.

Eurostat (2013), *Energy, transport and environment indicators*, 2013 edition, Publications Office of the European Union, Luxembourg.

International Energy Agency (2014), *World Energy Outlook 2014*, Paris, IEA.

IPCC (2013), *Climate Change 2013: The Physical Science Basis*, Contribution of Working Group I to the IPCC Fifth Assessment Report of the Intergovernmental Panel on Climate Change, Geneva.

IPCC (2014), *Climate Change 2014: Synthesis Report*, Contribution of Working Groups I, II and III to the IPCC Fifth Assessment Report of the Intergovernmental Panel on Climate Change, Geneva.

REN21 (2015), *Renewables 2014: Global Status Report*, Paris.



Greenhouse gas emissions



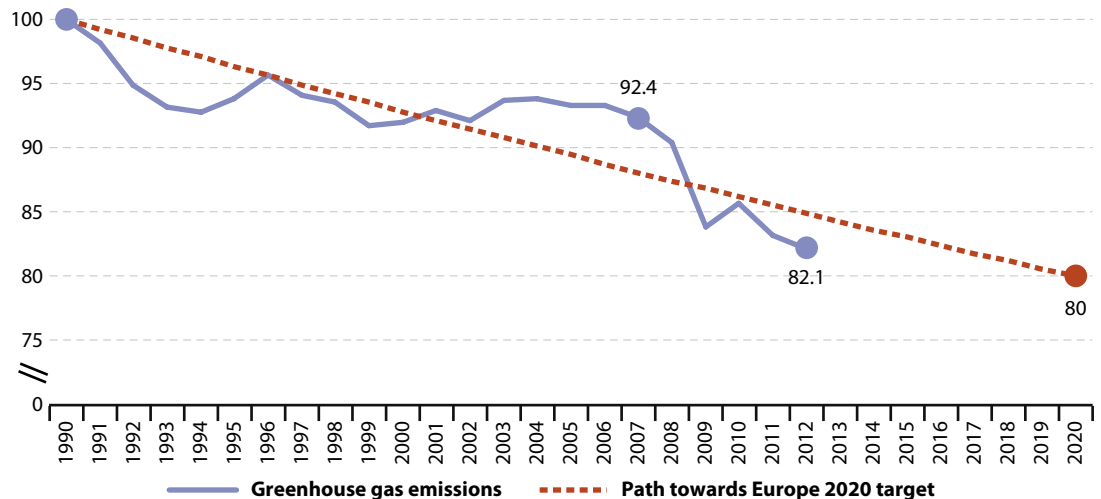
Long term
(since 2000)



Short term
(since 2007)

EU greenhouse gas (GHG) emissions have been declining continuously since 2006 due to progress in energy efficiency, a fuel switch from oil and coal to natural gas and renewables, and the economic slowdown. In 2012, GHG emissions had fallen by 17.9% compared with 1990 levels, putting the EU on track to surpassing its 2020 GHG emissions target.

Figure 6.1: Greenhouse gas emissions, EU-28, 1990–2012⁽¹⁾
(index 1990 = 100)



⁽¹⁾ Total emissions, including international aviation, but excluding emissions from land use, land use change and forestry (LULUCF). When considering the scope of the Kyoto Protocol, which excludes emissions from international aviation, the reduction achieved in 2012 reaches 19.2% compared with 1990 levels.

Source: European Environment Agency, Eurostat (online data code: [tsdcc100](#))

In 2012, EU greenhouse gas emissions, accounting for the total man-made emissions of the six gases of the 'Kyoto basket', were down by 17.9% compared with 1990 levels. This is an absolute reduction of 1 019 million tonnes of CO₂ equivalents. This figure includes international aviation. Without it, the reduction is 19.2%, as reported by the European Environment Agency (EEA) ⁽¹⁶⁾. While emissions have decreased at an average annual rate of only 0.9% over the long term since 2000, emission cuts sped up substantially over the shorter term, since 2007, when they declined by 2.3% per year on average.

Box 6.1: The 'Kyoto basket'

The 'Kyoto basket' encompasses the following six greenhouse gases: carbon dioxide (CO₂), methane (CH₄), nitrous oxide (N₂O) and several fluorinated gases: hydrofluorocarbons, perfluorocarbons and sulphur hexafluoride (SF₆). Each gas is weighted by its global warming potential and aggregated to give

total greenhouse gas emissions in CO₂ equivalents. The name 'Kyoto basket' reflects the fact that these six gases are covered by the reduction commitments of the Kyoto Protocol, which was adopted in the Japanese city in 1997.

The EU-15 have overachieved their joint Kyoto target

Under the Kyoto Protocol, the EU-15 committed to cut their combined GHG emissions (without international aviation) by 8% compared with 1990 levels. The target levels were to be achieved in the period 2008 to 2012. However, the country group surpassed its obligation with an 11.8% reduction in this period.

⁽¹⁶⁾ EEA (2014), *Annual greenhouse gas inventory 1990–2012 and inventory report 2014*, EEA Report No 9/2014, p. 6.

National and EU policies have played a role in emission reductions, together with economic and other factors

Lower carbon emissions per unit of energy used and lower energy input for each unit of GDP have been key drivers of the downward trend in emissions between 2005 and 2012. National and EU policies have played a role in initiating these changes, in particular the success in promoting renewable energies through effective support schemes in the power, heating and transport sectors. With respect to energy efficiency, stricter standards for building insulation, appliances or car emissions also played a role, although the exact effects of each policy cannot be calculated. Lower agriculture and waste emissions reflect the impacts of the Nitrates and Landfill Directive and changes in the Common Agriculture Policy ⁽¹⁷⁾.

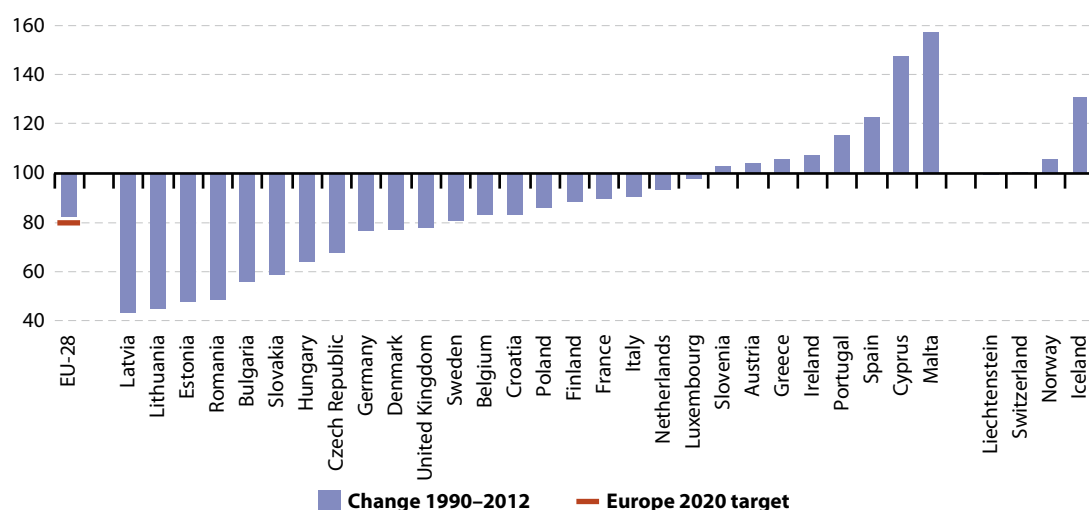
The economic downturn since 2008 has also played a role in reducing emissions by lowering production and transport volumes and the associated energy use. However, current EEA analysis indicates that the combined effects of policies and other factors are at least as relevant in explaining the observed trends as the change in GDP. Moreover, emissions have fallen by a greater extent when GDP has been sinking than they have risen when GDP has been growing, showing an absolute decoupling of economic growth and GHG emissions between 1990 and 2012 ⁽¹⁸⁾.

In contrast to this recent trend, the majority of emission reductions in the 1990s and early 2000s resulted from external factors. Drivers included the economic restructuring in eastern Europe, a shift from heavy manufacturing industries to more service-based economies and fuel switches from oil and coal to natural gas as a result of electricity market liberalisation. Significant reductions were also made in the waste sector by using waste treatment processes with a lower carbon footprint. In the agricultural sector, declining numbers of livestock and less nitrogenous fertilisers helped to cut emissions ⁽¹⁹⁾.

How greenhouse gas emissions vary across Member States

A large majority of Member States reduced their national GHG emissions between 1990 and 2012. Reductions are highest in eastern European countries, with the Baltic countries and Romania leading with cuts of more than 50%. By contrast, emissions increased in eight Member States as well as in Norway and Iceland.

Figure 6.2: Greenhouse gas emissions, by country, 2012 ⁽¹⁾
(index 1990 = 100)



⁽¹⁾ Total emissions, including international aviation, but excluding emissions from land use, land-use change and forestry (LULUCF).

Source: European Environment Agency, Eurostat (online data code: tsdcc100)

⁽¹⁷⁾ EEA (2014), *Why did greenhouse gas emissions decrease in the EU between 1990 and 2012?*, Copenhagen, p. 4f.

⁽¹⁸⁾ Ibid.

⁽¹⁹⁾ Eurostat (2011), Statistics in focus 10/2011, *Driving forces behind EU-27 greenhouse gas emissions over the decade 1999–2008*, p. 2.

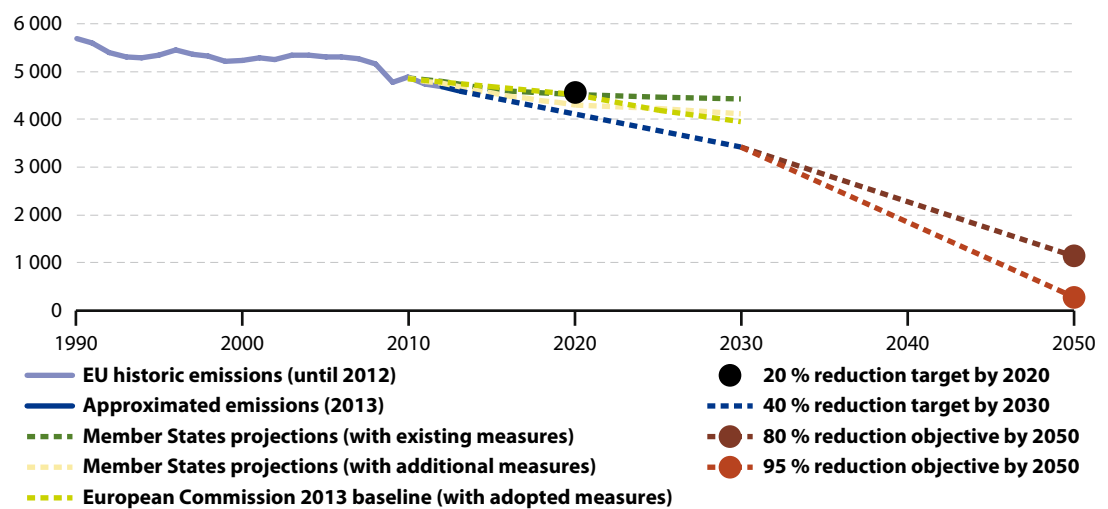


Projections show that steeper emissions cuts are needed to reach long-term objectives

The EEA's assessment of Member States' projections indicates that by 2020 the EU's GHG emissions are expected to decrease by 21 % based on existing policy measures and may decrease by 24 % with additional measures (excluding international aviation). Due to recently adopted EU policy instruments actual emission reductions might even surpass 24 % by 2020 ⁽²⁰⁾.

Despite this favourable development, average annual emission reductions between 2000 and 2012 are not enough to put the EU on a path to meeting its medium-term and long-term objectives. Both the 2030 target of reducing GHG emissions by at least 40 % ⁽²¹⁾ and the long-term commitment ⁽²²⁾ to cut emissions by 80–95 % by 2050 compared with 1990 levels will require steeper annual reductions ⁽²³⁾.

Figure 6.3: Greenhouse gas emissions and projections, 1990–2050 ⁽¹⁾
(million tonnes of CO₂ equivalent)



⁽¹⁾ Total EU GHG emissions include those from international aviation and exclude those from land use, land-use change and forestry (LULUCF). The 1990 GHG emissions data are preliminary estimates (from approximated GHG inventories).

Source: European Environment Agency

EU trends in climate change and energy compared with other countries in the world

While EU emissions have fallen since 1990, global emissions of CO₂, the most significant greenhouse gas ⁽²⁴⁾, are increasing. Between 1990 and 2012 they have risen by more than 51 % and the increase has become steeper over time. While global CO₂ emissions rose at an average annual rate of 1.3 % between 1990 and 2000, the rate nearly doubled to 2.4 % between 2000 and 2012.

Most of the increase has taken place in emerging economies. Emissions growth was strongest in China, both in relative and in absolute terms. The country's annual CO₂ emissions more than tripled between 1990 and 2012. Although at a slower pace, emissions in the rest of Asia, and the Americas excluding the United States also grew between 1990 and 2012, by 189 % and 69 % respectively. By contrast, CO₂ emissions in the United States peaked in 2005 and are 11 % below 2000 levels in 2012. As a result of these trends, the EU-28's share of global emissions has been shrinking, from almost a fifth in 1990 to 11 % in 2012.

⁽²⁰⁾ EEA (2014), *Trends and projections in Europe 2014, Tracking progress towards Europe's climate and energy targets until 2020*, EEA Report No 06/2014, Copenhagen, p. 9.

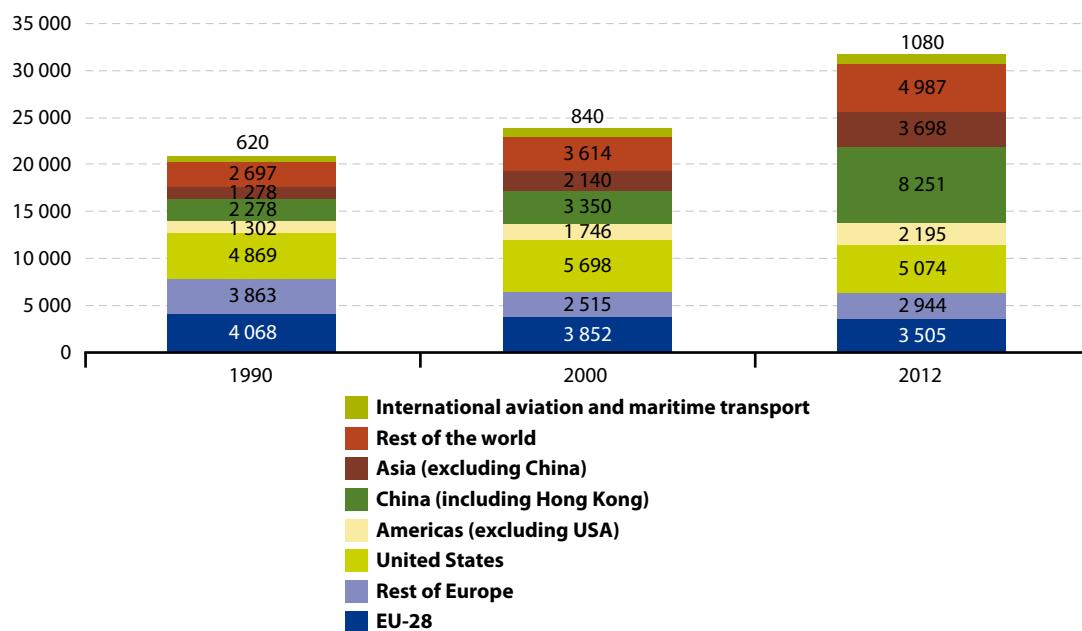
⁽²¹⁾ Council of the European Union (2014), *Council Conclusions (23–24 October 2014)*, Brussels, European Union.

⁽²²⁾ Council of the European Union (2009), *Council Conclusions on EU Position for the Copenhagen Climate Conference (7–18 December 2009)*, Brussels, European Union, p. 2.

⁽²³⁾ EEA (2015), *The European Environment state and outlook 2015. Resource efficiency and the low-carbon economy*, Copenhagen, p. 12.

⁽²⁴⁾ IPCC (2013), *Climate Change 2013: The Physical Science Basis*, Contribution of Working Group I to the IPCC Fifth Assessment Report of the Intergovernmental Panel on Climate Change, Geneva, Switzerland, fig. SPM-5.

Figure 6.4: Global CO₂ emissions from fuel combustion, 1990, 2000 and 2012
(million tonnes of CO₂)



Source: International Energy Agency (IEA)

What lies beneath this indicator?

The indicator 'greenhouse gas emissions' monitors the EU's contribution to the objective to limit the increase in global average temperature to 2°C above pre-industrial levels. To achieve this goal, mid- and long-term targets were set for reducing greenhouse gas emissions.

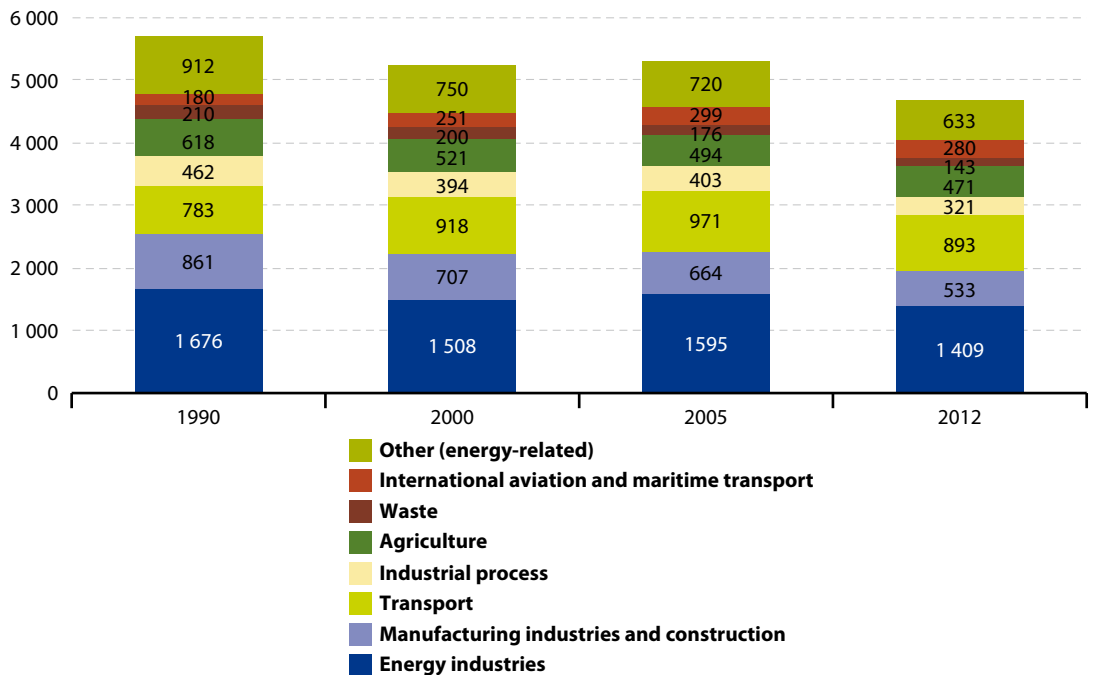
The indicator presents annual total emissions as a share of the base-year emissions. Emissions from international aviation are included, while emissions and sinks related to land use, land-use change and forestry are excluded.



Greenhouse gas emissions by sector

Emissions fell in all sectors except international transport between 2000 and 2012. Causes include effective climate policies, structural change and suppressed economic activity since 2007. Based on existing measures, the EU is projected to surpass its 2020 target for reducing emissions in sectors not covered by the EU Emissions Trading System.

Figure 6.5: Greenhouse gas emissions by sector, EU-28
(million tonnes of CO₂ equivalent)



Source: European Environment Agency, Eurostat (online data code: [tsdcc210](#))

Of all economic sectors, manufacturing industries and construction achieved the largest absolute reduction in GHG emissions between 2000 and 2012. Emissions in this sector fell by nearly 25 % over the entire period. The reduction is even higher, at 38.1 %, when compared with 1990 levels. Industrial processes showed similar reductions with a cut of 18.6 % between 2000 and 2012 and nearly a third since 1990. In absolute terms, the second largest reduction of 99 million tonnes of CO₂ equivalent (or 6.6 %) was achieved in the energy industries, which has the largest share of total emissions. Continuous downward trends were also achieved in the waste and agricultural sectors, with emissions falling by 28.7 % and 9.7 % respectively between 2000 and 2012. The reductions can be attributed in part to climate mitigation and other policies, in particular with respect to energy efficiency, expansion of renewables and more efficient waste treatment. Economic restructuring that shifted activity from heavy industry to services, lower cement production and a decrease in livestock have also helped lower the EU's GHG emissions ⁽²⁵⁾.

While transport emissions were below 2000 levels in 2012, bunker emissions continued to rise

In the overall downward trend of EU GHG emissions, the transport sector used to be the exception to the rule. However, although transport emissions were still 14.1 % above 1990 levels in 2012, the recent trend has been positive. After peaking in 2007, transport emissions fell by 9.7 % over the following five years and are now below 2000 levels. Both the increase and the recent decline can be linked to corresponding changes in the volume of passenger and freight transport, while stricter efficiency standards and the use of biofuels

⁽²⁵⁾ EEA (2014), *Annual greenhouse gas inventory 1990–2012 and inventory report 2014*, EEA Report No 9/2014, Copenhagen, p. 9; EEA (2014), *Why did greenhouse gas emissions decrease in the EU between 1990 and 2012?*, Copenhagen, p. 2.



also played a role ⁽²⁶⁾. Between 2011 and 2012, the decline in transport emissions was particularly strong in Member States where economic growth remained suppressed ⁽²⁷⁾. This illustrates the close correlation between the level of economic activity and transport emissions. Sustained efforts are therefore required to decouple emissions from growth to maintain the downward trend in the sector.

The trend in international aviation and maritime transport resembles the trend in the national transport sector, since emissions also peaked in 2007 and declined by 12.8 % over the following five years. However, in 2012, emissions from international flights and shipping were still 11.8 % above 2000 levels and 55.6 % higher than in 1990. The sector accounted for 6.0 % of total emissions in 2012.

The EU is on track to surpass its target for non-ETS sectors

According to the EEA, the EU is making strong progress in reducing emissions in sectors not covered under the EU Emissions Trading System (EU ETS). With existing measures, the EU is projected to surpass the reduction of about 10 % in 2020 that results from the aggregation of all national targets agreed in the Effort Sharing Decision (ESD) ⁽²⁸⁾. Progress does, however, vary between Member States. With the exception of Germany, Luxembourg and Poland, all Member States are estimated to emit less than their annual target for 2013 and some are likely to surpass it by more than 15 percentage points. Fifteen countries are projected to achieve or surpass the national 2020 target using existing measures and seven Member States can ensure compliance with additional measures that are already planned. The remaining six countries need to initiate further action to what is currently planned or use flexibility mechanisms ⁽²⁹⁾.

Box 6.2: EU Emissions Trading System (EU ETS)

The EU's greenhouse gas reduction target is split into a 21 % reduction in emissions from sectors covered by the EU Emissions Trading System (EU ETS) and a reduction of 9.4 % for sectors outside the EU ETS — in both cases relative to 2005 levels. The EU ETS sets a single EU-wide cap for more than 11 000 power stations and industrial plants, and the aviation industry. It allows the economic actors to trade emission allowances among each other. Every year, the cap shrinks so as to reach a 21 % reduction compared with 2005 levels by 2020.

Box 6.3: Member States targets under the Effort Sharing Decision (ESD)

To achieve the 9.4 % reduction in sectors not covered in the EU ETS, such as transport, buildings, agriculture and waste, each Member State has agreed a national limit under the Effort Sharing Decision (ESD) for 2020 ⁽³⁰⁾. Member States' targets vary between a 20 % reduction and a 20 % increase in emissions, reflecting differences in starting point and wealth. To achieve their 2020 targets, Member States must comply with annual targets for every year in the period from 2013 to 2020.

Forest management removed CO₂ emissions from the atmosphere between 1990 and 2012

Land use, land-use change and forestry (LULUCF) practices can lead to additional greenhouse gas emissions, for example when forests are converted to farmland. In the EU, however, the net effect of LULUCF was positive between 1990 and 2012. This means that newly planted forests and improved management of existing forests helped to remove GHG emissions from the atmosphere.

⁽²⁶⁾ EEA (2014), *Why did greenhouse gas emissions decrease in the EU between 1990 and 2012?*, Copenhagen, p. 3.

⁽²⁷⁾ EEA (2014), *Annual greenhouse gas inventory 1990–2012 and inventory report 2014*, EEA Report No 9/2014. Copenhagen, p. 9.

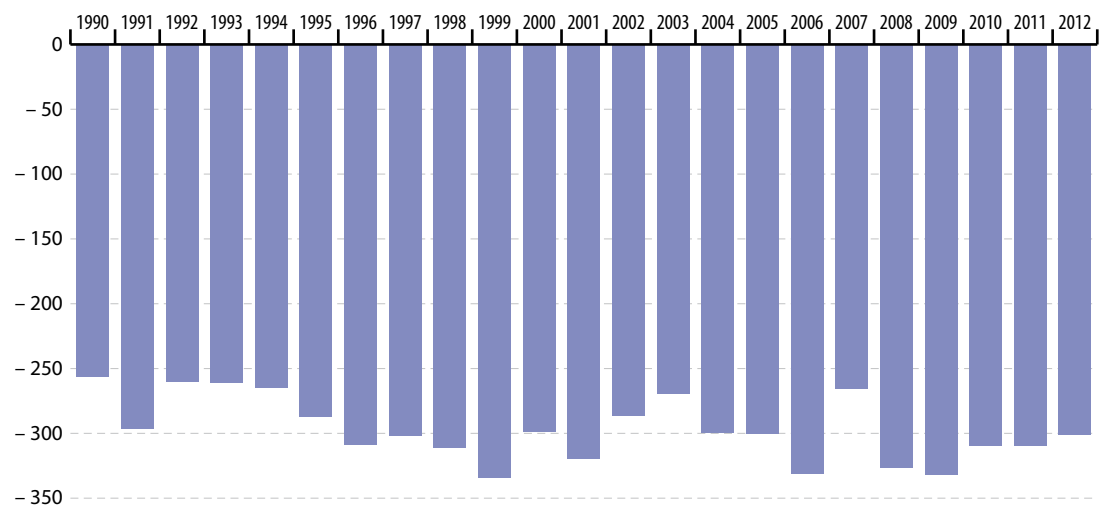
⁽²⁸⁾ EEA (2014), *Trends and projections in Europe 2014. Tracking progress towards Europe's climate and energy targets until 2020*, EEA Report No 06/2014, Copenhagen, p. 48.

⁽²⁹⁾ *Id.*, pp. 51 and 52.

⁽³⁰⁾ Decision No 406/2009/EC on the effort of Member States to reduce their greenhouse gas emissions to meet the Community's greenhouse gas emission reduction commitments up to 2020.



Figure 6.6: Emissions from land use, land-use change and forestry (LULUCF), EU-28, 1990–2012 (million tonnes of CO₂ equivalent)



Source: European Environment Agency

What lies beneath this indicator?

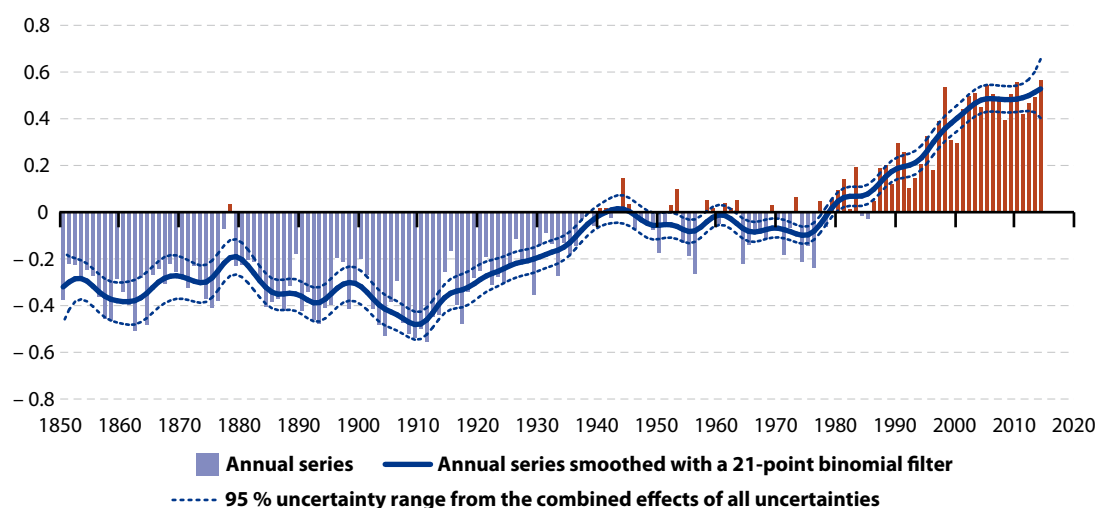
This indicator 'greenhouse gas emissions by sector' shows the contribution of key source categories to total greenhouse gas emissions, and how they change over time. The different greenhouse gases are weighted by their global warming potential, and the results are expressed in CO₂ equivalents. Economic sectors of the economy, such as electricity production, transport, the residential sector or agriculture, contribute by varying extents to total greenhouse gas emissions. By monitoring trends by sector, the indicator makes it possible to evaluate the effectiveness of measures implemented to cut greenhouse gas emissions. The indicator also highlights those sectors where further action may be needed.



Global surface average temperature

Global surface temperature is rising in response to higher levels of GHGs in the atmosphere. The year 2014 was among the four warmest years on record.

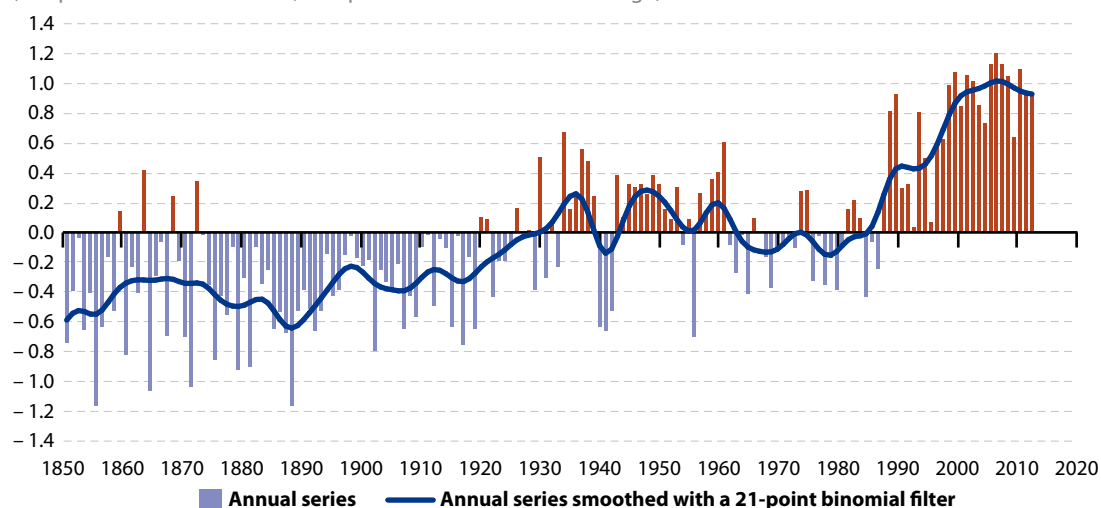
Figure 6.7: Global annual mean temperature deviations, 1850–2014 (temperature deviation in °C, compared with 1961–1990 average)



Source: Met Office Hadley Centre and the Climatic Research Unit at the University of East Anglia, [HadCRUT4](#)

Man-made GHG emissions have raised the concentration of greenhouse gases in the atmosphere, which has in turn led to a rise in surface temperature. Recordings of the combined global land and marine surface temperature show a clear upward trend. According to the most recent IPCC report, it increased by 0.85°C between 1880 and 2012⁽³¹⁾. Together with 2010, 2005 and 1998, the year 2014 was among the warmest years on record⁽³²⁾.

Figure 6.8: European annual mean temperature deviations over land areas only, 1850–2013 (temperature deviation in °C, compared with 1961–1990 average)



Source: European Environment Agency, based on Met Office Hadley Centre and the Climatic Research Unit at the University of East Anglia, [HadCRUT4](#)

⁽³¹⁾ IPCC (2013), *Climate Change 2013: The Physical Science Basis*, Contribution of Working Group I to the IPCC Fifth Assessment Report of the Intergovernmental Panel on Climate Change, Geneva, Switzerland, p. SPM-3.

⁽³²⁾ World Meteorological Organization (2015), *WMO statement on the status of the global climate in 2014*, WMO, No 1152, Geneva, p. 4.



The average annual temperature over the European land area has warmed by more than the average global temperature. In the decade 2004–2013, the annual mean land temperature in Europe was 1.4°C above the pre-industrial level, making it the warmest decade on record. Due to this warming, cold extremes have become less frequent and warm extremes occur more often. Since 1880 the average length of summer heat waves over western Europe has doubled and the frequency of hot days almost tripled ⁽³³⁾.

In Europe and globally, the rise in temperature has already led to observable changes in ecosystems and society. Ice sheets in Greenland and Antarctica, the Arctic sea ice and mountain glaciers are shrinking and sea levels are rising at an ever faster pace ⁽³⁴⁾. Impacts of climate change have reduced global maize and wheat harvests and led to regional price hikes for agricultural products ⁽³⁵⁾. Damage from natural disasters, of which 87% were climate related, amounted to USD 110 billion in 2014 ⁽³⁶⁾.

What lies beneath this indicator?

The indicator 'global surface average temperature' shows the combined global land and marine surface temperature record, in terms of temperature deviation from the average 1961 to 1990 in degrees Celsius, from 1850 onwards. It is used to gauge progress towards the EU Sustainable Development Strategy objective of limiting the rise in the global surface average temperature to less than 2°C compared with the pre-industrial level. The indicator is contextual due to its weak EU policy responsiveness and because it is unable to monitor the precise temperature deviation from pre-industrial level, defined by the IPCC as 1750.

⁽³³⁾ EEA (2014), *Global and European temperature* (CSI 012/CLIM 001), Assessment published in August 2014.

⁽³⁴⁾ IPCC (2013), *Climate Change 2013: The Physical Science Basis*, Contribution of Working Group I to the IPCC Fifth Assessment Report of the Intergovernmental Panel on Climate Change, Geneva, Switzerland, pp. SPM-5-6.

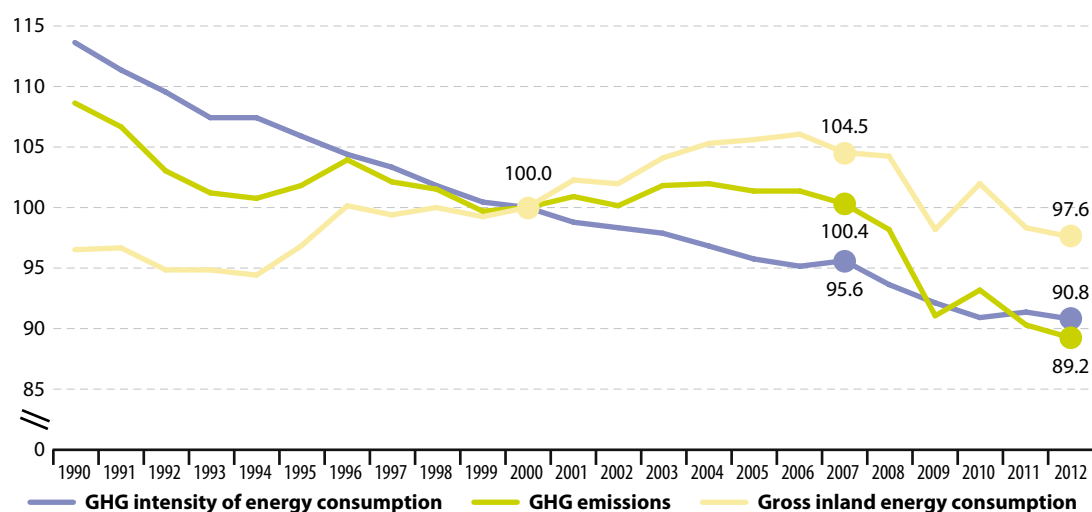
⁽³⁵⁾ IPCC (2014), *Climate Change 2014: Impacts, Adaptation, and Vulnerability. Summary for Policy-makers*, Cambridge University Press, Cambridge, p. 5.

⁽³⁶⁾ United Nations Office for Disaster Risk Reduction (2015), *Ten-year review finds 87% of disasters climate-related*, Press Release, Geneva.

Greenhouse gas emissions intensity of energy consumption

GHG emission intensity of energy consumption has fallen both in the long term since 2000 and in the short term since 2007, and in 2012 it was 20.1 % lower than its 1990 level. A switch from coal to natural gas, more renewables and reduced production levels in heavy industry contributed to this change.

Figure 6.9: Greenhouse gas emissions intensity of energy consumption, EU-28, 1990–2012 (index 2000 = 100)



Source: European Environment Agency, Eurostat (online data codes: [tsdcc210](#), [tsdcc220](#) and [tsdcc320](#))

The greenhouse gas (GHG) intensity of energy consumption, which describes the average GHG emissions per unit of energy consumed, steadily decreased between 1990 and 2012. Both the long-term and the short-term trends were positive, with a reduction in GHG intensity of 9.2 percentage points since 2000 and 4.8 percentage points since 2007. The average rate of decline was 1.3 % in the 1990s and slowed to 0.8 % between 2000 and 2012. While the switch from coal to natural gas and the decline in industrial use of coke explains most of the change during the 1990s, the increased uptake of renewable energies contributed more strongly to the positive trend between 2000 and 2012 (see the analysis of ‘primary energy consumption’).

What lies beneath this indicator?

‘Greenhouse gas intensity of energy consumption’ is the ratio between energy-related greenhouse gas emissions (carbon dioxide, methane and nitrous oxide) and gross inland energy consumption. It monitors the extent to which low-carbon fuels such as natural gas and renewables are replacing high carbon fuels such as lignite and hard coal in EU energy production. Lower GHG intensity of energy consumption means that GHG emissions can decline even if energy consumption remains stable.



Long term
(since 2000)



Short term
(since 2007)



Primary energy consumption



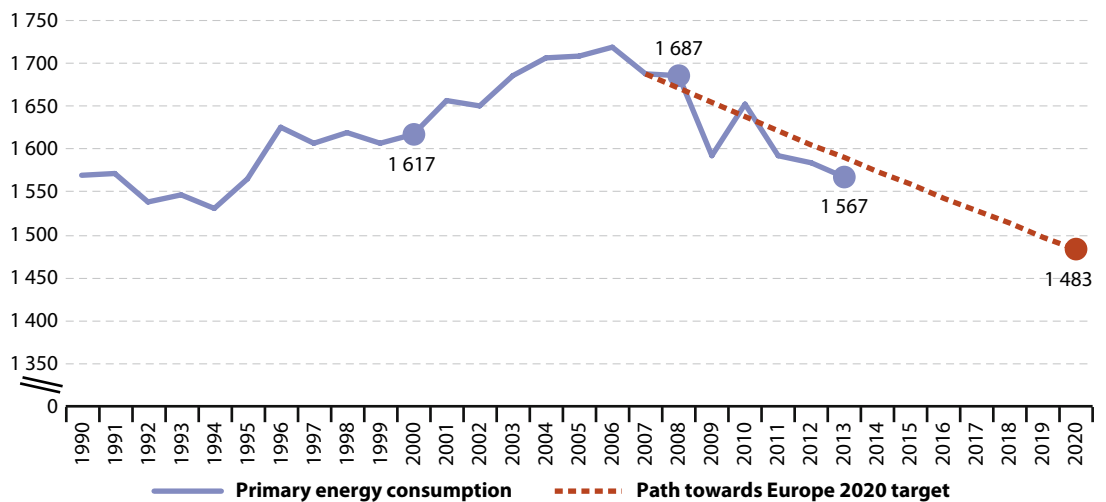
Long term
(since 2000)



Short term
(since 2008)

The EU has made substantial progress in reducing primary energy demand in the short term since 2008, due to energy efficiency policies and lower than expected economic growth. The long-term trend since 2000 has been less favourable due to a peak in primary energy consumption in 2006. However, the decline between 2007 and 2013 has put the EU on a favourable path to meeting its 2020 target of improving energy efficiency by 20%.

Figure 6.10: Primary energy consumption, EU-28, 1990–2013
(million tonnes of oil equivalent (Mtoe))



Source: Eurostat (online data code: [tsdcc120](#))

Primary energy consumption, the indicator used to assess progress towards the Europe 2020 strategy's energy efficiency target, showed a strong upward trend between 1990 and 2006. The year 2006 marks a turning point in the indicator's development, with primary energy consumption having experienced a remarkable decline since then. This means that a mixed long-term trend contrasts with a positive short-term trend: while primary energy demand was only 50.1 Mtoe below 2000 levels in 2013, the reduction amounted to 120.1 Mtoe between 2008 and 2013.

Box 6.4: Primary energy consumption

Primary energy consumption measures a country's total energy demand. It covers consumption by the energy sector itself, losses during transformation (for example, from oil or natural gas into electricity) and

distribution of energy, and the final consumption by end users. It excludes energy carriers used for non-energy purposes (for example, petroleum not used not for combustion but for producing plastics).

In 2013, the EU consumed 8.3% less primary energy than in 2005. In absolute terms, the efficiency target means that by 2020 the EU's primary energy consumption should be reduced from the projected consumption of 1 853 Mtoe in the reference scenario to 1 483 Mtoe ⁽²⁷⁾. Between 2008 and 2013, energy consumption decreased at an average annual rate of 1.5% per year. If this rate can be maintained in the future, the EU would surpass its energy efficiency target by 2020.

⁽²⁷⁾ Directive 2012/27/EU on energy efficiency, amending Directives 2009/125/EC and 2010/30/EU and repealing Directives 2004/8/EC and 2006/32/EC.



Reduction in primary energy demand since 2006 is partly a result of effective policies, but the economic crisis also played a role

Progress in reducing primary energy consumption between 2006 and 2013 can be partly attributed to effective energy efficiency policies, which reduced energy use of buildings, cars and industrial processes. Support for the expansion of renewable energies has also contributed to the positive trend. Many renewable energy sources are considered to have a conversion efficiency of 100 %, therefore statistically increasing the transformation efficiency in the electricity sector ⁽³⁸⁾.

However, energy efficiency policies are not the only driver. The fall in primary energy consumption also reflects the lasting effects of the crisis, which has lowered industrial production levels and transport volumes. As a result, energy use between 2008 and 2013 was lower than what was originally assumed in the projections underlying the 2020 efficiency target. In 2014, the European Commission estimated that the economic downturn explains about one-third of the progress towards the energy efficiency target observed up to 2013 ⁽³⁹⁾. Other external factors include structural changes, mainly in the EU industry sector. The analysis underlines the need to further pursue energy efficiency measures so as to ensure that primary energy consumption will fall further when growth accelerates again ⁽⁴⁰⁾.

How primary energy consumption varies across Member States

All but two Member States reduced primary energy consumption between 2005 and 2013, by values ranging from 1.7 % to 28.2 %. In absolute terms, the UK, Italy and Spain achieved the highest reductions, followed by Germany and France. In Poland and Estonia, primary energy consumption went up by 6.3 % and 21.3 % respectively. In the case of Poland, the increase can be attributed to higher economic growth than the EU average ⁽⁴¹⁾.

Box 6.5: Member States targets for energy efficiency

In contrast to the Renewable Energy Directive, the EU Energy Efficiency Directive 2012/27/EU does not include an effort sharing agreement. Instead, Member States set their own indicative national energy efficiency targets in 2013. In doing so, they were free to base their targets on either primary or final energy consumption, primary or final energy savings, or energy intensity ⁽⁴²⁾. According to analysis by the EEA, the individual national targets do not add up to the savings agreed at EU level, but a gap of 53 Mtoe

of primary energy consumption remains compared with the 2020 target of 1 483 Mtoe ⁽⁴³⁾. However, some countries changed their targets when they submitted their national energy efficiency action plans in 2014. Future analysis will show how these changes affect the identified gap. In addition to the indicative target, the EU Energy Efficiency Directive also encompasses mandatory measures to support efficiency improvements at national level.

⁽³⁸⁾ EEA (2015), *Renewable energy in Europe — approximated recent growth and knock-on effects*, EEA Report no 1/2015, Copenhagen, p. 7.

⁽³⁹⁾ European Commission (2014), *Communication on energy efficiency and its contribution to energy security and the 2030 Framework for climate and energy policy*, COM(2014) 520 final (4).

⁽⁴⁰⁾ EEA (2014), *Trends and projections in Europe 2014. Tracking progress towards Europe's climate and energy targets until 2020*, EEA Report No 06/2014, Copenhagen, pp. 76–78.

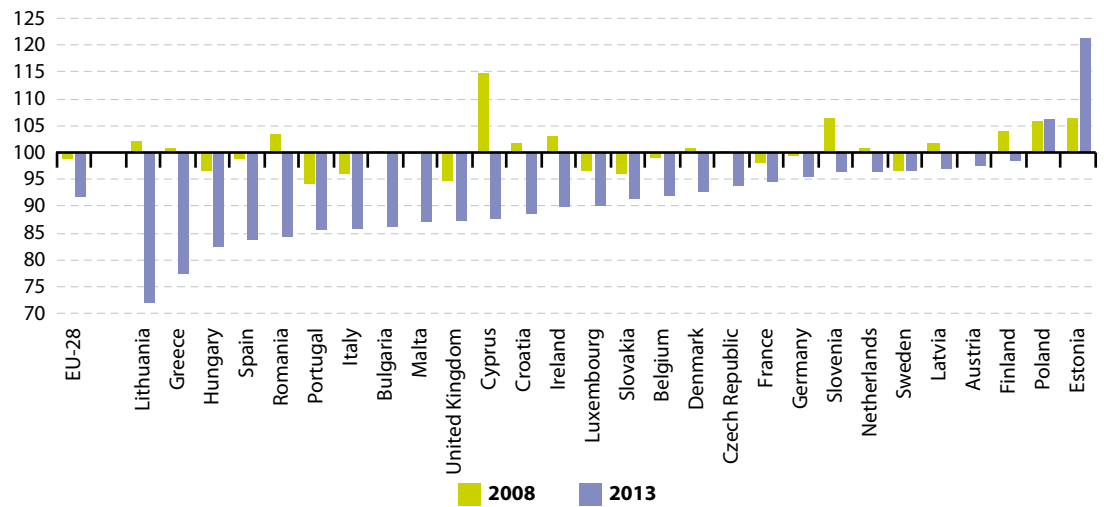
⁽⁴¹⁾ Id., p. 82.

⁽⁴²⁾ Directive 2012/27/EU on energy efficiency, art. 3.

⁽⁴³⁾ See footnote 40, p. 79.



Figure 6.11: Primary energy consumption, by country, 2008 and 2013
(index 2005 = 100)

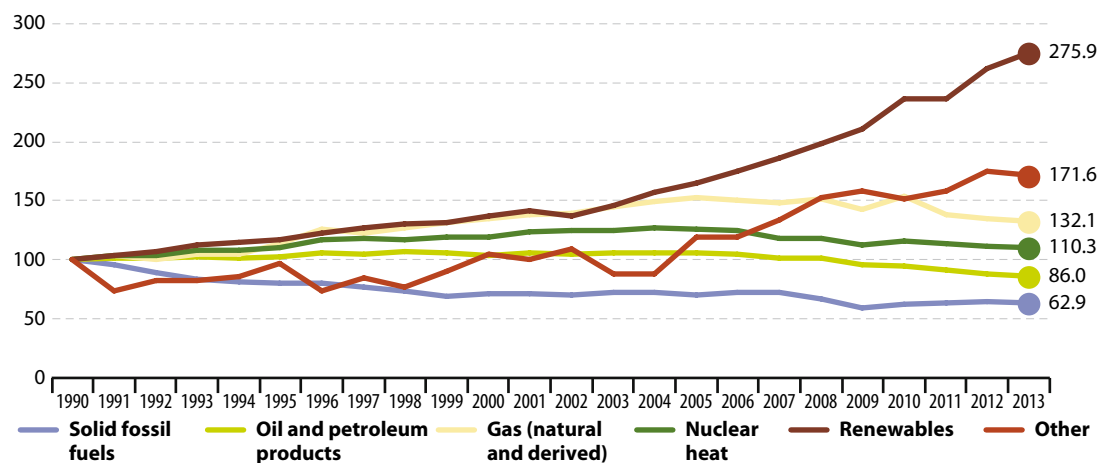


Source: Eurostat (online data code: [tsdcc120](#))

Solid fossil fuels and oil lose some of their share in primary energy consumption to natural gas and renewables

The fuel mix has changed substantially between 1990 and 2013. Solid fossil fuels experienced the highest reduction, with their share of primary energy consumption plummeting from 28.9% in 1990 to 18.2% in 2013. The reduction can be attributed to a decline in coke use for iron and steel production⁽⁴⁾ as well as to the so-called ‘dash for gas’ — the replacement of coal-fired power plants by gas plants. As a result, natural gas replaced solid fuels as the second most important fuel, delivering 23.8% of all primary energy consumed in 2013. The other growing source of primary energy is renewable energy. Albeit from a small base, energy production from renewables has almost tripled since 1990 to provide 12.6% of primary energy in 2013. With a share of 30.1% in 2013, oil and petroleum products remain the EU’s most important fuel due to their dominant role in the transport sector, but consumption has also gone down by 14% since 1990. The share of nuclear heat increased from 12.3% in 1990 to 13.6% in 2013.

Figure 6.12: Primary energy consumption, by fuel, EU-28, 1990–2013
(index 1990 = 100)



Source: Eurostat (online data code: [nrg_100a](#))

⁽⁴⁾ EEA (2014), *Annual greenhouse gas inventory 1990–2012 and inventory report 2014*, EEA Report No 9/2014, Copenhagen, p. 9.



What lies beneath this indicator?

Energy efficiency means delivering the same service or product using less energy. It is one of the most cost-effective options for reducing greenhouse gas emissions and enhancing security of energy supply. The measures with the most potential for cost-effective efficiency improvements are insulation of buildings, energy-efficient vehicles and a shift away from car-based mobility, as well as energy-efficient processes and products in industry ⁽⁴⁵⁾. In addition to environmental and economic benefits, lower energy consumption can bring significant health benefits by reducing air pollution.

The 'primary energy consumption indicator' encompasses all gross inland consumption except for non-energy use of energy carriers (for example, natural gas used not for combustion but for producing chemicals). This quantity is relevant for measuring total energy consumption and for comparing it with the Europe 2020 targets.

⁽⁴⁵⁾ European Commission (2014), *Communication on energy efficiency and its contribution to energy security and the 2030 Framework for climate and energy policy*, COM(2014) 520 final (5–8).



Consumption of renewables



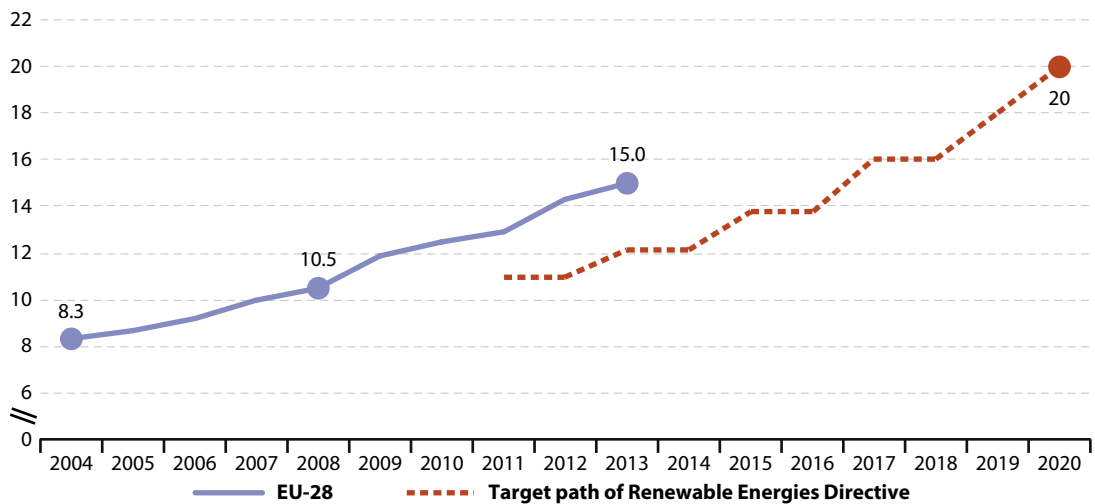
Long term
(since 2004)



Short term
(since 2008)

The share of renewables in gross final energy consumption has grown steadily since 2004, reaching 15.0 % in 2013. Effective national support measures and cost reductions in a burgeoning global market have made this progress possible.

Figure 6.13: Share of renewable energy in gross final energy consumption, EU-28, 2004–2013 (%)



Source: Eurostat (online data code: t2020_31)

The share of renewable energy increased continuously between 2004 and 2013, reaching 15 % of gross final energy consumption in 2013. With an average annual growth rate of 6.8 % and 7.4 % respectively, both the long-term trend (since 2004) and the short-term trend (since 2008) are clearly favourable. This has put the EU well on the path to meeting its target of covering 20 % of gross final energy consumption from renewable sources by 2020 ⁽⁴⁶⁾. There are two main drivers for the increase: support schemes for renewable energy technology and shrinking costs. As a result of policies such as feed-in tariffs, grants, tax credits and quota systems, installed capacity for renewable electricity and heat generation as well as the use of renewable transport fuels has grown steadily over the past decade. In addition lower final energy consumption (see indicator 'primary energy demand') has also helped the EU increase its renewable energy share ⁽⁴⁷⁾.

The scaling up of global production volumes and technological advances has allowed producers to substantially cut costs per unit. Photovoltaic systems have experienced the biggest plunge, with costs per kilowatt hour down by 53 % between 2010 and 2014. Electricity from onshore wind turbines also became 15 % cheaper during the same time period ⁽⁴⁸⁾. As a result, the world was able to keep increasing renewable capacity in the power, heating and transport sector, although global annual investment in renewables declined for a second consecutive year in 2013, when it was 23 % below its peak in 2011 ⁽⁴⁹⁾. Increasingly, wind and solar plants are being installed without subsidies in areas where conditions are favourable.

⁽⁴⁶⁾ European Commission (2015), *Renewable energy progress report*, COM(2015) 293 final, p. 3.

⁽⁴⁷⁾ Id, p. 4.

⁽⁴⁸⁾ McCrone, A. et al (2014), *Global trends in renewable energy investment 2014*, Frankfurt School of Finance and Management, UNEP Collaborating Centre and Bloomberg New Energy Finance, Frankfurt, p. 15.

⁽⁴⁹⁾ REN21 (2015), *Renewables 2014. Global Status Report*, Paris, p. 15; McCrone, A. et al (2014), *Global trends in renewable energy investment 2014*, Frankfurt School of Finance and Management, UNEP Collaborating Centre and Bloomberg New Energy Finance, Frankfurt, p. 12.

Political and economic uncertainty led to a slump in renewable investment

While EU countries still lead global statistics on total installed renewable capacity, the EU is losing ground to China, Japan and the United States with respect to new installations. In 2014, EU investment in renewables slumped by 44% compared with the previous year ⁽⁵⁰⁾. This reflected not only lower costs but also uncertainty about the future of support mechanisms and lower investment capacity due to the persistent economic downturn in many EU countries. Policy uncertainty increases capital costs and drives producers out of Europe. This has already been observed in the solar industry in particular ⁽⁵¹⁾. In this setting, further action from Member States is required to ensure the EU remains on the target path to 2020 ⁽⁵²⁾.

Box 6.6: Useful definitions

The share of renewable energy in gross final energy consumption indicates how much of the EU's energy demand is covered by wind, solar, biomass and geothermal energy.

Final energy is the energy supplied to the final consumer for all energy uses (electricity, heating and cooling and transport).

How consumption of renewables varies between Member States

In 2013, the share of renewable energy in gross final energy consumption in Member States ranged from 52.1% in Sweden to 3.6% in Luxembourg. Differences stem from variations in the endowment with natural resources, mostly in the potential for building hydro power plants and in the availability of biomass. All Member States increased their renewable energy share between 2004 and 2013. Thirteen countries have at least doubled their share. Sweden, Bulgaria, Estonia and Lithuania have already reached their targets for 2020 and several other Member States are close to reaching theirs. Farthest from their targets are the UK, the Netherlands and France.

Box 6.7: Member States' targets for renewable energies

The EU 2020 target for renewable energies has been broken down into national targets that reflect differences in resource base and wealth. The target for renewables in transport, by contrast, amounts to 10% for all Member States. To ensure that the renewable energy targets are met, the Renewable Energy Directive ⁽⁵³⁾ requires Member States to put in place support schemes and to remove administrative barriers with respect to authorisation, certification and licensing of renewable energy plants. In 2010 all Member States developed national renewable energy action plans (NREAPs), detailing how they plan to achieve their target, including interim targets and trajectories per sector and technology. Based on this planned development they report on their progress to the European Commission every

two years. In addition, Member States also report on their national renewable energy targets in the National Reform Programmes under the Europe 2020 strategy.

In October 2014, the European Council adopted a new renewable energy target for 2030 to increase the share of renewable energy consumption to at least 27% ⁽⁵⁴⁾. The target is binding on EU level, however, unlike the 2020 target it will not be broken down into binding national targets, but will instead be implemented through a new governance framework. The continued effort to expand renewable energy in the EU will also be a key element of the Energy Union strategy which aims to ensure secure, sustainable and affordable energy supply for all EU citizens ⁽⁵⁵⁾.

⁽⁵⁰⁾ McCrone, A. et al (2014), *Global trends in renewable energy investment 2014*, Frankfurt School of Finance and Management, UNEP Collaborating Centre and Bloomberg New Energy Finance, Frankfurt, p. 12.

⁽⁵¹⁾ REN21 (2015), *Renewables 2014. Global Status Report*, Paris, p. 21.

⁽⁵²⁾ European Commission (2015), *Renewable energy progress report*, COM(2015) 293 final, p. 5.

⁽⁵³⁾ Directive 2009/28/EC on the promotion of the use of energy from renewable sources.

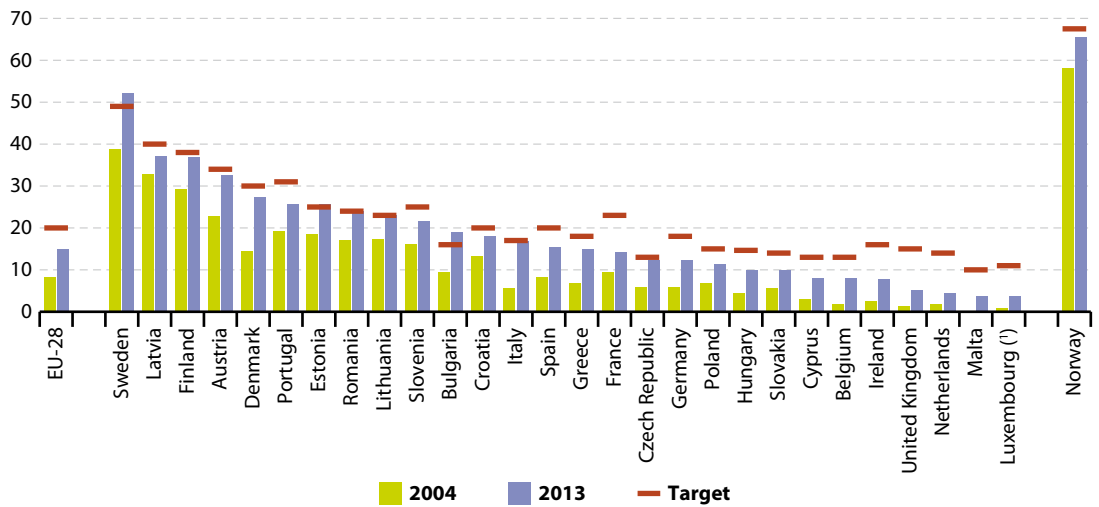
⁽⁵⁴⁾ Council of the European Union (2014), Council Conclusions (23–24 October 2014), European Union, Brussels.

⁽⁵⁵⁾ European Commission (2015), *A Framework Strategy for a Resilient Energy Union with a Forward-Looking Climate Change Policy*, COM(2015) 80 final.



Figure 6.14: Share of renewable energy in gross final energy consumption, by country, 2004 and 2013 ⁽¹⁾

(%)



⁽¹⁾ 2013 data are estimates.

Source: Eurostat (online data code: t2020_31)

What lies beneath this indicator?

Energy consumption is the EU's single largest source of greenhouse gas emissions. Because of this, renewable energies that emit low or no greenhouse gas are an important lever to address climate change and reduce the EU's dependence on imported fossil fuels. The indicator measures progress towards the EU target to provide 20% of final energy consumption from renewable sources by 2020 ⁽⁵⁶⁾.

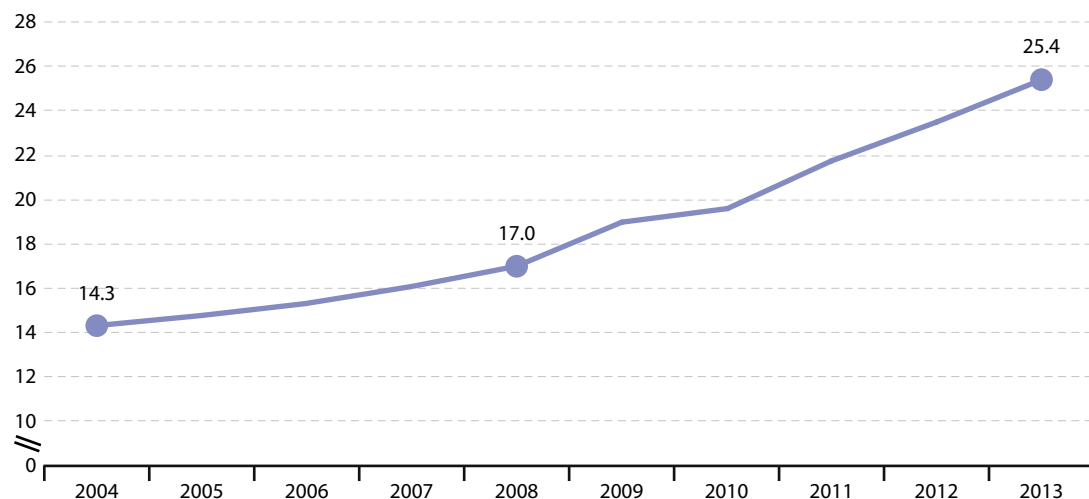
The indicator 'consumption of renewables' is defined as the share of renewables in gross final energy consumption, which refers to the quantity of energy consumed within a country's border. The energy sources taken into account are hydro, geothermal, wind and solar power, and biomass and the biodegradable fraction of waste.

⁽⁵⁶⁾ Directive 2009/28/EC on the promotion of the use of energy from renewable sources.

Electricity generation from renewables

Renewable sources provided a quarter of all electricity consumed in the EU in 2013, up from 14.3 % in 2004. After years of rapid progress thanks to effective support schemes and substantial cost reductions, unfavourable economic conditions and feed-in tariff cuts have reduced investment levels in most Member States.

Figure 6.15: Electricity generated from renewable sources, EU-28, 2004–2013
(% of gross electricity consumption)



Source: Eurostat (online data code: [tsdcc330](#))



Long term
(since 2004)



Short term
(since 2008)

Gross electricity generated from renewable sources almost tripled between 1990 and 2013 (+176.6%), with almost three-quarters of the increase being achieved between 2000 and 2013⁽⁵⁷⁾. The share from renewable sources in all electricity consumed increased at an average annual rate of 6.6% over the long term since 2004. Growth has even accelerated in the shorter term period since 2008, with the average annual rate reaching +8.4%. For the sixth consecutive year the majority of newly added power generation capacity came from renewable sources in 2013⁽⁵⁸⁾. By providing 25.4% of all electricity consumed from renewable sources in 2013, the power sector is contributing to reaching the renewable energy target (see the 'consumption of renewables' indicator).

In 2012 and 2013, feed-in tariffs for new renewable electricity plants have been drastically cut in many Member States, in some cases changes also apply retroactively to existing plants. Together with the unfavourable economic climate, these changes have led to a substantial fall in investment and a loss in global market share since 2011⁽⁵⁹⁾. Governments increasingly introduce measures such as premiums on spot market prices, competitive tenders or capacity-dependent feed-in tariffs to ensure market integration of renewable energy operators⁽⁶⁰⁾.

Hydro power loses in relative importance as bioenergy, wind and solar capacity increases

Although hydro power generation increased by nearly a third between 1990 and 2013, its relative share plummeted from 94.0% to 43.4% over the same time frame as other renewables grew rapidly. In 2013, wind power provided 27.5% of all renewable electricity followed by biomass and biogas (16.2%) and solar energy (10.0%). Small contributions came from renewable wastes (2.2%) and geothermal energy (0.7%). Solar and wind energy have grown fastest since 2005 due to rapid cost reductions. In some market segments, investors can now finance wind and solar plants without subsidies. However, regulation and grid infrastructure need to be adapted to enable full market and system integration.

⁽⁵⁷⁾ Eurostat (online data code: [nrg_105a](#)).

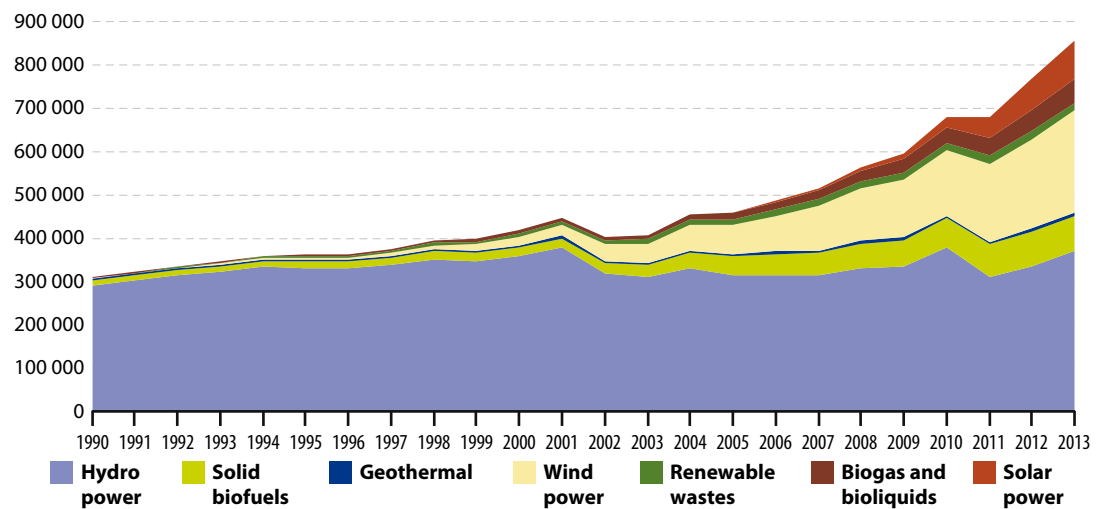
⁽⁵⁸⁾ REN21 (2015), *Renewables 2014. Global Status Report*, Paris, p. 14.

⁽⁵⁹⁾ McCrone, A. et al (2014), *Global trends in renewable energy investment 2014*, Frankfurt School of Finance and Management, UNEP Collaborating Centre and Bloomberg New Energy Finance, Frankfurt, p. 15.

⁽⁶⁰⁾ REN21 (2015), *Renewables 2014. Global Status Report*, Paris, pp. 76–78.



Figure 6.16: Gross electricity generation from renewable sources, EU-28 1990–2013 (gigawatt hours)



Source: Eurostat (online data code: nrg_105a)

What lies beneath this indicator?

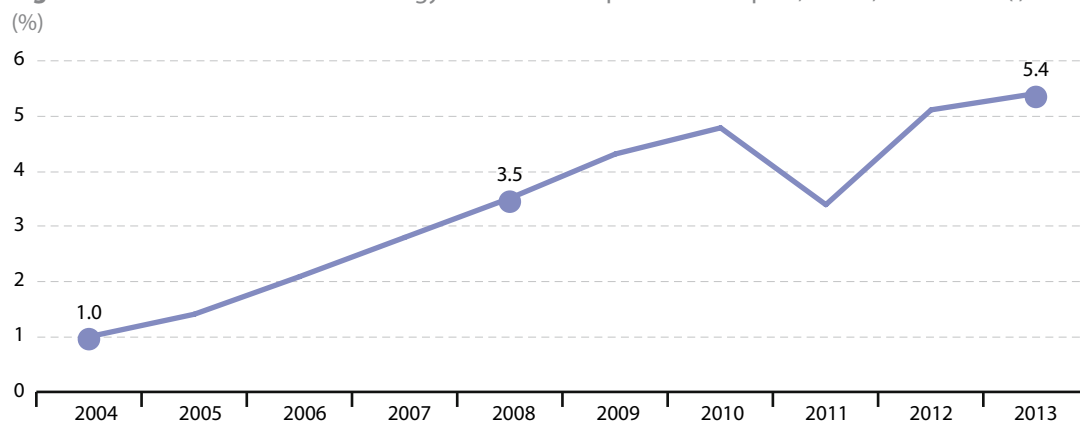
Renewable energy sources include wind, hydro, solar and geothermal energy as well as biomass. They are considered to produce negligible or zero greenhouse gas emissions. Both the EU Sustainable Development Strategy and the Renewable Energy Directive ⁽⁶⁾ aim for the expansion of power generation from renewable energy sources to reduce greenhouse gas emissions and dependence on energy imports. The indicator is defined as the share of electricity produced from renewables in gross electricity consumption. This equals the domestic electricity production, plus imports, minus exports.

⁽⁶⁾ Directive 2009/28/EC on the promotion of the use of energy from renewable sources.

Share of renewable energy in transport

The share of renewable energy in transport grew from 1.0 % in 2004 to 5.4 % in 2013. Due to tax credits and national requirements to blend a minimum biofuel share into conventional fuels, biofuels such as biodiesel and bioethanol provided the vast majority of all renewable energy in the transport sector.

Figure 6.17: Share of renewable energy in fuel consumption of transport, EU-28, 2004–2013 ⁽¹⁾



⁽¹⁾ Break in time series in 2011.

Source: Eurostat (online data code: tsdcc340)

After growing rapidly between 2004 and 2010, the share of renewable energy in transport continued to rise but at a slower pace over the following three years. This slowdown can partly be attributed to the fact that not all Member States have fully transposed the Renewable Energy Directive's sustainability criteria for biofuels and only certified biofuels are accounted for in the indicator starting from 2011 ⁽⁶²⁾. This statistical adjustment also explains the sudden drop in 2011. The EEA estimates that in 2012 around 21 % of all renewables consumed in the EU transport sector came from uncertified biofuels ⁽⁶³⁾. The share would therefore be higher if biofuels from countries that did not comply with sustainability requirements were included. In 2013, the share reached 5.4%. Nonetheless, both the long-term trend (since 2004) and the short-term trend (since 2008) are favourable.

The increase in renewable energy consumption in transport was mainly driven by the widespread introduction of support systems at national level. Member States use tax rebates or biofuel obligations to promote renewable energy consumption in road transport ⁽⁶⁴⁾.

What lies beneath this indicator?

Biofuels, biogas and renewable electricity can be used in vehicles as a means of curbing greenhouse gas emissions from transport and to reduce the EU's dependency on oil imports. The 2009 Directive on renewable energy promotion sets a binding target to reach a 10% share of renewable fuels in the total fuel consumption of transport, including all suitable renewable energy sources ⁽⁶⁵⁾. In practice, biofuels are expected to contribute the majority of all renewable energy used in transport up to 2020. However, based on an agreement between the European Parliament and the European Council, the contribution of conventional biofuels to the target will be capped at 7%. To ensure that biofuels deliver carbon savings in comparison to fossil fuels and do not harm the environment and food production, only biofuels conforming to the sustainability criteria laid down in the Directive on renewable energy promotion are included in the indicator starting from 2011.

⁽⁶²⁾ Directive 2009/28/EC on the promotion of the use of energy from renewable sources.

⁽⁶³⁾ EEA (2014), *Trends and projections in Europe 2014. Tracking progress towards Europe's climate and energy targets until 2020*, EEA Report No 06/2014, Copenhagen, p. 66.

⁽⁶⁴⁾ Commission Staff Working Document, *Recent progress in developing renewable energy sources and technical evaluation of the use of biofuels and other renewable fuels in transport*, SEC(2011) 130.

⁽⁶⁵⁾ Directive 2009/28/EC on the promotion of the use of energy from renewable sources.



Long term
(since 2004)



Short term
(since 2008)



Energy dependence



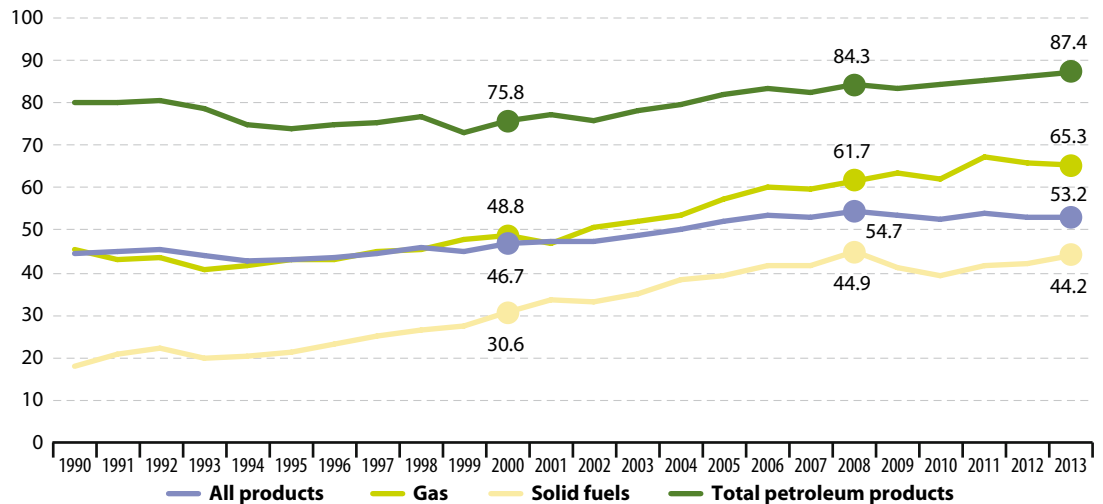
Long term
(since 2000)



Short term
(since 2008)

The EU imports more than half of its energy from outside markets. In the long term since 2000 the share of energy imports increased steadily, peaking in 2008. Due to lower energy demand and greater use of domestically sourced renewables, it has slightly decreased in the short term since 2008, reaching 53.2% in 2013.

Figure 6.18: Energy dependence, EU-28, 1990–2013 ⁽¹⁾
(share of imports in total energy consumption, %)



⁽¹⁾ 'Total' is not the average of the other three fuel categories shown. It also includes other energy sources, such as renewable energy or nuclear energy, which are treated as domestic sources.

Source: Eurostat (online data code: [tsdcc310](#))

The share of total energy needs in the EU that were met by imports from non-EU countries has increased by 6.5 percentage points over the long term since 2000, reaching 53.2% in 2013. The import share is now 8.9 percentage points higher than it was in 1990. Fossil fuels make up the largest share of total energy imports. In the short term, since 2008, however, the upward trend halted. Between 2000 and 2013, the level of dependence was highest for petroleum products, but increased most for natural gas (by 16.5 percentage points). After peaking at 54.7% in 2008, the share of imports in total energy consumption declined over the following five years, albeit at a very low average rate of 0.6% per year.

Lower EU oil and gas production and higher energy demand increase energy dependence

The rise in energy imports is driven by the decline of oil and gas production within the EU, mainly in the North Sea. Up until 2006, rising overall primary energy demand was an additional cause for rising imports (see indicator 'primary energy demand'). Together with the increased usage of renewables (see indicator 'consumption of renewables'), the decline in overall energy consumption since 2006 has helped stabilise the EU's dependence on energy imports.

What lies beneath this indicator?

By being reliant on non-EU energy sources, the European economy is exposed to high price volatility, significant costs and the risk of supply shortage. Securing energy supplies is therefore high on the EU's agenda, in particular after the start of the Ukraine crisis in 2014. It is an objective of the EU Sustainable Development Strategy, the EU Climate and Energy Package and a recent Energy Union communication ⁽⁶⁶⁾.

⁽⁶⁶⁾ European Commission (2015), *A framework strategy for a resilient Energy Union with a forward-looking climate change policy*, COM(2015) 80 final.



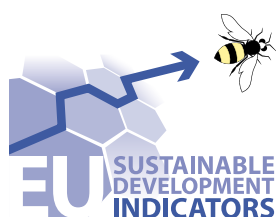
Energy dependence can be lowered by reducing primary energy demand and by increasing the share of energy consumption covered by renewables, most of which can be procured within the EU.

Energy dependence is calculated as net imports divided by the sum of gross inland energy consumption and maritime bunkers, and hence, it describes the extent to which an economy relies on imports to meet its energy needs.

Sustainable transport

7





Overview of the main changes

Energy consumption of transport per unit of gross domestic product (GDP) in the EU has fallen in the long term since 2000, with the strongest declines seen in the short-term period since 2008. This downward trend was amplified by the impacts of the economic crisis starting in 2008. It is unclear whether this favourable short-term trend will continue with the economic recovery.

Because transport volumes are strongly dependent on economic activity, the economic crisis has also affected the other indicators in the 'sustainable transport' theme. In the short term, modal split and volumes of freight transport have recorded slightly favourable developments. However, no conclusive assessment of these trends can yet be made. The transport impact indicators show a more favourable trend, both in the long and short terms. Greenhouse gas emissions have fallen in the short term. This can be explained partly by smaller transport volumes as well as other factors such as newly implemented transport and environmental regulation policies and technological progress. These underlying reasons can also explain the favourable trends of other transport impact indicators such as people killed by road accidents or emissions of ozone precursors and particulate matter.

Table 7.1: Evaluation of changes in the sustainable transport theme, EU-28 ⁽¹⁾

Indicator	Long-term evaluation (since 2000)	Short-term evaluation (last five-year period)
Energy consumption of transport relative to GDP		
Transport and mobility		
Modal split of freight transport	⁽²⁾	⁽²⁾
Volume of freight transport relative to GDP	⁽²⁾	⁽²⁾
Modal split of passenger transport		
Volume of passenger transport relative to GDP		
Transport impacts		
Greenhouse gas emissions from transport		
People killed in road accidents		
Average CO ₂ emissions per kilometre from new passenger cars	:	⁽²⁾
Emissions of ozone precursors from transport		
Emissions of particulate matter from transport		

⁽¹⁾ An explanation of the evaluation method and the meaning of the weather symbols is given in the Introduction and in Annex III.

⁽²⁾ Evaluation based on EU-27.



Key trends in sustainable transport

Absolute decoupling of energy consumption of transport from economic growth in the short term but not in the long term

Energy consumption of transport per unit of GDP has fallen by 13.1 % since 2000 and by 6.2 % since 2008. The environmental component of this indicator — transport energy use — has only declined since the start of the economic crisis in 2008. Between 2000 and 2013 GDP grew by 16.2 % while transport energy only showed a minor increase.

These trends — faster growth of GDP compared with energy consumption — imply a relative decoupling of energy consumption of transport from economic growth in the EU over the period 2000 to 2013. In the short term an absolute decoupling (that is a strong reduction in transport energy consumption while the economy decreased at a slower rate) could be observed. But it is yet unclear whether transport energy use will rise again with the economic recovery.

No favourable long-term changes in transport modes and mobility

The **modal splits of passenger transport and freight transport** in 2013 remained similar to their 2000 levels. More than three-quarters of total inland freight transport is carried out on the road — slightly more than in 2000. In the short term a modest shift towards more environmentally friendly transport modes could be observed for freight transport but not for passenger transport. Most passenger journeys were undertaken by car, with a share of 83.2 %, in 2013.

Large variation in the shares of each transport mode can be observed across Member States. However, these differences are far stronger within the freight transport sector. In some countries road transport constituted only a half of all tonne-kilometres in 2013. For passenger transport the variation in mode shares are smaller.

Volumes of freight transport relative to GDP have dropped by 4.0 % since 2000 and by 7.3 % since 2008. The economic crisis is considered to be the main reason why freight transport volumes have decoupled from GDP in the short term. In contrast, **passenger transport volumes** have reacted differently to the crisis and have not decoupled from GDP growth since 2008. While GDP dropped slightly, passenger-kilometres fell by even less between 2008 and 2013. Therefore volumes of passenger transport relative to GDP display no (absolute) decoupling so far.

Transport impacts have improved in the short term, but long-term reductions are not yet assured

Greenhouse gas emissions from transport decreased by 2.7 % between 2000 and 2012. Declines, however, were not consistent, with emissions increasing until 2007 and sinking thereafter. Overall, growth was slower between 2000 and 2007 than during the 1990s. However, GHG emissions from transport have been falling at a slower pace compared with other sectors of the economy. Emissions from transport will need to fall sharply to meet the goals stated in the 2011 Transport White Paper.

Reduced **average CO₂ emissions per kilometre from new passenger cars** have contributed to the short-term decline in greenhouse gas emissions from road transport. On average, newly registered cars emitted 14 % less CO₂ in 2014 compared with 2009.

Emissions of ozone precursors (nitrogen oxides, NO_x) and **emissions of particulate matter** (PM_{2.5}) both fell substantially between 2000 and 2013, by 42.5 % and 43.9 % respectively.

Road accident fatalities have continuously fallen and have been reduced by more than half since 2000. This reduction in fatalities, especially in the short term, is in line with the 2020 target to halve the number of road deaths in Europe set by the European Commission.

Why do we focus on sustainable transport?

Transport has played an important role throughout human evolution. In modern society, it is a driver of economic growth and allows people to commute and to travel. Ultimately, transport is a major resource and an important instrument for ongoing European integration. Therefore, transport matters.

More than ever, companies and individuals in the EU are taking advantage of the benefits offered by the extension and integration of the common market. This has led to an increase in both the volume and complexity of transport. However, the transport system in the EU is not yet sustainable. Growth in transport activities puts increasing pressure on natural resources and on societies. Emissions of greenhouse gases, air pollutants and noise from transport affect the climate, environment and human health. In addition, increasing energy consumption by the transport sector requires more resources. Moreover, transport infrastructure fragments landscapes and ecosystems on a large scale. Increased transport activities and accidents with fatal outcomes create social costs and time losses due to congestions.

How does the EU tackle sustainable transport?

The EU Sustainable Development Strategy (EU SDS) ⁽¹⁾ dedicates one of its seven key challenges to sustainable transport, with the overall objective to 'ensure that our transport systems meet society's economic, social and environmental needs whilst minimising their undesirable impacts on the economy, society and the environment'.

The EU SDS operational objectives and targets include:

- Decoupling economic growth and the demand for transport with the aim of reducing environmental impacts.
- Achieving sustainable levels of transport energy use and reducing transport greenhouse gas emissions.
- Reducing pollutant emissions from transport to levels that minimise effects on human health and/or the environment.
- Achieving a balanced shift towards environment friendly transport modes to bring about a sustainable transport and mobility system.
- Reducing transport noise both at source and through mitigation measures to ensure overall exposure levels minimise impacts on health.
- Modernising the EU framework for public passenger transport services to encourage better efficiency and performance.

- In line with the EU strategy on CO₂ emissions from light duty vehicles, the average new car fleet should achieve CO₂ emissions of 140g/km (2008/09) and 120g/km (2012) ⁽²⁾.
- Halving road transport deaths by 2010 compared with 2000 ⁽³⁾.

The Europe 2020 strategy ⁽⁴⁾ unites two flagship initiatives under the sustainable growth priority to tackle the issue of sustainable transport:

- 'Resource efficient Europe' supports the shift towards a resource-efficient, low-carbon economy. This flagship initiative provides a framework for actions in many policy areas including transport. One of the key components is a roadmap presenting a vision for a transport system by 2050 that promotes clean technologies.
- 'An industrial policy for the globalisation era' highlights ten key actions for European industrial competitiveness, including a more efficient European transport infrastructure and services.

The European Commission adopted a roadmap including 10 goals and 40 concrete initiatives in form of a Transport White Paper:

- European Commission, Roadmap to a Single European Transport Area — Towards a competitive and resource efficient transport system, COM(2011) 144 final, Brussels, 2011.

⁽¹⁾ Council of the European Union (2006), *Review of the EU Sustainable Development Strategy (EU SDS) — Renewed Strategy*, 10917/06, Brussels.

⁽²⁾ These reduction targets have been adapted in 2009 and 2014 by Regulation (EC) No 443/2009, and by Regulation (EU) No 333/2014 of the amending Regulation (EC) No 443/2009. Further, targets for vans have been set by Regulation (EU) No 510/2011 and by Regulation (EU) No 253/2014.

⁽³⁾ The European Road Safety Action Programme 2011–2020 adapts this reduction target. The new goal is to halve the number of road deaths in Europe between 2011 and 2020.

⁽⁴⁾ European Commission (2010), *Europe 2020, A strategy for smart, sustainable and inclusive growth*, communication from the Commission, COM(2010) 2020 final, Brussels.



Analysing the transport sector in the context of sustainable development reveals the trade-offs between its advantages, for example in enabling job creation, and its negative impacts, such as oil dependency, environmental pressures or road accident fatalities. As more goods are transported and more people take long journeys, an increasing amount of energy is needed. This linkage between transport and economic growth is monitored using the 'energy consumption relative to GDP' indicator. This headline indicator reveals the most important trade-off a sustainable transport system has to tackle. Possible solutions to this conflict are new technologies allowing engines and motors to run more efficiently.

The issue of transport and mobility covers transport performance and transport modes. While freight- or passenger-kilometres show trends in the basic demand for transport, the mode of transport chosen provides an indication of the possible negative impacts. Because different types of transport modes have different environmental impacts, the modal split can be used to gauge whether a shift towards more environmentally friendly types of transport is under way. Therefore, this issue looks at the driving forces behind the impacts of transport on the environment and on society.

Transport activities do have environmental and societal impacts, on both a local and a global scale. Transport greenhouse gas (GHG) emissions influence global climate change; air pollutants harm health and affect building surfaces and the biosphere; noise has negative impacts on people on a local level; and growing transport volumes can cause more congestion and fatalities or injuries. The monitoring of these interlinkages indicates whether the corresponding objectives of the EU Sustainable Development Strategy can be achieved. Indicators in this chapter cover greenhouse gas emissions from transport, including average CO₂ emissions of new passenger cars and emissions of ozone precursors and particulate matter. On the social impact level, fatalities from road accidents are also evaluated.

Further reading on sustainable transport

Bongardt, D., Creutzig, F., Hüging, H., Sakamoto, K., Bakker, S., Gota, S., Böhler-Baedeker, S. (2013), *Low-Carbon Land Transport, policy handbook*, Routledge, Oxon.

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OECD (2014), *International Transport Forum, Road Safety Annual Report 2014*, IRTAD Annual Report, Paris.

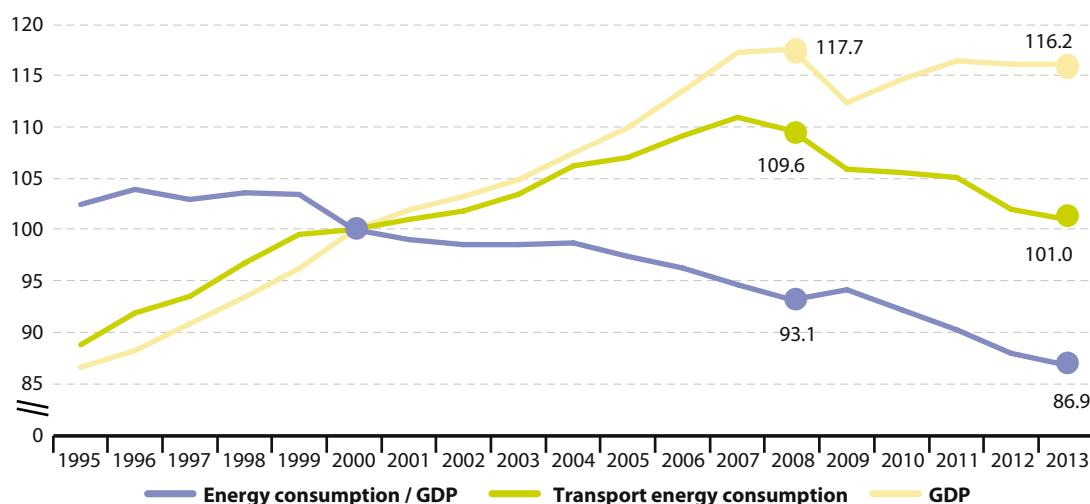
OECD (2015), *International Transport Forum, Transport Outlook 2015*, Paris.

Ricardo-AEA, DIW, CAU (2014), *Update of the Handbook on External Costs of Transport, report for the European Commission*, DG Mobility and Transport, January 2014, London.

Energy consumption of transport relative to GDP

EU energy consumption of transport per unit of GDP showed a long-term decline of 13.1 % between 2000 and 2013 as GDP grew faster than energy use. In the short term, between 2008 and 2013 energy consumption fell while GDP faltered.

Figure 7.1: Energy consumption of transport relative to GDP, EU-28, 1995–2013 (1)
(index 2000 = 100)



(1) Energy consumption of transport includes the final energy consumption of all modes of transport.

Source: Eurostat (online data codes: tsdtr100, nrg_100a and nama_gdp_k)

The amount of transport energy used to produce one unit of GDP has declined since 2000. In 2013, about 33 grams of oil equivalent for each EUR of GDP were used to satisfy total transport demand in the EU, compared with some 37 grams in 2000. This ongoing, almost steady decline indicates a relative decoupling of energy consumption in transport from economic growth over the long term. This means GDP grew faster than transport energy consumption. Although energy consumption of transport per unit of GDP has declined steadily, the long-term trend is unfavourable because energy use was still slightly higher in 2013 than in 2000.

In the short term, an absolute decoupling was recorded between 2008 and 2013 as GDP fell slightly while energy use dropped by a greater amount. During the pre-crisis period, 2000 to 2007, both economic growth and transport energy use were rising almost in parallel in the EU, with GDP only slightly outpacing transport energy use. However, economic growth started to slow first between 2007 and 2008 with the onset of the crisis, and then suffered a severe decrease in the following year. Since 2009, only a slight economic recovery has been observed. In contrast, demand for energy in transport has been falling since 2007. As transport activities, especially in freight transport (2), are closely related to economic growth, part of this reduction can be explained by the weak economic development during the last five years. Technological changes, for example, related to fuel-efficiency standards, represent another reason for the decreasing energy demand in transport. But as a sustained economic recovery has not yet been observed, it is unclear whether this favourable short-term trend will persist or whether transport energy use will rise again with the economic recovery.

(2) See the corresponding indicator 'volume of freight transport relative to GDP' on page 240 of this chapter.



Long term
(since 2000)



Short term
(since 2008)



Box 7.1: Decoupling indicators

Decoupling indicators show the interdependence between two spheres. Decoupling is calculated by dividing an environmental pressure variable (numerator) by an (economic) driver variable (denominator).

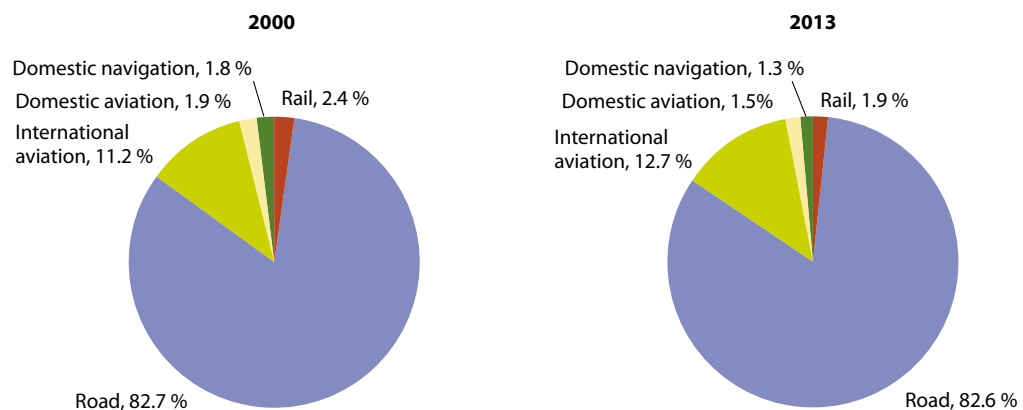
Relative decoupling occurs when the growth rate of the driving force (for example GDP) exceeds the growth rate of the environmental pressure.

Absolute decoupling means environmental pressure is stable or decreasing while the economic driving force is growing. Thus, absolute decoupling is the genuine separation of environmental pressures from economic growth.

Road transport is using the most energy...

Road transport accounted for 82.6 % of transport energy consumption in the EU in 2013, followed by international aviation with 12.7 %. Since 2000 no substantial shift between the shares of the different transport modes has been observed.

Figure 7.2: Energy consumption of transport, by mode, EU-28, 2000 and 2013 (%)



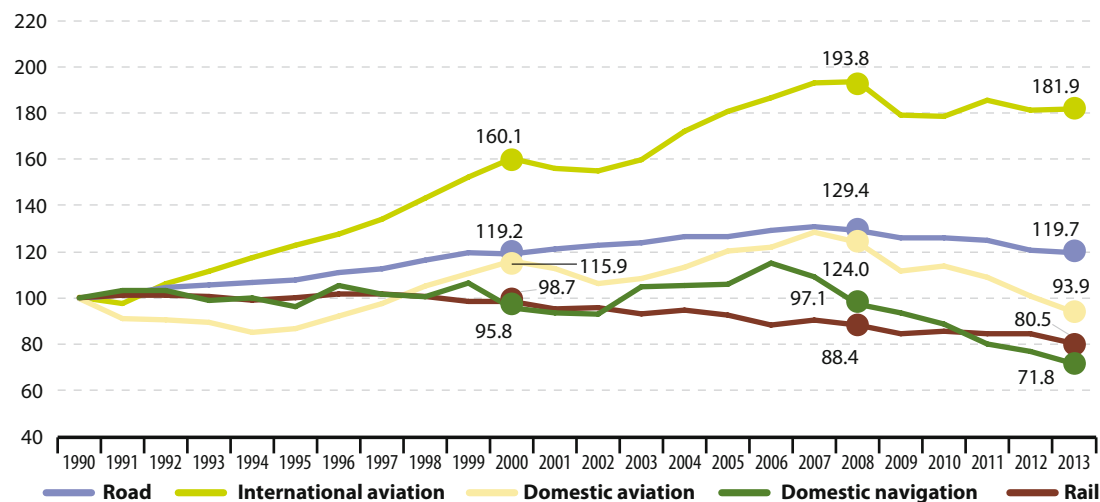
Source: Eurostat (online data code: tsdtr250)

... but its energy use has fallen in the short term

Road transport, which accounts for almost 83 % of transport energy, has been using less energy since the start of the economic crisis in 2007. Between 2008 and 2013 its energy use fell by 7.4 %. This post-crisis downward trend is also true for all other transport modes. The total energy consumption of transport fell by 7.9 % in this short-term period. Domestic aviation and navigation showed the largest short-term drops of 24.3 % and 26.1 % respectively. However, while international aviation declined sharply between 2008 and 2009 before stabilising, energy consumption in the domestic navigation and domestic aviation transport sectors has declined steadily since 2006 and 2007, respectively. Data on transport volumes of inland waterways disclose only parts of a possible explanation, namely that the transport of goods declined between 2006 and 2009. Transport volumes of domestic navigation showed an increasing trend between 2010 and 2013, indicating a possible shift in the energy efficiency of inland waterways ⁽⁶⁾.

⁽⁶⁾ See Statistics Explained online, http://ec.europa.eu/eurostat/statistics-explained/index.php/Inland_waterways_freight_transport_-_quarterly_and_annual_data

Figure 7.3: Energy consumption of transport, by mode, EU-28, 1990–2013
(index 1990 = 100)



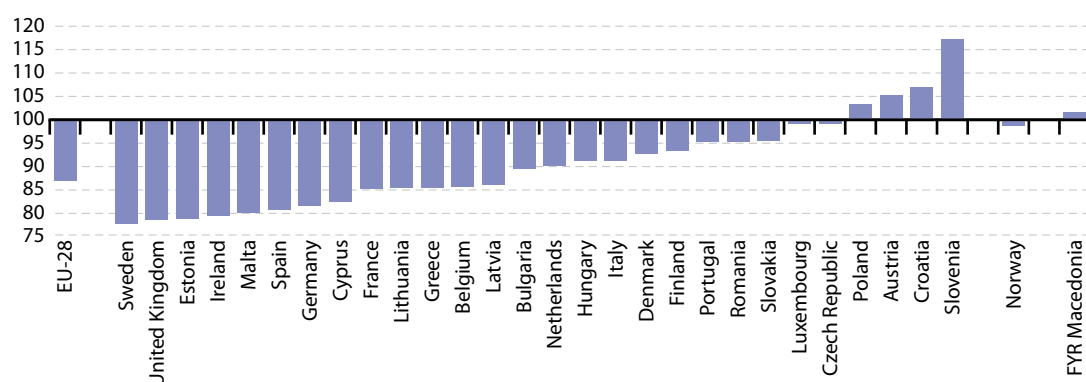
Source: Eurostat (online data code: tsdtr250)

How energy consumption of transport relative to GDP varies across Member States

Most Member States recorded decreasing levels of energy consumption per unit of GDP between 2000 and 2013. Only four countries showed increasing energy consumption per unit of GDP (Slovenia, Croatia, Austria and Poland). In four countries energy consumption of transport relative to GDP declined by 20% or more in the same period (Sweden, United Kingdom, Estonia and Ireland).

There are several possible reasons for this variation between Member States. First, specific resources such as labour income are not endowed equally. Hence, the demand for mobility that has to be financed varies (⁷). Different endowments and spending options influence demand for both quantity and quality of transport. Countries with a smaller transport budget may not be able to afford the most efficient technology, leading to higher energy consumption. Furthermore, infrastructure endowments as well as investments for new constructions or extensions vary between countries (⁸). Finally, statistically energy consumption is measured by fuel sold not by transport activity itself. Therefore, transit countries such as Slovenia, Austria and Luxembourg register higher energy consumption.

Figure 7.4: Energy consumption of transport relative to GDP, by country, 2013 (¹)
(index 2000 = 100)



(¹) Energy consumption of transport includes the final energy consumption of all modes of transport.

Source: Eurostat (online data code: tsdtr100)

(⁷) Eurostat (2012), Statistics in focus 47/2012, *Substantial cross-European differences in GDP per capita*.

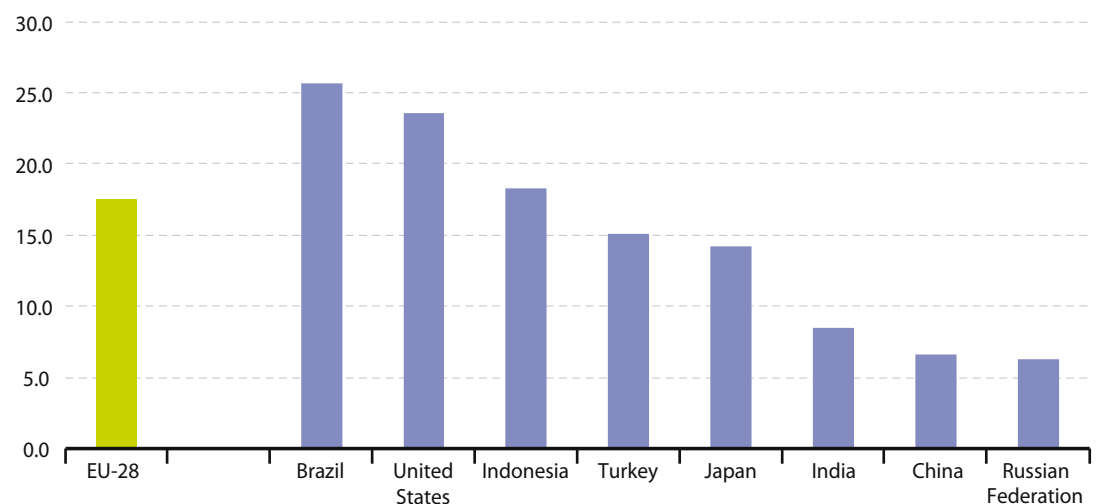
(⁸) OECD (2013), International Transport Forum, *Spending on Transport Infrastructure 1995–2011*, May 2013, Paris.



EU transport energy use trends compared with other countries in the world

Comparable data for road sector energy consumption (relative to total energy consumption) are available on a worldwide scale. As shown in Figure 7.5, the EU road sector has an 18 % share of total energy consumption. Substantially lower shares are reported, for example, in the Russian Federation, China and India, whereas Brazil and the United States show higher shares than the EU. The data reveal that road energy consumption does not only depend on GDP levels, as Brazil has a higher road transport energy consumption share than richer regions, such as the United States and the EU. Indeed, besides income levels, also infrastructure endowments, spending on public transport and population densities can explain differences. As the indicator refers road sector energy consumption to total energy consumption, the absolute level of the latter (e.g. influenced by the heating level in a country) should also be taken into account when interpreting these results.

Figure 7.5: Road sector energy consumption, by selected areas, 2010 ⁽¹⁾
(% of total energy consumption)



⁽¹⁾ Road sector energy consumption is the total energy used in the road sector including petroleum products, natural gas, electricity and combustible renewable and waste. Total energy consumption is the total country energy consumption.

Source: Eurostat for the EU; International Energy Agency for other countries

What lies beneath this indicator?

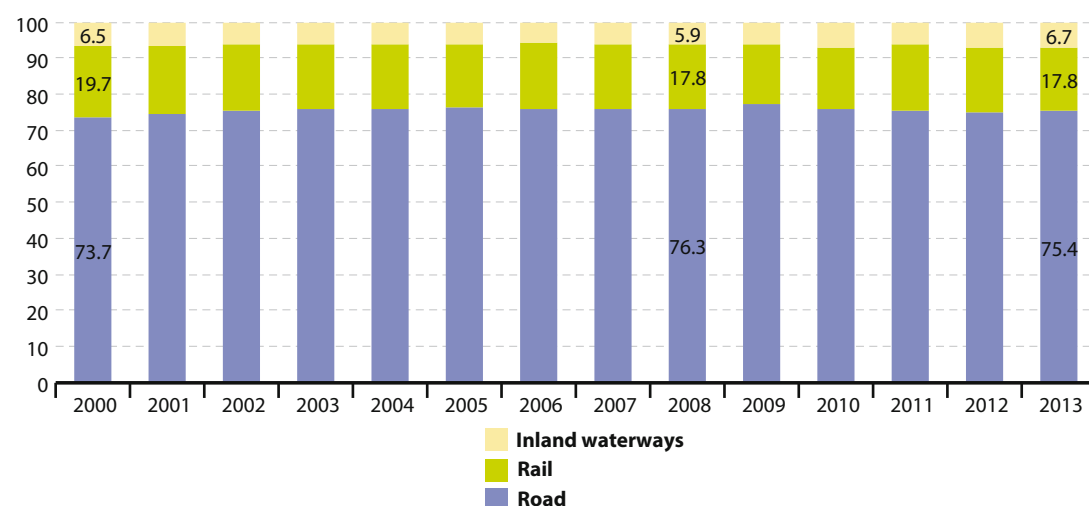
The mobility of people and goods requires energy. Total energy consumption depends on the total demand for transport and the energy efficiency of the transport mode. Because energy consumption has an impact on the environment, one of the aims of sustainable development is to satisfy the demand for mobility by using the least amount of energy possible. Therefore the EU Sustainable Development Strategy (EU SDS) tackles both the total amount of transport energy used and efficient energy use.

Energy consumption of transport relative to GDP is calculated by dividing energy consumption of transport by GDP (chain-linked volumes, at 2000 exchange rates). Energy consumption includes all transport modes (road, rail, inland navigation and aviation), with the exception of maritime and pipeline transport.

Modal split of freight transport

More than three-quarters of total inland freight was transported by road in 2013. This is slightly more than in 2000 but less than in 2008. A modest modal shift towards more environmentally friendly modes of freight transport can be observed in the short term.

Figure 7.6: Modal split of freight transport, EU-27, 2000–2013
(% in total inland freight tonne-km)



Long term
(since 2000)



Short term
(since 2008)

Source: Eurostat (online data code: [tsdtr220](#))

Choice of transport mode for inland freight transport has not changed substantially since 2000. Inland freight is generally transported by road, rail and inland waterways. In 2013, road transport constituted 75.4% of all tonne-kilometres performed in the EU-27, followed by rail (17.8%) and inland waterways (6.7%). In the short term, rail transport is the only mode to show a constant share. On the other hand, fewer tonne-kilometres were undertaken by road and more freight was transported by inland waterways in 2013 than in 2008.

The evaluation of this indicator is based on the share of road transport in total inland freight transport. Road transport shows two clear developments. First, its share increased steadily between 2000 and 2009. However, it lost more than two percentage points in the aftermath of the economic crisis between 2009 and 2013 as other transport modes started gaining ground. Its falling share since 2009 also explains the divergence in the long-term and short-term trends.

No long-term turnaround yet observed

Without a clear economic recovery, the reasons for the turnaround in modal split of freight transport in 2008 can only be assumed at this stage. Freight transport tends to be more sensitive to economic conditions than passenger transport. This was the case during the 2007 financial and economic crisis and the following recession, which hit the freight transport sector severely. With only a small increase of freight transport volumes in 2010 and more recent falls in 2011 and 2012, it is still unclear how the different freight transport modes will develop in the future ⁽⁹⁾. No substantial long-term shift toward more environmentally friendly transport modes can yet be expected.

⁽⁹⁾ See further explanations within the 'volume of freight transport relative to GDP' indicator on page 240 of this chapter.



Box 7.2: EU funding for modal shift

The EU Marco Polo programmes (2003–2013) aimed to shift a substantial part of the forecasted road freight transport growth to more environmentally friendly transport modes. The programmes targeted professionals planning to switch modes or to implement new distribution techniques. Almost 65 billion tonne-kilometres of road transport may be avoided due to projects funded by the Marco Polo programmes. Thereby, road accidents could be reduced and about 73 lives saved in the EU. It is expected that both Marco Polo periods will lead to a total of four million trucks over a distance of 1 000 kilometres shifting from road to rail, sea or inland waterways.

For the period 2014–2020, relevant measures supporting sustainable and efficient freight transport services have been incorporated in the broader framework of the Trans-European Transport Network (TEN-T) programme and the instrument Connecting Europe Facility (CEF). Under specific conditions, companies with intentions to shift freight off the road to greener transport modes can apply for financial support to co-fund their projects.

The TEN-T/CEF policy is run by the European Commission's Directorate-General for Mobility and Transport (DG MOVE) and implemented by the EU's Innovation and Networks Executive Agency (INEA).

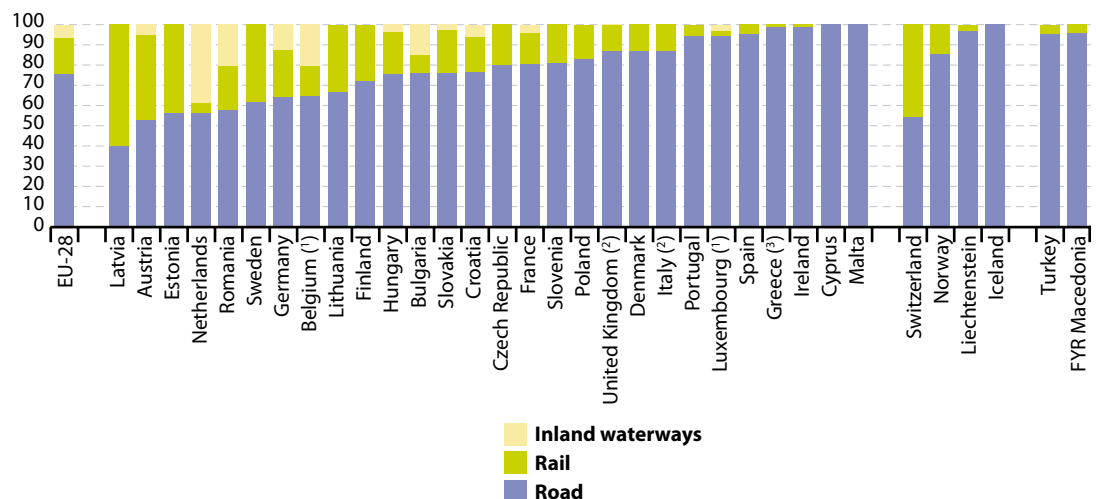
How modal split of freight transport varies across Member States

In the long term, countries that joined the EU in 2004 and 2007 have recorded the largest increases in the share of road transport in the total inland transport performance. One reason is that the extension and integration of the common market is heavily interlinked with transport demand. The resulting additional demand for transport will overflow onto roads if this form of transport is the easiest to interconnect and cheaper than other modes. This could also explain why the indicator 'modal split of freight transport' has not followed a more favourable long-term trend.

In the short term, rail transport profited and increased its share as the sector became more competitive and as the crisis hit the road transport sector⁽⁹⁾. Since 2009, demand for rail transport has increased the most in Belgium, Italy and Portugal. However, in the largest, mostly advanced European countries (such as France and the United Kingdom), no substantial shift towards more environmental friendly transport modes could be observed in the long term between 2000 and 2013.

Figure 7.7: Modal split of freight transport, by country, 2013

(% in total inland freight tonne-km)



(1) Estimated data (all modes). (2) Estimated or provisional data for inland waterways. (3) Estimated data for rail.

Source: Eurostat (online data code: [tsdtr220](#))

(9) Eurostat (2011), Statistics in focus 12/2011, *Six years of road freight growth lost to the crisis*.



Moreover, the organisation of transport is based on decisions made within the broader logistical system. For example, availability of infrastructure is an important factor in the choice of transport mode. The variation in infrastructure density can also explain the different modal splits across countries ⁽¹⁾.

What lies beneath this indicator?

Energy consumption and related environmental and health impacts vary substantially between different transport modes. Therefore, changes in the modal split of freight transport can have a considerable effect on transport's impacts.

Modal split of freight transport indicates the percentage share of each transport mode in total inland freight transport. Transport performance (tonne-kilometres) should be reported by countries according to the 'territoriality principle'. This means that countries should only report transport taking place on their territory. However, road transport reporting is currently based on all movements of vehicles registered in the reporting country; meaning further methodological developments are needed to estimate road transport according to this principle.

Transporting one tonne of goods over a kilometre corresponds to a tonne-kilometre (tkm). The indicator includes transport by road, rail and inland waterways. Air transport is not included.

Comparability over time is somewhat restricted by a number of breaks that have occurred as a result of the effort to improve accuracy and comparability between countries and due to differences in the methodology used for collecting data.

⁽¹⁾ See Statistics Explained on that issue: http://ec.europa.eu/eurostat/statistics-explained/index.php/Inland_transport_infrastructure_at_regional_level



Volume of freight transport relative to GDP



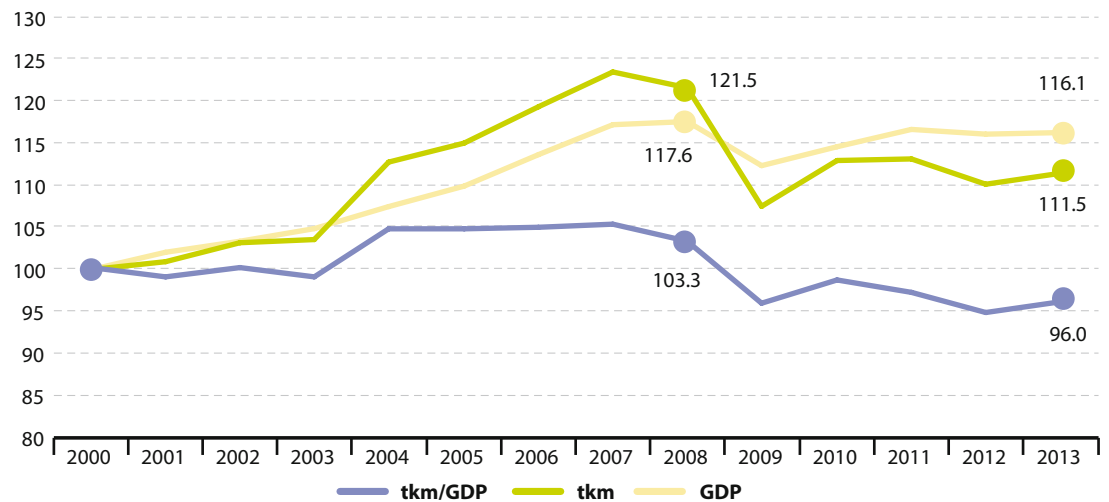
Long term
(since 2000)



Short term
(since 2008)

Volumes of freight transport relative to GDP have dropped by 4.0 % in the long term since 2000 and by 7.3 % in the short term since 2008. As a result of the economic crisis and the associated fall in GDP, freight transport volume has decoupled from GDP in the short term but not in the long term.

Figure 7.8: Volume of freight transport relative to GDP, EU-27, 2000–2013
(index 2000 = 100)



Source: Eurostat (online data codes: tsdtr230 and nama_gdp_k)

The extent to which freight transport volume by road, rail and inland waterways is coupled to economic growth decreased between 2000 and 2013. Thus, the transport demand intensity (the transport volume associated with one EUR of GDP) was lower in 2013 than in 2000.

Over the long-term period between 2000 and 2013, both GDP and transport volumes increased: GDP grew by 16.1 % and transport volumes by 11.5 %. As a result, relative decoupling between transport volumes of the three covered transport modes and economic growth took place. In the short term, between 2008 and 2013, transport volumes fell by more than GDP, resulting in an absolute decoupling.

One of the operational objectives of the EU Sustainable Development Strategy is ‘decoupling economic growth and the demand for transport’. So far this has only been observed during the economic crisis. In the period of positive economic growth before 2007, freight transport volumes increased faster than GDP. This trend could be seen at the EU level and for almost half of the Member States, where growth of tonne-kilometres of road transport surpassed GDP growth ⁽¹²⁾. These patterns indicate that freight transport is very sensitive to changes in GDP.

Road transport and the economic crisis

Most freight transport occurs on roads in the EU. With three out of four tonne-kilometres covered by road transport, this sector has been the most exposed to the economic crisis. It took just a year, from 2008 to 2009, to cancel out six years of growth in European road freight transport. EU inland freight transport activity peaked in 2007 before dropping by almost 13 % and reaching the lowest tonne-kilometre level in six years in 2009. This drop in freight transport holds for all EU regions ⁽¹³⁾.

⁽¹²⁾ European Commission (2014), *EU transport in figures*, statistical pocketbook 2014, Luxembourg.

⁽¹³⁾ Eurostat (2011), *Statistics in Focus*, 12/2011, *Six years of road freight growth lost to the crisis*.



What lies beneath this indicator?

Transport demand is closely connected to economic development and to an economy's structure (for example, the share of services in gross value added). In the past, GDP growth has normally increased freight transport volumes, and vice versa, with consequences for the environment. To reduce freight transport's environmental impacts, economic growth needs to be decoupled from the demand for freight transport.

Volume of freight transport relative to GDP is calculated by dividing tonne-kilometres by GDP (chain-linked volumes, at 2000 exchange rates). The index is based on the year 2000 = 100 and covers transport by road, rail and inland waterways. Transporting one tonne of goods over a kilometre corresponds to a tonne-kilometre (tkm).



Modal split of passenger transport



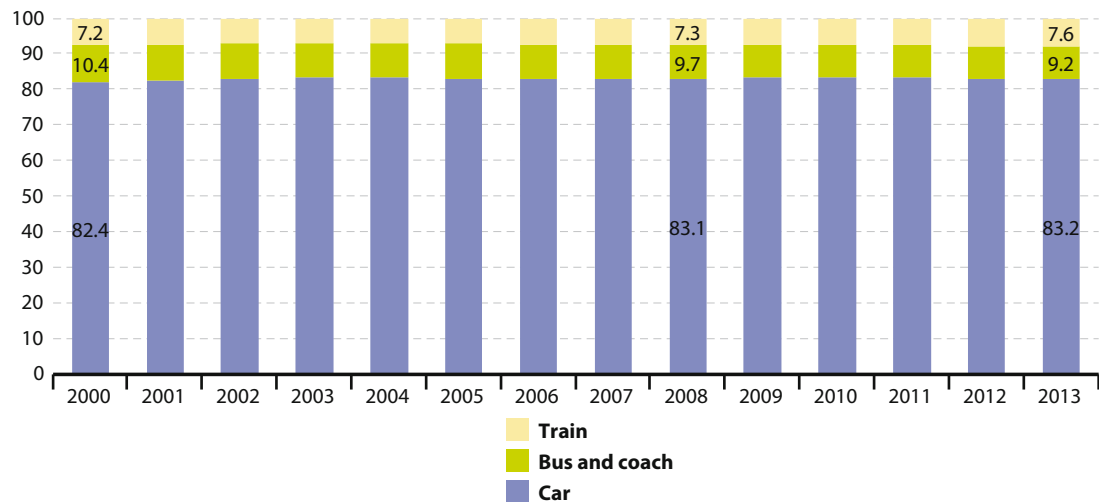
Long term
(since 2000)



Short term
(since 2008)

More than 83 % of total inland passenger transport was carried out on the road in 2013. This is more than in both 2000 and 2008. No modal shift towards more environmentally friendly transport modes could be observed.

Figure 7.9: Modal split of passenger transport, EU-28, 2000–2013
(% in total inland passenger-km)



Source: Eurostat (online data code: [tsdtr210](#))

The shares of different transport modes in total inland passenger transport have not changed substantially since 2000. In 2013, 83.2 % of around 5 600 000 million passenger-kilometres travelled in the EU were covered by passenger cars. On the other hand, public transport constituted 16.8 % of total transport movements in the EU (buses and coaches covered 9.2 % and trains 7.6 %).

In both the short and long terms, rail and road transport slightly increased their modal shares. On the other hand, fewer passenger kilometres were travelled by busses and coaches in 2013 compared with 2000 and 2008.

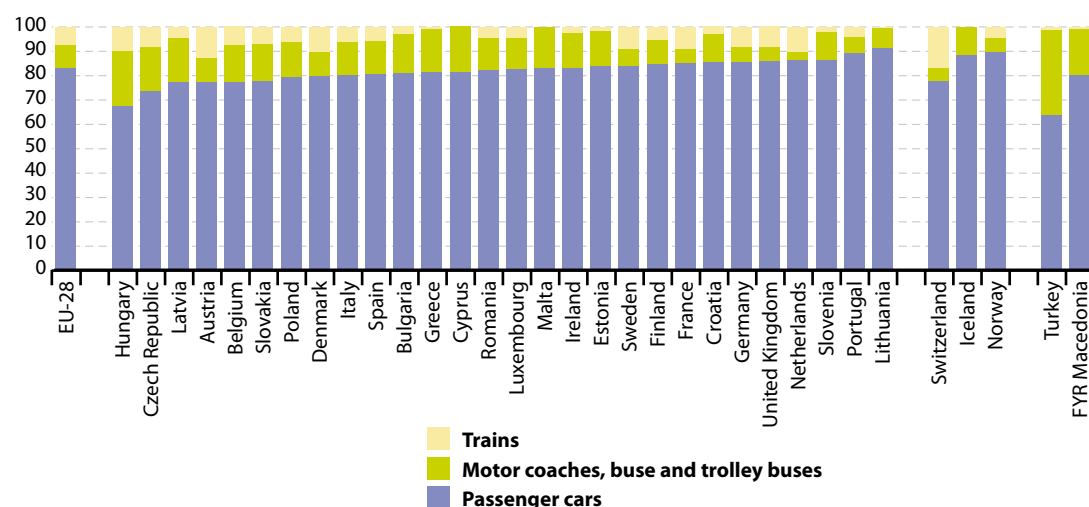
The evaluation of this indicator is based on the share of road transport in total passenger transport performance. After a rise between 2000 and 2002, the share of road transport in total passenger-kilometres remained stable until 2008. Between 2008 and 2013 shares of car transport first increased and then almost fell back to 2008 levels. This shift is the main reason behind the negative short- and long-term evaluation of the indicator.

The other two transport modes show opposing trends. While the shares of train travel mostly increased steadily, those of buses and coaches declined continuously in the long term and short term.

How modal split of passenger transport varies across Member States

Compared with freight transport, the modal split of passenger transport has shown less variation across Member States. Road transport shares in most countries are around 80 % of total inland passenger-kilometres. Major shifts can only be observed in the long run since 2000. The largest increases in road transport share were recorded in countries that joined the EU in 2004 and 2007. The economic growth and increase in personal income could be behind this broader road transport activity. In the shorter term, since 2008, most Member States have not recorded substantial changes.

Figure 7.10: Modal split of passenger transport, by country, 2013 ⁽¹⁾
(% in total inland passenger-km)



⁽¹⁾ Estimated or provisional data for most Member States (too numerous to be listed).

Source: Eurostat (online data code: [tsdtr210](#))

What lies beneath this indicator?

Energy consumption and related environmental and health impacts vary substantially between different transport modes. Therefore, changes in the modal split of passenger transport can have a considerable effect on the impact of transport.

Modal split of passenger transport indicates the percentage share of each transport mode in total inland transport. A journey of one person over a kilometre yields a passenger-kilometre (pkm). The indicator includes journeys by passenger cars, buses and coaches, and trains. Domestic air transport and human-powered mobility (walking, cycling) are not included. The data are requested to be based on movements on the national territory of each country, regardless of the nationality of the vehicle (territoriality principle). However, data collection methodologies are not harmonised at the EU-level because road passenger transport data are collected on a voluntary basis.



Volume of passenger transport relative to GDP



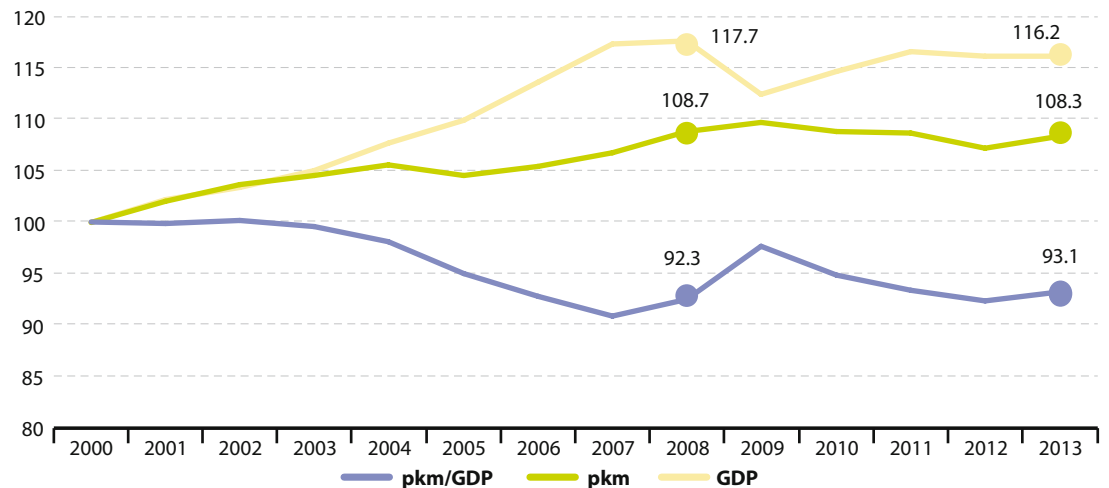
Long term
(since 2000)



Short term
(since 2008)

Volumes of passenger transport relative to GDP have dropped by 6.9% since 2000 but increased by 0.9% since 2008. Although the economic development is faltering in the short term, demand for passenger transport has not decreased substantially.

Figure 7.11: Volume of passenger transport relative to GDP, EU-28, 2000–2013
(index 2000 = 100)



Source: Eurostat (online data codes: [tsdtr240](#) and [nama_gdp_k](#))

The extent to which passenger transport by car, bus and train is coupled to economic growth decreased between 2000 and 2013. Thus, the transport demand intensity (transport volumes associated with one EUR of GDP) was lower in 2013 than in 2000. Both GDP and transport volumes have increased over the long-term period. As GDP grew by 16.2% and transport volumes by 8.3%, only a relative decoupling was observed. In the short term, between 2008 and 2013, both transport volumes and GDP fell slightly, although GDP by a larger amount. As a result, in the short term, a relative decoupling of passenger transport demand from economic growth also took place. But so far, an absolute decoupling has not been observed.

Passenger volumes and GDP show contradicting developments in recent years

Changes in car, bus and train passenger volumes and GDP were contrary in the last few years. In some periods transport volumes increased and GDP decreased, in other periods the opposite was true. Two conclusions can be drawn from this. First, passenger volumes seem to lag behind GDP developments. Second, passenger transport seems to be less sensitive to economic changes than freight transport.

Is the long-term trend driven by diminishing marginal utility of transport expenditures?

The ongoing relative decoupling in the long term is consistent with the peak car travel hypothesis. This theory suggests there is a maximum level of car travel which could be reached in most developed countries in the EU. According to this theory, growing GDP and incomes are not spent on car travel but on other goods and services. However, an analysis of GDP data for individual countries shows that in countries with higher GDP per capita, passenger transport intensities tend to decrease, while countries with lower GDP per capita show a broad range of transport intensities⁽¹⁴⁾.

⁽¹⁴⁾ European Environment Agency (2014), *The contribution of transport to air quality, TERM 2014: transport indicators tracking progress towards environmental targets in Europe*, EEA Report No 7/2014, December 2014, Copenhagen, pp. 33 and 34.

Box 7.3: How transport prices have evolved

When deciding whether to travel by car or by plane transport prices play an important role. Demand for transport services declines as prices rise ⁽¹⁵⁾. Therefore, rising prices can reduce impacts on several environmental issues by inducing fewer journeys. Then again, transport possibilities influence people's quality of life with rising prices signifying a rather negative impact. Finally, shares of different transport modes vary with changing relative prices between them.

The Harmonised Indices of Consumer Prices (HICPs), a measure of consumer price inflation in the EU, increased by 36.7% between 2000 and 2014. Compared to this, transport services in general rose by 73.0%. Prices for passenger transport services evolved in a slightly different way with rises of up to 56.6% for passenger transport by air and up to 70.0% for passenger transport by road.

What lies beneath this indicator?

The demand for transport is closely connected to economic development. In the past, increasing GDP has normally led to increasing passenger transport volumes, and vice versa, with corresponding impacts on the environment. To reduce environmental impacts from passenger transport a decoupling of economic growth and the demand for passenger transport would be needed.

Volume of passenger transport relative to GDP is calculated by dividing passenger-kilometres by GDP (chain-linked volumes, at 2000 exchange rates). The index is based on year 2000 = 100. A journey of one person over a kilometre yields a passenger-kilometre (pkm). The index includes transport on national territory by passenger car, bus and coach, and train. Data collection methodologies are not harmonised at the EU level because road passenger transport data are collected on a voluntary basis.

⁽¹⁵⁾ For an overview of demand reactions and transport elasticities see for example: Victoria Transport Policy Institute (2013), *Understanding Transport Demands and Elasticities, How Prices and Other Factors Affect Travel Behavior*, Victoria (Canada).



Greenhouse gas emissions from transport



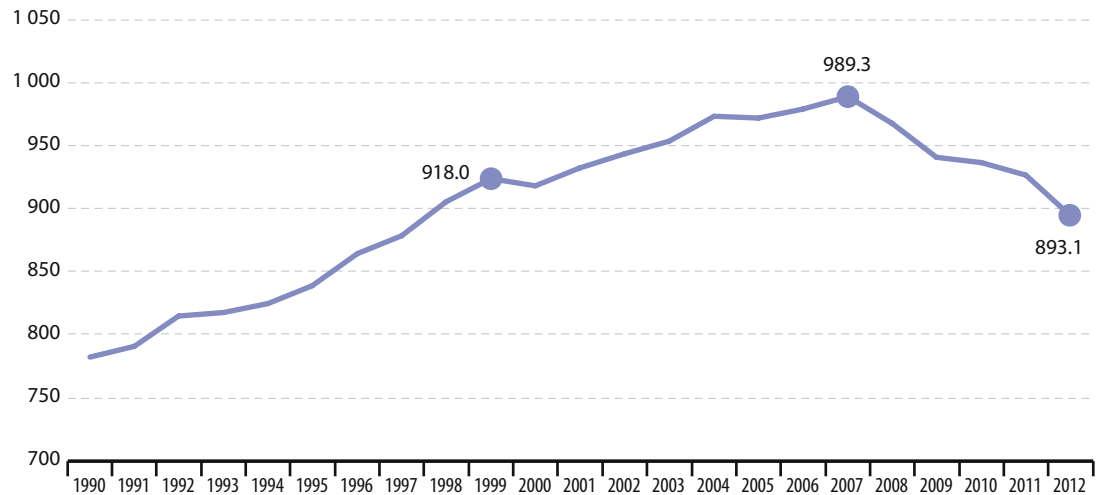
Long term
(since 2000)



Short term
(since 2007)

Greenhouse gas emissions from transport in the EU have diminished since 2007, falling back to 1998 levels. Emissions fell by 2.7 % between 2000 and 2012, presumably as a result of the economic downturn and emission regulations in the transport sector.

Figure 7.12: Greenhouse gas emissions from transport, EU-28, 1990–2012
(million tonnes of CO₂ equivalent)



Source: European Environment Agency (online data code: tsdtr410)

Transport is responsible for about a fifth of EU greenhouse gas (GHG) emissions. Between 1990 and 2007, GHG emissions from this sector increased by 26.4%. In contrast, emissions in other economic sectors were falling. For example, in the energy and agricultural sector GHG emissions fell by 3.5% and 20.6% respectively over the same period.

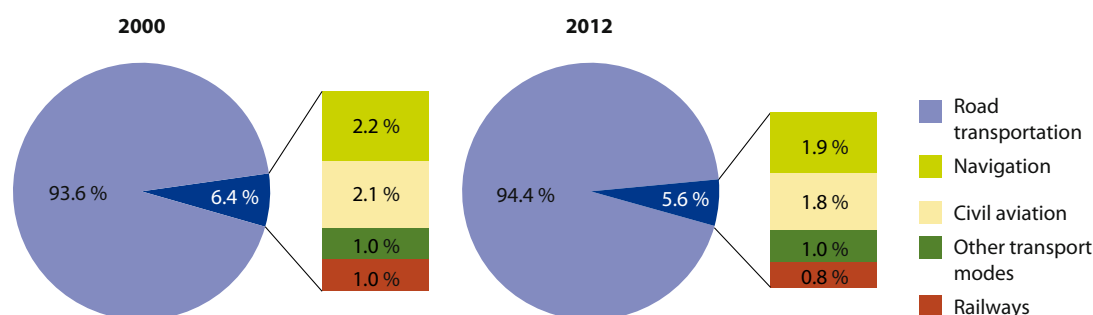
Since 2000, GHG emissions from transport have diminished by 2.7%. In the short term between 2007 and 2012, they decreased by 9.7% — an average of 2.0% per year. Thus, growth in GHG emissions from transport has started to slow down: while emissions grew by 17.3% during the 1990s, they only rose by 7.8% between 2000 and 2007. Due to the economic crisis in late 2008 and the following general downturn in many economic activities, emissions in the transport sector started to diminish.

Different developments in the short- and long-term and across transport modes

The main source of GHG emissions from transport is road transport with a share of 94.4% in 2012. Between 1990 and 2012 the share of each transport mode remained more or less stable. However, emission reductions have been observed for all transport modes since 2007. In the short term, these reductions have been most acute for aviation, with a 17.2% reduction since 2007. In the long term, the largest reductions were observed in rail transport, with a fall of 24.9% since 2000. For the specifics of emission reduction in road passenger transport see 'average CO₂ emissions from new passenger cars' on page 251.

Compared with other sectors of the economy, the reduction of GHG emissions in the transport sector has been lower. Overall EU emissions have fallen by 10.9% since 2007 compared with 9.7% in the transport sector.

Figure 7.13: Greenhouse gas emissions from transport, EU-28, 2000 and 2012 (%)



Source: European Environment Agency

Box 7.4: The Transport White Paper of the EU

In 2011, the European Commission adopted a new Transport White Paper. This roadmap envisions a Single European Transport Area with no barriers between transport modes and national systems. The transport system should allow for growth in demand and support mobility while substantially reducing greenhouse gas emissions. Transport modes will also depend less on oil. Ten goals are listed to achieve the 60% reduction target by 2050. The key goals are:

- No more conventionally fuelled cars in cities.
- 40% use of sustainable low carbon fuels in aviation; at least a 40% cut in shipping emissions.
- A 50% shift of medium distance (between 300 and 1 000 km) intercity passenger and freight journeys from road to rail.
- A 50% shift of medium-long distance (over 300 km) of freight transport from road to rail and waterborne transport.

These goals will also contribute to the stated reduction goal for the transport sector of at least 60% of GHGs by 2050 with respect to the 1990 level. As a first step, GHGs will be cut by around 20% with respect to their 2008 level by 2030.

One of the several initiatives formulated in the White Paper concerns the completion of the core network of strategic European infrastructure by 2030, which is consistent with the Trans-European Transport Network (TEN-T) ⁽¹⁶⁾⁽¹⁷⁾. An agreement on proposals to transform the existing infrastructure patchwork was signed in 2013 between the European Commission, the Council and the Parliament ⁽¹⁸⁾. One of its goals is investment in transport infrastructures to contribute to the transport sector's GHG emission reduction target.

In the year 2015, the Commission is planning to take stock of progress via a public consultation on this issue and on the implementation of a renewed Transport White Paper.

The GHG emissions figures reported here do not account for emissions of international aviation and international waterways. These so-called international bunkers have also shown falling trends with a drop of 5.5% for international aviation and 18.6% for international waterways between 2012 and 2007 ⁽¹⁹⁾.

However, transport emissions, including international aviation but excluding international maritime, are still 20.5% above 1990 levels, despite their currently decreasing emission trends. Therefore, GHG emissions from transport will need to fall by more than 67% by 2050 to meet the 2011 Transport White Paper target ⁽²⁰⁾.

⁽¹⁶⁾ Regulation (EU) No 1315/2013 of the European Parliament and of the Council of 11 December 2013 on Union guidelines for the development of the trans-European transport network and repealing Decision No 661/2010/EU.

⁽¹⁷⁾ European Commission (2011), *Proposal for a regulation for the European Parliament and of the council on Union guidelines for the development of the trans-European transport network*, COM(2011) 650 final, Brussels.

⁽¹⁸⁾ Commissioner for Transport, The Commission welcomes 'historic' agreement on new trans-European transport network, press release, May 2013.

⁽¹⁹⁾ European Commission (2014), *EU transport in figures, statistical pocketbook 2014*, Luxembourg, p. 130.

⁽²⁰⁾ European Environment Agency (2014), *Focusing on environmental pressures from long-distance transport — TERM 2014: transport indicators tracking progress towards environmental targets in Europe*, EEA Report No 7/2014, December 2014, Copenhagen, p. 18.



What lies beneath this indicator?

Accumulation of greenhouse gases (GHGs) in the atmosphere may have negative impacts on the climate and interrelated processes, such as biodiversity and soil erosion. Transport is the source of about a quarter of GHG emissions in the EU and is the second biggest emitting sector. Further, transport is the only category that emits more greenhouse gases than it did in 1990. Hence, reducing greenhouse gas emissions from transport is an important issue for the EU in achieving its 2020 reduction targets.

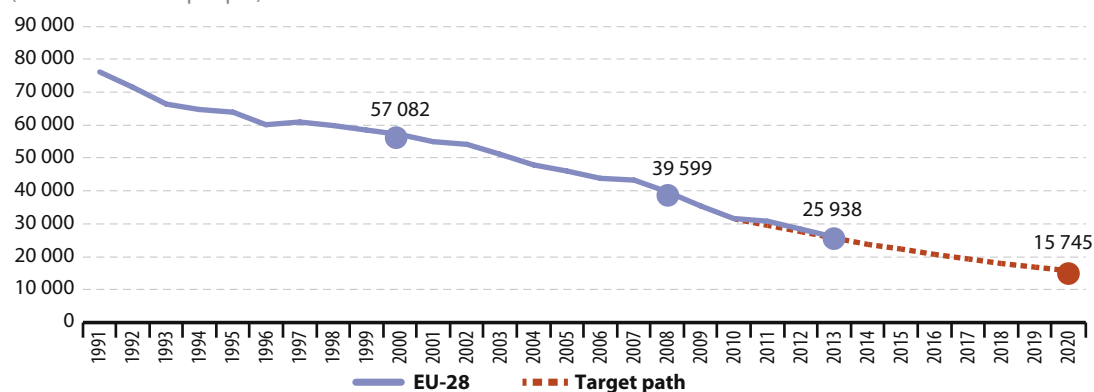
The indicator shows trends in the emissions from transport of greenhouse gases regulated by the Kyoto Protocol. Included are emissions from road transport, rail, inland navigation and domestic aviation. Three GHGs are relevant in the context of transport: carbon dioxide (CO₂), methane (CH₄) and nitrous oxide (NO_x). These are aggregated to tonnes of CO₂ equivalent according to their relative global warming potential, whereas CO₂ emissions account for almost 99%.

People killed in road accidents

Fewer and fewer people are killed in road accidents in the EU. Fatalities have reduced by 34.5 % since 2008 and have been cut by more than half since 2000. The main reason for this favourable trend is the EU road safety programme.

Figure 7.14: People killed in road accidents, EU-28, 1991–2013

(number of killed people)



Source: European Commission services, DG Mobility and Transport, CARE database (online data code: [tsdtr420](#))

Almost 26 000 people were killed in road accidents in the EU in 2013. This loss is equivalent to the size of a medium town. However, compared with more than 57 000 fatalities in 2000, substantial progress has been made with a yearly reduction rate of 5.9%. The number of people being killed in road accidents has increased only once in the last 20 years. In the short term, fatalities have fallen by 34.5 % since 2008. This clearly favourable performance has been supported by a yearly drop of more than 10 % in 2009 and 2010.

Despite this marked improvement, the ambitious goal set in the European Road Safety Action Programme 2001–2010, to halve fatalities between 2001 and 2010, was not met. The renewal of the Action Programme will nevertheless continue efforts to reduce road fatalities and improve safety. The new objectives are also in line with the goal formulated in the Transport White Paper to reduce fatalities to close to zero by 2050 ⁽²¹⁾.



Long term
(since 2000)



Short term
(since 2008)

Box 7.5: European Road Safety Action Programme 2011–2020

The European Road Safety Action Programme sets the challenging goal of halving the number of road deaths in Europe between 2011 and 2020 ⁽²²⁾. This means that efforts already undertaken in the 2001–2010 Action Programme will need to continue.

The programme provides a general governance framework to guide national or local strategies. Seven objectives, for which action at EU and national level will be proposed, have been set:

- Improve education and training of road users
- Increase enforcement of road rules
- Safer road infrastructure

- Safer vehicles
- Promote the use of modern technology to increase road safety
- Improve emergency and post-injuries services
- Protect vulnerable road users.

Recent key initiatives in these areas include a new EU Driving Licence impeding the access of young people to powerful motorbikes ⁽²³⁾, exchanges of best practices concerning enforcement plans, cross border enforcement rules and first milestones on the way to an injury strategy ⁽²⁴⁾.

⁽²¹⁾ European Commission (2011), *White Paper, Roadmap to a Single European Transport Area — Towards a competitive and resource efficient transport system*, COM(2011) 144 final, Brussels.

⁽²²⁾ European Commission (2010), *Towards a European road safety area: policy orientations on road safety 2011–2020*, COM(2010) 389 final.

⁽²³⁾ Directive 2012/36/EU on driving licences.

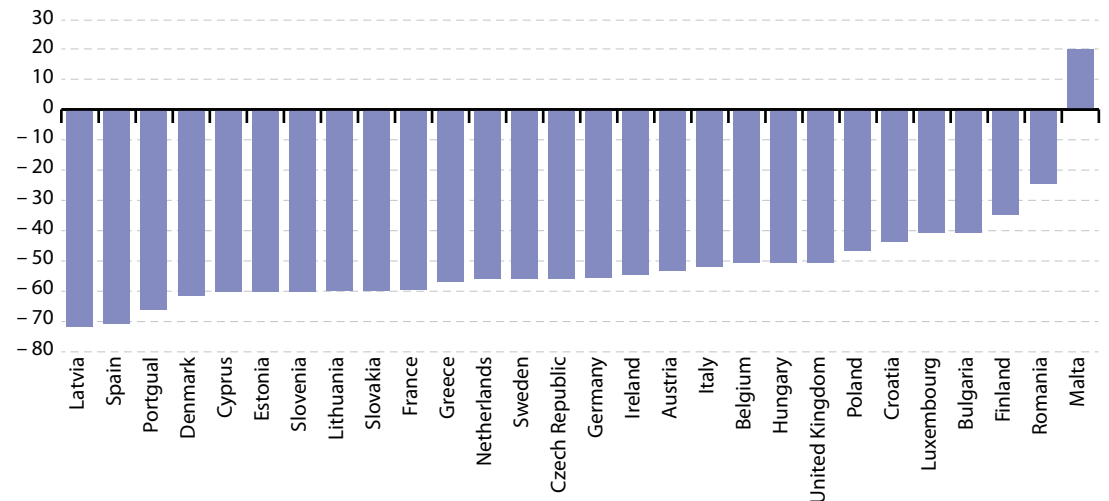
⁽²⁴⁾ See http://ec.europa.eu/transport/road_safety/topics/serious_injuries/index_en.htm



How fatalities from road accidents vary across Member States

The majority of Member States still have to further strengthen their efforts to meet the EU's goal of halving road fatalities at the national level. Between 2000 and 2013, the highest relative reduction of road fatalities was observed in Latvia. In this period, only Malta reported an increase, although on a very low absolute level. The safest Member States, United Kingdom, Denmark and Sweden, have reached three or less than three road fatalities per 100 000 inhabitants by 2012.

Figure 7.15: People killed in road accidents, by country, 2000–2013
(% change from 2000 to 2013)



Source: EU Commission, DG Energy and Transport — CARE database (online data code: [tsdtr420](#))

Road fatalities compared with other countries in the world

On a worldwide scale, fatalities due to road accidents differ widely between countries. Road safety performances measured in fatalities per 100 000 population vary more than nine fold between members of the International Road Traffic and Accident Database (IRTAD) ⁽²⁵⁾. The highest road fatality rates are recorded in Malaysia and Cambodia. In general, road fatalities have been declining in almost all countries in recent years, however, the ten years between 2011 and 2012 recorded the slowest decline ⁽²⁶⁾.

What lies beneath this indicator?

Fatalities due to road accidents are an important indicator of road safety.

People killed in road accidents shows the numbers of fatalities in road transport. It includes drivers and passengers of motorised vehicles as well as pedestrians. A road accident victim is considered as a road fatality if he or she deceased within 30 days from the day of the accident.

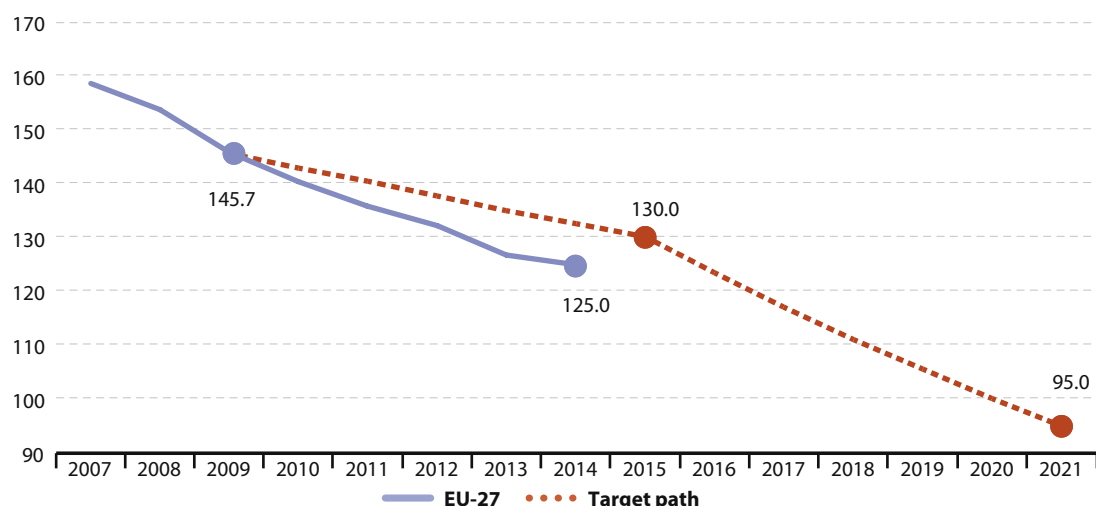
⁽²⁵⁾ The International Road Traffic and Accident Database (IRTAD) was established in 1988 by the OECD Road Transport Research Programme to provide aggregated data on a continuous basis. IRTAD includes both a database and a working group contributing to international co-operation on road accident data and its analysis.

⁽²⁶⁾ OECD (2014), International Transport Forum, *Road Safety Annual Report 2014*, IRTAD Annual Report 2014, Paris.

Average CO₂ emissions per km from new passenger cars

Newly registered passenger cars emitted 14% less CO₂ on average in 2014 compared with 2009. The fall in this short-term period was largely the result of EU Regulations.

Figure 7.16: Average carbon dioxide emissions per km from new passenger cars, EU-27, 2009–2014 (gram of CO₂ per km)



Source: Eurostat (online data code: tsdtr450)

In the EU-27 on average, newly registered cars emitted 125 grams of CO₂ per kilometre in 2014. This value as well as the short-term trend is well below the target path according to the associated targets set by the EU. Since 2009 this value has fallen on average by 3.0% each year. Therefore, the new passenger car fleet met the 130 g CO₂/km target for 2015 already two years in advance.



Short term
(since 2009)

Box 7.6: Reducing CO₂ emissions from passenger cars

EU legislation sets mandatory emission reduction targets for new cars ⁽²⁷⁾. These targets apply to a manufacturer's overall fleet. Heavier cars with emissions above the limit value are still allowed but have to be compensated with lighter cars to preserve the overall fleet average. The limit values are:

- 130 grams of CO₂ per kilometre in 2015.
- 95 grams of CO₂ per kilometre in 2021.

The EU fleet average target by 2015 has been phased in since 2012. A shorter phase-in period will be applied to the 95 g/km target.

The legislation foresees the European Commission to review the targets and impacts of the Regulation in 2015. This could lead to new proposals for new car CO₂ emission targets beyond 2020.

⁽²⁷⁾ Regulation (EC) No 443/2009 setting emission performance standards for new passenger cars as part of the Community's integrated approach to reduce CO₂ emissions from light-duty vehicles, and Regulation (EU) No 333/2014 of the amending Regulation (EC) No 443/2009 to define the modalities for reaching the 2020 target to reduce CO₂ emissions from new passenger cars.



Regulation is one reason behind the reported emission reductions

New cars are becoming more and more efficient, even though their average mass is still not steadily decreasing. Member States have additionally managed to speed up the reduction of new car CO₂ emissions by demand-oriented incentives such as scrappage schemes, extra taxes on cars with high CO₂ emissions or purchase grants for low-emission vehicles such as hybrids.

What lies beneath this indicator?

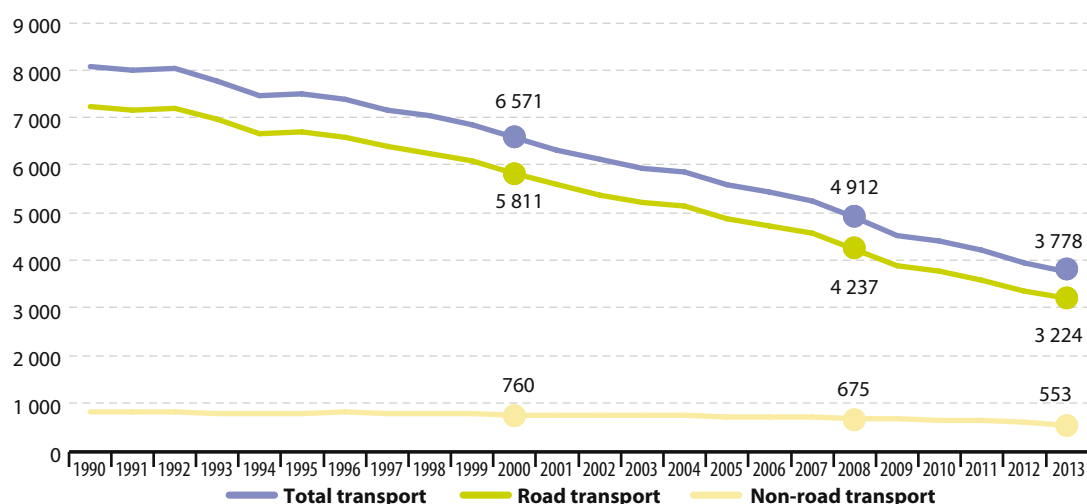
The reported emissions are based on type-approval and can vary from the actual carbon dioxide (CO₂) emissions of new cars. Passenger cars have a substantial impact on climate change. The EU has set mandatory emission reduction targets for new cars to improve the fuel economy of cars sold.

This indicator is defined as the average emissions of CO₂ per kilometre by new passenger cars registered in a given year.

Emissions of ozone precursors from transport

Nitrogen oxides from transport have diminished in the short term and in the long term. In 2013 emissions had fallen by 23.1 % since 2008 and by 42.5 % since 2000.

Figure 7.17: Emissions of nitrogen oxides (NO_x) from transport, EU-28, 1990–2013 (1 000 tonnes)



Source: European Environment Agency (online data code: tsdtr430)

Between 2000 and 2013, emissions of nitrogen oxides (NO_x) from transport decreased by 42.5 %. Emissions from road transport fell by 44.5 %; the non-road sector reduced its emissions by 27.2 % in the long term. In the short term, both sectors show similar downward drifts. Since 2008, road transport NO_x emissions have declined by 23.9 %, while non-road transport emissions have fallen by 18.0 %. Road transport accounts for the vast majority of total NO_x emissions. However, with the substantial decline of road transport and, accordingly, total NO_x emissions, the share of the non-road sector has increased both, in the short and the long term. Non-road transport accounted for 11.6 % of the total NO_x emissions in 2000. The 550 000 tonnes emitted in 2013 represent a share of 14.6 % of the total NO_x emissions.

Clear limit values for nitrogen dioxides and other air pollutants are set in Directive 2008/50/EC on ambient air quality and cleaner air⁽²⁸⁾. However, improvements in road transport are directly linked to the implementation of the emission limits for light and heavy duty vehicles. Further policies regulating fuel tax rates and alternative energy sources have also had an effect. In the non-road sector increased activities and emissions in aviation and shipping have helped reduce emissions⁽²⁹⁾.

What lies beneath this indicator?

NO_x is directly emitted by transport vehicles and is an important precursor gas for ozone, which is formed when sufficient concentrations of precursor gases are released in the presence of sunlight. Ozone is a highly reactive gas that causes or provokes respiratory problems for human beings and animals. It is also toxic to plants and can lead to leaf damage and defoliation. NO_x can also directly affect health. In addition, it is involved in particulate formation and acidification, causing damage to soil and buildings. Reducing pollutant emissions from transport minimises such effects.

This indicator tracks emissions of nitrogen oxides in the air caused by transport.

⁽²⁸⁾ Directive 2008/50/EC on ambient air quality and cleaner air for Europe.

⁽²⁹⁾ European Environment Agency (2014), *The contribution of transport to air quality, TERM 2014: transport indicators tracking progress towards environmental targets in Europe*, EEA Report No 7/2014, December 2014, Copenhagen, p. 19.



Long term
(since 2000)



Short term
(since 2008)



Emissions of particulate matter from transport



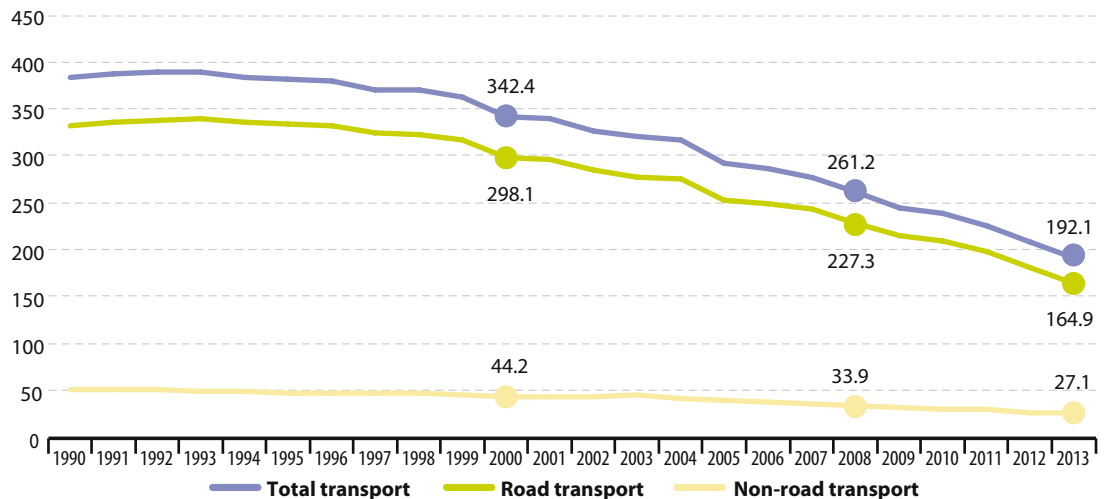
Long term
(since 2000)



Short term
(since 2008)

Quantities of very small particulate matter decreased in the short term as well as in the long term. Emissions shrank by 26.5 % between 2008 and 2013 and by 43.9 % between 2000 and 2013.

Figure 7.18: Emissions of particulate matter from transport (PM_{2.5}), EU-28, 1990–2013
(1 000 tonnes)



Source: European Environment Agency (online data code: tsdtr440)

Emissions of very small particulate matter (PM_{2.5}) from transport decreased by 43.9 % between 2000 and 2013. These improvements are mainly due to progress in road transport. This transport mode accounts for 85.8 % of the total PM_{2.5} emissions but has steadily reduced its output of particulate matter. Non-road transport also showed decreasing volumes of PM_{2.5} in both, the short and the long term. But while non-road transport exhibited a weaker yearly decrease in the short term from 2008 to 2013 than in the long term from 2000 to 2013, the opposite is true for the road sector.

Clear limit values for PM_{2.5} and other air pollutants are set in Directive 2008/50/EC on ambient air quality and cleaner air⁽³⁰⁾. However, improvements in road transport are directly linked to the implementation of the emission limits for light and heavy duty vehicles. Further policies regulating fuel tax rates and alternative energy sources have also led to reductions⁽³¹⁾.

Box 7.7: External Costs of Transport

Transport activities have environmental impacts and can also lead to accidents. Several indicators within the sustainable transport chapter address such impacts: people killed in road accidents, emissions of transport such as greenhouse gas emissions, nitrous oxides (NO_x), and particulate matter (PM_{2.5}).

The costs of these effects are normally not borne by the transport users and are thus not taken into

account in their decision-making processes. The internalisation of external costs means allowing users to take such costs into account. The European Commission has published a handbook on external costs of transport to update and harmonise ways of calculating these costs⁽³²⁾. This handbook outlines a model for the internalisation of external costs which could serve as a basis for future calculations of infrastructure charges.

⁽³⁰⁾ Directive 2008/50/EC on ambient air quality and cleaner air for Europe.

⁽³¹⁾ European Environment Agency (2014), *The contribution of transport to air quality, TERM 2014: transport indicators tracking progress towards environmental targets in Europe*, EEA Report No 7/2014, Copenhagen, p. 19.

⁽³²⁾ Ricardo-AEA, DIW, CAU (2014), *Update of the Handbook on External Costs of Transport, report for the European Commission*, DG Mobility and Transport, London.



What lies beneath this indicator?

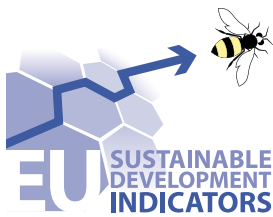
Transport, particularly road transport, is one of the main sources of particulate matter. Airborne particulates are believed to contribute to a large number of premature deaths from lung and cardiovascular diseases. The potential for causing health problems is directly linked to the size of the particles.

This indicator tracks emissions of very small particulate matter in the air caused by transport. $PM_{2.5}$ refers to particulate matter with a diameter of up to 2.5 micrometres.

Natural resources

8












Overview of the main changes

The population status of common birds, the headline indicator of the 'natural resources' theme, continues to deteriorate. While the forest bird index has shown improvements since 2000, substantial declines in the abundance of farmland birds have led to an overall deterioration of the common bird index. Moreover, despite progress in the sufficiency of nature conservation sites designated to implement the Habitats Directive, many of the EU's natural resources ⁽¹⁾, such as biodiversity, air, water, soil and spatial resources, are under continuous pressure, mainly due to land-take for settlements and infrastructure as well as intensification of agricultural production and fisheries. However, progress can be observed in the water quality of rivers as well as in the gross nutrient balance on agricultural land. These improvements, among other reasons, are due to better waste water treatment and farm management practices, most importantly regarding fertiliser application techniques. Nonetheless, further measures are needed to improve the state of natural resources in the EU and to put natural resource use on a sustainable path. New concepts and solutions are required in a number of areas, including agriculture, fisheries and water policies as well as transport, consumption and production patterns.

Table 8.1: Evaluation of changes in the natural resources theme, EU-28 ⁽¹⁾

Indicator	Long-term evaluation (since 2000)	Short-term evaluation (last five-year period)
Common bird index	 ⁽²⁾	 ⁽²⁾
Biodiversity		
Protected areas	:	:
Fresh water resources		
Water abstraction	:	:
Water quality in rivers	 ⁽³⁾	 ⁽³⁾
Marine ecosystems		
Fishing capacity	:	:
Land use		
Artificial areas	:	 ⁽⁴⁾
Nutrient balance on agricultural land		

⁽¹⁾ An explanation of the evaluation method and the meaning of the weather symbols is given in the Introduction and in Annex III.

⁽²⁾ EU aggregate with changing composition.

⁽³⁾ 20 EEA countries.

⁽⁴⁾ Last three-year period.

⁽¹⁾ The concept of natural resources also commonly includes raw materials, air and energy resources; however, these natural resource types are dealt separately under the Chapter 2 on sustainable consumption and production and Chapter 6 on climate change and energy. For more information on Eurostat's concept of natural resources see <http://ec.europa.eu/eurostat/web/environmental-data-centre-on-natural-resources/overview/natural-resource-concepts>.



Key trends in natural resources

Continued pressure on the EU's natural capital

The **index for all common birds** declined by 1.8 percentage points between 2000 and 2013, with two polarised trends in the populations of common farmland and common forest birds. While the forest bird index increased by 8.0 percentage points, the farmland bird index dropped by 12.7 percentage points in the long-term trend.

Agricultural intensification has largely been blamed for the decline of common farmland birds. Harmful subsidies and increased use of biomass for renewable energy production are key drivers of this intensification. Biodiversity concerns are increasingly being integrated into the regional development policy and the Common Agricultural Policy of the EU, but further efforts are needed.

Slight improvements in sufficiency of protected areas

Between 2008 and 2012 the sufficiency of areas proposed for nature conservation under the Habitats Directive increased slightly to 87 % for the EU-27, indicating progress in the implementation of EU nature legislation and biodiversity protection. Half of the Member States showed sufficiency levels of **protected areas** above 90 % in 2012. However, further improvement in the management of designated sites and connectivity between sites is needed.

Water exploitation close to sustainable levels and river water quality improving

Water exploitation decreased over the past decade in most regions of Europe with the exception of Estonia, Spain and Cyprus which reported higher water abstraction. Countries such as Lithuania and Romania made significant progress towards more sustainable water management by reducing water abstraction.

Biochemical oxygen demand in rivers — an indicator of organic pollution in water — decreased by an average of 2.5 % per year since 2000 for the 20 European countries (including 18 EU Member States) considered. These improvements are mainly due to a general improvement in wastewater treatment. However, significant risks to water quality remain, including diffuse pollution from agriculture.

A declining fishing fleet

The engine power of the **EU fishing fleet** fell by 2.0 % per year on average from 2007 to 2014. Further efforts and policy reforms are needed for a sound fleet capacity adjustment, which would lead to more sustainable fish stock management and better economic conditions for active fishermen.

Share of artificial areas growing but nutrient surplus on agricultural land declining

In 2012, 4.7 % of the entire EU land area was covered by **artificial land**. Particularly high shares are associated with the most densely populated Member States. A rising demand for housing, economic activities in urban areas and transport infrastructure are mainly responsible for a continuous shrinkage of the share of semi-natural and arable land in the EU.

Since 2000 the **gross nutrient balance on agricultural land** has been disturbed, largely due to the use of fertilisers for agricultural production. However, the surplus of nutrients added to agricultural soils has a declining trend over the long-term and the short-term period, with the phosphorous balance almost reaching parity between inputs and outputs. Implementation of the Nitrates Directive and other agricultural improvements have stabilised nutrient inputs, potentially reducing environmental pressures. However, agricultural nitrogen surpluses are still high in some parts of Europe, in particular in western Europe and in some Mediterranean countries.



Why do we focus on natural resources?

Healthy ecosystems provide a range of benefits that serve as the backbone for biodiversity and human well-being. These benefits include provisioning (such as food and wood), regulating (climate, flood and water regulation) and cultural services (spiritual, recreational and educational).

Human well-being relies on natural capital, including the ability of ecosystems to provide food, water and fuel as well as to regulate the environment through services such as carbon storage, flood control and water purification. Natural systems can only tolerate disruption up to a certain point ^(?). Therefore the sustainable use of natural resources and maintenance of well-functioning ecosystems is crucial to meeting the demands of current and future generations. Their protection and strategic use are an integral part of sustainable development.

How does the EU tackle natural resources?

The EU Sustainable Development Strategy (EU SDS) declares natural resources as one of its seven key challenges. The overall objective is to 'improve management and avoid overexploitation of natural resources, recognising the value of ecosystem services'.

The EU SDS has two operational objectives and targets:

- Improving resource efficiency to reduce the overall use of non-renewable natural resources and the related environmental impacts of raw material use [considered in the chapter on sustainable consumption and production], thereby using renewable natural resources at a rate that does not exceed their regeneration capacity.
- Improving management and avoiding overexploitation of renewable natural resources such as fisheries, biodiversity, water, air, soil and atmosphere, and restoring degraded marine ecosystems by 2015 in line with the Johannesburg Plan (2002) including achievement of the maximum sustainable yield (MSY) in fisheries by 2015.

Other relevant EU policies and strategies for Natural Resources include the:

- 7th Environment Action Programme (EAP). Since the 1970s the European environmental policy has been shaped by the EAP. The 7th EAP runs until 2020 and identifies protecting, conserving and enhancing the EU's natural capital as the first of three priorities. Furthermore, it expresses the EU's commitment to speed up the delivery of the objectives of the EU Biodiversity Strategy to 2020 and the Blueprint to safeguard Europe's water resources, as well as take steps to reduce nitrogen and phosphorous emissions.
- EU Biodiversity Strategy to 2020 includes six main targets to halt the loss of biodiversity and ecosystem services in the EU by 2020.

- EU Blueprint to safeguard Europe's water resources is the current EU water policy strategy and outlines actions focusing on: better implementation of current water legislation, integration of water policy objectives into other policies, and filling knowledge gaps about water quantity and efficiency.
- Common Agricultural Policy is one of the most influential EU policies regarding biodiversity. This has recently been reformed to meet the challenges of soil and water quality, biodiversity and climate change and to promote environmentally friendly farming practices.
- EU Green Infrastructure Strategy addresses target 2 of the EU Biodiversity Strategy to 2020, aiming to maintain and enhance ecosystems and their services via the establishment of green infrastructure and the restoration of degraded ecosystems.
- EU Adaptation Strategy. This highlights the value of ecosystem-based approaches and their multiple benefits, such as reduced flood risk, less soil erosion, improved water and air quality and reduced heat island effect.
- Common Fisheries Policy is currently undergoing reform to be more sustainable, to contribute to the Europe 2020 strategy and to work towards robust economic performance of the industry, including growth and enhanced cohesion in coastal regions.
- Resource Efficiency Roadmap recognises the direct and indirect impacts of EU policies on land use and aims to achieve no net land-take by 2050, as well as to reduce pressure on natural resources via the full implementation of EU environmental legislation by 2020.

(?) This is often referred to as a threshold, tipping point or point of no return.



Some progress has been made regarding water and air quality, but human activities continue to threaten vast areas of natural land and the life they sustain. Recent assessments paint a distressing picture of the status of biodiversity and ecosystems and highlight the lack of progress in achieving European targets in this area ⁽³⁾.

A key factor behind biodiversity decline is changes in land use and land cover due to a growing human demand for food, renewable energy and built infrastructure that increase sealed surfaces, such as buildings and roads ⁽⁴⁾. Satisfying these demands has resulted in the loss and fragmentation of vast areas of natural and semi-natural habitats. These are the unique ecological areas in which particular animals, plants and other organisms live. Such habitat modifications not only threaten biodiversity, but also reduce the ecosystem's ability to withstand the foreseen effects of climate change such as more frequent natural disasters ⁽⁵⁾.

There are strong linkages between the 'natural resources' theme and other sustainable development areas. While the exploitation and consumption of natural resources have underpinned economic growth and improvements in human welfare in Europe to date, the diminishing quantity and quality of these resources can ultimately undermine livelihoods. Over-fishing, for example, has significantly decreased fish stocks and landings, affecting the resilience of marine ecosystems and incomes and employment opportunities within the fisheries sector. Water shortages caused by over-use and increases in the number of groundwater aquifers not meeting EU drinking water standards have economic repercussions on society. Trade-offs between nature protection goals and activities such as energy and food production, transport and infrastructure development, are frequent. Balancing these demands requires awareness not only of European needs, but also of the impact of land use decisions and consumption patterns in other world regions. The reliance of many of the world's poor on natural resources also highlights the need to think about the environment and sustainable development in global terms.

Only if the EU's production and consumption habits respect the physical limits of the biosphere and ecosystems, can their services be maintained and restored and a transformation to a green economy be achieved, resulting in an overall improvement in human well-being.

Further reading on natural resources

European Environment Agency (2015), *The European environment — state and outlook 2015: synthesis report*, Copenhagen.

European Environment Agency (2015), *State of nature in the EU Results from the Reporting under the Nature Directives 2007–2012*, Copenhagen.

European Environment Agency (2012), *Protected areas in Europe — an overview*, EEA Report No 5/2012, Copenhagen.

European Commission (2013), *Green Infrastructure (GI): Enhancing Europe's natural capital*, COM(2013) 249 final, Brussels.

European Bird Census Council (2012), *Trends of common birds in Europe, 2012 update*, Brussels.

BirdLife (2012), *On the road to recovery? BirdLife assessment of progress on the EU 2020 Biodiversity Strategy*, October 2012, Brussels.

European Commission (2011), *Our life insurance, our natural capital: an EU biodiversity strategy to 2020*, COM(2011) 244, Brussels.

European Commission (2010), *Facts and figures on the Common Fisheries Policy — 2010 Edition*, Office for Official Publications of the European Union, Luxembourg.

European Environment Agency (2010), *EU 2010 Biodiversity Baseline*, EEA Technical report No 12/2010, Copenhagen.

⁽³⁾ See COM (2012), BirdLife (2012), CBD (2010) and EEA (2010) in the 'Further reading on natural resources' box.

⁽⁴⁾ BISE <http://biodiversity.europa.eu/topics/land-use-changes>

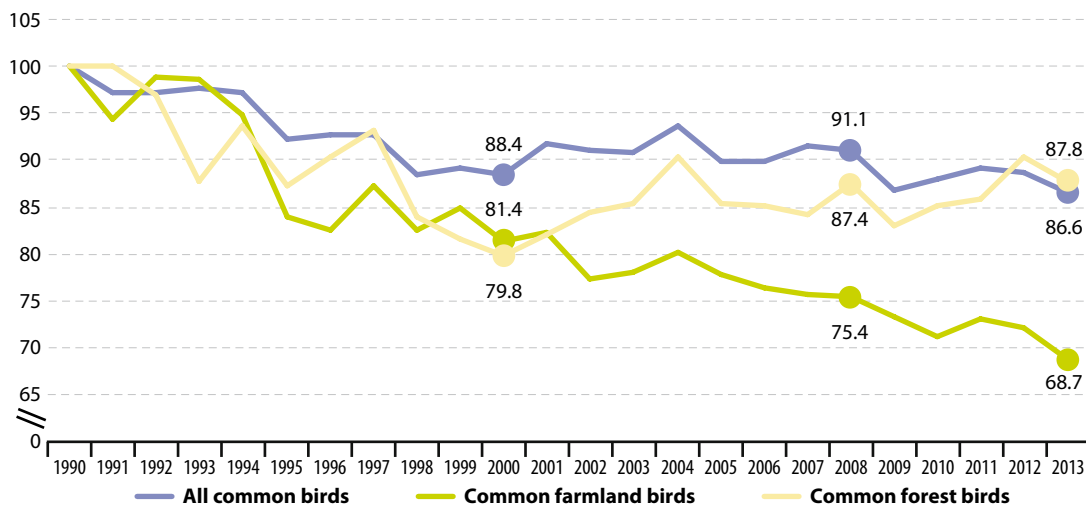
⁽⁵⁾ GRID-Arendal (2013), *Impacts on biodiversity and ecosystem from conventional expansion of food production*.



Common bird index

The EU common bird index decreased by 1.8 percentage points in the long term between 2000 and 2013. The decline was particularly strong in the short term, with the common bird index falling by 4.5 percentage points between 2008 and 2013. While forest birds have shown a recovery since 2000, farmland birds have declined substantially.

Figure 8.1: Common bird index, EU, 1990–2013 (°)
(index 1990 = 100)



(°) The EU aggregate changes depending on countries joining the Pan-European Common Birds Monitoring Scheme.

Source: Eurostat (online data code: [tsdnr100](#))

Despite some fluctuations, the index of all common birds declined by an average of 0.2% annually in the long-term period between 2000 and 2013. This fall was slower than in the previous long-term period from 1990 to 2000, during which the index declined sharply by 1.2% per year on average. Recent short-term developments have, however, been less favourable again, with the common bird index declining by 1.0% per year on average between 2008 and 2013.

The moderate long-term decline in common birds masks more polarised trends in the populations of common farmland and common forest birds. The forest bird index has shown a favourable trend, with an 8.0 percentage point increase between 2000 and 2013. The farmland bird index, however, decreased dramatically by 12.7 percentage points over the same period. Short-term trends indicate deterioration; while the common forest bird index increased only marginally between 2008 and 2013, the index for common farmland birds fell at an even faster pace than in the long term.

Farmland bird diversity still declining

A large discrepancy exists between the relatively stable common bird population and a significant decline in farmland birds. The ‘all common birds’ index represents species from different habitats, including 34 common forest species and 39 common farmland species, as well as 94 habitat generalists that thrive for example in built-up areas. The trend therefore shows that species that are dependent upon specific habitats other than built-up areas are increasingly threatened by ongoing land use change and increasing land-take. Less specialised bird species and bird species adapted to human activities are more resilient to these changes. This means that current land use practices favour the occurrences of bird species that are less vulnerable to human activities.



Long term
(since 2000)



Short term
(since 2008)



In 2012, agricultural and grassland habitats covered 44.2% of the EU-27 land area ⁽⁶⁾. These habitats are crucial for biodiversity protection in the EU, including bird species that partially or exclusively rely on farmland habitats ⁽⁷⁾.

According to the European Environment Agency (EEA) in its recent State of Nature in the EU report, about 48% of bird species associated with agricultural ecosystems are assessed as 'secure', 38% as 'non-secure' (16% 'threatened' and 22% as 'near threatened', 'declining' or 'depleted') and 14% are assessed as 'unknown'. In addition, more than half of the population trends for non-secure species are decreasing. These figures indicate that bird species associated with agricultural ecosystems are clearly worse off than bird species overall ⁽⁸⁾.

Box 8.1: EU population status of birds

Regional population status assessments at the EU level were recently carried out at the species level under EU reporting requirements. The criteria and thresholds used to assess the population status of birds in the EU can be seen below.

Threatened: Meets any of the International Union for the Conservation of Nature and Natural Resources (IUCN) Red List criteria for 'threatened' at EU-27 scale.

Near threatened: Close to meeting IUCN Red List criteria for 'threatened' at EU-27 scale.

Declining: EU-27 population or range declined by at least 20% since 1980 and continue to decline since 2001.

Depleted: EU-27 population or range declined by at least 20% since 1980, but is no longer declining.

Secure: Does not currently meet any of the criteria above in the EU-27.

Unknown: Inadequate information available to assess status in the EU-27.

The first step in the EU population status assessment process is to assess whether the species is regionally threatened or 'near threatened' (those that meet or are close to meeting any of the IUCN Red List criteria at the EU-27 scale). This information feeds directly into the EU Red List of Birds ⁽⁹⁾.

Declines in farmland bird population mainly driven by agricultural changes

The decline in the number of farmland bird species has been confirmed in further studies ⁽¹⁰⁾. Much of this decline has been attributed to changes in agricultural methods, intensification and specialisation ⁽¹¹⁾. For example, one study found that nearly one third of Europe's Important Bird Areas are threatened by agricultural intensification and expansion ⁽¹²⁾. Factors cited as being particularly harmful in terms of agricultural intensification in the EU include hedgerow loss, land drainage, increased mechanisation, increased fertiliser and pesticide use, reduction of spring cultivation, simplification of crop rotations, changes in crop use, and loss of farm diversity ⁽¹³⁾.

Agriculture is also the most common pressure or threat category for bird species listed by Member States reporting under the Birds Directive. The level of reported agricultural pressures or threats is particularly high for birds associated with cropland ecosystems, the most significant of which is 'modification of cultivation practices', such as agricultural intensification, grassland conversion into arable land and crop change ⁽¹⁴⁾.

Target 3A of the EU Biodiversity Strategy to 2020 aims to maximise the agricultural area covered by biodiversity-related measures under the Common Agricultural Policy (CAP). The objective is to ensure biodiversity conservation and improve the conservation status of species and habitats depending on or affected

⁽⁶⁾ BirdLife International (2015), *European Red List of Birds*, Luxembourg.

⁽⁷⁾ Eurostat (2012), *Agri-environmental indicator — population trends of farmland birds*, accessed on 23 April 2015.

⁽⁸⁾ EEA (2015), *State of nature in the EU. Results from reporting under the nature directives 2007–2012*, Technical report No 02/2015, Copenhagen.

⁽⁹⁾ Ibid.

⁽¹⁰⁾ Chamberlain, D.E., Fuller, R.J., Bunce, R.G.H., Duckworth, J.C. & Shrubbs, M. (2000), *Changes in the abundance of farmland birds in relation to the timing of agricultural intensification in England and Wales*, *J. Appl. Ecol.* 37, pp. 771–788; Fox, A.D. (2004), *Has Danish agriculture maintained farmland bird populations?* *J. Appl. Ecol.* 41, pp. 427–439; Wretenberg, J., Lindström, Å., Svensson, S., Thierfelder, T. & Pärt, T. (2006), *Population trends of farmland birds in Sweden and England: similar trends but different patterns of agricultural intensification*, *J. Appl. Ecol.* 43, pp. 1110–1120.

⁽¹¹⁾ Donald, P. F., Green, R. E. and Heath, M. F. (2001), *Agricultural intensification and the collapse of Europe's farmland bird populations*, *Proc. Roy. Soc. Lond. B* 268, pp. 25–29.

⁽¹²⁾ BirdLife International (2004), *Agricultural intensification threatens Important Bird and Biodiversity Areas in Europe*, Presented as part of the BirdLife State of the world's birds website. Available from: <http://www.birdlife.org/datazone/sowb/casestudy/140>. Checked: 24/04/2015

⁽¹³⁾ BirdLife International (nd), *Common bird indicators: helping to track progress towards the 2010 target*.

⁽¹⁴⁾ See footnote 8.



by agriculture. Therefore, this indicator should also be seen in the context of the CAP, in particular its rural development part and efforts aimed at the ‘greening’ of the CAP. Further efforts are needed to provide incentives for maintaining high nature value farmland and hence the practices sustaining farmland biodiversity⁽¹⁵⁾. High nature value farmland refers to predominantly agricultural areas that support a high level of species and habitat diversity and/or species of conservation concern.

The decline in common farmland bird species has been contrasted by the dramatic increase in the populations of some rare bird species over the same period, most likely as a result of direct conservation action⁽¹⁶⁾.

Box 8.2: The impact of Natura 2000 on bird species

Covering 18% of the EU’s land surface and about 4% of its seas, the Natura 2000 network is the world’s largest co-ordinated network of nature conservation areas. The network aims to contribute to the maintenance and restoration of a favourable conservation status for the target habitats and species and has been shown to play a strong role in improving the status of birds.

For example, one study compared population trends for bird species both within the EU and outside the EU before and after the introduction of Natura 2000 in the early 1990s. The study finds that between 1990 and 2000, threatened bird species in the EU had higher positive population trends than

the same species outside the EU, whereas there was no difference for non-threatened species⁽¹⁷⁾.

In France, Natura 2000 sites have also been found to have mostly positive impacts on non-target bird species⁽¹⁸⁾. Additionally, the status of common bird species with negative population trends tended to decline more slowly within protected areas than elsewhere⁽¹⁹⁾. In one study, 50% of the species studied showed a higher abundance in Natura 2000 sites than outside. Farmland bird populations also decreased slightly within the network over the study period but had a much steeper decrease outside⁽²⁰⁾. The findings of the study in France suggest that Natura 2000 is beneficial also for non-target species.

Bioenergy production also plays a role in farmland bird decline

Rising demand for biomass to produce bioenergy has noticeably increased the cultivation of high-input crops such as maize and rape, resulting in additional threats to biodiversity and ecosystem functions. Consequently, fallow land, which is an important habitat for many farmland species, has been increasingly used to grow energy crops.

EU trends in the abundance of common birds compared with other countries in the world

Very similar to the decline in European farmland birds, populations of many common grassland and shrubland birds have also declined in North America, apparently in response to the intensification of agricultural practices. An analysis of state-level Breeding Bird Survey (BBS) data highlighted that 15 of 25 bird species (60%) breeding in grassland habitats showed significant negative trends over the period 1980–1999, and an average decline of 1.1% per year⁽²¹⁾. Another analysis highlighted the plight of 20 common bird species, all of which have lost more than half of their continental population since 1967⁽²²⁾.

⁽¹⁵⁾ BirdLife International (2012), *On the road to recovery? BirdLife assessment of progress on the EU 2020 Biodiversity Strategy*, October 2012.

⁽¹⁶⁾ Gregory, R.D., Noble, D., Field, R., Marchant, J., Raven, M. and Gibbons, D.W. (2003), *Using birds as indicators of biodiversity*, *Ornis Hungarica* 12, pp. 12–24; Holling, M. & Rare Breeding Birds Panel (2011), *Rare breeding birds in the United Kingdom 2009*, *British Birds* 104, pp. 476–537.

⁽¹⁷⁾ Donald, Paul F., Fiona J. Sanderson, Ian J. Burfield, Stijn M. Bierman, Richard D. Gregory and Zoltan Waliczky (2007), *International Conservation Policy Delivers Benefits for Birds in Europe*, *Science* 317 (5839), pp. 810–13.

⁽¹⁸⁾ Pellissier, V., J. Touroult, R. Julliard, J. P. Sibley and F. Jiguet (2013), *Assessing the Natura 2000 Network with a Common Breeding Birds Survey*, *Animal Conservation* 16 (5), pp. 566–74.

⁽¹⁹⁾ Devictor, Vincent, Laurent Godet, Romain Julliard, Denis Couvet and Frederic Jiguet (2007), *Can Common Species Benefit from Protected Areas?*, *Biological Conservation* 139 (1–2), pp. 29–36; Brodier, S., S. Augiron, T. Cornulier and V. Bretagnolle (2014), *Local Improvement of Skylark and Corn Bunting Population Trends on Intensive Arable Landscape: A Case Study of the Conservation Tool Natura 2000*, *Animal Conservation* 17 (3), pp. 204–16.

⁽²⁰⁾ Pellissier, Vincent (2014), *The Impact of Natura 2000 on Non-Target Species: Assessment Using Volunteer-Based Biodiversity Monitoring*, Unpublished report for the European Topic Centre on Biological Diversity.

⁽²¹⁾ For further information see Bird Life (State of the world’s birds): <http://www.birdlife.org/datazone/sowb>.

⁽²²⁾ Most of the world countries lack the extensive, long-term monitoring schemes found in Europe and North-America, meaning that figures for the global scale are rather ambiguous.



What lies beneath this indicator?

Having failed to halt biodiversity loss by 2010 as set out in the EU's 2001 goal ⁽²³⁾, the EU Biodiversity Strategy to 2020 sets new targets and actions. The headline target is to halt the loss of biodiversity and degradation of ecosystem services in the EU by 2020 and to restore them in as far as feasible, while increasing the EU's contribution to averting global biodiversity loss. Birds are considered a good gauge of overall biodiversity status. They reflect environmental changes in ecosystems rather rapidly because they tend to be at, or close to, the top of the food chain.

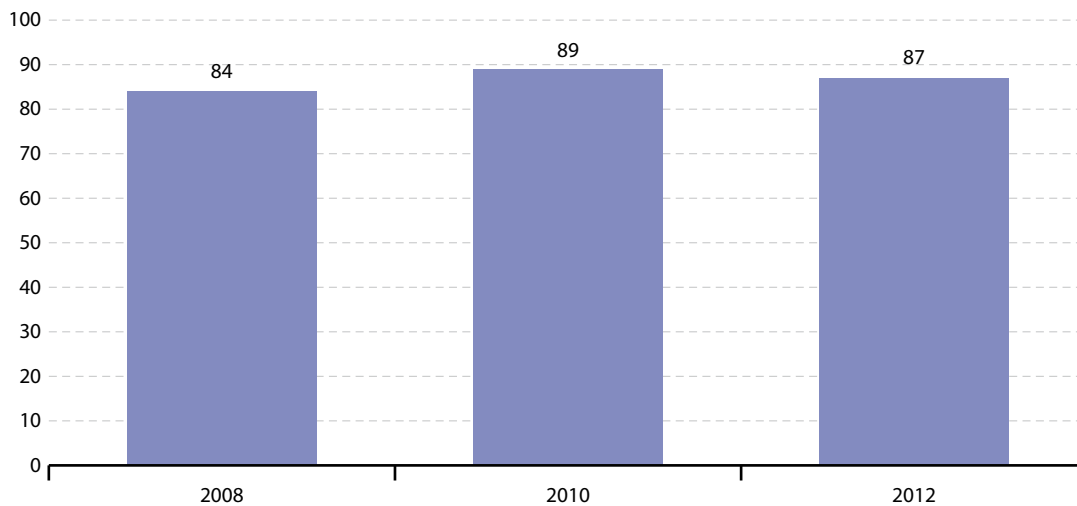
The common bird index combines information on the population abundance and diversity of a selection of bird species associated with specific habitats, including common forest and common farmland birds. An increase in the indicator means that there are more species whose populations have increased than there are species with decreasing populations. One methodological concern is that when a species becomes extinct or very rare, it is excluded from the indicator and the indicator improves as a result.

⁽²³⁾ Presidency Conclusions, Göteborg European Council, 15 and 16 June 2001, SN 2001/1/01 REV 1.

Protected areas

The sufficiency of sites designated for nature conservation was 87 % in the EU-27 in 2012. Two Member States have reached 100 % sufficiency and 12 more reported sufficiency levels of at least 90 %.

Figure 8.2: Sufficiency of sites designated under the EU Habitats Directive, EU-27, 2008–2012 ⁽¹⁾ (%)



⁽¹⁾ Break in time series in 2012.

Source: Eurostat (online data code: [tsdnr210](#))

The establishment of Natura 2000 sites is an important pillar of the EU's efforts to halt biodiversity loss. For the EU-27, the sufficiency of designated areas rose slightly from 84 % to 87 % between 2008 and 2012.

Two aspects need to be kept in mind when using the sufficiency of designated sites as an indicator of the status of EU protected areas. First, this indicator shows the progress towards the full designation of areas that qualify for protection under the Habitats Directive. Variations between Member States exist regarding the total area that can potentially be designated, depending on the presence of specific vulnerable habitats and species targeted by the Directives. Second, and more important, the indicator refers only to the designation of areas but not yet to their actual protection through management to ensure the effective conservation of habitats and species.

As revealed by the 2015 European Commission report on the State of Nature in the European Union, nearly 77 % of the protected habitats and 60 % of protected species are in an unfavourable conservation status, while 32 % of birds are in a non-secure state ⁽²⁴⁾. The assessment for species found in cropland, grassland, wetland and urban ecosystems is even more negative.

The Natura 2000 network now covers more than 18 % of the EU's land area and 4 % of Europe's seas. It is the main instrument of the nature Directives to improve the status of species and habitats. From 2007 to 2012 there was a 6.2 % increase in the number of Sites of Community Importance (SCI) in the network. The area covered by these sites also increased, by 15.3 %. Most of these increases relate to Bulgaria and Romania joining the EU in 2007, and to the marine component of the network ⁽²⁵⁾.

Despite this important progress, the full potential of the network has yet to be realised. While the effective management and restoration of the Natura 2000 areas is central to achieving the Directive's objectives, insufficient progress has been made to put in place conservation objectives and measures that fully respond to the needs of the protected habitats and species. Only 50 % of the sites have been reported as having

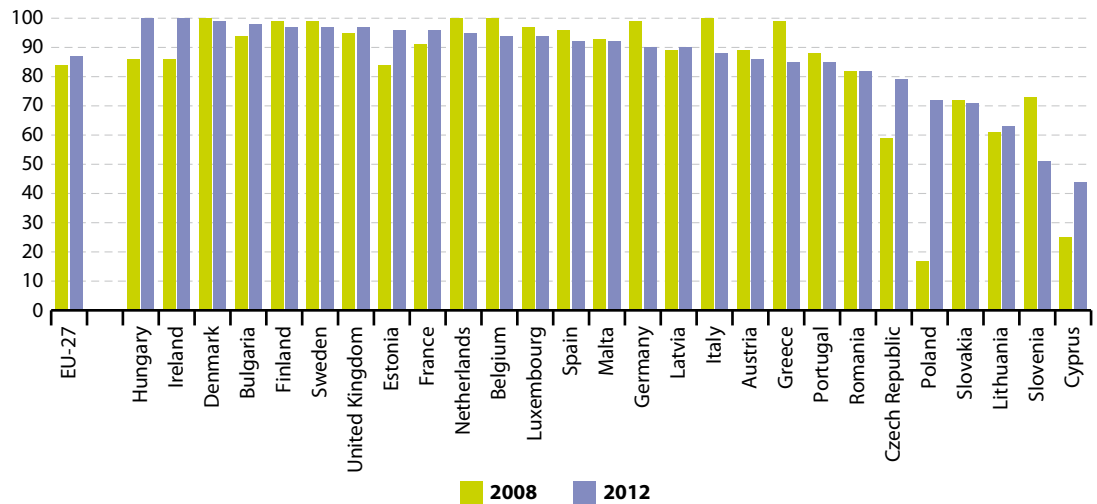
⁽²⁴⁾ European Commission, *The State of Nature in the European Union: Report on the Status and Trends of Habitat Types and Species covered by the Birds and Habitats Directives for the period 2007–2012 as required under Article 17 of the Habitats Directive and Article 12 of the Birds Directive*, COM(2015) 219.

⁽²⁵⁾ EEA (2015), *State of nature in the EU. Results from reporting under the nature directives 2007–12*, Technical report No 02/2015, Copenhagen.



comprehensive management plans. Moreover, EU funding instruments supporting management and restoration of Natura 2000 are still insufficiently used ⁽²⁶⁾. Much stronger conservation efforts will therefore be needed to achieve the targets of the EU Biodiversity Strategy to 2020.

Figure 8.3: Sufficiency of sites designated under the EU Habitats Directive, by country, 2008 and 2012 ⁽¹⁾
(%)



⁽¹⁾ Break in time series for all countries in 2012.

Source: Eurostat (online data code: tsdnr210)

How the sufficiency of sites varies between Member States

Two countries, Hungary and Ireland, had achieved 100% sufficiency by 2012. Denmark and Bulgaria were close, with 99% and 98% sufficiency respectively. A further ten Member States were more than 90% sufficient. Cyprus was the only Member State below 50%. By far the largest increase from 2008 to 2012 was observed in Poland from 17% to 72%.

What lies beneath this indicator?

The sufficiency index shows the degree to which the Habitats Directive has been implemented by measuring how well SCIs proposed by Member States cover the types of terrestrial habitats and species occurring in their territory and listed in the Habitats Directive. A value of 100% indicates that a Member State's proposals are sufficient. The EU Sustainable Development Strategy calls for Member States to complete the Natura 2000 network and to pay particular attention to species, habitats protection and management.

The EU has nine biogeographical regions. The indicator provides the sum, by biogeographical region and per country, of the proportion of Annex I habitats and Annex II species that are sufficiently represented in the list of sites proposed by a Member State, in relation to the number of species and habitats on the European Commission's reference lists for each biogeographical region. The sufficiency index of a Member State is calculated by summing up the indices for each biogeographical region in the country, weighted by the proportion of the biogeographical region's area that lies within the country ⁽²⁷⁾. The indicator does not show the conservation status of habitats and species within the designated sites. Moreover, it should be noted that when the 100% sufficiency level is achieved, the indicator will not be able to show further progress in halting biodiversity loss.

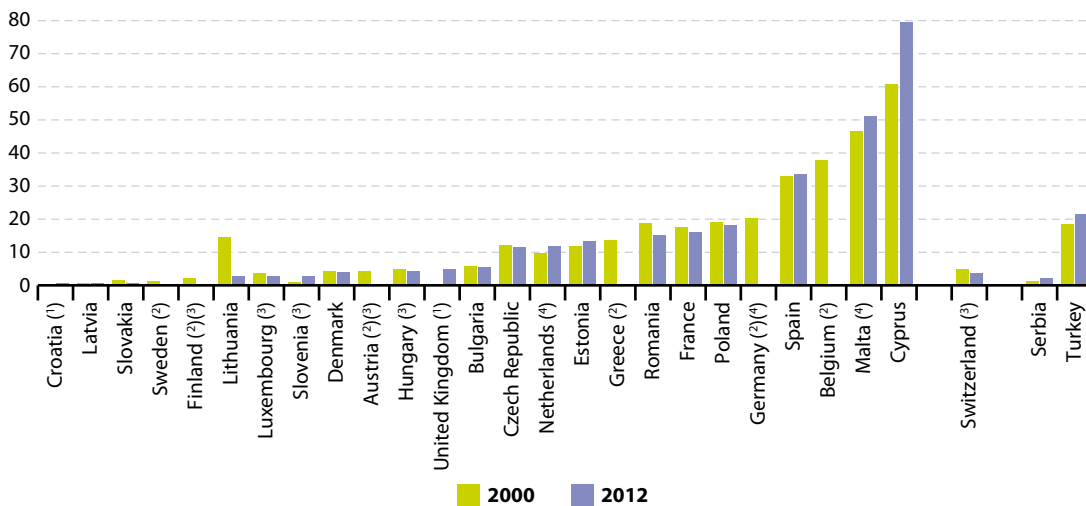
⁽²⁶⁾ European Commission (2011), *Financing Natura 2000 — Investing in Natura 2000: Delivering benefits for nature and people*, SEC (2011) 1573 final.

⁽²⁷⁾ <http://www.eea.europa.eu/data-and-maps/indicators/sites-designated-under-the-eu-1/assessment>

Water abstraction

Water abstraction from ground and surface water has declined in many Member States and abstraction pressure on water resources stabilised between 2000 and 2012. However, water stress has increased in some countries suffering severe scarcity.

Figure 8.4: Water exploitation index, by country, 2000 and 2012
(% of long-term average available water (LTAA) from renewable fresh water resources)



(1) No data for 2000.

(2) No data for 2012.

(3) 1999 data (instead of 2000).

(4) 2001 data (instead of 2000).

Source: Eurostat (online data code: [tsdnr310](#))

The water exploitation index (WEI) is used to measure to what extent available (renewable) water resources are being used sustainably. The warning threshold of 20% distinguishes a non-stressed region from a water scarce one, with severe scarcity occurring where the WEI exceeds 40%.

Eight of the 12 Member States for which data are available for both 2000 and 2012 reported a lower average share of renewable freshwater exploitation in 2012 compared with 2000. Higher WEI values were reported by one non-water-stressed country (Estonia), as well as by two countries with water scarcity (Spain and Cyprus). Of the 19 Member States for which data are available in 2012, three exceeded the threshold for water scarcity (Spain, Malta and Cyprus), while only two exceeded the threshold for severe scarcity (Malta and Cyprus).

The use of both surface water and groundwater is driven by four main activities: 44% of the total abstracted water is for energy production (largely cooling in electricity production), 24% for agriculture (largely irrigation), 21% for public water supply and 11% for industry⁽²⁸⁾.

How water abstraction varies between Member States and worldwide

Whereas surface water is water on the surface of the planet, for example in streams, rivers, lakes and oceans, groundwater is water stored underground in rocks and soil and makes up more than 97% of the world's liquid freshwater not tied up as ice and snow.

The amount of water actually available for abstraction from surface water and groundwater is mainly determined by geo-climatic conditions. Therefore figures vary significantly across the Member States for which data are available.

⁽²⁸⁾ EEA (2009), *Water resources across Europe — confronting water scarcity and drought*, EEA Report No 02/2009, Copenhagen.



Comparing 2000 to 2012, overall annual surface water abstraction remained relatively stable in most Member States for which data are available. Only Cyprus, Estonia and the Czech Republic experienced increases. Bulgaria, Latvia, Lithuania, Romania and Slovakia made a major step towards more sustainable water abstraction by decreasing surface water abstraction.

In several Member States, groundwater abstraction was lower in 2000 than in 2012 ⁽²⁹⁾. However, this mainly applies to non-water stressed countries. By contrast, Cyprus, which already exceeded a sustainable level, reported higher groundwater abstraction in 2012 than in 2000.

Studies of global water use have shown that technological developments and changes in governance, such as improved water infrastructure, advances in water-efficient appliances, the use of water meters and water pricing, have helped improve water use efficiency and save water ⁽³⁰⁾. Nonetheless, between 1960 and 2000, global groundwater withdrawal increased from 312 km³ to 734 km³ per year, significantly raising the level of groundwater depletion ⁽³¹⁾.

Globally the rising world population, urbanisation and growing production and consumption have placed increasing demands on the world's freshwater resources. While water demand among OECD countries is projected to decrease between 2000 and 2050, global water demand is forecast to increase by 55 % overall ⁽³²⁾. As a result, one study projects the world will face a 40 % global water deficit by 2030 under a business-as-usual climate scenario ⁽³³⁾.

How successful is the current EU Water Policy?

Unfortunately, the measures developed and implemented by Member States in reaction to the 'Communication on water scarcity and droughts in the European Union' were found to be limited and in some cases even contradictory to the achievement of its objectives ⁽³⁴⁾. This shows the need for a new impulse from the EU to step up efforts to protect water resources. The protection of water resources is also a critical part in the 'Blueprint to safeguard Europe's water resources' ⁽³⁵⁾, published in 2012.

Box 8.3: Key documents and legal instruments in EU water policy

- **The Water Framework Directive** ⁽³⁶⁾ is the main legal instrument for water policy in the EU and aims to achieve coherent and sustainable water management in terms of quality and quantity.
- The **Communication on water scarcity and droughts in the European Union** ⁽³⁷⁾ proposes that European institutions focus on seven main policy options to tackle water scarcity problems, including for example the improvement of drought risk management and fostering water efficient technologies and practices.
- The **Blueprint to safeguard Europe's water resources** ⁽³⁸⁾ is the current EU strategy for the use of water resources. It outlines actions to be taken to better implement current water legislation, increase integration of water policy objectives into other policy areas and fill gaps in the current framework regarding tools for improving water efficiency.

⁽²⁹⁾ Countries in which groundwater abstraction decreased between 2000 and 2012 include BG, HU, CZ, DK, LT, RO and SK.

⁽³⁰⁾ Flörke, M., Kynast, E., I Bärlund, I. et al. (2013), *Domestic and industrial water uses of the past 60 years as a mirror of socio-economic development: A global simulation study*, *Global Environmental Change* 23, pp. 144–156.

⁽³¹⁾ Wada, Y., van Beek, L.P.H., van Kempen, C.M., Reckman, J.W.T.M., Vasak, S. and Bierkens, M.F.P. (2010), *Global depletion of groundwater resources*, *Geophysical Research Letters* 37, L20402.

⁽³²⁾ OECD (2012), *Environmental Outlook to 2050: The Consequences of Inaction*.

⁽³³⁾ 2030 Water Resources Group (2009), *Charting our water future: Economic frameworks to inform decision-making*, Washington, DC, 2030 WRG.

⁽³⁴⁾ Strosser P., Dworak, T., Garzon Delvaux, P.A., Berglund, M., Schmidt, G., Mysiak, J., Kossida, M., Iacovides, I., Ashton, V. (2012), *Gap Analysis of the Water Scarcity and Droughts Policy in the EU*.

⁽³⁵⁾ Commission Communication (2012), *A blueprint to safeguard Europe's water resources*, COM(2012)673.

⁽³⁶⁾ Directive 2000/60/EC establishing a framework for Community action in the field of water policy.

⁽³⁷⁾ Commission Communication (2007), *Addressing the challenge of water scarcity and droughts*, COM(2007)414.

⁽³⁸⁾ Commission Communication (2012), *A blueprint to safeguard Europe's water resources*, COM(2012)673.



What lies beneath this indicator?

The availability of freshwater is fundamental not only for human well-being but also for many economic activities. This indicator provides an insight on the extent to which available (renewable) water resources are being used sustainably. Despite some limitations for this indicator ⁽³⁹⁾, the amount of water abstracted as a percentage of a country's total available freshwater resources identifies those countries that have relatively high abstraction rates and are therefore prone to water stress.

The water exploitation index (WEI) shows total combined groundwater and surface water abstraction from renewable fresh water resources per year as a percentage of the long-term renewable available water resources (yearly total).

⁽³⁹⁾ The mean values used by this indicator do not depict variations in the availability and demand for water in different regions of individual countries. Hence, severe water scarcities at the local level, which occur in the EU, cannot be highlighted. Moreover, this indicator does not distinguish between water abstracted from surface or groundwater, or provide information on whether abstracted water is redirected after use, including after treatment, or used for irrigation purposes.



Water quality in rivers



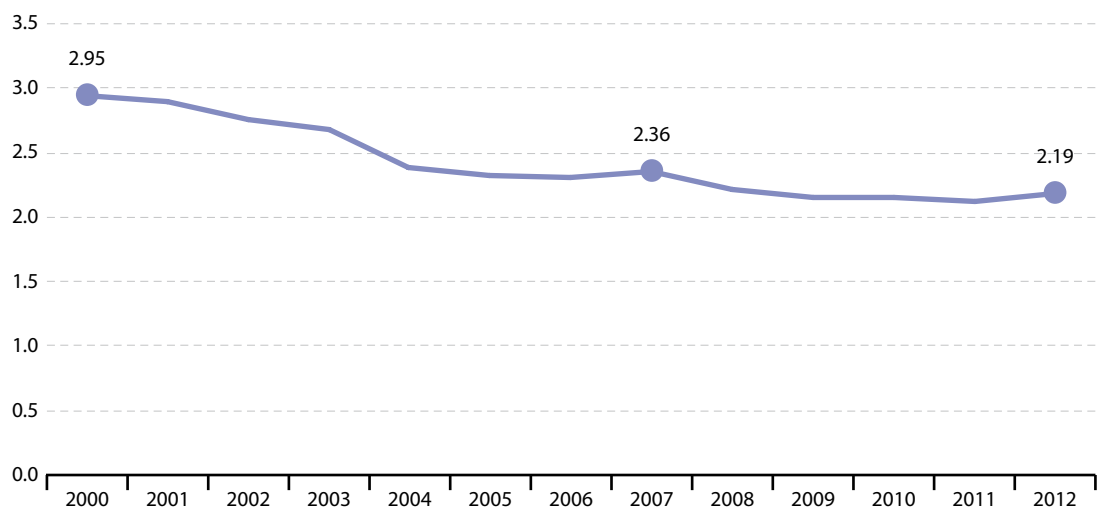
Long term
(since 2000)



Short term
(since 2007)

Biochemical oxygen demand (BOD) in European rivers has shown a long-term decline. Between 2000 and 2012 BOD fell by an average of 2.5 % per year for reporting countries, mainly due to improved waste water treatment. This water quality improvement was also clearly visible in the short term, with an average annual decline of 1.5 % between 2007 and 2012.

Figure 8.5: Biochemical oxygen demand in rivers, Europe, 2000–2012 ⁽¹⁾
(mg O₂ per litre)



⁽¹⁾ Monitoring stations included: Europe (1 235), Austria (49), Belgium (36), Bosnia-Herzegovina (13), Bulgaria (91), Croatia (37), Denmark (38), Estonia (53), Finland (34), France (246), Ireland (54), Italy (165), Latvia (19), Lithuania (28), Luxembourg (3), Former Yugoslav Republic of Macedonia (19), Poland (106), Romania (116), Slovakia (15), Slovenia (14), and the United Kingdom (99).

Source: European Environment Agency (online data code: [tsdnr330](#))

Biochemical oxygen demand (BOD) is used to measure water quality. High levels are usually a sign of organic pollution, which affects the water quality. The cleanest rivers have a five-day BOD of less than 1 mg/l. Moderately polluted rivers show values ranging from 2 to 8 mg/l.

The concentrations of dissolved oxygen BOD values were monitored at 1 235 river monitoring stations in 20 countries, of which 18 are EU Member States. BOD fell between 2000 and 2012, indicating river water quality improved. The average BOD decreased by 0.76 mg/l between 2000 and 2012 and by 0.17 mg/l between 2007 and 2012.

The average yearly decrease in BOD was 2.5 % from 2000 to 2012 and 1.5 % from 2007 to 2012, indicating a slowing of the improvement over time. Based on a statistical assessment by the EEA, the majority of river stations report a negative trend in BOD, while only a small share reported increases ⁽⁴⁰⁾. Countries reporting a particularly low BOD concentration (less than 1.4 mg/l) in 2012 are Slovenia (1.02 mg/l), Ireland (1.19 mg/l) and France (1.28 mg/l).

Some of the year-to-year variation in values measured at river stations can be explained by variation in precipitation and runoff. However, the long-term positive trend in BOD indicates that treatment (secondary and tertiary treatment) of waste water has improved as a result of implementation of the Urban Waste Water Treatment Directive, and possibly falls in agricultural emissions. Therefore, this indicator is linked to the sustainable development indicator 'population connected to urban wastewater treatment with at least secondary treatment' ⁽⁴¹⁾.

⁽⁴⁰⁾ EEA (2015), *Oxygen consuming substances in rivers (CSI 019/WAT 002)* — Assessment published February 2015, accessed on 10 March, 2015.

⁽⁴¹⁾ Eurostat (2015), *Population connected to urban wastewater treatment with at least secondary treatment*, accessed on 10 March, 2015.



Despite these successes, further water quality challenges remain. For example, more than 40 % of rivers and coastal water bodies are affected by diffuse pollution from agriculture, while between 20 % and 25 % are subject to point source pollution, such as emissions from industrial facilities, sewage systems and wastewater treatment plants ⁽⁴²⁾.

It should be noted, however, that while the indicator is relatively robust, a number of factors make country comparisons difficult. For example, water quality in one country can be heavily affected by pollution from countries upstream. Moreover, the number and selection of measurement stations per country also influence overall results.

Box 8.4: Improving water quality

While collecting data on biochemical oxygen demand is voluntary, a number of EU Directives aim to improve water quality and reduce the loads and impacts of organic matter. The **Water Framework Directive** ⁽⁴³⁾ requires good ecological status or good ecological potential of rivers to be achieved across the EU by 2015. The **Nitrates Directive** ⁽⁴⁴⁾

aims to reduce nitrate and organic matter pollution from agricultural land. The **Urban Waste Water Treatment Directive** ⁽⁴⁵⁾ aims to reduce pollution from sewage treatment works and certain industries. The **Integrated Pollution Prevention and Control Directive** ⁽⁴⁶⁾ aims to control and prevent the pollution of water by industry.

What lies behind this indicator?

Biochemical oxygen demand is a relatively robust key indicator for monitoring water quality. The indicator measures the effect of biodegradable organic pollution present in water and shows how much dissolved oxygen is needed to decompose organic matter. Higher BOD concentrations can result from discharges from waste water treatment plants, industrial effluents and agricultural run-off and may lead to rapid de-oxygenation of river water, high concentration of ammonia and disappearance of fish and aquatic invertebrates.

As used for this indicator, the biochemical oxygen demand is defined as the annual average biochemical oxygen demand in rivers weighted by the number of measuring stations. It represents the amount of oxygen required to decompose organic matter in the dark over a period of five days at 20°C and is expressed in micrograms of oxygen per litre.

⁽⁴²⁾ EEA (2015), *Chapter 3: Protecting, conserving and enhancing natural capital, in The European environment — state and outlook 2015: synthesis report*, European Environment Agency, Copenhagen.

⁽⁴³⁾ Directive 2000/60/EC establishing a framework for Community action in the field of water policy.

⁽⁴⁴⁾ Directive 91/676/EEC concerning the protection of waters against pollution caused by nitrates from agricultural sources.

⁽⁴⁵⁾ Directive 91/271/EEC concerning urban waste-water treatment.

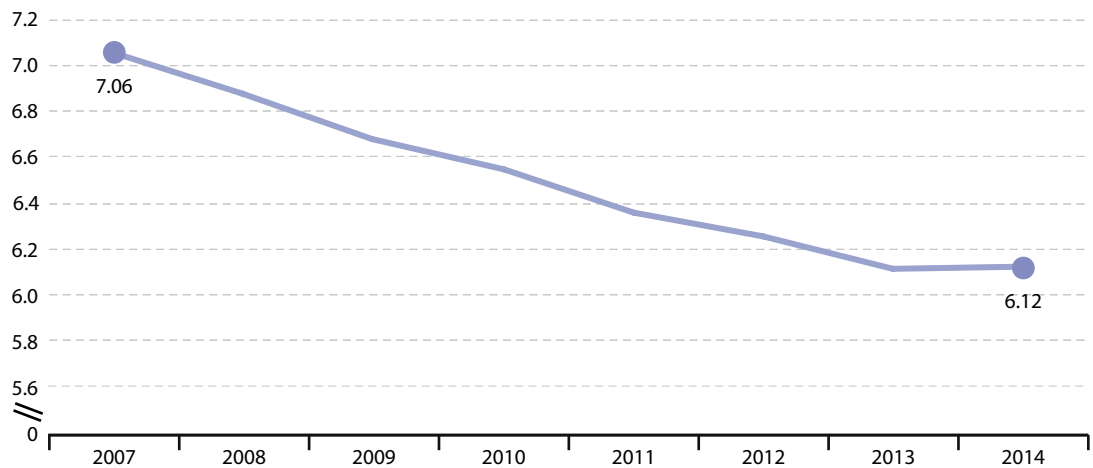
⁽⁴⁶⁾ Directive 96/61/EEC concerning integrated pollution prevention and control.



Fishing capacity

The size of the EU fishing fleet in terms of engine power fell by 2.0% on average from 2007 to 2014. Further capacity reduction is needed for fish stocks to recover.

Figure 8.6: Fishing fleet, total engine power, EU-27, 2007–2014
(million kilowatts)



Source: Eurostat (online data code: tsdnr420)

The EU-27 fishing fleet, measured by the total engine power of fishing vessels, fell from 7.06 million kilowatts in 2007 to 6.12 million kilowatts in 2014, representing an average annual reduction of 2.0%. An oversized fishing fleet has several economic consequences that undermine a transition to a green economy: fish stocks are overfished, parts of the fleet face economic difficulties despite high subsidy levels, jobs in the sector are unattractive and the situation of many coastal communities depending on fisheries becomes precarious ⁽⁴⁷⁾.

EU fishery policy at a turning point?

The decline in fishing fleet capacity is mainly a result of Member States' efforts to align fishing with the size of fish populations. This has included introducing mechanisms such as decommissioning schemes and tradable fishing rights concessions (TFC or individual transferable quotas [ITQs]) ⁽⁴⁸⁾. Since 2002 a fishing fleet ceiling has been set under the Common Fisheries Policy (CFP) in terms of both kilowatts and gross tonnage. This prevents fishing fleets from being increased and when public funds are used to decommission a vessel, the corresponding reduction in fleet capacity is made permanent.

Under the newly reformed CFP, Member States must also put in place measures to adjust their fleet's fishing capacity to the size of fish populations over time and report annually on the balance between the two. Therefore, Member States will have to ensure that the fleet capacity (number and size of vessels) is in balance with fishing opportunities. Where Member States identify an overcapacity they will have to develop an action plan to reduce it. If a Member State does not deliver the report or fails to reduce its fleet capacity in line with the action plan, a proportionate suspension or interruption of relevant EU funding may result.

Declines in fishing fleets do not automatically translate into shrinking fishing capacity. According to the Green Paper on the Reform of the CFP ⁽⁴⁹⁾, reductions in fishing fleets may well have been offset by technological progress, which is estimated to increase fishing efficiency by 2–3% per year ⁽⁵⁰⁾. This corresponds to

⁽⁴⁷⁾ Commission Communication, *Reform of the Common Fisheries Policy*, COM(2011) 417 final.

⁽⁴⁸⁾ Scientific, Technical and Economic Committee for Fisheries (STECF) (2014), *The 2014 Annual Economic Report on the EU Fishing Fleet (STECF-14-16)*, Luxembourg.

⁽⁴⁹⁾ European Commission (2009), *Commission Green Paper, Reform of the Common Fisheries Policy*, COM(2009)163.

⁽⁵⁰⁾ Banks, R., Cunningham, S., Davidse, W.P., Lindebo, E., Reed, A., Sourisseau, E. and De Wilde, J.W., (2002), *The impact of technological progress on fishing effort*, report prepared for the European Commission.

the European Commission's statement that despite massive spending of EUR 2 730 million between 1994 and 2013 to scrap fishing vessels, the EU's fishing capacity is still growing by about 3 % every year ⁽⁵¹⁾.

However, for commercially exploited fish stocks total catches have fallen from 8.1 million tonnes of live weight in 1995 to 4.7 million tonnes in 2013 ⁽⁵²⁾. Moreover, the estimate of stocks fished above the maximum sustainable yield (MSY) in the EU's Atlantic and Baltic waters has fallen from 94 % in 2007 to 41 % in 2014, indicating a decline in fishing pressure ⁽⁵³⁾. Nonetheless, some unsustainable fishing practices such as bottom-trawling remain in use.

For the CFP to reach the MSY goal for all fish stocks by 2020, efforts to reduce fleet overcapacity will have to be properly implemented and the general growth in marine activities will have to be aligned with the EU's biodiversity policies. Furthermore, additional pressures on marine ecosystems, such as coastal eutrophication, contaminants, introduction of non-indigenous species, climate change and increasing amounts of marine litter will also need to be addressed ⁽⁵⁴⁾.

Box 8.5: Ensuring sustainable fishing in EU waters

- The **Common Fisheries Policy (CFP)** has been the EU's main instrument for managing fisheries and aquaculture since 1983. Its main objective is to ensure fisheries are exploited sustainably. The CFP sets maximum quantities of fish that can be safely caught every year (the total allowable catch [TAC]), from which national quotas are determined. After several years of debate, a new CFP has been in force since 1 January 2014. Among other things, the current policy stipulates that between 2015 and 2020 catch limits should be set at a maximum sustainable yield (MSY), that is, at levels that are sustainable and maintain fish stocks in the long term, while also maximising catches for fisherman.
- Target four of the **EU Biodiversity Strategy to 2020** aims to ensure the sustainable use of fisheries resources, including the achievement of MSY by 2015. This target is to be achieved through actions to improve the management of fished stocks and to eliminate adverse impacts on fish stocks, species, habitats and ecosystems ⁽⁵⁵⁾.
- The European Commission's **Blue Growth Strategy** was launched in 2012. It contributes to the EU's Integrated Maritime Policy (IMP) aimed at achieving the goals of the Europe 2020 strategy for smart, sustainable and inclusive growth. The strategy looks towards long-term collaboration between Member States and industry to support sustainable growth in the marine and maritime sectors as a whole ⁽⁵⁶⁾.
- The **Marine Strategy Framework Directive (MSFD)** is the environmental pillar of the IMP. It aims to achieve good environmental status (GES) of EU marine waters by 2020 by enshrining the ecosystem approach to managing human activities that have an impact on the marine environment. Among other things the MSFD requires each Member State to develop a strategy for its marine waters and review it every six years ⁽⁵⁷⁾.

What lies beneath this indicator?

An oversized EU fishing fleet can deplete fish stocks and reduce the attractiveness of fishing sector jobs as well as affect the situation of many fishery-dependent coastal communities. Fishing capacity is expressed here in terms of the total engine power of the fishing fleet for registered fishing vessels of EU Member States, Iceland and Norway. The measure only provides a partial indication of the fleet's size and the expected volume of fish catches. A fleet's fishing potential or capacity also depends on the fleet's efficiency (related to the fishing gear used for the actual fishing activity).

⁽⁵¹⁾ European Commission, *CFP reform — Transferable Fishing Concessions. Additional information to CFP Reform Package*.

⁽⁵²⁾ Eurostat (online data code: fish_ca_main).

⁽⁵³⁾ European Commission (2014), *Communication concerning a consultation on fishing opportunities for 2015 under the Common Fisheries Policy*, COM(2014) 388 final.

⁽⁵⁴⁾ <http://www.eea.europa.eu/soer-2015/europe/maritime-activities>

⁽⁵⁵⁾ European Commission (2011), *Our life insurance, our natural capital: an EU biodiversity strategy to 2020*, COM(2011) 0244 final.

⁽⁵⁶⁾ European Commission (2012), *Blue Growth opportunities for marine and maritime sustainable growth*, COM(2012) 494 final.

⁽⁵⁷⁾ http://ec.europa.eu/environment/marine/eu-coast-and-marine-policy/marine-strategy-framework-directive/index_en.htm



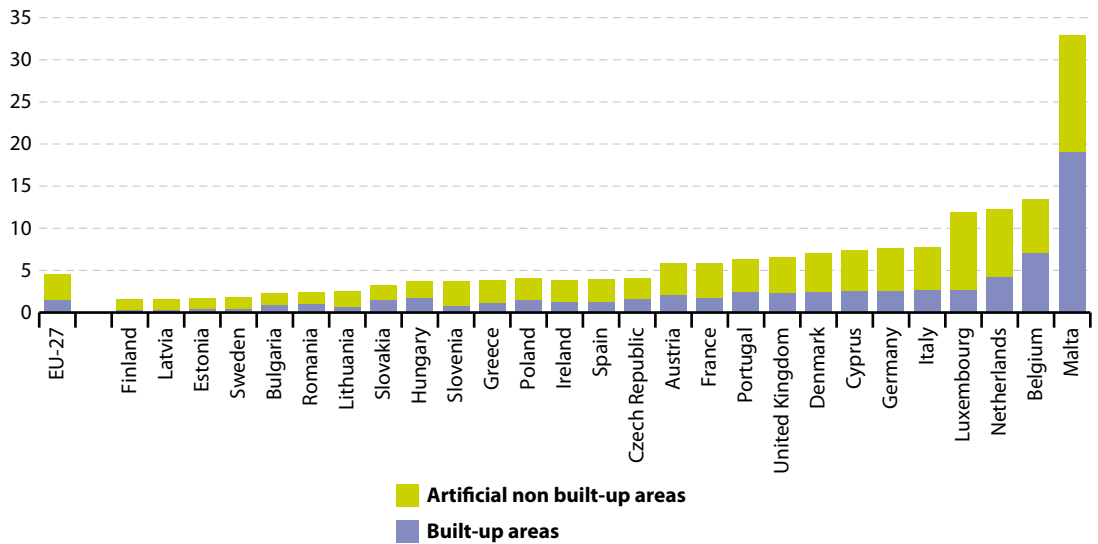
Artificial areas



Short term
(since 2009)

In 2012, 4.7 % of the entire EU land area was covered by artificial land. This share has been rising by 3 % per year on average since 2009. Urbanisation and expanding transport infrastructure are the main drivers of land sealing.

Figure 8.7: Artificial land cover, by country, 2012
(% share of total area of country)



Source: Eurostat (online data code: [tsdnr510](#))

Artificial areas, including built-up areas (mainly buildings and greenhouses) and those covered by artificial or impervious surfaces such as car parks, roads and railways, are continuously encroaching on farmland, forests and semi-natural land ⁽⁵⁸⁾. Across the EU, 4.7 % of the land area was artificial in 2012, compared with 4.3 % in 2009. This represents an average increase of about 3 % per year which is equivalent to a loss of non-artificial land of more than 17 square kilometres per day or more than 200 square meters per second in the total EU area. About two-thirds of this artificial area is artificial non-built-up land ⁽⁵⁹⁾.

How coverage by artificial areas varies between Member States

The highest shares of artificial areas were recorded in Malta (32.9%), Belgium (13.4%), the Netherlands (12.2%) and Luxembourg (11.9%). Because artificial areas are commonly found in cities and towns, countries with a high population density tend to record high shares of artificial land cover. This relationship is particularly clear for Malta, which has the highest share of each, and to a lesser extent for the Netherlands and Belgium ⁽⁶⁰⁾. In contrast, two Nordic and two Baltic countries have the lowest shares of artificial areas: Finland and Latvia (1.6 % each) and Sweden and Estonia (1.8 % each). These countries are among the least densely populated.

⁽⁵⁸⁾ EEA (2012), Environmental Indicator Report, 2012, *Ecosystem Resilience and Resource Efficiency in a Green Economy in Europe*, Copenhagen.

⁽⁵⁹⁾ Eurostat (2011), *Regional yearbook 2011, Chapter 12 Land cover and land use*, pp. 157–167.

⁽⁶⁰⁾ Eurostat (2013), Land Cover Statistics, accessed 18 March 2015.



Box 8.6: Mitigating the impacts of artificial areas

Under Target 2 of the EU Biodiversity Strategy to 2020 the concept of green infrastructure plays a central role in mitigating the impacts of artificial land cover and built-up areas on habitat fragmentation and helps to restore ecosystems and their services ⁽⁶¹⁾. Green infrastructure (GI) — which is comprised of spatially or functionally connected areas, such as protected areas — has emerged as a central tool for:

- Contributing to the full implementation of the Birds and the Habitats Directives.
- Maintaining and enhancing biodiversity in the marine environment and the wider countryside ⁽⁶²⁾.

- Maintaining ecological coherence and thereby healthy ecosystems ⁽⁶³⁾.

- Contributing to a green economy via the provision of job opportunities and increases in local GDP.

The 'land take' milestone within the Resource Efficiency Roadmap acts as a further measure to mainstream environmental needs in all decisions on land use; the aim is to limit soil sealing and achieve no net land-take by 2050. These approaches should contribute to biodiversity protection and human well-being, for example, by using floodplain restoration instead of dike construction as protection against flooding.

What lies beneath this indicator?

Artificial land cover leads to the sealing of soils and large-scale fragmentation of ecosystems, and indicates a reduction in semi-natural and farmland areas. This harms biodiversity, as fragmented habitats greatly reduce the range available to animals for migration, exchange of genetic material between populations, breeding and finding food ⁽⁶⁴⁾. Furthermore, surface sealing associated with artificial areas impacts soils and the essential functions it serves, such as purifying water or protecting against floods by storing water ⁽⁶⁵⁾. Therefore, reducing the annual share of area converted to artificial land serves to avoid these negative direct and indirect impacts.

This indicator shows both the share of land covered by artificial land cover in a given year and the percentage change observed in artificial areas over a given period of time.

⁽⁶¹⁾ EEA (2011), *Green infrastructure and territorial cohesion. The concept of green infrastructure and its integration into policies using monitoring systems*, EEA Technical report No 18/2011, Copenhagen.

⁽⁶²⁾ http://ec.europa.eu/environment/nature/ecosystems/index_en.htm

⁽⁶³⁾ BISE, <http://biodiversity.europa.eu/topics/green-infrastructure>

⁽⁶⁴⁾ EEA-FOEN (2011), *Landscape fragmentation in Europe*, EEA Report No 2/2011, Copenhagen.

⁽⁶⁵⁾ EEA (2011), *Urban soil sealing in Europe*, accessed 22 August 2013.



Nutrient balance on agricultural land



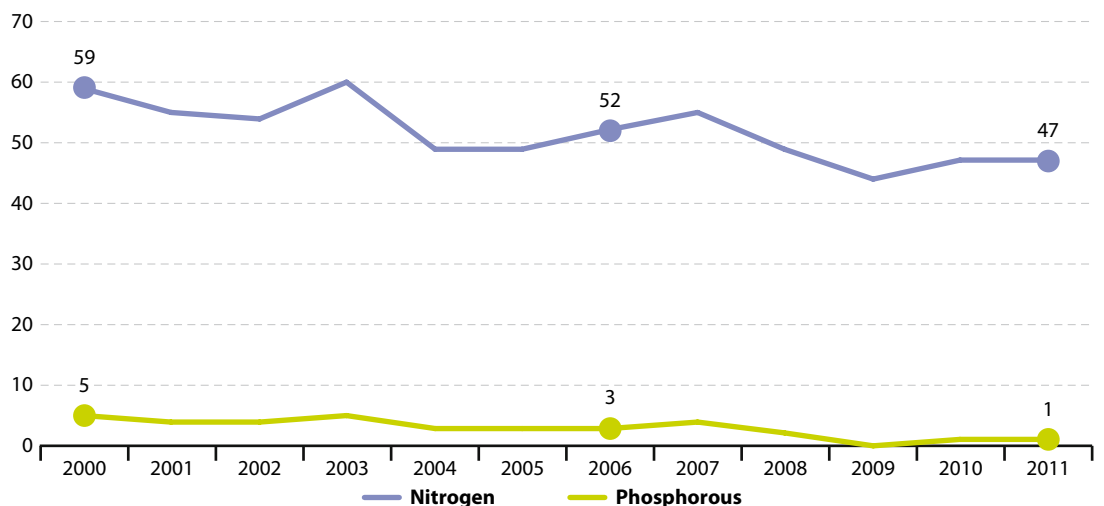
Long term
(since 2000)



Short term
(since 2006)

The gross nutrient balance on agricultural land has been disturbed over the long term between 2000 and 2011, in particular for nitrogen. Surpluses of nitrogen and phosphorous applied to agricultural soils have fallen between 2000 and 2011. The short-term period since 2006 confirms this positive trend, with the gross phosphorous balance reaching almost parity between inputs and outputs.

Figure 8.8: Gross nutrient balance on agricultural land, EU-28, 2000–2011 ⁽¹⁾
(kilograms per hectare)



⁽¹⁾ Estimated data

Source: Eurostat (online data code: t2020_rn310)

In the long-term period between 2000 and 2011, the balance between nitrogen and phosphorous added and removed from agricultural lands (measured in kilograms per hectare) was disturbed, but with a declining trend. The surplus of nitrogen applied to agricultural land fell by about 20 %, from 59 kg per hectare in 2000 to 47 kg per hectare in 2011. The phosphorous surplus, being considerably lower, fell from 5 kg per hectare in 2000 to 1 kg per hectare in 2011. These favourable trends were confirmed in the short term, between 2006 and 2011, when nitrogen and phosphorus surpluses declined by 5 kg per hectare (–9.6 %) and 2 kg per hectare (–66.7 %) respectively. The lowest values for surpluses of both nutrients were recorded in 2009, with the gross phosphorous balance reaching parity.

The largest contributor to the gross surplus in the nutrient balance for the EU-28 is the use of fertilisers containing nitrogen and phosphorus as an input in agricultural production ⁽⁶⁶⁾. Fertiliser use includes organic fertilisers, such as livestock manure, and manufactured mineral fertilisers, and adds nutrients or minerals to the soils. On the other hand, harvesting of crops, harvesting and grazing of fodder, removal of residues and runoff remove nutrients or minerals from soils. The nutrient requirements of plants are influenced by previous land management, soil type and climatic factors, and vary from one crop to another.

The implementation of the Nitrates Directive and the introduction of set-aside measures have stabilised pollution from nutrients, potentially reducing the environmental pressures on soil, water and air, but agricultural nitrogen balances are still high in some countries, particularly in lowland western Europe and in some Mediterranean countries ⁽⁶⁷⁾. According to the Food and Agriculture Organisation of the United Nations (FAO), while fertiliser use is set to decline marginally in western Europe until 2018, it is set to increase in central and eastern Europe ⁽⁶⁸⁾. The resulting pollution of water bodies puts these Member States at greater

⁽⁶⁶⁾ Eurostat (2015), *Agriculture, forestry and fishery statistics*, 2014 edition.

⁽⁶⁷⁾ Ibid.

⁽⁶⁸⁾ FAO (2015), *World fertilizer trends and outlook to 2018*, Food and Agriculture Organization of the United Nations, Rome, Italy.



risk of exceeding critical loads for eutrophication ⁽⁶⁹⁾, among other environmental impacts. The level of nitrogen still substantially exceeds ecosystem eutrophication limits in most of Europe and the eutrophication risk is predicted to remain unchanged until 2020 ⁽⁷⁰⁾. Measures to tackle agricultural pollution include improving the efficiency of nitrogen use in crop and animal production; conserving nitrogen in animal manure during storage and application; and full compliance with the Nitrates Directive ⁽⁷¹⁾.

Box 8.7: Maintaining healthy soils and preventing environmental pollution linked to agriculture

Due to the complex relationship between agriculture and the environment, environmental concerns and safeguards are increasingly being integrated into the EU's **Common Agricultural Policy (CAP)**, in particular by setting conditions for farmers to benefit from direct payments and targeted agri-environmental measures. These efforts at '**greening**' the CAP ⁽⁷²⁾ will reward farmers for respecting three obligatory greening measures: maintenance of permanent grassland, ecological focus areas and crop diversification.

Moreover, the **EU Biodiversity Strategy to 2020** ⁽⁷³⁾ includes a target that addresses agriculture's role regarding biodiversity in Europe and links directly with CAP reform measures. For example, under the **Rural Development Programme (RDP)** ⁽⁷⁴⁾ measures are taken to mitigate soil erosion and reduce fertiliser use by helping to reduce nitrate and phosphate leakage from agricultural land. In addition, a list of 28 agri-environmental indicators covering farming practices, agricultural production systems, pressures and risks to the environment, and the state of natural resources is presented in the Communication '**Development of agri-environmental indicators for monitoring the integration of environmental concerns into the common agricultural policy**' (COM(2006)), allowing for a thorough monitoring of the interlinkages between agriculture and environment.

To limit the environmental damage associated with excess nutrient application, a number of legisla-

tive measures have also been taken, including the **Nitrates Directive** ⁽⁷⁵⁾ and the **Water Framework Directive** ⁽⁷⁶⁾.

The Nitrates Directive aims to reduce and prevent water pollution linked to nitrate sources in agriculture and sets a legally binding maximum concentration of nitrates in drinking water, limits to applications of nitrogen fertiliser and livestock manure, and designates periods in which nitrate use is prohibited. No comparable legislation directly concerned with the use of phosphorus in agriculture is available at the European level, however, aspects of the phosphorus problem are integrated in other policy areas and related legal instruments.

The Water Framework Directive provides a legal obligation to protect and restore the quality of all inland and coastal waters across Europe with the aim of reaching a good ecological status by 2015. Ecological status is defined in terms of the quality of the biological community, hydrological characteristics and chemical characteristics. Measures applied under the Water Framework Directive affecting the nutrient balance relate to environmental best practices aimed at reducing the influx of nutrients and pesticides to groundwater and surface water, including the reduction of nutrient application, the modification of cultivation techniques, the proper handling of pesticides and fertilisers, and erosion minimising soil cultivation.

⁽⁶⁹⁾ EEA (2010), *Critical load exceedance for nitrogen (SEBI 009) — Assessment published May 2010*, accessed on 10 March 2015.

⁽⁷⁰⁾ EEA (2014), *Effects of air pollution on European ecosystems. Past and future exposure of European freshwater and terrestrial habitats to acidifying and eutrophying air pollutants*, EEA Technical report No 11/2014, European Environment Agency, Copenhagen, Denmark.

⁽⁷¹⁾ EEA (2015), Chapter 3: Protecting, conserving and enhancing natural capital, in *The European environment — state and outlook 2015: synthesis report*, European Environment Agency, Copenhagen.

⁽⁷²⁾ EEA (2014), *Greening Europe's Agriculture*, accessed 10 March 2015.

⁽⁷³⁾ European Commission (2011), *Our life insurance, our natural capital: an EU biodiversity strategy to 2020*, COM(2011) 0244 final.

⁽⁷⁴⁾ http://ec.europa.eu/agriculture/rural-development-2014-2020/index_en.htm

⁽⁷⁵⁾ Directive 91/676/EEC concerning the protection of waters against pollution caused by nitrates from agricultural sources.

⁽⁷⁶⁾ Directive 2000/60/EC establishing a framework for Community action in the field of water policy.



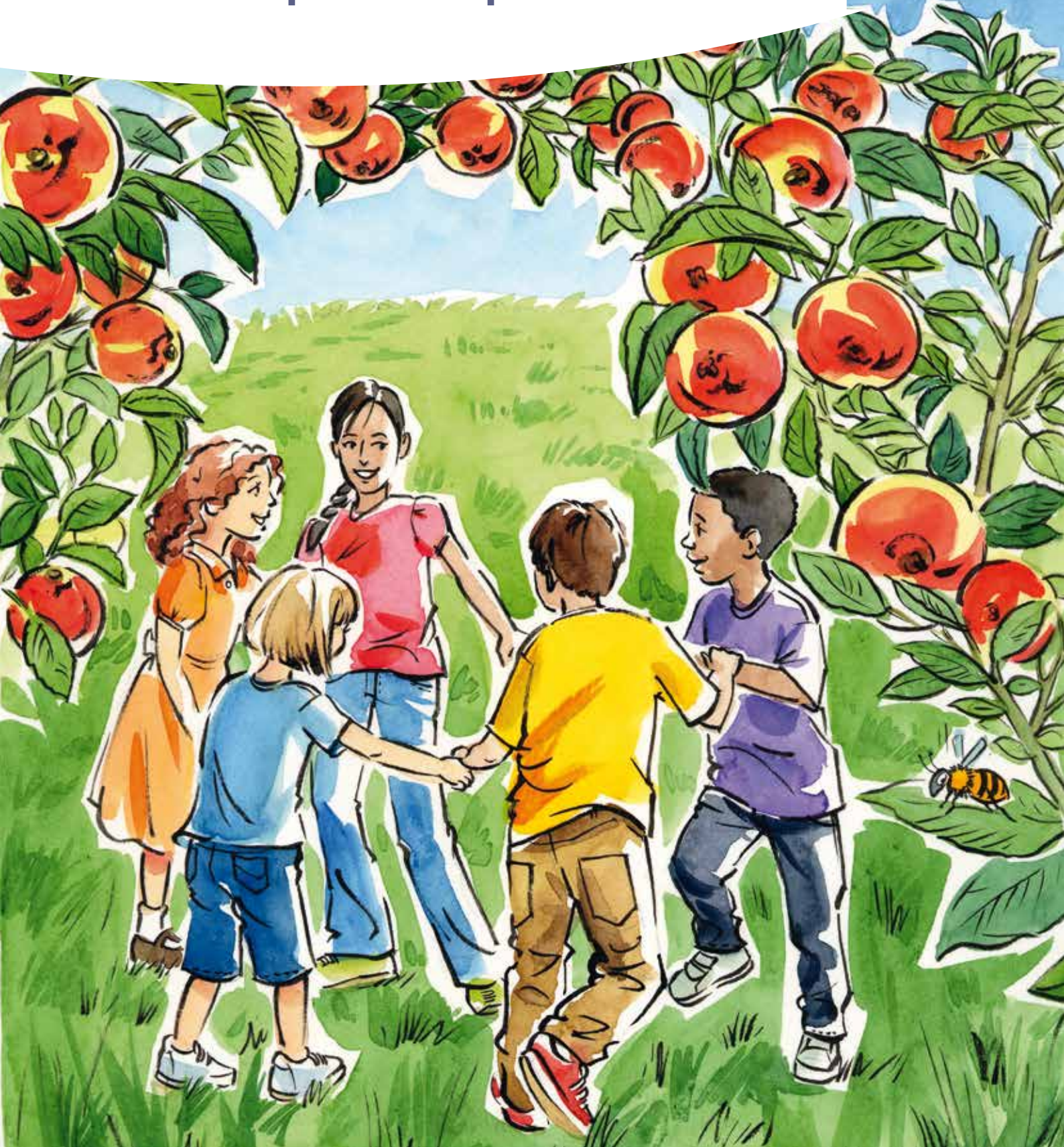
What lies behind this indicator?

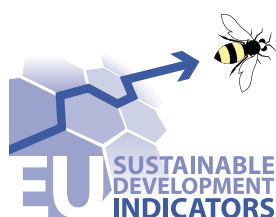
Gross nutrient or mineral balance provides insight into the agricultural sustainability of soils and the total potential environmental impact of nitrogen and phosphorous surpluses or deficits in agricultural soils. Persistent surpluses can indicate environmental problems such as nutrient leaching (resulting in surface- and groundwater pollution and eutrophication) and nitrous oxide emissions (a greenhouse gas). A persistent deficit can indicate loss of soil fertility through soil degradation and erosion.

The indicator estimates the nutrients or mineral balance per hectare of agricultural land. This is done by calculating the difference between the amounts of nitrogen and phosphorus added to an agricultural system, in particular in the form of animal manure and mineral fertilisers, and the amount of nitrogen and phosphorus removed from a system, such as in the form of harvested agricultural crops, grazing of livestock or crop residues cleared from agricultural lands ⁽⁷⁷⁾. Moreover, the actual risks to the environment depend on a range of factors, such as climatic conditions, soil type and characteristics, soil saturation and management practices. However, as the indicator draws on annual data for all Member States and a variety of important agricultural parameters, including fertiliser consumption, livestock population, crop production and crop type, it is considered a valuable indicator for identifying areas and systems of high risk to the environment (air, water and soil).

⁽⁷⁷⁾ EEA (2015), *Gross nutrient balance* — Last modified July 2011, accessed 10 March, 2015.

Global partnership





Overview of the main changes

The EU is not on track to meet its target for official development assistance (ODA). In spite of a slight increase in the long term (2000 to 2014), the short-term trend (2009 to 2014) saw a slight decline in the share of ODA in gross national income (GNI). The EU is increasingly lagging behind its path towards the 0.7 % gross national income (GNI) target for 2015. However, compared with other countries in the world, the EU remains the world's largest donor, also in terms of ODA/GNI.

Many indicators in the global partnership theme are linked to the EU's economic situation. For this reason, several show clear impacts of the onset of the financial and economic crisis in 2008. This is particularly visible in the headline indicator 'official development assistance' where overall flows fell during the economic downturn. Although the EU is the world's largest donor, it is not on track to meet its long-standing target of dedicating 0.7 % of its GNI to ODA in 2015. Nevertheless, the share of ODA for low-income countries did

Table 9.1: Evaluation of changes in the global partnership theme, EU-28 ⁽¹⁾

Indicator	Long-term evaluation (since 2000)	Short-term evaluation (last five-year period)
Official development assistance (ODA)	⁽²⁾	
Globalisation of trade		
Imports from developing countries	⁽³⁾	
Imports from least-developed countries	⁽³⁾	
Subsidies for EU agriculture	⁽⁴⁾	⁽⁴⁾
Financing of sustainable development		
Financing for developing countries	⁽⁵⁾	⁽⁵⁾
Share of foreign direct investment in low-income countries	:	:
Share of official development assistance for low-income countries	⁽⁵⁾	⁽⁵⁾
Share of untied assistance	⁽⁵⁾	⁽⁵⁾
Bilateral official development assistance	:	:
Global poverty	:	:
Global resource management		
CO ₂ emissions per inhabitant	:	:
Access to water	:	:

⁽¹⁾ An explanation of the evaluation method and the meaning of the weather symbols is given in the Introduction and in Annex III. ⁽²⁾ From 2004. ⁽³⁾ From 2002. ⁽⁴⁾ Evaluation based on EU-27. ⁽⁵⁾ Evaluation based on EU-15.



improve between 2000 and 2013 to some extent and particularly shows a favourable trend for the last five years. In addition, although ODA to developing countries is not enough to meet EU targets, it remains a largely stable source of finance in absolute terms. A negative trend that emerges is the fluctuation of private financial flows. These fluctuations can create unpredictability for developing countries that particularly rely on external financial support. In relation to trade, the EU has increased its imports from developing countries, although these have mainly been from China. Imports from least-developed countries (LDCs) represent a considerably lower share of overall EU imports. The largest increase among imports from LDCs is in the category of mineral fuels and lubricants.

The proportion of people whose income is less than USD 1.25 a day halved between 2010 and 1990. However, regional differences exist. The target had not been met in Sub-Saharan Africa, Southern Asia and Western Asia.

The ratio between per capita carbon dioxide (CO₂) emissions in the EU and developing countries was halved between 2000 and 2012; yet this was mainly due to increasing emissions in developing countries.

The global target to halve the share of the population without access to safe drinking water by 2015 was achieved early in 2010. However, a large gap remains between high-income countries and LDCs.

Key trends in global partnership

EU not on track to meet its target for official development assistance (ODA)

'Official development assistance' shows unfavourable trends in both the long term (2000 to 2014) and in particular in the short term (2009 to 2014). Although the EU is the world's largest donor, it is not on track to meet its long-standing target of dedicating 0.7% of its gross national income (GNI) to official development assistance (ODA) in 2015, although the rate did increase slightly in the long term. Nevertheless, the share of ODA for least-developed countries (LDCs) did improve in the decade from 2000 to 2010. However, in the short term (2008 to 2013) the share of ODA for LDCs continued to improve. Also, although ODA to developing countries is not enough to meet the EU's targets, it remains a largely stable source of finance in absolute terms.

Rise in ODA for low-income countries but no clear trend for EU foreign direct investment (FDI)

The indicators on financing for sustainable development show a mixed picture.

Financing for developing countries shows positive trends, both in the long and the short term. The **share of ODA for low-income countries** shows only a moderately favourable change in the long term, but the short-term trend has been favourable. The **share of untied assistance** is continuously increasing, thus showing a clearly favourable trend in both the long and the short term.

On the negative side, EU **foreign direct investment (FDI)** to low-income countries varies widely between years. It has not shown any consistent upward or downward trend towards the aim of increasing the share of EU FDI to these countries.

Bilateral ODA has increased in absolute terms in the long term, but has fluctuated over the last five years, showing varying changes in some categories.

Regarding **global poverty**, the overall population living in poverty decreased but to varying degrees in different regions of the world.

Increase in EU imports from developing countries, mostly China

The indicators on globalisation of trade mostly show favourable trends.

With regard to the aim of increasing **imports from developing countries** to the EU, both the long-term trend (2002 to 2014) and the short-term trend (2009 to 2014) are positive as the share of developing country imports in overall EU imports increased. Imports from China were the single largest factor behind this trend.

Imports to the EU from least-developed countries increased more strongly than imports from all developing countries. This marked progress towards the goal of raising the share of these particularly poor countries in global trade. Yet in 2014 imports from least-developed countries still represented only about 2% of all EU imports.



Regarding **agricultural subsidies**, between 2000 and 2011 the EU significantly reduced subsidies considered to be trade-distorting under the World Trade Organization's Agreement on Agriculture. This is a positive trend. Yet these figures do not allow a conclusion on whether the EU has shifted its agricultural support to other types of payments that are not limited according to WTO rules, but may still have a negative impact on developing countries.

2.5 times more CO₂ emissions per inhabitant in the EU compared with developing countries

In 2012, the **per capita CO₂ emissions** per EU inhabitant were 2.5 times as high as those of developing country inhabitants. Between 2000 and 2012 CO₂ emissions per inhabitant in developing countries increased by more than 70%; by contrast, the increase was only 11.5% between 2009 and 2012.

Access to water target reached but some challenges remain

The global target of halving the share of the **world population without access to safe drinking water** by 2015 was achieved five years early in 2010. Yet there are still more people without such access in developing than in developed countries. International aid is likely to have contributed to the progress.

Why do we focus on global partnership?

Advancing global partnership for development has been one of the core Millennium Development Goals (MDGs) ⁽¹⁾. Presented as the eighth MDG, the global partnership for development reflects mutual responsibilities for both developed and developing countries to achieve the other seven MDGs which focus on with poverty, education, gender equality, child mortality, maternal health, poverty diseases and the environment. As early as 1987, the Brundtland report ⁽²⁾ had emphasised the urgency of meeting the essential needs of the world's poor to achieve sustainable development. To that end it highlighted the importance of collective action and the idea of sitting 'all on one boat', which is at the core of the concept of global partnership.

Furthermore, 2015 is the European Year for Development ⁽³⁾. This year was chosen for two reasons: the MDGs were to be reached by 2015 and it also marks the beginning of a new era of development co-operation since the debates about the design of the Post-2015 Development Agenda are supposed to culminate into Sustainable Development Goals (SDGs). The latter are currently discussed at the global level and the global partnership also plays a crucial role in these goals. Goal 17 of the SDGs aims to strengthen 'the means of implementation and [to] revitalise the global partnership for sustainable development' ⁽⁴⁾. In addition, every goal highlights the global partnership perspective by listing special targets aimed at highlighting those aspects of each goal that are particularly relevant for a global partnership.

One of the objectives of the EU Sustainable Development Strategy is to promote sustainable development actively worldwide. For this purpose, the EU does not only take specific development-related actions, including action towards its international commitments on development financing, but is also committed to the objective of policy coherence for development. Policy coherence for development aims 'to ensure that, as much as possible, a state's policies other than its development co-operation policy do not undermine ('do no harm') and indeed ideally also support development. This applies to both external policies (for example, trade or security) and internal policies (for example, agriculture or finance) that have external effects, which is increasingly the case as globalisation intensifies' ⁽⁵⁾.

Today's world is economically, socially and environmentally interconnected. A country pursuing the well-being of its citizens is very likely to affect, directly or indirectly, positively or negatively, the well-being of citizens in other countries. Globally, the effects of unsustainable patterns of economic development are still largely determined by developed countries and increasingly by emerging economies, while poorer countries are disproportionately impacted and have the least resources to cope with negative effects ⁽⁶⁾.

⁽¹⁾ The *Millennium Development Goals* are a set of eight development-related objectives that the international community seeks to achieve by 2015.

⁽²⁾ World Commission on Environment and Development (1987). *Our common future*.

⁽³⁾ 2015 is the *European Year for Development*.

⁽⁴⁾ United Nations (2014), *Open Working Group Proposal for Sustainable Development Goals*, Goal 17: 'Strengthen the means of implementation and revitalise the global partnership for sustainable development'.

⁽⁵⁾ Definition used in the European Report on Development (2013), *Post-2015: Global Action for an Inclusive and Sustainable Future*, Overseas Development Institute (ODI), German Development Institute/Deutsches Institut für Entwicklungspolitik (DIE), European Centre for Development Policy Management (ECDPM), Brussels: 2013, p. 19.

⁽⁶⁾ European Commission (2013), *A decent life for all: Ending poverty and giving the world a sustainable future*, COM(2013) 92 final.



To tackle these challenges the EU contributes directly to sustainable development in developing countries. It does so by allocating financial flows, both public and private, to these countries. In addition, it supports them with special concessions in trade policies. Trade constitutes a source of revenue for the developing countries. The type of trade is also monitored.

The EU's policies may impact, for example, the number of people seeking to migrate to the EU as a result of the situation in their home countries. The EU also affects developing countries by its resource use; extraction of natural resources may have negative impacts on the ground in developing countries, but also provides a potential source of income to developing countries. More and more resources are imported into the EU from third countries, and more than half of the energy used in the EU actually comes from outside. This is why some of the indicators relate to natural resources in the EU and developing countries.

How does the EU tackle global partnership?

The EU Sustainable Development Strategy (EU SDS) ⁽⁷⁾ dedicates one of its seven key challenges to global poverty and sustainable development issues. The overall objective is 'to actively promote sustainable development worldwide and ensure that the European Union's internal and external policies are consistent with global sustainable development and its international commitments'. To this end, the EU SDS sets out the following operational objectives and targets:

- Make significant progress towards meeting the commitments of the EU with regard to internationally agreed goals and targets, in particular those contained in the Millennium Declaration ⁽⁸⁾ and those deriving from The World Summit on Sustainable Development held in Johannesburg in 2002 ⁽⁹⁾, and related processes such as the Monterrey Consensus on Financing for Development ⁽¹⁰⁾, the Doha Development Agenda ⁽¹¹⁾ and the Paris Declaration on Aid Effectiveness ⁽¹²⁾ and the Accra Agenda for Action ⁽¹³⁾.
- Contribute to improving international environmental governance, in particular in the context of the follow-up to the 2005 World Summit outcome ⁽¹⁴⁾, and to strengthening multilateral environmental agreements (MEAs).
- Raise the volume of aid to 0.7 % of gross national income by 2015 with an intermediate target of 0.56 % in 2010.

- Promote sustainable development in the context of the negotiations of the World Trade Organisation (WTO), in accordance with the preamble to the Marrakesh Agreement establishing the WTO ⁽¹⁵⁾ which sets sustainable development as one of its main objectives.
- Increase the effectiveness, coherence and quality of EU and Member States' aid policies in the period 2005–2010.
- Include sustainable development concerns in all EU external policies, including the common foreign and security policy, inter alia, by making it an objective of multilateral and bilateral development co-operation.

Furthermore, the EU committed, at the Foreign Affairs Council (Development) on 26 May 2015, to collectively achieve the 0.7 % of GNI as ODA target within the time-frame of the post-2015 agenda, and to meet the 0.15 %–0.20 % GNI target for least-developed countries in the short term, reaching the upper 0.20 % threshold of that target within the timeframe of the post-2015 agenda.

Selection of EU policy instruments for improving global partnership

The **European Consensus on Development** adopted in December 2005 ⁽¹⁶⁾ reflects the EU's

⁽⁷⁾ The Council of the European Union (2006), *Review of the EU Sustainable Development Strategy (EU SDS) – Renewed Strategy*, 26 June 2006.

⁽⁸⁾ United Nations (2000), *United Nations Millennium Declaration*, also known as the *Millennium Development Goals (MDGs)*.

⁽⁹⁾ *World Summit on Sustainable Development*, Johannesburg, 2002.

⁽¹⁰⁾ United Nations (2003), *Monterrey Consensus on Financing for Development*.

⁽¹¹⁾ World Trade Organisation (2001), *Doha Development Agenda*.

⁽¹²⁾ Organization for Economic Co-operation and Development High-Level Forum on Aid Effectiveness, *Paris Declaration on Aid Effectiveness*, Paris, 2005.

⁽¹³⁾ *Accra Agenda for Action* (2008).

⁽¹⁴⁾ United Nations General Assembly (2005), *2005 World Summit Outcome*.

⁽¹⁵⁾ World Trade Organisation (2004), *Marrakesh Agreement*.

⁽¹⁶⁾ European Parliament (2005), Council, Commission, *Joint statement by the Council and the representatives of the governments of the Member States meeting within the Council, the European Parliament and the Commission on European Union Development Policy: 'The European Consensus'*.



willingness to make a decisive contribution to the eradication of global poverty and to help build a more peaceful and equitable world. It identifies shared values, goals, principles and commitments to be implemented in EU and Member State development policies. In particular, these include a focus on poverty reduction and achievement of the Millennium Development Goals; a commitment to increased levels of official development assistance of 0.7% by 2015; and improved co-ordination of aid with other development work in the beneficiary country for greater effectiveness.

In 2012, the Council endorsed the **'Agenda for Change'** ⁽¹⁷⁾ for EU development policy which puts renewed emphasis on good governance; social protection, health and education; sustainable agriculture and clean energy. The agenda also calls for a 'differentiated' EU approach to aid allocation and development partnerships, whereby the EU should seek to target its resources where they are most needed and for greatest impact on poverty reduction.

One way in which action is taken to implement the SDS objective of increasing 'the effectiveness, coherence and quality of EU and Member State's aid' is through **EU joint programming** of aid. This approach, first implemented in selected countries in 2012, improves co-ordination between the EU and its Member States who agree on which donor should work in which sector. The aim is to increase the impact and the results of aid, as well as transparency and predictability ⁽¹⁸⁾. To improve transparency the EU also makes data on the aid provided available online ⁽¹⁹⁾.

In February 2013, the European Commission adopted the Communication **'A Decent Life for All: ending poverty and giving the world a sustainable future'** ⁽²⁰⁾. The Communication puts forward a common EU approach for a single post-2015 development framework, integrating the review of the MDGs and the follow up to the 2012 United Nations Conference on Sustainable Development (Rio+20). One of the outcomes of Rio+20 was the agreement to launch a process to develop a set of Sustainable

Development Goals (SDGs). Several EU Member States were members of the Open Working Group (OWG) tasked with developing the SDGs ⁽²¹⁾. In 2014, the Commission published a follow-up Communication **'A Decent Life for All — From Vision to Collective Action'** ⁽²²⁾. The Communication sets forth the EU's vision for achieving a decent life for all people globally by 2030 and stresses that the framework for achieving this objective should be rights-based and people-centered and that it needs to integrate all three dimensions of sustainable development. The document also identifies potential targets and priority areas for action. In February 2015, the Commission published a further Communication entitled **'A Global Partnership for Poverty Eradication and Sustainable Development after 2015'** ⁽²³⁾. In this document, the Commission outlines its vision for the global partnership in the run-up to the two important development-related events in 2015: the third International Conference on Financing for Development in Addis Ababa in July and the United Nations (UN) summit for the adoption of the post-2015 development agenda in New York in September. Thus, there is a chance not to be missed to establish a global partnership that brings together different earlier initiatives.

In July 2013, the European Commission adopted a Communication putting forward possible elements of a common EU approach to financing post-2015, titled **'Beyond 2015, Towards a Comprehensive and Integrated Approach to Financing Poverty Eradication and Sustainable Development'** ⁽²⁴⁾. Building on 'A Decent Life for all', which focuses on the 'what' to put on the future development framework, this communication turns the attention to the 'how' to finance it, the type of resources available that could be mobilised, the principles that should guide the Commission's work, and the processes that could help put those into practice.

The main current **EU funding instruments** for development co-operation cover the period 2014–2020. The EU has proclaimed 2015 to be the **'European Year for Development'** ⁽²⁵⁾.

⁽¹⁷⁾ European Commission (2011), *Increasing the impact of EU Development Policy: an Agenda for Change*, COM(2011) 637.

⁽¹⁸⁾ European Commission, International Cooperation and Development, *Programming*.

⁽¹⁹⁾ European Commission, *Aid Explorer*.

⁽²⁰⁾ European Commission (2013), *A Decent Life for All: Ending poverty and giving the world a sustainable future*, COM(2013) 92.

⁽²¹⁾ These Member States are: Netherlands, United Kingdom, Denmark, France, Germany, Italy, and Spain. All of the countries shared their seat with other countries, see Sustainable Development Knowledge Platform, *Open Working Group on SDGs*, Members.

⁽²²⁾ European Commission (2014), *A Decent Life for All — From Vision to Collection Action*, COM(2014) 335.

⁽²³⁾ European Commission (2015), *A Global Partnership for Poverty Eradication and Sustainable Development after 2015*, COM(2015) 44.

⁽²⁴⁾ European Commission (2013), *Beyond 2015: towards a comprehensive and integrated approach to financing poverty eradication and sustainable development*, COM(2013) 531.

⁽²⁵⁾ See *European Year for Development*.



Further reading on the global partnership

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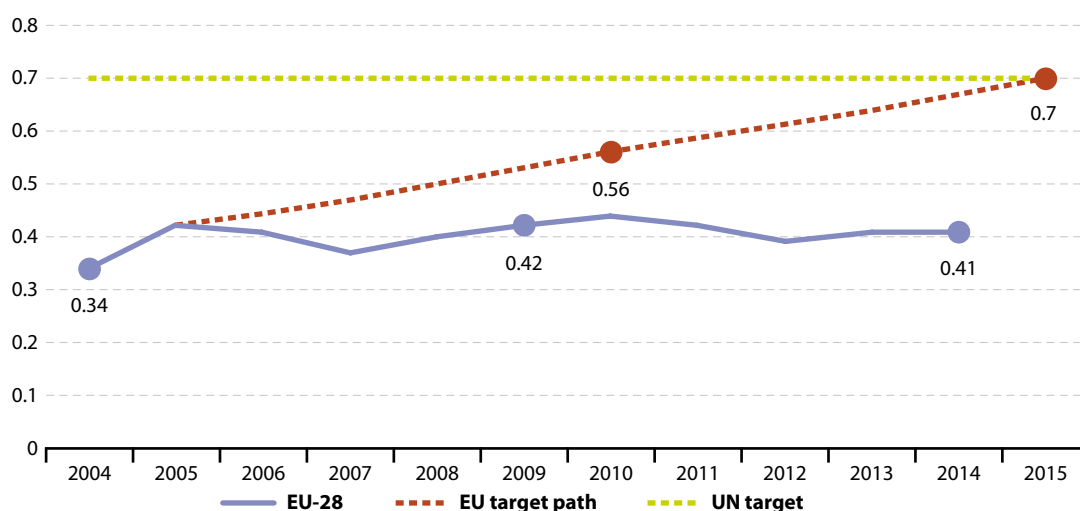
United Nations (2002), *Monterrey Consensus on Financing for Development*, Monterrey.

World Bank (2014), *World Development Report 2015: Mind, Society and Behaviour*, Washington.

Official development assistance

The EU increased its share of gross national income (GNI) spent on official development assistance (ODA) by 0.07 percentage points between 2004 and 2014. The short-term trend since 2009 even saw a slight decline in the share of ODA in GNI. The EU is therefore not on track to meet the UN target of dedicating 0.7% of GNI to ODA by 2015.

Figure 9.1: Official development assistance as a share of gross national income, EU-28, 2004–2014 ⁽¹⁾ (% of GNI)



⁽¹⁾ 2014 data are provisional.

Source: OECD, European Commission services, Eurostat (online data code: [tsdgp100](#))

In the long term, between 2004 and 2014, the share of GNI spent by the EU on ODA (the assistance granted to developing countries) grew on average by 1.9% a year. This was insufficient to meet the goal of 0.7% of GNI by 2015. Short-term developments have been tentative. Between 2010 and 2012, the ODA of EU Member States decreased from 0.44% to 0.39%, in the face of continued budgetary constraints resulting from the economic crisis ⁽²⁶⁾. However, from 2012 to 2013 a slight growth of 0.02 percentage points can be observed, probably due to a wide agreement for raising development aid in almost all Member States ⁽²⁷⁾. However, from 2013 to 2014, no increase in ODA can be observed. Thus without substantial additional efforts by most Member States, the EU's long-standing collective commitment to dedicate 0.7% of its GNI to official development assistance in 2015 is unlikely to be met. The EU had already missed its collective interim target of dedicating 0.56% of its GNI to ODA in 2010; the share in that year was 0.44%.

EU citizens' solidarity with developing countries grows

EU citizens continue to think that providing assistance to developing countries is important; its solidarity even grows. In a 2014 survey, 52% said that promises to raise ODA should be kept and an additional 15% thought ODA should be raised beyond what has been promised ⁽²⁸⁾. These figures are slightly higher compared with the 2012 survey, when 49% and 12% respectively held the above opinions ⁽²⁹⁾, and represent a return to 2010 levels.

⁽²⁶⁾ Council of the European Union (2013), *Council Conclusions on the Annual Report 2013 to the European Council on EU Development Aid Targets*, Brussels, 28 May 2013.

⁽²⁷⁾ European Commission (2015), Special Eurobarometer 421, *The European Year for Development — Citizens' Views on Development, Cooperation and Aid Report*, p. 63.

⁽²⁸⁾ *Id.*, p. 7.

⁽²⁹⁾ European Commission (2012), Special Eurobarometer 392, *Solidarity That Spans The Globe, Europeans and Development Aid Report*, p. 16.



Long term
(since 2004)



Short term
(since 2009)

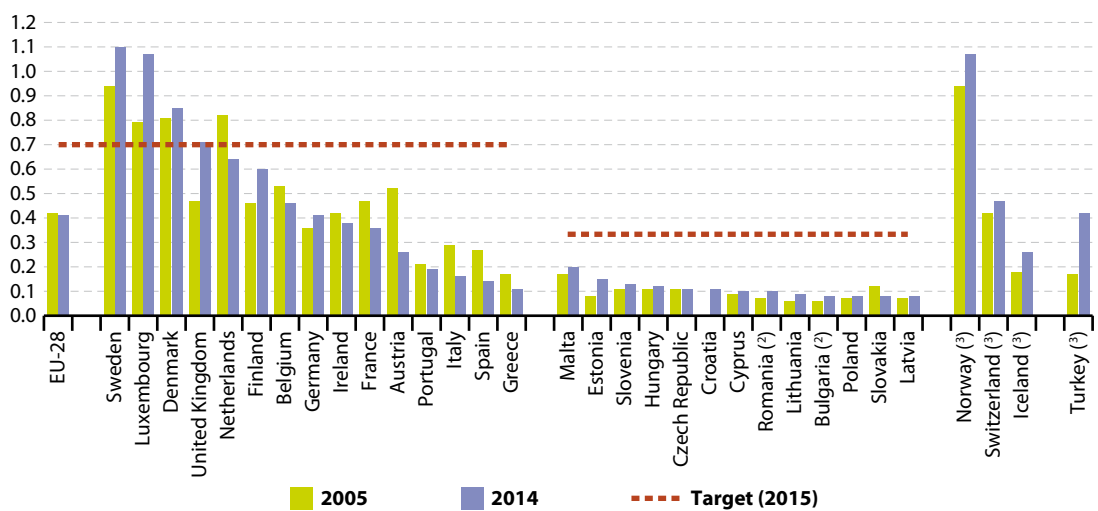


How ODA varies between Member States

The EU has committed itself to a collective target of 0.7% for 2015. The same target applies to many Member States. However, those Member States that joined the EU after 2002 pledged to increase their ODA/GNI to 0.33% by 2015 ⁽³⁰⁾.

In 2014, ODA/GNI shares in the EU ranged from 1.1% in Sweden to 0.08% in Bulgaria, Latvia, Poland and Slovakia. Four Member States — Sweden, Luxembourg, Denmark and the United Kingdom — exceeded the 0.7% target in 2014. Between 2005 and 2014, the ODA/GNI share fell in 10 EU Member States and increased in 16. Between 2005 and 2014 the largest increase took place in Luxembourg (by 0.28 percentage points), and the largest decrease (by 0.26 percentage points) in Austria.

Figure 9.2: Official development assistance as share of gross national income, by country, 2005 and 2014 ⁽¹⁾
(% of GNI)



⁽¹⁾ 2014 data are provisional (all countries).

⁽²⁾ 2007 data (instead of 2005).

⁽³⁾ 2013 data (instead of 2014).

Source: OECD, European Commission services, Eurostat (online data code: [tsdgp100](#))

ODA per capita in EU and developing countries has increased

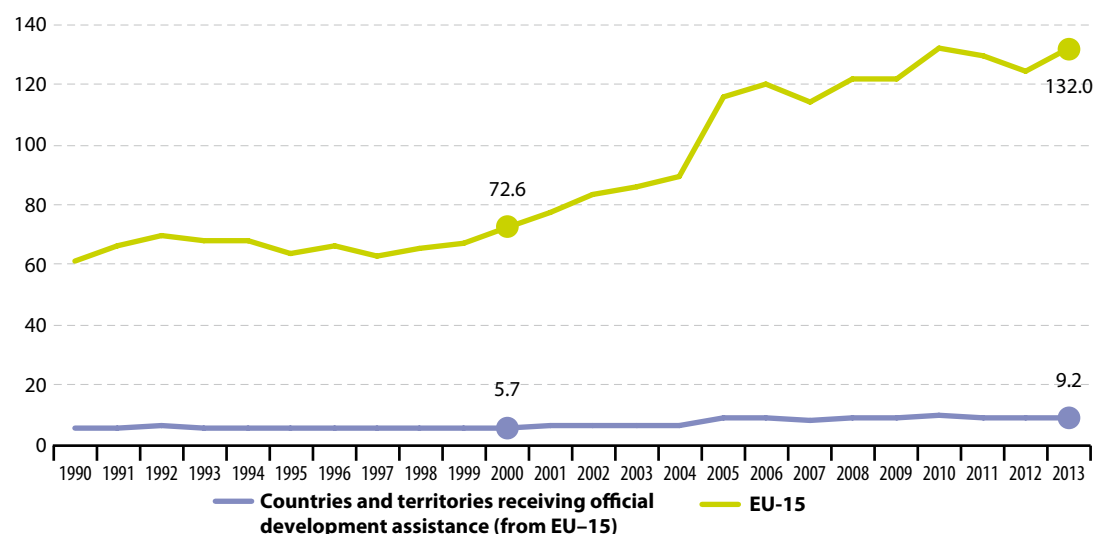
ODA can furthermore be analysed in relation to the average amount of assistance spent per inhabitant in donor countries and the amount received per inhabitant in developing countries. While in 2008 the EU-15 spent EUR 122.4 per capita a year on ODA, the figure in 2013 was EUR 132.0 ⁽³¹⁾, representing an increase of 7.8% during the last five years. However, this growth is not entirely reflected in ODA received per person in developing countries. There was only a moderate 3.0% increase in ODA received per capita from EUR 8.88 in 2008 to EUR 9.15 in 2013. One possible reason for this is population growth in developing countries.

⁽³⁰⁾ Council of the European Union (2014), Annual Report 2014 to the European Council on EU Development Aid Targets — Council Conclusions, 19 May 2014, p. 4.

⁽³¹⁾ For the EU-28 it was EUR 106.6 in 2013.



Figure 9.3: Official Development Assistance per capita in donor and recipient countries, EU-15, 1990–2013
(EUR per inhabitant; at current values)



Source: OECD, Eurostat (online data code: tsdgp520)

EU trends in ODA compared with other countries in the world

In 2014, the EU maintained its position as the biggest ODA donor globally in absolute terms, providing more than half of the total ODA made available by the Development Assistance Committee (DAC) of the OECD countries⁽³²⁾. This figure refers to the combined ODA provided by all EU Member States⁽³³⁾. In 2012, the share of aid from the EU's DAC members in all aid from DAC donors was at its lowest since 2001⁽³⁴⁾, however, it rose again in 2013⁽³⁵⁾.

The total EU ODA/GNI ratio in 2014 was 0.42%, significantly higher than for most other OECD donors. In the US the ODA/GNI share decreased from 0.21% in 2010 to 0.19% in 2014. Canada dedicated 0.34% of its GNI to ODA in 2010, but only 0.24% in 2014⁽³⁶⁾, while Japan spent 0.28% of its GNI on ODA in 2000, but only 0.19% in 2014⁽³⁷⁾. At the same time, aid from emerging donors, such as Turkey, Estonia and Russia is increasing⁽³⁸⁾. The United Arab Emirates spent 1.25% of its GNI on ODA, which was the highest ratio for a country in 2013⁽³⁹⁾.

⁽³²⁾ OECD (2014), *Aid to developing countries rebounds in 2013 to reach an all-time high*, 8 April 2014. See also European Commission (2015), *EU Accountability Report 2015 on Financing for Development*, SWD(2015) 128 final, 23 June 2015. The Development Assistance Committee (DAC) of the OECD is a forum of selected OECD member states that are at the same time major donor countries to discuss issues surrounding development cooperation. The DAC also monitors financial flows to developing countries. 19 EU Member States are DAC members.

⁽³³⁾ 52% of this is provided by EU-DAC members (currently 19 EU Member States).

⁽³⁴⁾ United Nations (2013), *The Millennium Development Goals Report 2013*, p. 53.

⁽³⁵⁾ United Nations (2014), *The Millennium Development Goals Report 2014*, p. 48.

⁽³⁶⁾ UNSTATS, *Millennium Development Goals Indicators: Net ODA as percentage of OECD/DAC donors GNI*.

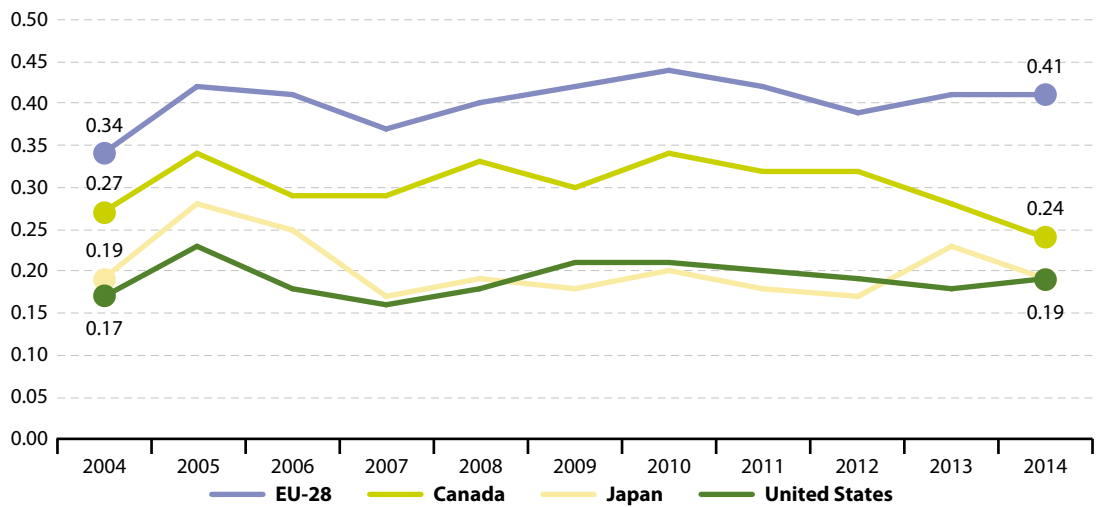
⁽³⁷⁾ Ibid.

⁽³⁸⁾ United Nations (2014), *The Millennium Development Goals Report 2014*, p. 49.

⁽³⁹⁾ Ibid.



Figure 9.4: Official development assistance as share of gross national income, by donor, 2004–2014 ⁽¹⁾
(% of GNI)



⁽¹⁾ EU-28 data for 2014 data are provisional.

Source: OECD, European Commission services, Eurostat (online data code: [tsdgp100](#))

What lies beneath this indicator?

Official development assistance (ODA) consists of grants or loans provided by official agencies, including state and local governments, or by their executive agencies, to countries and territories on the Organisation for Economic Development and Cooperation's Development Assistance Committee (OECD DAC) List of ODA Recipients and to multilateral development institutions ⁽⁴⁰⁾. The main object of ODA is to promote the economic development and welfare of developing countries. It conveys a grant element of at least 25% (calculated at a rate of discount of 10%) and is concessional in character. ODA is reported by donors to the OECD thereby also specifying what the purpose of the particular payment is.

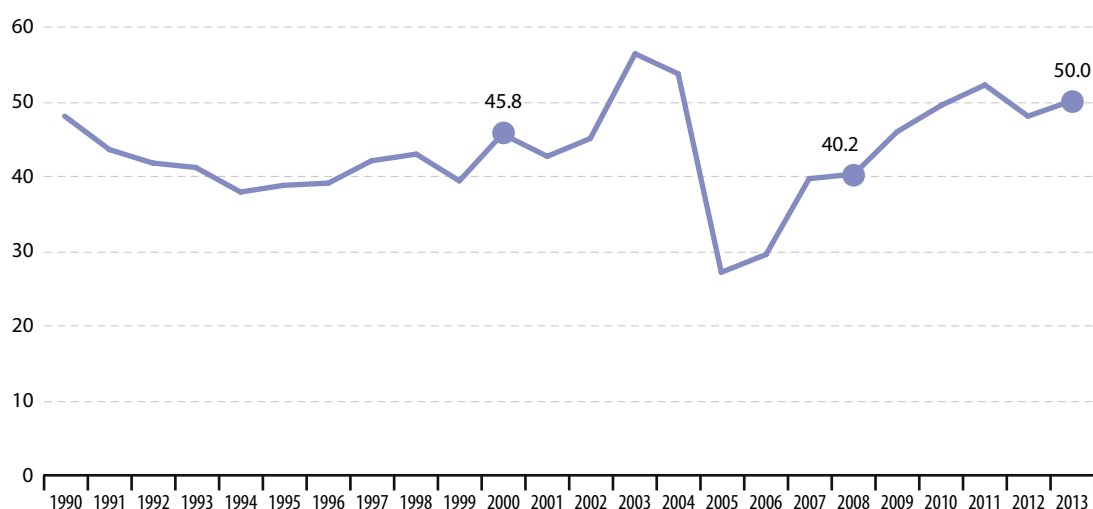
⁽⁴⁰⁾ OECD, DAC List of ODA Recipients.



Share of official development assistance for low-income countries

Least-developed countries and other low-income countries — the two poorest groups of developing countries — received a higher share of EU-15 ODA in 2013 than in 2000. The short-term trend since 2008 is particularly strong, but has started from one of the lowest levels since 1990.

Figure 9.5: Share of ODA dedicated to low-income countries, EU-15, 1990–2013 (% of country-allocated ODA)



Source: OECD, Eurostat (online data code: tsdgp330)

In 2013, LDCs and other low-income countries (OLICs) together received 50 % of total EU-15 ODA, up from 45.8 % in 2000. From 2000 to 2013 total EU-15 ODA to LDCs and OLICs grew by almost 77 % from EUR 5 321 million to EUR 9 402 million. Although the amount did not grow in every year, the promising long-term trend is also reflected during in last five years, with a growth of almost 12.4 % between 2008 and 2013.

The European Consensus on Development ⁽⁴¹⁾ furthermore stresses the need to dedicate a high proportion of ODA to LDCs and OLICs. In 2008 EU Member States pledged to this end to collectively provide between 0.15 % and 0.20 % of their GNI to ODA in LDCs by 2010. However, in 2010, EU DAC members only provided 0.14 % and the proportion even fell to 0.13 % in 2011 and 0.11 % in 2012 ⁽⁴²⁾.

ODA constituted a much more steady flow to low-income countries than foreign direct investment which varied greatly between years.

Least developed countries are particularly reliant on ODA

ODA is particularly significant for low-income countries. The poorest countries, especially those that are resource-scarce, may not attract foreign direct investment. In addition, their level of domestic resource mobilisation and domestic investment remains low, making them particularly reliant on external aid and development finance ⁽⁴³⁾. The macro-economic stability of these countries is thus vulnerable to the fluctuations in the overall volume of aid as well as donor preferences for this aid ⁽⁴⁴⁾.

⁽⁴¹⁾ European Parliament, Council, Commission (2005), *Joint statement by the Council and the representatives of the governments of the Member States meeting within the Council, the European Parliament and the Commission on European Union Development Policy: The European Consensus*.

⁽⁴²⁾ European Commission (2014), *Commission Staff Working Document, EU Accountability Report 2014 on Financing for Development Review of progress by the EU and its Member States*, SWD(2014) 235, Part 1/5, p. 89.

⁽⁴³⁾ UNDP (2011), *Towards Human Resilience: Sustaining MDG Progress in an Age of Economic Uncertainty*, p. 146.

⁽⁴⁴⁾ European Commission (2011), *Increasing the impact of EU Development Policy: an Agenda for Change*, COM(2011) 637 final.



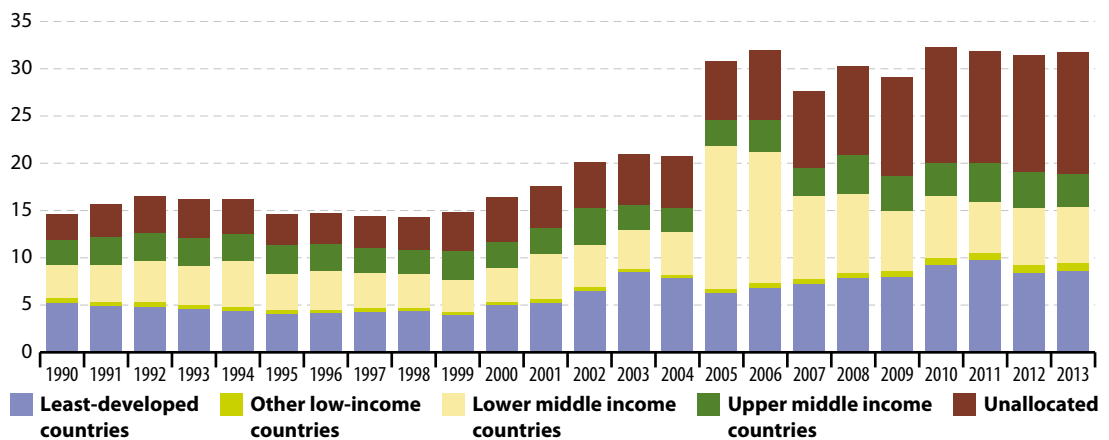
Long term
(since 2000)



Short term
(since 2008)



Figure 9.6: Official development assistance, by income group, EU-15, 1990–2013 ⁽¹⁾
(EUR billion; at current values)



⁽¹⁾ 'Unallocated' refers to ODA disbursed at regional, rather than country level.

Source: OECD, Eurostat (online data code: tsdgp330)

Some low-income countries have 'graduated' to middle-income countries

An additional factor that should be taken into consideration when analysing the level of aid to LDCs and OLICs in comparison to higher income countries is the graduation of countries to lower middle income country (LMIC) and upper middle income country (UMIC) status. ⁽⁴⁵⁾ Between 2000 and 2010, 13 least-developed and other low-income countries graduated to lower- or upper middle income status ⁽⁴⁶⁾. It has been argued that for this reason, a higher proportion of the world's poor now live in LMICs and UMICs, not LDCs ⁽⁴⁷⁾. The exact numbers of poor people living in LMICs and UMICs require further analysis; however, to monitor the impact of ODA on poverty, and indeed on inequality, additional or new indicators may be necessary.

What lies beneath this indicator?

ODA may help recipient countries to achieve important sustainable development targets, such as the Millennium Development Goals (MDGs). However, progress towards sustainable development depends very much on how and for which objectives the funds are spent. Because of their vulnerability least-developed countries (LDCs) and other low-income countries (OLICs) are among the EU priorities regarding ODA spending. This necessity is specifically stressed in the European Consensus on Development ⁽⁴⁸⁾.

ODA consists of grants or loans provided by states with the objective of promoting economic development and welfare in recipient countries. ODA is defined here as net bilateral and imputed multilateral disbursements at market prices for ODA to countries in the OECD's Development Assistance Committee (DAC) list of ODA beneficiaries. On this list, countries are classified by their income level. Countries are considered 'least-developed' depending on their three-year average estimate of the gross national income per capita, weak human assets, as measured through a composite Human Assets Index, and economic vulnerability measured through a composite Economic Vulnerability Index ⁽⁴⁹⁾.

Shares are expressed as a percentage of the overall ODA amount that can be allocated to specific countries or country groups. The unallocated part of total net ODA is not included. The classification of countries by income groups follows the World Bank definition. LDCs are classified by the UN.

⁽⁴⁵⁾ 'Graduation' of developing country from one category (e.g. LMIC) to another (e.g. UMIC) is the term used by the OECD and other organisations when the respective country's economic status has improved to the extent that it satisfies the criteria of a different category.

⁽⁴⁶⁾ Comparing DAC List of ODA Recipients (Effective for reporting on 2009 and 2010 flows) with DAC List of Aid Recipients (Effective for reporting on 2000 flows). Sumner even speaks of 28 that graduated between 2000 and 2011, see Sumner, Andy, Institute for Development Studies, Poverty in Middle-Income Countries, 2011, p. 2.

⁽⁴⁷⁾ Sumner, Andy (2011), *Institute for Development Studies, Poverty in Middle-Income Countries*, pp. 2 and 3.

⁽⁴⁸⁾ European Parliament, Council, Commission (2005), *Joint statement by the Council and the representatives of the governments of the Member States meeting within the Council, the European Parliament and the Commission on European Union Development Policy: The European Consensus*.

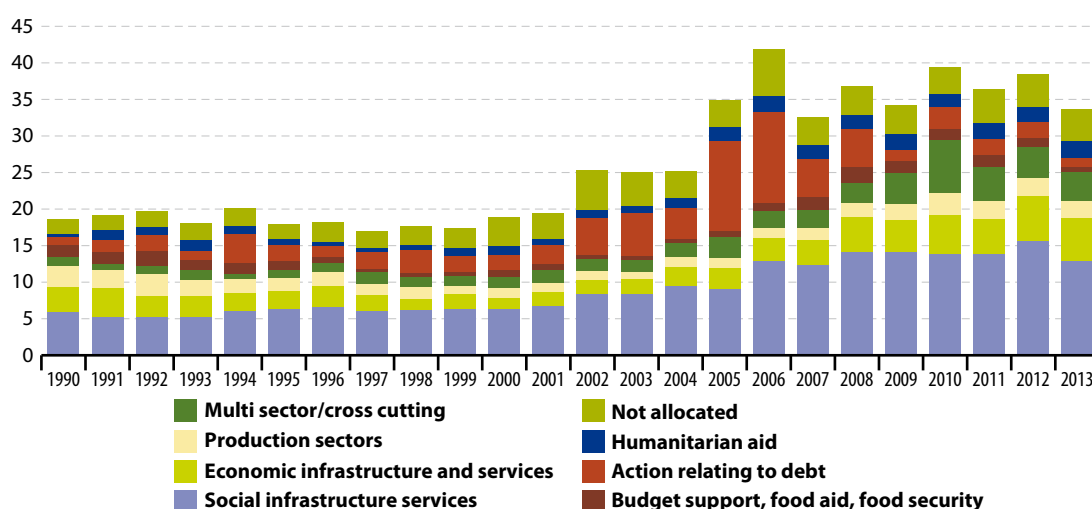
⁽⁴⁹⁾ For details of the classification, see UNCTAD, *Research and Policy Analysis on LDCs*.



Bilateral official development assistance

The fastest growing category for bilateral official development assistance (ODA) between 2000 and 2013 was 'economic infrastructure and services', with an annual growth rate as high as 11.2%. In contrast, bilateral ODA for 'budget support, food aid, food security' decreased by 2.7% annually and 'action relating to debt' even fell by 3.8% during the same time period.

Figure 9.7: Bilateral official development assistance, by category, EU-15, 1990–2013 (EUR billion; at current values)



Source: Eurostat (online data code: tsdgp350)

In 2013, the biggest share of bilateral ODA went to 'social infrastructure services', amounting to EUR 12 893.5 million, starting from EUR 6 289.1 million in 2000. The smallest share in 2013, with only EUR 743.3 million, went to 'budget support, food aid, food security', starting from EUR 1 060.3 million in 2000.

However, with an annual growth rate as high as 11.2% between 2000 and 2013, the 'economic infrastructure and services' sector grew the fastest in that time period to EUR 5 874.7 million in 2013. The three sectors 'social infrastructure services', 'production sectors', and 'humanitarian aid' each grew between 4% and 5.6% on average per year between 2000 and 2013. During the same period, bilateral ODA for 'budget support, food aid, food security' annually decreased by 2.7% to EUR 743.3 million and 'action relating to debt' decreased by 3.8% annually to EUR 1 238.8 million in 2013.

What lies beneath this indicator?

The indicator describes the fulfilment of ODA commitments by the EU and provides information on the allocation of ODA in different aid categories that offer different opportunities for poverty alleviation and welfare development. Tracking movements of aid by destination allows for an assessment as to whether aid is allocated to priority sectors, in conformity with the Millennium Development Goals (MDGs), set for the year 2015, and with EU political commitments. The social dimension of globalisation is recognised as important for development policy. For instance, the EU Sustainable Development Strategy explicitly mentions that the improvement of social standards is desirable.

The indicator is defined as the value at market prices of bilateral commitments and commitments to regional banks to the countries covered by the Development Assistance Committee (DAC), broken down by aid category. DAC countries refer to 'developing countries and territories' on Part I of the OECD DAC List of Aid Recipients.



Share of untied assistance



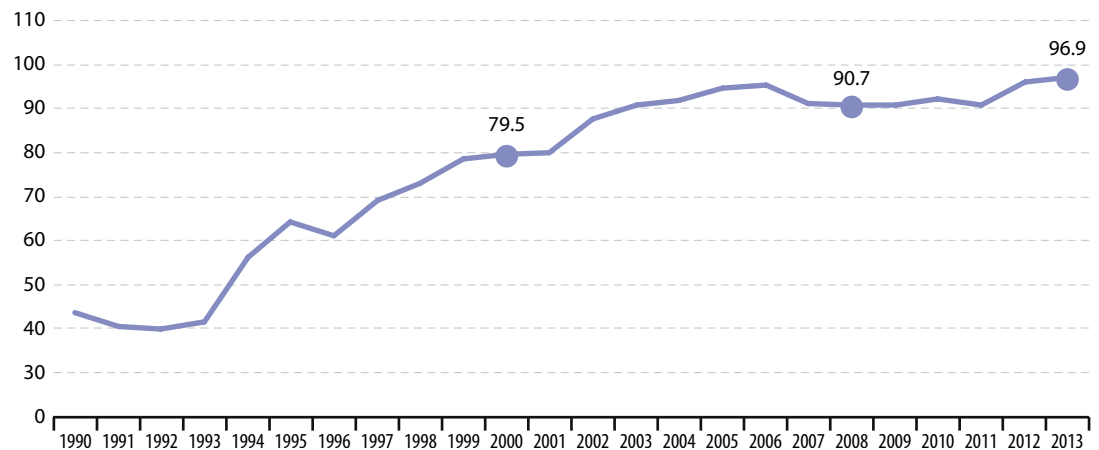
Long term
(since 2000)



Short term
(since 2008)

The share of untied EU-15 official development assistance increased by 17.4 percentage points over the long term between 2000 and 2013. The short-term trend since 2008 has shown moderate growth of 6.2 percentage points.

Figure 9.8: Untied official development assistance, EU-15, 1990–2013
(% of total ODA)



Source: OECD, Eurostat (online data code: [tsdgp340](#))

In 2013, 96.9% of all EU-15 ODA was untied, compared with about 80% in 2000 and 90.7% in 2008. This meant developing countries could use almost 97% of the ODA they received to freely buy services and goods in all countries, giving them more freedom in their economic choices than when the aid would have been tied.

The share of untied ODA increased by 17.4 percentage points between 2000 and 2013. However, the share of untied EU-15 ODA was already more than 95% in 2006 and had decreased until 2011 before starting to rise again. The short-term trend since 2008 shows a moderate growth of 6.2 percentage points until 2013. Considering that the share of untied assistance is already considerably high at almost 97%, it is obvious that growth rates must be slowing. The longer-term trend is therefore quite positive: in the early 1990s the share of untied EU-15 ODA had been below 50%.

There were marked differences between the rates of untied ODA in different Member States of the EU-15 in 2013. Three countries had untied their ODA entirely and another three by more than 98%, but two others had untied less than 50%.

What lies beneath this indicator?

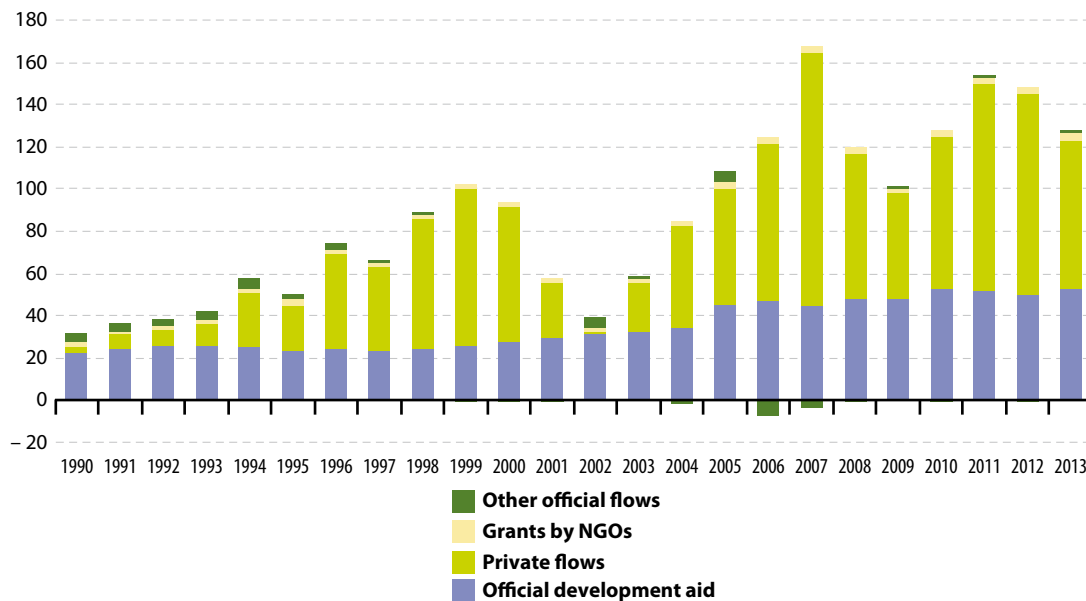
One of the operational objectives and targets of the Sustainable Development Strategy is to ‘increase the effectiveness, coherence and quality of EU and Member States aid policies [...]’. The strategy specifies that one way to do this is to untie aid. In 2001, the OECD Development Assistance Committee (DAC) issued a recommendation (and re-issued it in 2008) to its members on untying aid to least-developed and highly indebted poor countries to the greatest extent possible. The commitment to untying aid to least-developed countries was also reiterated in the Monterrey Consensus on Financing for Development and the Paris Declaration on Aid Effectiveness.

The indicator presents the share of ODA which is untied, that is ODA for which the associated goods and services may be freely procured in all countries. The indicator covers aid from EU countries to the countries mentioned in the DAC list. The shares of untied ODA are calculated based on total bilateral ODA figures that differ from those presented in the table on bilateral ODA by category. Technical co-operation and administration costs are tied by definition and thus excluded from the figures used here.

Financing for developing countries

Financing for developing countries from the EU-15 grew by 2.5 % a year on average between 2000 and 2013. However, over the last five years its average annual growth rate only reached 1.3 %.

Figure 9.9: Financing for developing countries, by type, EU-15, 1990–2013 (EUR billion; at current values)



Long term
(since 2000)



Short term
(since 2008)

Source: OECD, Eurostat (online data code: tsdgp310)

Total EU-15⁽⁵⁰⁾ financing for developing countries, comprising flows from the public and private sector, was EUR 127 293.5 million in 2013. This corresponds to an annual average increase of 2.5 % between 2000 and 2013, while it was only 1.3 % during the last five years with an absolute decrease in the last two years. In the decade 1990 to 2000 the average annual growth was 11.5 %. Thus, financial flows to developing countries grew more slowly than in the previous decade.

The global economic crisis had a marked impact on private finance for development

In 2013 overall EU-15 financing for development was just 77.9 % of what it had been in 2007, the year before the financial crisis began. While ODA remained relatively stable, the impact on financing for development was mainly due to private sector finance to developing countries, which fell by 41.9 % between 2007 and 2013. Between 2009 and 2011 the amount of private flows was growing, but it decreased again between 2011 and 2013. These fluctuations can create an unpredictable financial environment for developing countries that are particularly reliant on external financial support⁽⁵¹⁾.

⁽⁵⁰⁾ Data on bilateral aid is only available for the EU-15 countries.

⁽⁵¹⁾ Massa, Isabella, Jodie Keane and Jane Kennan (2012), *The euro zone crisis and developing countries*, ODI Working Paper 345.



Box 9.1: Money sent by migrants to their families and domestic finance: key sources of finance for developing countries

In addition to the sources of financing for developing countries shown in Figure 9.9, remittances are another important flow of resources to developing countries⁽⁵²⁾. Remittances are relatively small sums of money transferred by migrants to their families in their country of origin. In 2012, remittances from the EU amounted to EUR 3 880 million, of which 73 % went to countries outside the EU-27⁽⁵³⁾. Workers' remittances stayed relatively stable around these figures during the last four years⁽⁵⁴⁾.

The full scale of these financial flows may in fact be significantly higher, as transactions carried out through informal, unrecorded channels are not captured by official data and some Member States do not report data on remittances at all⁽⁵⁵⁾. Although it is difficult to measure the precise impact of remittances, it is clear they play an important role in reducing vulnerability of household income as well as the incidence and severity of poverty. Furthermore, remittances can contribute to increased household investments in education and health⁽⁵⁶⁾. The EU recognises the financial and developmental impact of remittances for developing countries for example through the European Council conclusions on the 'Global approach to migration and mobility', affirming 'the need to ensure faster, easier and cheaper remittance transfers and enhance the impact on

development of social and financial remittances while ensuring coherence with other development priorities'⁽⁵⁷⁾. The G20 members have committed to reducing the cost of transferring remittances from 10% to 5% by 2014. And indeed, the global average costs of sending remittances went down in 2013, including countries like Italy, Germany and the UK⁽⁵⁸⁾. Furthermore, the EU and an additional nine Member States announced that they would try to reduce the cost of remittances⁽⁵⁹⁾.

In addition to providing external financial support, the EU and other members of the international community are also promoting domestic revenue generation within developing countries. By encouraging developing countries to improve government revenue collection, the donor community hopes that the level of domestic funding for development could be significantly improved. To support this action, the Communication on 'Improving EU Support to Developing Countries in mobilising Financing for Development' proposes that '...the EU should continue to increase its support to strengthen the capacity of tax systems in line with the three principles of Good Governance in the tax area (transparency, exchange of information and fair tax competition) and public financial management'⁽⁶⁰⁾.

What lies beneath this indicator?

Total external financing for development comprises net disbursements of ODA, other official flows (OOFs), private flows (mainly foreign direct investment (FDI)) and grants by NGOs. ODA consists of grants or loans undertaken by the official sector with promotion of economic development and welfare in the recipient countries as the main objective. Private flows include direct investment, bonds, export credits and multi-lateral private flows. OOFs are transactions which do not meet the conditions for eligibility as ODA, either because they are not primarily aimed at development, or because they have a grant element of less than 25 %. Grants by national NGOs consists of funds for development assistance and relief, together with any additional contributions in kind, including, for instance proceeds from charity Christmas card sales or special appeals (for example, for disaster relief).

⁽⁵²⁾ Massa, Isabella, Jodie Keane and Jane Kennan (2012), *The euro zone crisis and developing countries*, ODI Working Paper 345, p. 3.

⁽⁵³⁾ European Commission (2014), Commission Staff Working Document, *EU Accountability Report 2014 on Financing for Development Review of progress by the EU and its Member States*, SWD(2014) 235, Part 1/5, p. 72.

⁽⁵⁴⁾ Ibid.

⁽⁵⁵⁾ Council of the European Union (2012), *Conclusions on the Global Approach to Migration and Mobility*, 9417/12, 3 May 2012.

⁽⁵⁶⁾ World Bank (2006), *Global Economic Prospects 2006: Economic Implications of Remittances and Migration*, p. 13.

⁽⁵⁷⁾ See footnote 55.

⁽⁵⁸⁾ Ibid.

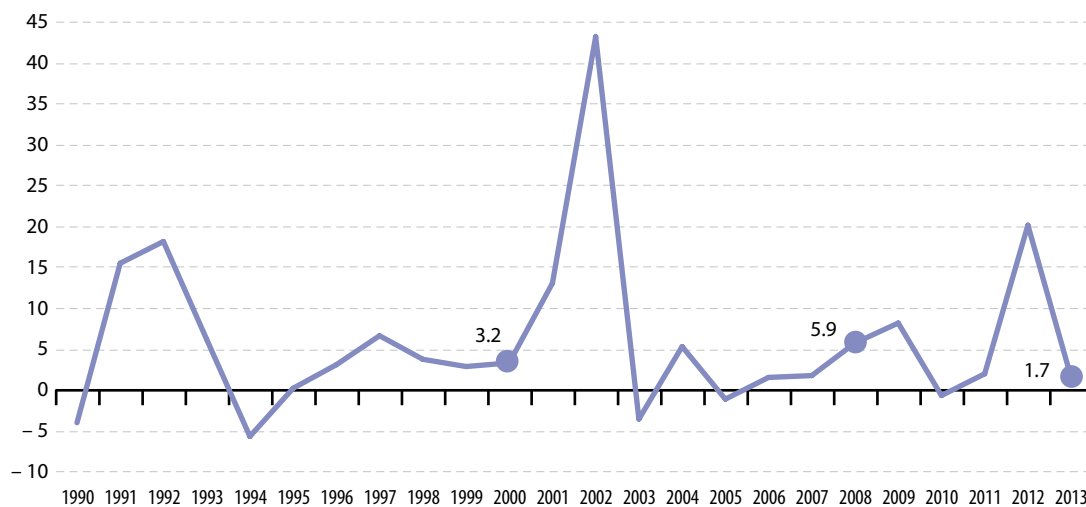
⁽⁵⁹⁾ See footnote 53.

⁽⁶⁰⁾ European Commission Communication, *Improving EU support to developing countries in mobilising Financing for Development*, 2012.

Share of foreign direct investment in low-income countries

The amount of EU foreign direct investment (EU FDI) destined for low-income countries varied widely in the period from 2000 to 2013. There was no consistent upward or downward trend. The absolute amount of EU FDI to these countries increased only marginally between 2000 and 2013, its share in all EU FDI in developing countries fell.

Figure 9.10: Share of foreign direct investment in low-income countries, EU-15, 1990–2013 (% of country allocated FDI)



Source: OECD, Eurostat (online data code: tsdgp320)

In 2000 the share of low-income countries of the total EU FDI to developing countries was 3.2%; in 2008 it was 5.9% and in 2013 it had reduced to 1.7%.

Yet these figures have only limited significance in showing long-term trends, given that FDI figures for low-income countries fluctuated considerably over the years. FDI from the EU-15 to these countries ranged in the decade 2000 to 2010 from a negative amount of EUR – 1 874 million in 2002, to a high of EUR 12 211 million in 2012. Declines in FDI flows, for example as a result of the euro area crisis, are a particular concern for low-income countries.

Box 9.2: Foreign direct investment

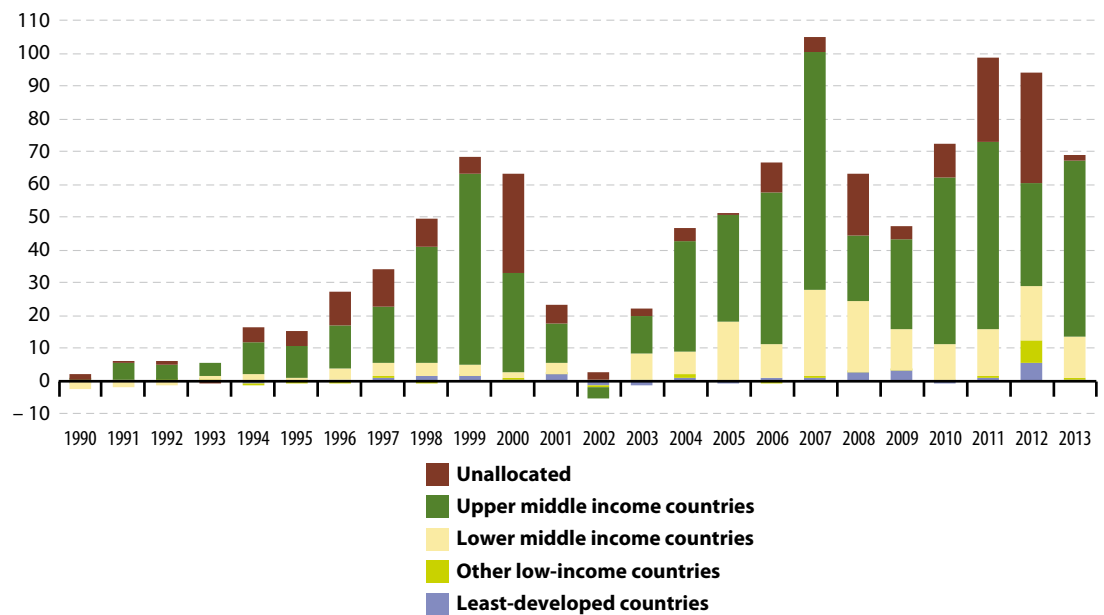
Foreign direct investment (FDI) is an international investment where an enterprise from one country owns 10% or more in an enterprise in another country.

Negative FDI values indicate where outflows of investment exceed inflows. This may indicate, for

example, disinvestment, or reinvestment outside the country, discharges of liabilities, advance and redemption of inter-company loans, short-term credit movements, company dividends exceeding recorded income over a given period or company operations being at a loss.



Figure 9.11: Foreign direct investment in developing countries, by income group, EU-15, 1990–2013 (EUR billion; at current values)



Source: OECD, Eurostat (online data code: [tsdgp320](#))

What lies beneath this indicator?

The Monterrey Consensus and the Doha Declaration on Financing for Development stipulate that private capital flows to developing countries should be increased ⁽⁶¹⁾. The draft SDGs document also stipulates that FDI to countries where the need is greatest, including least-developed countries, should be encouraged ⁽⁶²⁾.

The indicator shows the amount of foreign direct investment made by EU enterprises in developing countries, with a focus on low-income countries. Developing countries are here identified on the basis of list of countries and territories eligible to receive official development aid/assistance (ODA), as determined by the OECD Development Assistance Committee (DAC). Low-income countries are least-developed and other low-income countries taken together.

The indicator does not tell us to what extent the distribution of income generated by FDI benefits the population at large, or whether investors respect social and environmental standards.

The indicator has no evaluation symbol as the share of (FDI) in low-income countries changed considerably from year to year and growth rates can therefore not be meaningfully assessed.

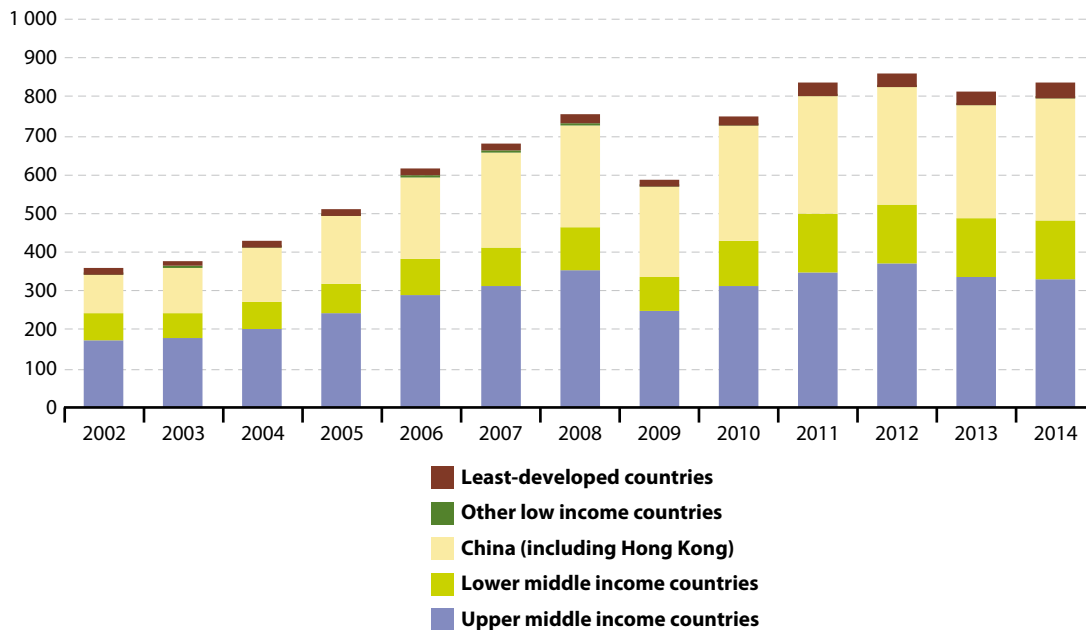
⁽⁶¹⁾ United Nations (2002), *Monterrey Consensus on Financing for Development*.

⁽⁶²⁾ United Nations (2014), *Open Working Group Proposal for Sustainable Development Goals. Goal 10: 'Reduce inequality within and among countries'*.

Imports from developing countries

EU imports from developing countries increased 7.3 % on average per year between 2002 and 2014. The growth rate was the same between 2009 and 2014. Imports from China were the main driver of growth.

Figure 9.12: EU Imports from developing countries by income group, EU-28, 2002–2014 (EUR billion, at current values)



Long term
(since 2002)



Short term
(since 2009)

Source: Eurostat (online data code: [tsdgp210](#))

Between 2002 and 2014, EU imports from developing countries more than doubled, from EUR 358 766 million in 2002 to EUR 834 941 million in 2014. Growing imports from China are a decisive factor behind the overall increase in EU imports over the long term; their share in total EU imports increased from 10.8 % in 2002 to 18.6 % in 2014. In absolute terms, the value of imports from China in 2014 was more than three times the value recorded in 2002.

Imports from developing countries to the EU decreased slightly between 2012 and 2013, reflecting a general decrease in imports from all countries to the EU, but then increased again between 2013 and 2014.

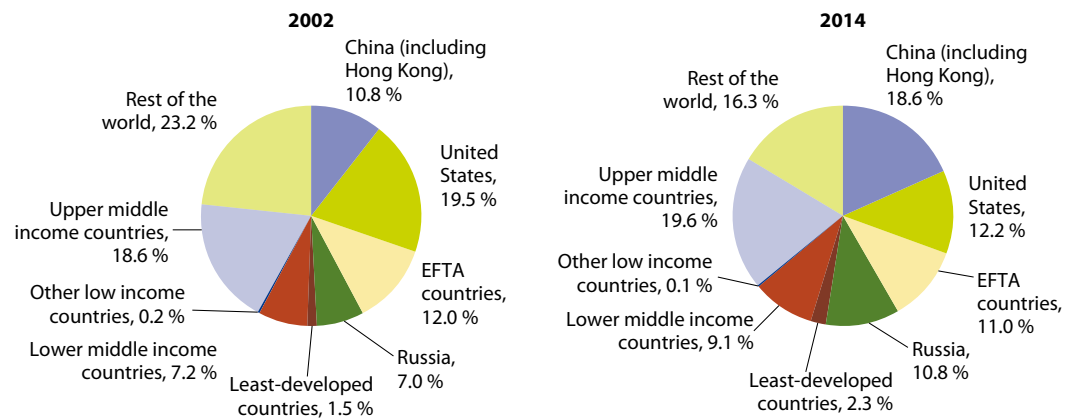
Which are the EU's main trading partners?

Looking at total imports of the EU, China was the largest provider in 2014, followed by the US and Russia. Among the 10 biggest exporters to the EU were three developing countries in addition to China in 2014. China was by far the largest exporter among the BASIC countries (Brazil, South Africa, India and China), exporting to the EU more than eight times as much as India, the next EU import provider in this group.

Between 2002 and 2014 the share of EU imports from developing countries in EU imports from all countries outside the EU increased from 38.3 % in 2002 to 49.7 % in 2014. While the average annual growth rate was 7.3 % for imports from developing countries, the rate was 5.0 % for imports from all non-EU countries to the EU.



Figure 9.13: Extra-EU-28 imports, by trading partner, EU-28, 2002 and 2014 (%)

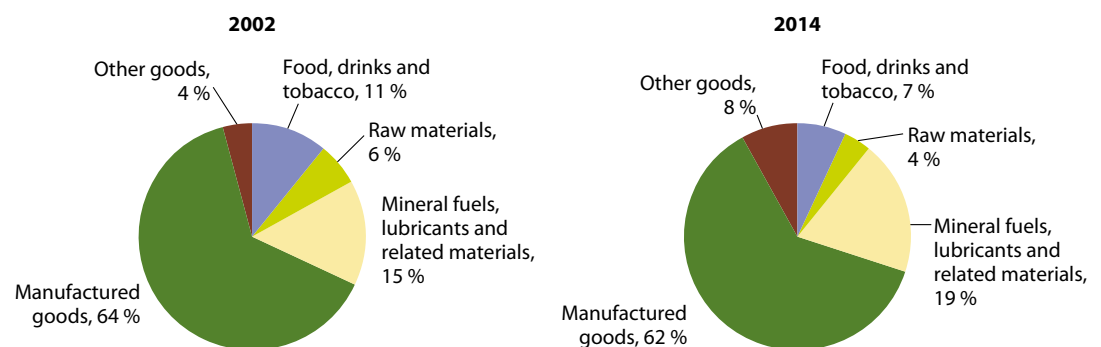


Source: Eurostat (online data codes: [tsdgp210](#) and [ext_lt_maineu](#))

Which are the most imported products to the EU from developing countries?

Developing countries export a range of products to the EU. Yet manufactured goods were by far the largest type of EU imports from developing countries in all years between 2002 and 2014. Their value increased by 7.2% on average annually over the entire period. The amount of mineral fuels and similar materials, the second largest type of products that developing countries export to the EU, increased at a higher average rate of 9.0%. These two largest groups of products accounted for about 80% of developing countries exports to the EU in 2002 and 2014. The four categories (food, drinks and tobacco; raw materials; mineral fuels, lubricants and related materials; and manufactured goods) together accounted for more than 90% of developing countries' exports to the EU in 2014.

Figure 9.14: EU Imports from developing countries, by group of products, EU-28, 2002 and 2014 (%)



Source: Eurostat (online data code: [tsdgp220](#))



What lies beneath this indicator?

The potential contribution of trade to sustainable development has long been acknowledged. In 2010, the European Commission adopted a work programme on policy coherence for development; trade and finance is one of the areas specifically mentioned therein. The EU facilitates imports from developing countries by granting tariff reductions under its Generalised Scheme of Preferences ⁽⁶³⁾ and by providing 'Aid for Trade' targeted at supporting trade-related infrastructure, trade-related assistance and private sector development ⁽⁶⁴⁾.

Various international declarations emphasise the importance of a greater share in world trade for developing countries, including the Doha Declaration on Financing for Development and the Rio+20 final declaration 'The future we want' ⁽⁶⁵⁾. The Open Working Group draft on future Sustainable Development Goals (SDGs) also stresses the contribution that trade can make to sustainable development ⁽⁶⁶⁾. The February 2015 Communication from the EU Commission also refers to trade as a 'key factor for inclusive growth and sustainable development' ⁽⁶⁷⁾.

This indicator is defined as the value at current prices of EU imports from the countries on the DAC list of ODA beneficiaries; these countries are also referred to as 'developing countries' in this section. The indicator is broken down by income groups of countries following the World Bank definition which classifies developing countries by their GNI per capita ⁽⁶⁸⁾. Countries are classified by the UN as least-developed depending on their three-year average estimate of the gross national income per capita, weak human assets, as measured through a composite Human Assets Index, and economic vulnerability measured through a composite Economic Vulnerability Index ⁽⁶⁹⁾. The list of ODA beneficiaries for 2014 to 2016 has been used throughout the time series.

EU import statistics indicate to what extent developing countries can access the EU market, but provide no measure of the use of environmentally and socially sustainable modes of production in developing countries or the overall effects of trade on sustainable development in these countries. Moreover, they do not allow inferences about the EU's overall trade balance with developing countries, which would require taking account of EU exports to these countries as well.

⁽⁶³⁾ European Commission (n.d.), *Generalised Scheme of Preferences*.

⁽⁶⁴⁾ European Commission (2013), Staff Working Document: *Aid for Trade Report 2013*.

⁽⁶⁵⁾ United Nations (2012), Resolution adopted by the General Assembly, 66/288, *The future we want*, 11 September 2012, paras. 281f.

⁽⁶⁶⁾ United Nations (2014), *Open Working Group Proposal for Sustainable Development Goals, Goal 17: 'Strengthen the means of implementation and revitalize the global partnership for sustainable development'*.

⁽⁶⁷⁾ European Commission (2015), *A Global Partnership for Poverty Eradication and Sustainable Development after 2015*, COM(2015) 44, p. 9f.

⁽⁶⁸⁾ For details, see World Bank, *How we Classify Countries*.

⁽⁶⁹⁾ For details of the classification, see UNCTAD, *Research and Policy Analysis on LDCs*.



Imports from least-developed countries



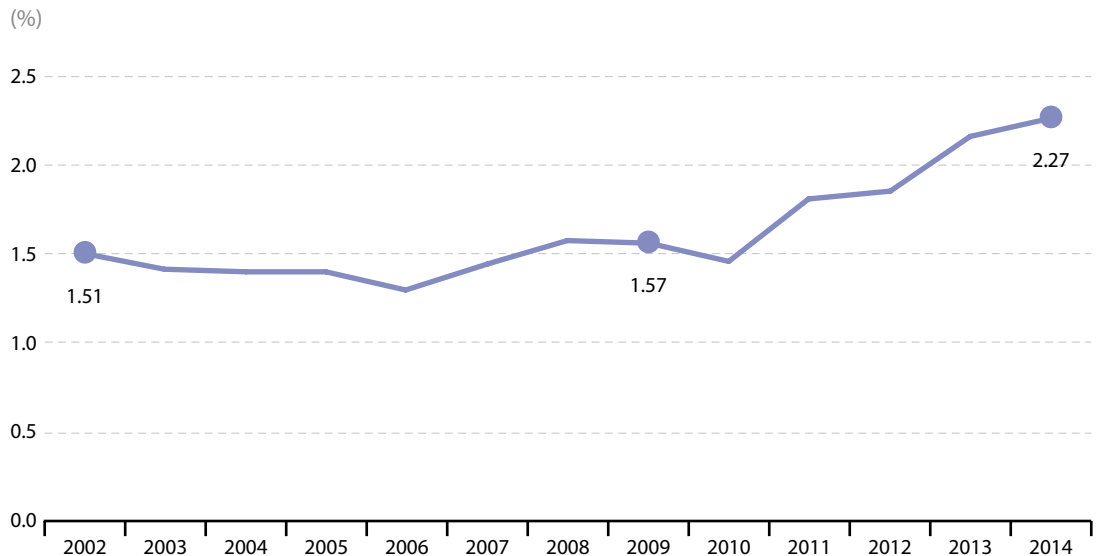
Long term
(since 2002)



Short term
(since 2009)

Imports from least-developed countries to the EU increased by 8.6% annually between 2002 and 2014. The annual increase was considerably higher in the period between 2009 and 2014, amounting to 14.5%. These favourable trends underline progress towards the overall aim of increasing the share of imports from LDCs in total EU imports.

Figure 9.15: Share of imports from least-developed countries in total extra-EU imports, EU-28, 2002–2014



Source: Eurostat (online data codes: tsdgp210 and ext_lt_intratrd)

In 2014, the absolute amount of EU imports from least developed countries (LDCs) was almost three times the 2002 value. The overall share of imports from these countries in total EU imports stood at 2.3% in 2014, up from 1.5% in 2002.

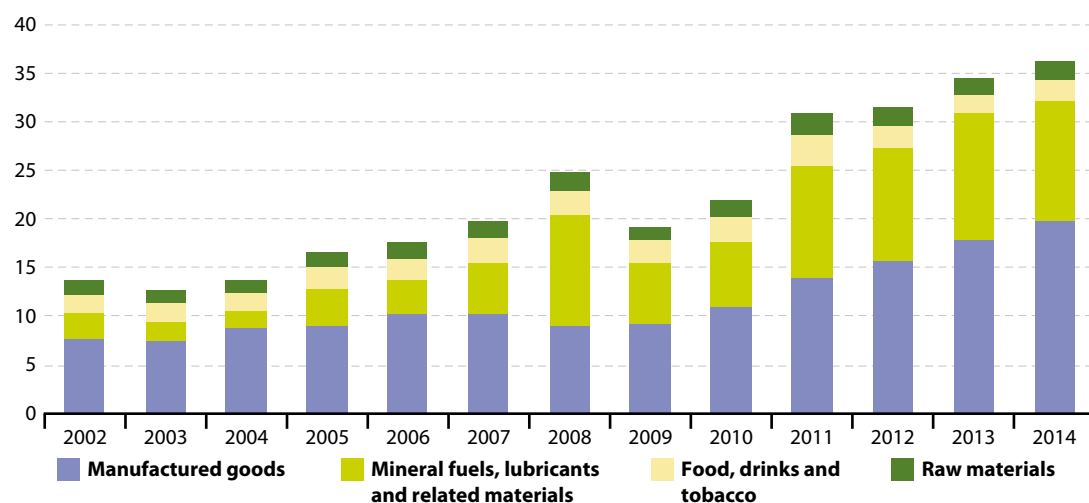
Between 2002 and 2014, there was an 8.6% annual increase in EU imports from LDCs, a category that comprises almost 50 countries⁽⁷⁰⁾. Hence, the annual growth rate for EU imports from LDCs was moderately higher than the annual increase in imports from all developing countries. This indicates progress towards the objective of increasing the share of imports from the poorest countries of the world.

The difference is more pronounced in the short term, from 2009 to 2014. In this period the annual growth rate of imports from all developing countries to the EU was 7.3% and thus the same as the long-term (2002 to 2014) annual growth rate. By contrast, the average annual growth rate of EU imports from LDCs was 14.5% between 2009 and 2014.

⁽⁷⁰⁾ For the list, see OECD (2015), DAC List of ODA Recipients 2014–2016, <http://www.oecd.org/dac/stats/documentupload/DAC%20List%20of%20ODA%20Recipients%202014%20final.pdf>

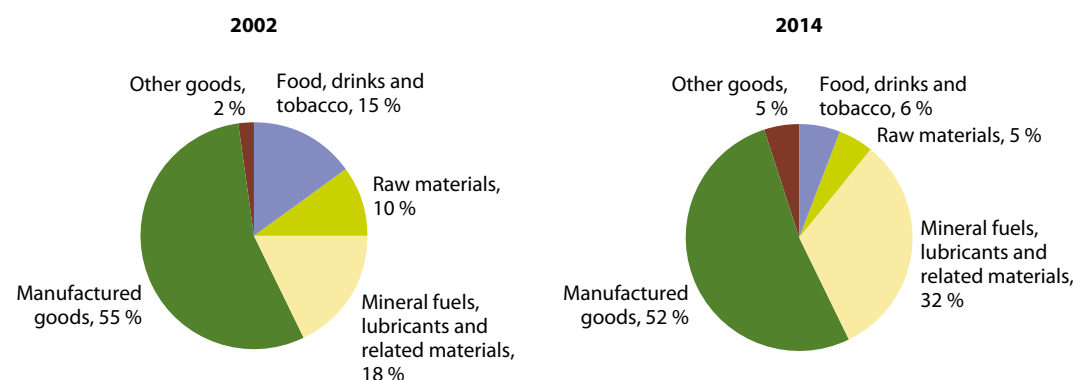


Figure 9.16: EU imports from least-developed countries by group of products, EU-28, 2002–2014 (EUR billion)



Source: Eurostat (online data code: [tsdgp230](#))

Figure 9.17: EU Imports from least-developed countries, by group of products, EU-28, 2002 and 2014 (%)



Source: Eurostat (online data code: [tsdgp230](#))

Which LDC products does the EU import the most?

Between 2002 and 2014, the composition of EU imports from LDCs underwent considerable changes, with a marked increase in mineral fuels, lubricants and related materials, and substantial decreases in the categories of foods, drinks and tobacco as well as raw materials other than oil.

In 2014, 55% of EU imports from LDCs consisted of manufactured products, whereas the share for all developed countries was 64%. Yet in absolute terms imports in manufactured products from LDCs to the EU were more than twice as high in 2014 as they had been in 2002.

By far the largest average annual increase among EU imports from LDCs was in the category of mineral fuels, lubricants and related materials. These imports grew by 14.3% annually or an absolute amount of almost EUR 10 billion between 2002 and 2014.

By contrast, only a slight increase could be observed in the import of foods, drinks and tobacco. In 2014, the share of this group of products in overall LDC exports to the EU was only a bit more than a third of the 2002 share. The absolute value of imports of these products remained more or less unchanged in the same



period. In 2014, the share of other raw materials in LDCs' exports to the EU was also less than half the share in 2002.

Given that international oil prices have substantially increased between 2002 and 2013 ⁽⁷¹⁾, high oil prices appear to be an important driver behind growing values of LDCs' exports to the EU. Yet only a few LDCs export substantial amounts of oil to the EU, among them Equatorial Guinea, Yemen, Angola and the Democratic Republic of the Congo ⁽⁷²⁾. This suggests that some LDCs have benefitted disproportionately from increasing EU imports. Least-developed countries overall continue to be dependent on exports of a few primary commodities, making them vulnerable to volatile world market prices ⁽⁷³⁾.

What lies beneath this indicator?

The potential contribution of trade to sustainable development has long been acknowledged. In 2010, the European Commission adopted a work programme on policy coherence for development; trade and finance is one of the areas specifically mentioned therein. The EU facilitates imports from least-developed countries by exempting them from tariffs on most products under its 'Everything but Arms' scheme ⁽⁷⁴⁾ and by providing 'Aid for Trade' aimed at supporting trade-related infrastructure, trade-related assistance and private sector development. The February 2015 Communication from the Commission refers to trade as a 'key factor for inclusive growth and sustainable development', pointing to its importance for least-developed countries in particular ⁽⁷⁵⁾.

Various international declarations emphasise the importance of a greater share in world trade for developing countries, including the Doha Declaration on Financing for Development and the Rio+20 final declaration 'The future we want' ⁽⁷⁶⁾. The Open Working Group draft on future Sustainable Development Goals (SDGs) also stresses the contribution that trade can make to sustainable development ⁽⁷⁷⁾. Increasing the share of LDCs in global exports by 2020 is mentioned as a target.

This indicator is defined as the value at current prices of EU imports from the countries on the DAC list of ODA beneficiaries; these countries are also referred to as 'developing countries' in this section. The indicator is broken down by income groups of countries following the World Bank definition which classifies developing countries by their GNI per capita ⁽⁷⁸⁾. Countries are classified by the UN as least-developed depending on their three-year average estimate of the gross national income per capita, weak human assets, as measured through a composite Human Assets Index, and economic vulnerability measured through a composite Economic Vulnerability Index ⁽⁷⁹⁾. The indicator also provides information about the type of products, which help understand the overall trends related to the export base of least-developed countries. The list of ODA beneficiaries for 2014 to 2016 has been used throughout the time series.

EU import statistics indicate to what extent developing countries can access the EU market, but provide no measure of the use of environmentally and socially sustainable modes of production in developing countries or the overall effects of trade on sustainable development in these countries. Moreover, they do not allow inferences about the EU's overall trade balance with developing countries, which would require taking account of EU exports to these countries as well.

⁽⁷¹⁾ For example, the Organisation of Oil Exporting Countries (OPEC) indicates that the OPEC yearly basket price for oil increased from USD 24 in 2002 to USD 106 in 2013, see OPEC, *OPEC Basket Price*.

⁽⁷²⁾ European Commission, *Monthly and cumulative crude oil imports into the EU (2001–2014)*.

⁽⁷³⁾ European Report on Development (2013), *Post-2015: Global Action for an Inclusive and Sustainable Future*, Overseas Development Institute (ODI), German Development Institute/Deutsches Institut für Entwicklungspolitik (DIE), European Centre for Development Policy Management (ECDPM), Brussels: 2013, p. 150.

⁽⁷⁴⁾ European Commission, *Generalised Scheme of Preferences*.

⁽⁷⁵⁾ European Commission (2015), *A Global Partnership for Poverty Eradication and Sustainable Development after 2015*, COM(2015) 44, p. 9f.

⁽⁷⁶⁾ United Nations (2012), Resolution adopted by the General Assembly, 66/288, *The future we want*, 11 September 2012, paras. 281f.

⁽⁷⁷⁾ United Nations (2014), *Open Working Group Proposal for Sustainable Development Goals, Goal 17: 'Strengthen the means of implementation and revitalize the global partnership for sustainable development'*.

⁽⁷⁸⁾ For details, see World Bank, *How we Classify Countries*.

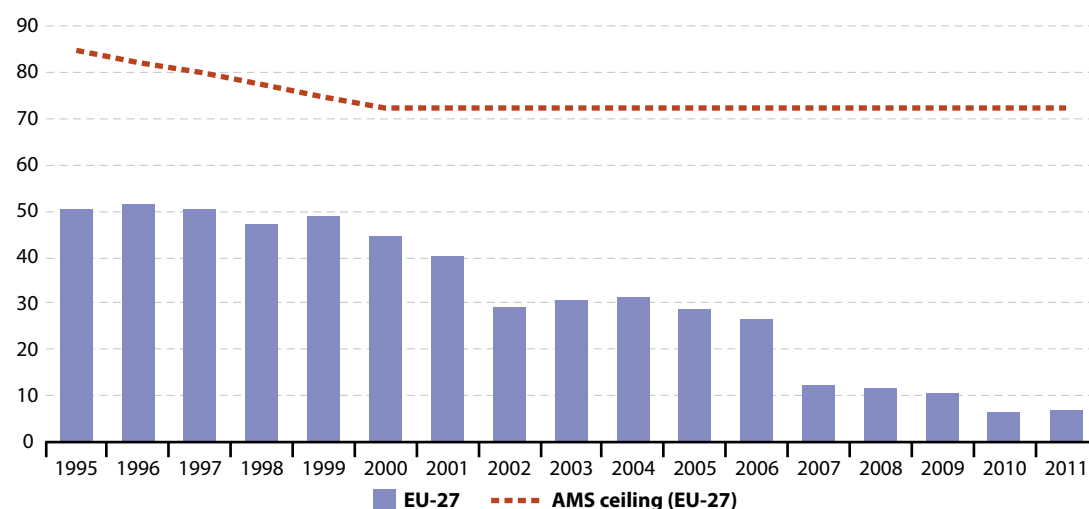
⁽⁷⁹⁾ For details of the classification, see UNCTAD, *Research and Policy Analysis on LDCs*.



Subsidies for EU agriculture

The amount of trade-distorting EU agricultural subsidies decreased substantially between 2000 and 2011, resulting in a growing distance from the ceiling established under the World Trade Organization's Agreement on Agriculture.

Figure 9.18: Aggregated measurement of support for agriculture, EU-27, 1995–2011 (EUR billion; at current values)



Source: EU Commission services, World Trade Organisation, Eurostat (online data code: [tsdgp240](#))

Between 2000 and 2011 those EU subsidies for agriculture classified by the World Trade Organization (WTO) as 'trade-distorting' decreased from EUR 44 419 million to EUR 6 859 million. From 2000 to 2011, the amount of subsidies decreased on average by 15.6 % annually.

The WTO Agreement on Agriculture required a reduction of certain subsidies between 1995 and 2000 below a certain level ('ceiling'). Since then the ceiling has remained unchanged. The EU has remained well below the agreed ceiling in each year since the agreement entered into force.

In principle, this is a positive trend in terms of sustainable development. However, other EU agricultural subsidies not included in this calculation and permitted under WTO may also make it harder for developing countries to compete with EU producers⁽⁸⁰⁾. The reduction described here is due to changes in the EU's Common Agricultural Policy (CAP). While EU farmers in earlier years received more direct product-related payments, which are limited under WTO law, the support has shifted to other forms in more recent years⁽⁸¹⁾.

What lies beneath this indicator?

One way to measure EU progress towards sustainable development in the area of trade is to look at the extent to which EU trade policies are coherent with sustainable development goals. The EU has committed to the objective of policy coherence in the area of development policy, an objective enshrined in the Treaty on the Functioning of the European Union⁽⁸²⁾. Among the EU policies that create a negative effect on developing countries are agricultural subsidies. Such subsidies make EU agricultural products cheaper and thus make it harder for producers from developing countries to compete with EU producers in agricultural markets.

⁽⁸⁰⁾ United Nations Conference on Trade and Development (UNCTAD), *Green Box Subsidies: A Theoretical and Empirical Assessment*, 2007; ICTSD, *Agricultural Subsidies in the WTO Green Box: Ensuring Coherence with Sustainable Development Goals*, Geneva, p. 6.

⁽⁸¹⁾ Alan Swinbank (2009), *The reform of the EU's Common Agricultural Policy*, In: Meléndez-Ortiz, Ricardo, Christophe Bellmann, and Jonathan Hepburn (2009), *Agricultural Subsidies in the WTO Green Box: Ensuring Coherence with Sustainable Development Goals*. Cambridge University Press, p. 71ff.

⁽⁸²⁾ Consolidated version of the Treaty on the Functioning of the European Union, Art. 208, 2012.



Long term
(since 2000)



Short term
(since 2006)



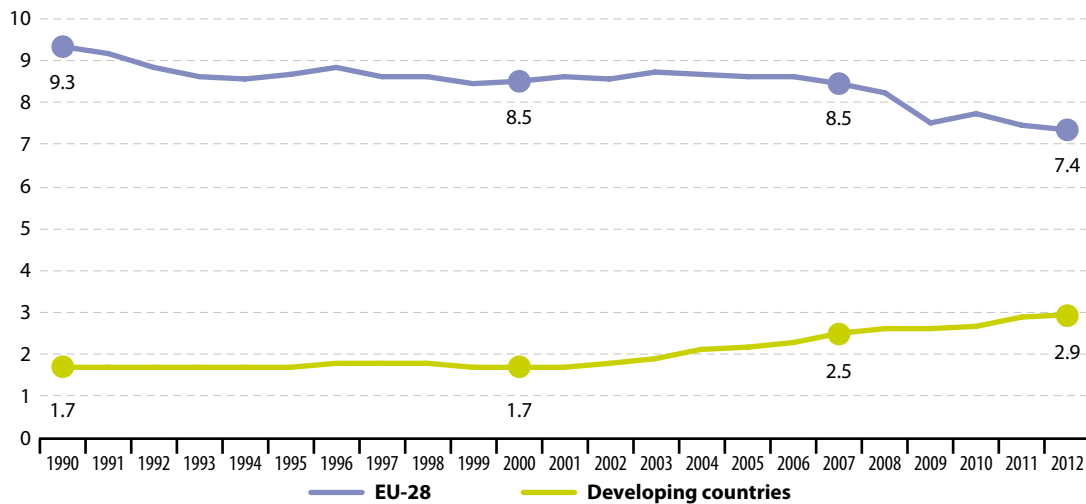
The WTO Agreement on Agriculture obliges the EU to reduce agricultural subsidies that are considered trade-distorting (so-called amber box subsidies). These include certain direct payments to EU farmers. The EU must bring the total amount of the respective subsidies below a certain level or ceiling, referred to as total aggregate measurement of support (AMS). The EU must notify the WTO annually of how much of these subsidies it has disbursed. The calculation is only done for the EU as a whole; there is no breakdown by Member States.

Certain other subsidies can be granted without limitation (so-called green box subsidies). The figures presented here do not allow inferences on whether the EU has reduced its overall level of agricultural subsidies that may have a negative effect on developing countries or changed the modalities of payments to make them compatible with WTO obligations.

CO₂ emissions per inhabitant

CO₂ emissions per EU inhabitant are 2.5 times as high as those of developing country inhabitants in 2012. The ratio between the EU and developing countries was almost halved between 2000 and 2012, mainly because of increasing CO₂ emissions in developing countries.

Figure 9.19: CO₂ emissions per inhabitant in the EU and in developing countries, 1990–2012 (tonnes per inhabitant)



NB: CO₂ emissions for developing countries are from fuel combustion only.

Source: European Environment Agency, International Energy Agency, Eurostat (online data code: [tsdgp410](#))

In 2000, CO₂ emissions per inhabitant in the EU were five times higher than in developing countries. Since 2001 this gap has steadily narrowed: emissions have grown in developing countries, while they have decreased in the EU. Nevertheless, the difference in absolute terms remains high. In 2012, the EU emissions stood at 7.4 tonnes per capita, while in developing countries the amount was 2.9 tonnes.

Fall in EU per capita CO₂ emissions less than growth in developing countries

Between 2000 and 2012 CO₂ emissions per inhabitant in developing countries increased to 2.9 tonnes per inhabitant, representing a total increase of more than 70% for this period. By contrast, the increase was only 11.5% between 2009 and 2012. The decreases in the EU's CO₂ emissions in 2009 and 2011 are not mirrored by those in developing countries. Yet even among developing countries, there were large differences in per capita emissions; for example, per capita emissions were 1.6 tonnes in India as opposed to 6.1 tonnes in China in 2012 ⁽⁸³⁾.

What lies behind this indicator?

For mitigating climate change, the reduction of emissions of greenhouse gases, notably CO₂, is essential. The 2009 Review of the EU Sustainable Development Strategy ⁽⁸⁴⁾ and the European Consensus on Development also include this objective, the latter specifying that 'with regard to climate change, the Community will focus its efforts on the implementation of the EU action plan on climate change in the context of development cooperation' ⁽⁸⁵⁾. The EU provides funding for mitigating climate change in developing countries through various programmes ⁽⁸⁶⁾.

⁽⁸³⁾ International Energy Agency (IEA) (2014), *CO₂ emissions from fuel combustion*, p. vii.

⁽⁸⁴⁾ European Commission (2009), *Mainstreaming sustainable development into EU policies: 2009 Review of the European Union Strategy for Sustainable Development*, COM(2009) 400.

⁽⁸⁵⁾ European Union (2005), *The European Consensus on Development*, para. 76.

⁽⁸⁶⁾ See for example European Commission (2013), *European Union Climate Funding for Developing Countries*.



For EU Member States this indicator is compiled using the data on CO₂ emissions (sector 1–7 excluding sector 5 — land use change and forestry) provided in the official submission of the European Commission to the United Nations Framework Convention on Climate Change (UNFCCC); and per capita emissions are calculated using Eurostat population statistics. For developing countries this indicator is compiled using fuel combustion related CO₂ emissions published by the International Energy Agency (IEA) and per capita emissions are calculated using population statistics published by the IEA. Developing countries are here identified with the ‘developing countries and territories’ on the OECD Development Assistance Committee List of Aid Recipients for which CO₂ emission data are available.

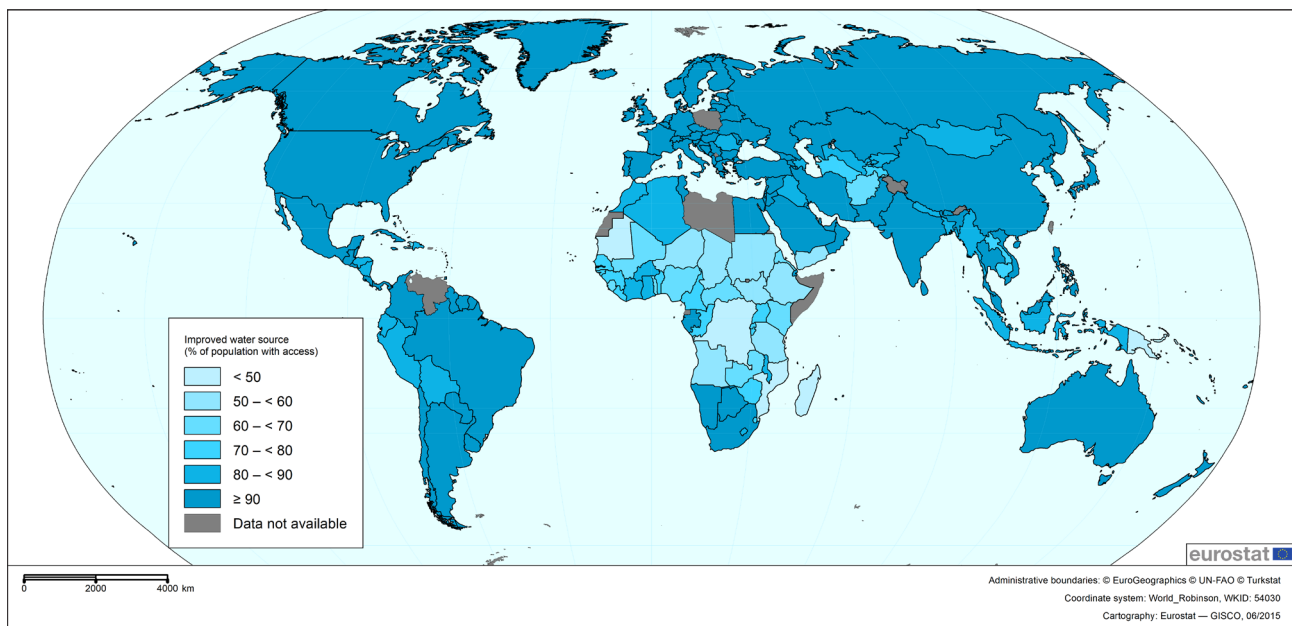
The indicator is not described through an evaluation symbol, as only a decrease in CO₂ emissions in both developing countries and the EU could be considered a favourable trend from a broader sustainable development perspective. Yet comparing the per capita CO₂ emission in developing countries highlights the disproportionately high resource use of EU citizens.



Access to water

The global target of halving the share of the population without access to safe drinking water by 2015 was achieved early in 2010. The gap in share of population with access to safe drinking water between high-income countries and least-developed countries narrowed between 2000 and 2012, but was still more than 30 percentage points in 2012. International aid has contributed to progress.

Map 9.1: Population with sustainable access to an improved water source, 2012 ⁽¹⁾
(% of population)



⁽¹⁾ Access to an improved water source refers to the percentage of the population using an improved drinking water source. The improved drinking water source includes piped water on premises (piped household water connection located inside the user's dwelling, plot or yard), and other improved drinking water sources (public taps or standpipes, tube wells or boreholes, protected dug wells, protected springs, and rainwater collection).

Source: World Bank

Between 2000 and 2012, more people globally got access to a source of enhanced drinking water, representing progress towards globally agreed sustainable development goals. For example, the percentage of people with access to water in least-developed countries increased from 59% in 2000 to 67% in 2012.

However, the difference between richer and poorer countries concerning the proportion of the population with access to safe drinking water was still pronounced in 2012. For example, in Sub-Saharan Africa, comprising many of the world's poorest countries, the percentage was at 64% in 2012. By contrast, the ratio was at 99.2% in high-income countries in the same year. Yet the gap narrowed: in 2000 the difference between both country groups had been 43 percentage points, but by 2012 it was 35 percentage points.

International aid fosters progress towards international water-related goals

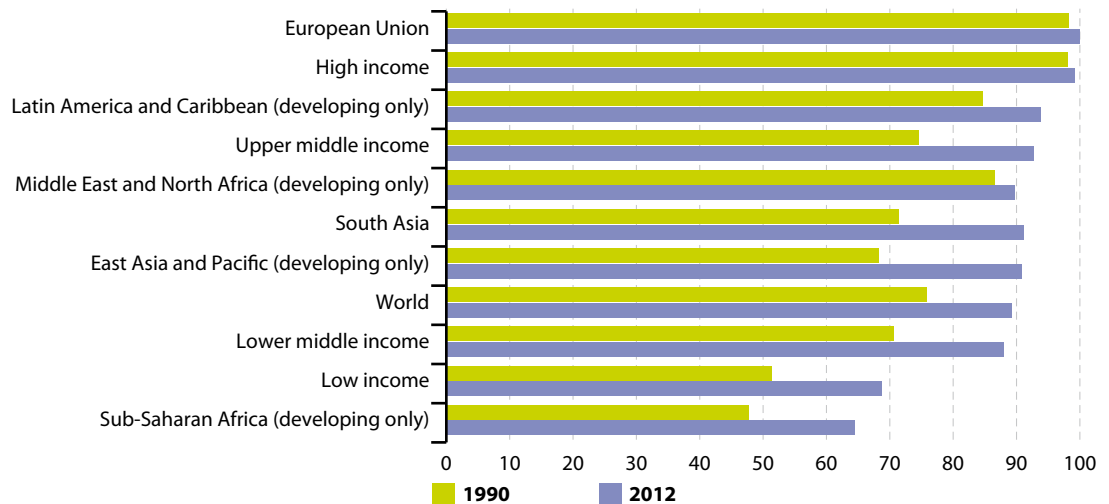
According to the UN, the target of halving the proportion of people without access to improved sources of water was achieved five years ahead of the target year 2015. Between 1990 and 2012, 2.3 billion people gained access to improved drinking water sources. Nonetheless, 748 million people remained without access to an improved source of drinking water in 2012 ⁽⁸⁷⁾.

⁽⁸⁷⁾ For all figures UN, Millennium Development Goals, Goal 7, Ensure Environmental Sustainability.



Aid was an essential factor for progress toward the MDG targets on water supply and sanitation ⁽⁸⁸⁾. For example, the OECD points out that total annual average aid commitments to water and sanitation amounted to USD 7.6 billion; this was 6 % of all aid that was allocated to specific sectors in 2010–2011.

Figure 9.20: Population with sustainable access to an improved water source, 1990 and 2012 (% of population)



Source: World Bank

What lies behind this indicator?

The indicator measures progress towards the aim of providing more people globally with access to safe drinking water, an aim recognised at the global level in several instances. The Millennium Goal 7 includes the target of bringing down to half, by 2015, the proportion of the population without sustainable access to safe drinking water and basic sanitation ⁽⁸⁹⁾. The proposal for Sustainable Development Goals also includes Goal 6 ‘Ensure availability and sustainable management of water and sanitation for all’, with a sub-target of achieving universal and equitable access to safe and affordable drinking water for all by 2030 ⁽⁹⁰⁾.

The EU has also included the objective of enhanced access to water in its development-related strategies. Notably, the European Water Initiative (EUWI) was launched in 2002 during the World Summit on Sustainable Development (WSSD). The initiative brings together stakeholders, including government, civil society, the private sector and others. Its aim is ‘to contribute to the achievement of the MDGs and WSSD targets for drinking water and sanitation, within the context of integrated water resources management’ ⁽⁹¹⁾.

This indicator shows the percentage of the population in a given country that has regular access to an improved drinking water source. These sources include, according to the World Bank’s definition, ‘piped water on premises (piped household water connection located inside the user’s dwelling, plot or yard), and other improved drinking water sources (public taps or standpipes, tube wells or boreholes, protected dug wells, protected springs, and rainwater collection)’ ⁽⁹²⁾. The data is collected through national level census or survey by the World Health Organization (WHO) and the United Nations International Children’s Emergency Fund (UNICEF).

The indicator is part of the World Bank’s development indicators. The indicator does not measure the specific EU contribution to the objective of enhanced access to drinking water.

⁽⁸⁸⁾ OECD (2013), *Financing Water and Sanitation in Developing countries: the Contribution of External Aid*, June 2013.

⁽⁸⁹⁾ UN, Millennium Development Goals, Goal 7, Ensure Environmental Sustainability.

⁽⁹⁰⁾ United Nations (2014), *Open Working Group Proposal for Sustainable Development Goals*.

⁽⁹¹⁾ European Water Initiative, *About us*.

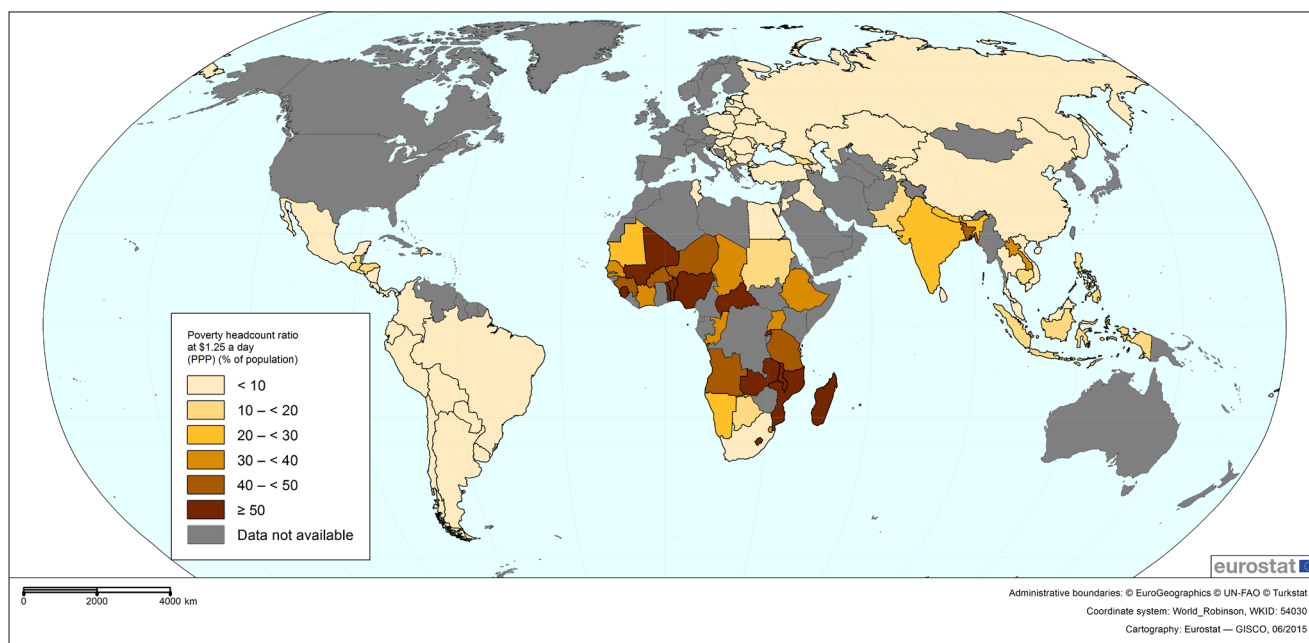
⁽⁹²⁾ World Bank, *World Development Indicators, Improved water source (% of population with access)*.



Global poverty

Globally, the proportion of people whose income is less than USD 1.25 a day has been halved by 2010 compared to 1990 levels. However, there are regional differences: the target has not been met in Sub-Saharan Africa, Southern Asia and Western Asia.

Map 9.2: Population living on less than 1.25 USD a day, 2010–2013 ⁽¹⁾⁽²⁾
(% of population)



⁽¹⁾ The map shows most recent data, which lies between 2010 and 2013 for each country; figures are in PPP at 2005 international prices.

⁽²⁾ Population below USD 1.25 a day is the percentage of the population living on less than USD 1.25 a day at 2005 international prices. As a result of revisions in PPP exchange rates, poverty rates for individual countries cannot be compared with poverty rates reported in earlier editions.

Source: World Bank

Between 1990 and 2010, the world's population living in extreme poverty (with less than USD 1.25 per day), shrank from 36.4% in 1990 to 16.3% in 2010 and even further down to 14.5% in 2011 ⁽⁹³⁾. However, if these aggregated numbers are subdivided for the different world regions, it can be seen that the main winners of this process are East Asia and Pacific (from 57.01% in 1990 down to 7.93% in 2011), Middle East and North Africa (from 5.77% in 1990 to 1.69% in 2011), Latin America and Caribbean (from 12.18% in 1990 to 4.63% in 2011), but not Sub-Saharan Africa (from 56.64% in 1990 to 46.81% in 2011) or fragile and conflict affected regions (from 44.69% to 42.72% in 2011).

Poverty rates vary widely between regions and are concentrated in a few countries

To be more precise, the majority of the world's poor live in just a few countries. For instance, in 2010, 33% of the world's population living with less than USD 1.25 a day were living in India alone, a further 13% in China and another 9% in Nigeria ⁽⁹⁴⁾. Furthermore, high poverty rates are often found in small and conflict-affected countries which lack surveys that could capture data on income or consumption, therefore hindering the efforts to design and implement policies and programmes to combat extreme poverty ⁽⁹⁵⁾.

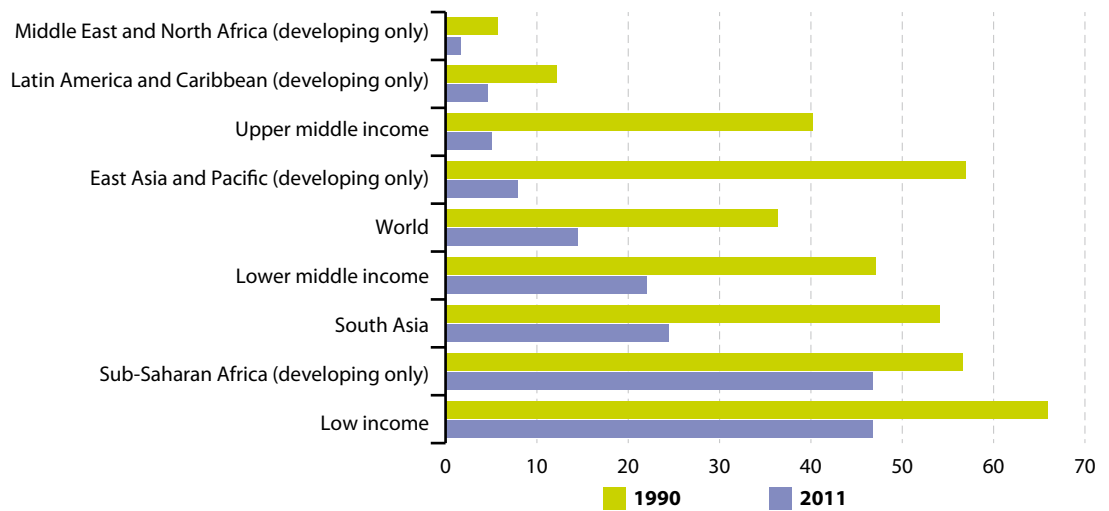
⁽⁹³⁾ World Bank, <http://data.worldbank.org/indicator/SI.POV.DDAY>

⁽⁹⁴⁾ United Nations (2014), *The Millennium Development Goals Report 2014*, p. 9.

⁽⁹⁵⁾ Ibid.



Figure 9.21: Population living on less than 1.25 USD a day, 1990 and 2011 ⁽¹⁾
(% of population)



⁽¹⁾ Figures are in PPP at 2005 international prices.

Source: World Bank

While the population living on less than USD 1.25 per day significantly decreased from 57% in 1990 to 7.93% in 2011 in the developing countries of East Asia and Pacific, in the developing countries of Sub-Saharan Africa it only decreased from 56.64% to 46.81% in the same period.

What lies beneath this indicator?

By definition, the people who have less than USD 1.25 per day to spend (at 2005 international prices) live in extreme poverty. The renewed EU Sustainable Development Strategy refers to reducing poverty as a fundamental right ⁽⁹⁶⁾ and the 2009 Review of the EU SDS calls for ‘intensifying efforts to combat global poverty’ ⁽⁹⁷⁾.

Furthermore, being the first MDG, halving the proportion of people living in extreme poverty is one of the most prominent MDGs. Correspondingly, the first of the proposed SDGs is to ‘end poverty in all its forms everywhere’ ⁽⁹⁸⁾.

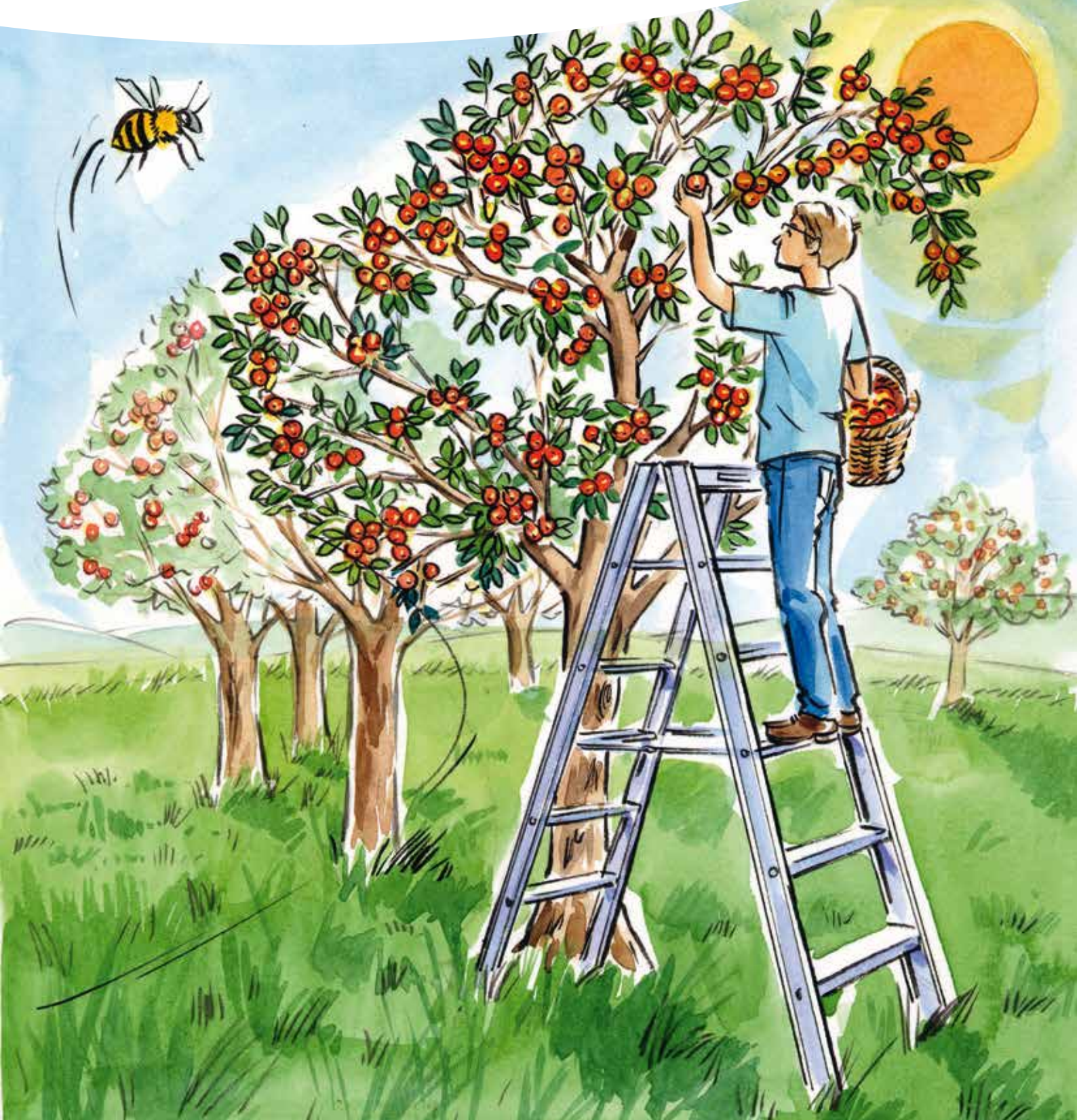
⁽⁹⁶⁾ The Council of the European Union (2006), *Review of the EU Sustainable Development Strategy (EU SDS) — Renewed Strategy*, 26 June 2006, p. 4.

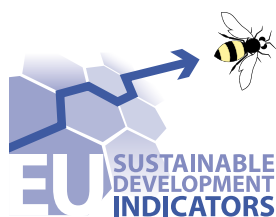
⁽⁹⁷⁾ European Commission (2009), *Mainstreaming sustainable development into EU policies: 2009 Review of the European Union Strategy for Sustainable Development*, COM(2009) 400, p. 15.

⁽⁹⁸⁾ United Nation Open Working Group of the General Assembly on Sustainable Development Goals (2014), *Proposal for Sustainable Development Goals*, p. 6.

Good governance

10













Overview of the main changes

The trends observed in the good governance theme since 2000 have been mixed. Short-term trends — considering the last five years — are often similar to the long-term overview. Favourable trends have been registered for new infringement cases and to the transposition deficit of EU law with respect to Single Market rules. In addition citizens continue to increasingly interact with public authorities over the internet. Some unfavourable trends, however, persist. Voter turnout in national parliamentary elections continues to decline, and a general shift from labour to environmental taxes, as called for in the EU Sustainable Development Strategy and more recently in the Europe 2020 strategy, has not been achieved.

Table 10.1: Evaluation of changes in the good governance theme, EU-28 ⁽¹⁾

Indicator	Long-term evaluation (since 2000)	Short-term evaluation (last five-year period)
: ⁽²⁾	:	:
Policy coherence and effectiveness		
Citizens' confidence in EU institutions	:	:
Infringement cases	 ⁽³⁾	 ⁽⁴⁾
Transposition deficit of EU law	 ⁽⁴⁾	 ⁽⁴⁾
Openness and participation		
Voter turnout		
Citizens' online interaction with public authorities	:	
Economic instruments		
Environmental taxes compared with labour taxes	:	

⁽¹⁾ An explanation of the evaluation method and the meaning of the weather symbols is given in the Introduction and in Annex III.

⁽²⁾ The chapter contains no headline indicator because none was judged robust and policy-relevant enough to provide a comprehensive overview of the good governance concept.

⁽³⁾ From 2007; Evaluation based on EU-27.

⁽⁴⁾ Evaluation based on EU-27.



Key trends in good governance

Low trust in EU institutions, but positive trends in policy coherence

Citizens' confidence in EU institutions remains generally low. Data for 2013 signalled the lowest levels for the European Parliament, the European Commission and the European Central Bank. In 2014, trust in both the European Parliament and the European Commission registered a slight increase. The European Parliament continues to be the most trusted among the main EU institutions.

Favourable trends can be observed regarding policy coherence and effectiveness, both in the long term and the short term. The number of Single Market-related open **infringement cases** fell by 38% in the EU between 2007 and 2014. Most of this drop occurred in the short term between 2009 and 2014. Transport, environmental issues and taxation account for more than half of total infringement cases by policy sector. Moreover, the EU has remained below its target for transposition deficit of Single Market rules. The long-term trend of **transposition deficit of EU law** is clearly favourable: since 2000 the transposition deficit has more than halved with a 2.5 percentage point drop until 2014. In the last five years, the deficit has remained below the 1% target except in 2011, with the EU reaching its best result ever in 2014 (0.5%).

Less participation in elections, but increasing online interaction with governments

Between 2000 and 2014, **voter turnout** in national parliamentary elections in the EU fell 3.4 percentage points. About two-thirds of this decline in the share of citizens casting their vote took place in the short term between 2009 and 2014. Yet, over the same period, **online interactions of citizens with public authorities** in the EU showed a favourable trend, increasing by 10 percentage points. Overall, almost half of EU citizens aged 16 to 74 used e-government in 2014.

No shift in taxation from labour to environmental taxes

The **ratio of labour to environmental taxes** increased by 1.8% in the EU, from 7.9 in 2007 to 8.0 in 2012. Such a trend remains counter to the EU goals of shifting the tax burden from labour to energy and environmental taxes ('greening' the taxation system).

Why do we focus on good governance?

The objective of sustainable development (especially the balancing and integration of environmental, economic and social objectives) poses significant challenges for government bodies, which were originally established to address sectoral concerns. These challenges are interdependent and integrated, and so require 'comprehensive approaches and popular participation' ⁽¹⁾. The EU Sustainable Development Strategy, as the EU's main policy document for strategic and integrated decision-making in the area of sustainable development, contains principles for governance that reflect governance processes in Europe (see Box 'How does the EU tackle good governance?').

The link between governance and sustainable development is thus fundamental and was already addressed in the Brundtland Report of 1987. Generally, governance refers to the steering of societal processes by governing procedures and institutions in a democratic manner. 'Good governance' is a specifically normative usage that prescribes certain steering procedures and institutions — based on principles, values and norms (such as participation, transparency and rule of law) — that should be adopted to achieve preferred outcomes. The EU has addressed good governance in its White Paper on European Governance (see box, p. 319), defining five principles for application and designating the concept a normative standard for the EU's policy processes. That governance mechanisms are crucial for sustainable development has also been widely acknowledged at UN meetings: from framing sustainable development as a governance reform in Agenda 21 in 1992 ⁽²⁾ to the Johannesburg World Summit in 2002 and the Rio+20 Conference in 2012 (see Box 'Good governance in Rio+20 outcome document').

⁽¹⁾ World Commission on Environment and Development (1987), *Our Common Future*, p.9.

⁽²⁾ United Nations (1992), *Agenda 21: The United Nations Programme of Action from Rio*, United Nations, New York.

The good governance provisions described in the EU Sustainable Development Strategy and in the White Paper on European Governance can be grouped into three main themes:

- **Policy coherence and effectiveness** focuses on better regulation as highlighted in the EU Sustainable Development Strategy. Here some of the issues of policy relevance are ‘new infringement cases’ and ‘transposition of EU law’. They concern mainly the vertical dimension of policy coherence, that is, the coherence between the EU and national levels. Another important issue is the ‘citizens’ confidence in EU institutions’ because it provides information on the perception of EU institutions by EU citizens.
- **Openness and public participation** focuses on two policy guiding principles of the EU Sustainable Development Strategy, namely open and democratic society, and the involvement of citizens. Some of the main issues important for monitoring are ‘voter turnout’ and ‘e-government usage’.
- **Economic instruments** relate to the polluter pays principle and the focus on economic instruments in the EU Sustainable Development Strategy and the Europe 2020 strategy. The monitoring of important issues such as ‘environmental taxes compared to labour taxes’ and ‘implicit tax rate on energy’ allows the EU performance in the shift of taxation from labour to environmental taxes or the so-called ‘greening’ of the taxation system to be evaluated.

How does the EU tackle good governance?

The EU Sustainable Development Strategy (EU SDS) ⁽³⁾ addresses good governance in various sections, namely in the sections on policy guiding principles, better policy-making, and financing and economic instruments. Various policy guiding principles are directly related to good governance:

- Open and democratic society: guaranteeing citizens’ rights of access to information (first pillar of the Aarhus Convention) and access to justice (third pillar of the Aarhus Convention); promoting adequate consultation and participatory channels for all interested parties and associations (second pillar of the Aarhus Convention).
- Involvement of citizens: enhancing the participation of citizens in decision-making; promoting education and public awareness of sustainable development; informing citizens about their impact on the environment and their options for making more sustainable choices.
- Involvement of businesses and social partners: enhancing social dialogue, corporate social responsibility and private-public partnerships to foster cooperation and common responsibilities to achieve sustainable consumption and production.
- Policy coherence and governance: promoting coherence between all EU policies and between national, regional and local actions to enhance their contribution to sustainable development.
- Policy integration: promoting the integration of economic, social and environmental policies so they are coherent and mutually reinforce each

other by making full use of instruments for better regulation, such as balanced impact assessment and stakeholder consultations.

- Make polluters pay: ensuring prices reflect the real costs to society of consumption and production activities, and that polluters pay for the damage they cause to human health and the environment.

The Europe 2020 strategy ⁽⁴⁾ includes a chapter on ‘stronger governance’ for delivering results. Apart from designing a governance mechanism for streamlining policy objectives, it describes a multi-level governance system and responsible institutions that are need to be involved in policy delivery, including the main EU institutions (Council, Commission and Parliament); national, regional and local governments; and stakeholders and civil society.

The White Paper on European Governance ⁽⁵⁾ includes five principles of good governance:

- Openness: EU institutions should work more openly.
- Participation: the quality, relevance and effectiveness of EU policies depend on ensuring wide participation throughout the policy chain.
- Accountability: roles in the legislative and executive processes must be clearly defined.
- Effectiveness: policies must be effective and timely; delivering what is needed on the basis of clear objectives.
- Coherence: policies and actions must be coherent and easily understood.

⁽³⁾ Council of the European Union (2009), *Review of the EU Sustainable Development Strategy*, Presidency report, 16818/09.

⁽⁴⁾ Commission Communication (2010), *Europe 2020 — A strategy for smart, sustainable and inclusive growth*, COM(2010) 2020 final.

⁽⁵⁾ Commission Communication (2001), *European Governance — A white paper*, COM(2001) 428 final.



Several interlinkages are apparent within the issues covered in the good governance theme. First, confidence in the main EU institutions may affect voter turnout in EU parliamentary elections. Second, there is a link between new infringement cases brought before the Court of Justice of the European Union and the transposition of Single Market law by Member States. Third, citizens' online interactions with public authorities are linked to more open access to public authorities in general.

There is also a direct link between good governance and other sustainable development themes. The pledge to shift taxation from labour to environmental taxes can be linked to sustainable consumption and production (particularly to 'resources and waste' and 'consumption patterns'), climate change and energy, sustainable transport and natural resources.

Good governance in the Rio+20 outcome document

The Rio+20 outcome document, 'The Future We Want'⁽⁶⁾, includes good governance issues very prominently. It acknowledges that 'democracy, good governance and the rule of law, at the national and international levels, as well as creating an enabling environment, are essential for sustainable development' (paragraph 10). This notion has most recently been confirmed in the 'zero draft' of the outcome

document for the UN Summit to adopt the Post-2015 Development Agenda⁽⁷⁾.

Moreover, the outcome document reflects on effective governance at the different political levels (from global to local), including issues of policy coherence, stakeholder participation, science-policy interface and the review of progress achieved for sustainable development (para 75 and 76 ff.).

Further reading on good governance

European Commission (2011), *Aarhus Convention Implementation Report*, COM(2011)208 final, Brussels.

European Commission (2010), *The European eGovernment Action Plan 2011–2015: Harnessing ICT to promote smart, sustainable & innovative Government*, COM(2010) 743, Brussels.

European Commission (2010), *A Digital Agenda for Europe*, COM(2010) 245 final, Brussels.

Eurostat (2013), *Taxation trends in the European Union: Data for the EU Member States, Iceland and Norway*, 2013 edition, Publications Office of the European Union, Luxembourg.

European Commission (2012), *29th Annual Report on Monitoring the Application of EU Law*, COM(2012) 714 final, Brussels.

European Commission (2012), *Digital Agenda Scoreboard for Europe 2012*, Publications Office of the European Union, Luxembourg.

European Environment Agency (2011), *Environmental tax reform in Europe: opportunities for eco-innovation*, Technical report No 17/2011, Copenhagen.

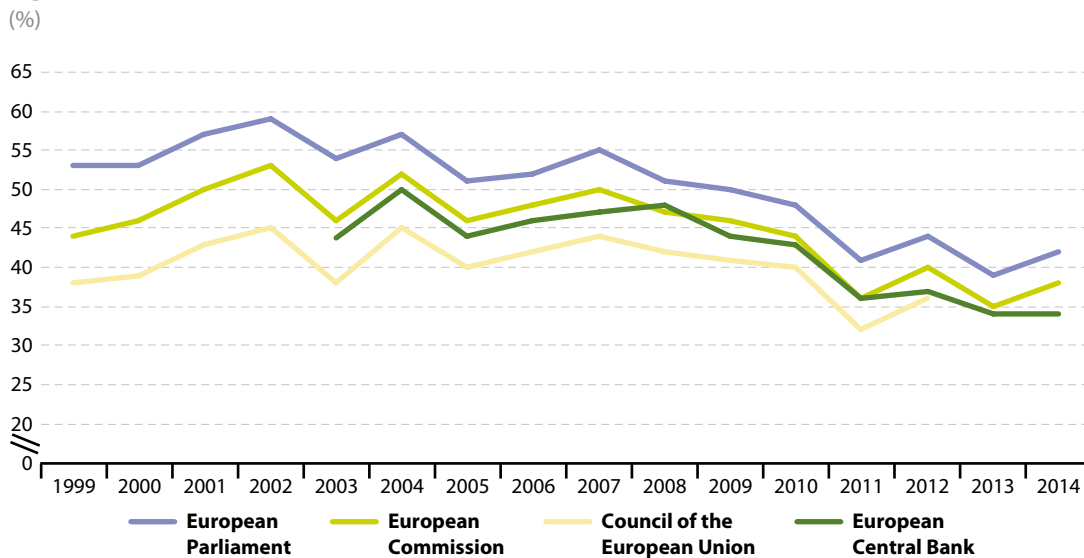
⁽⁶⁾ UNCSO outcome document (2012), *The Future We Want*, A/CONF.216/L.1.

⁽⁷⁾ See <http://www.uncsd2012.org/futurewewant.html>

Citizens' confidence in EU institutions

Citizens' confidence in EU institutions remains generally low. After reaching a low in 2013, trust in both the European Parliament and the European Commission increased slightly in 2014. The European Parliament remains the most trusted of the main EU institutions.

Figure 10.1: Level of citizens' confidence in EU institutions, EU, 1999–2014⁽¹⁾



(1) Data for trust in the Council of the European Union are only available up to 2012.

Source: European Commission, Eurobarometer (online data code: [tsdgo510](#))

Levels of trust in all four institutions have declined in the long term, reaching the lowest point in 2013 for the European Parliament, the European Commission and the European Central Bank. The lowest level of trust in the Council of the EU was reached in 2011⁽⁸⁾. In the short term, between 2009 and 2014, both the European Parliament and the European Commission lost 8 percentage points, while the European Central Bank (ECB) registered a 10 percentage point decrease in citizens' confidence.

Both long-term (since 1999) and short-term trends (since 2009) follow a common path of decreasing citizens' confidence in EU institutions. In 2014, less than half of the EU citizens (42%) said they trusted the European Parliament. However, it remained the most trusted of the four EU institutions evaluated. Even fewer citizens said they trusted the European Commission (38%). Seemingly low trust is expressed in the Council of the EU (36%), for which data have been collected until 2012. Of all the EU institutions mentioned, the ECB engendered the lowest level of confidence at 34% for both 2013 and 2014.

Low trust levels in EU institutions is matched by a general lack of trust in national political institutions

EU citizens' trust in political institutions at all levels of government is generally low⁽⁹⁾. EU citizens have the lowest trust in national governments (29%) and national parliaments (30%). They are more likely to trust regional and local authorities (43%) and international institutions, such as the United Nations (48%). Recent reports⁽¹⁰⁾ show that the economic crisis and the following spending cuts ('austerity policy'), together with the way these were managed, seem to explain much of the lack of trust. The last published Eurobarometer

(8) Data for trust in the Council of the EU are only available up to 2012.

(9) European Commission (2014), *Eurobarometer 82*, Brussels.

(10) European Council on Foreign Relations (2013), *The continent-wide rise of Euroscepticism*, May 2013; and Centre for European Policy Studies (2011), *Has the financial crisis shattered citizens' trust in national and European governmental institutions?*, CEPS Working Document No 343, June 2011 (update).



(Autumn 2014) ⁽¹⁾ reports that unemployment represents the most important national concern among EU citizens, followed by the economic situation, immigration, health and social security, and government debt.

What lies beneath this indicator?

Confidence in political institutions is important for effective democracies. On the one hand, citizens' confidence increases the probability that they vote in democratic elections. On the other hand, it provides politicians and political parties with the necessary mandate to take decisions that are accepted in society.

The indicator is measured by expressions of institutional 'trust' among citizens of the EU Member States in main EU institutions: European Parliament, European Commission, Council of the European Union (until 2012), and the European Central Bank. Citizens questioned expressed their confidence levels by choosing the following alternatives: 'tend to trust', 'tend not to trust' and 'don't know' or 'no answer'. As 'trust' is not further specified, there is clearly room for individual interpretations.

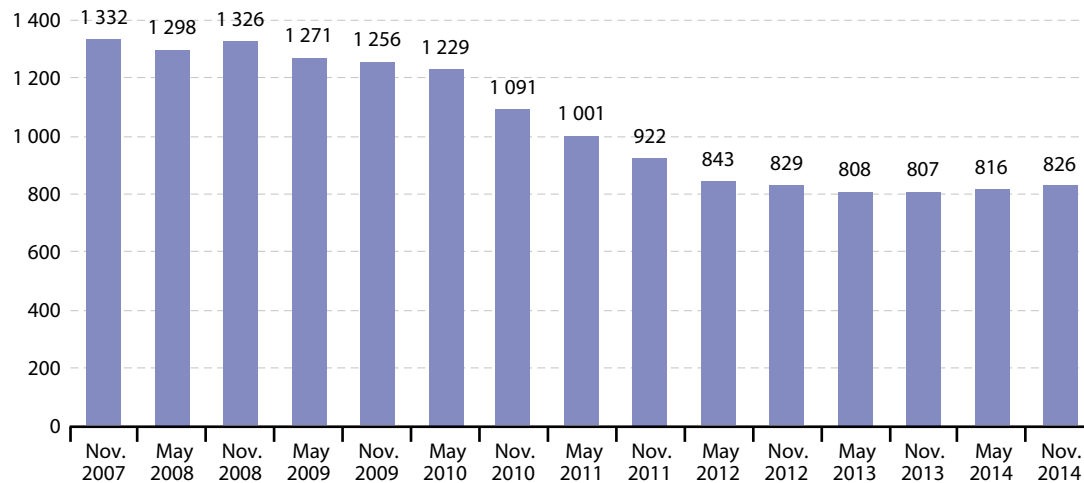
⁽¹⁾ European Commission (2014), *Eurobarometer 82*, Brussels.



Infringement cases

The total number of Single Market-related pending infringement cases fell by 38% in the EU in the long term between 2007 and 2014. Most of this drop occurred in the short term between 2009 and 2014. Transport, environmental issues and taxation account for more than half of the total of infringement cases by policy sector.

Figure 10.2: Open infringement cases, EU, 2007–2014 ⁽¹⁾
(number)



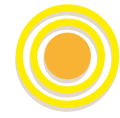
⁽¹⁾ Data refer to the EU composition of the reference period.

Source: European Commission services (Single Market Scoreboard)

Open infringements cases refer to cases where Single Market rules are presumed to have been incorrectly applied or transposed and where a letter of formal notice has been sent to the Member State in question. The number of open infringement cases in the EU dropped considerably in the long-term period between 2007 and 2014, with the most notable falls occurring in 2010 and 2011. Although both long-term and short-term trends are favourable, the two periods showed slightly different trends: the drop was much faster and more evident in the last five years, between November 2009 and November 2014, representing almost 85% of the total drop. After a six-year decline, infringement cases started to increase again slightly in the last year, between November 2013 and November 2014, rising from 807 to 826 cases.



Long term
(since 2007)



Short term
(since 2009)

Box 10.1: The 'EU Pilot' project to improve co-operation and early problem-solving

In April 2008, the Commission put the 'EU Pilot' project in place with 15 volunteer Member States to enhance co-operation and early problem-solving on the application of EU law. Now the EU Pilot project applies to all Member States. In general, EU Pilot is used as a first step to try to clarify or resolve problems, so that, if possible, formal infringement proceedings can be avoided ⁽¹²⁾.

Box 10.2: The SOLVIT centres

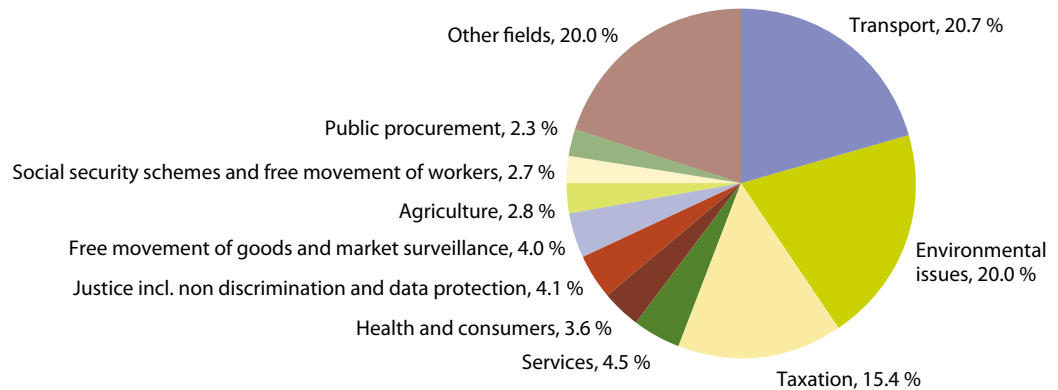
Operational since July 2002, SOLVIT is an online network, created by the European Commission and the Member States, with the aim of solving problems that arise for individual citizens and businesses from the misapplication of internal market law. Moreover, a network of national SOLVIT centres ⁽¹³⁾ has been set up to seek quick solutions to cross-border problems faced by individuals or businesses related to poor application of Single Market rules.

⁽¹²⁾ See http://ec.europa.eu/internal_market/scoreboard/performance_by_governance_tool/eu_pilot/index_en.htm

⁽¹³⁾ http://ec.europa.eu/solvit/contact/index_en.htm



Figure 10.3: Infringement cases by sector, EU-28, 2014 (%)



Source: European Commission services (Single Market Scoreboard)

Considerable differences in infringement cases between policy sectors

Major differences exist between individual policy sectors. Considered together, transport, environment and taxation made up more than half of the total of infringement cases in 2014. In the Single Market, the major concerns continue to be in the areas of transport with 20.7% of all infringement cases (air transport accounting for almost half of cases in this sector), environmental issues with 20% (water protection and waste management in particular), and direct and indirect taxation totalling 15.4%.

What lies beneath this indicator?

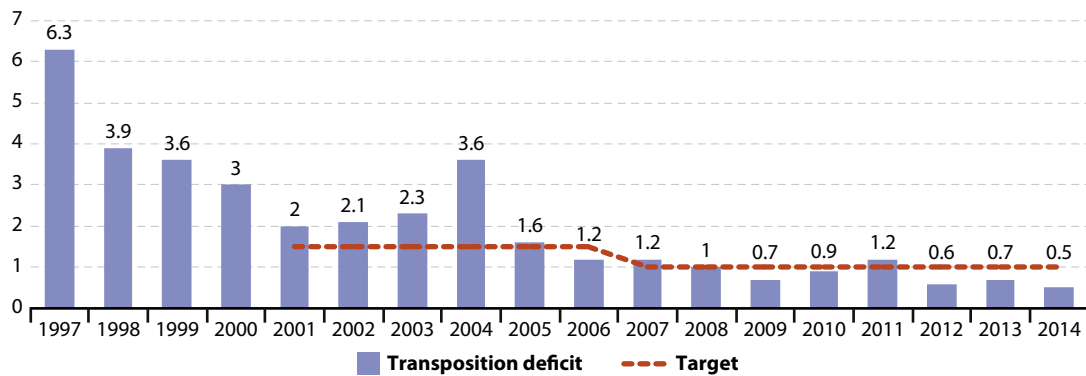
The indicator provides a measure of the enactment of EU Single Market law at the national level and gives some insight into areas that cause difficulties for Member States. It illustrates one aspect of policy coherence between the EU and the Member States called for in the EU Sustainable Development Strategy (EU SDS) and the Europe 2020 strategy. One of the policy guiding principles of the EU SDS is to promote coherence at all levels of political action (policy and governance), and the Europe 2020 strategy governance process requires close co-ordination between the different levels of government.

The infringement statistics highlight the infringement backlog of the various Member States, provide recognition of any efforts undertaken to improve the resolution of cases and encourage Member States to improve their performance. The number of open infringement cases in the EU refers to cases where Single Market rules are presumed to have been incorrectly applied or incorrectly transposed and where a letter of formal notice has been sent to the Member State in question. As guardian of the Treaties, it is the Commission's task to ensure that both Treaty provisions and acts adopted by the EU institutions are correctly implemented and applied by the Member States. If after preliminary consultations in EU Pilot, the Commission considers that EU rules are not being properly applied, it may open infringement proceedings against the Member States in question. However, only the Court of Justice can rule definitively that EU law has been breached.

Transposition deficit of EU law

A 2.5 percentage point drop in the transposition deficit of EU law occurred between 2000 and 2014. This puts the EU well inside the target for transposition deficit of Single Market rules and is its best result to date.

Figure 10.4: Transposition deficit of Single Market law, EU, 1997–2014 ⁽¹⁾ (%)



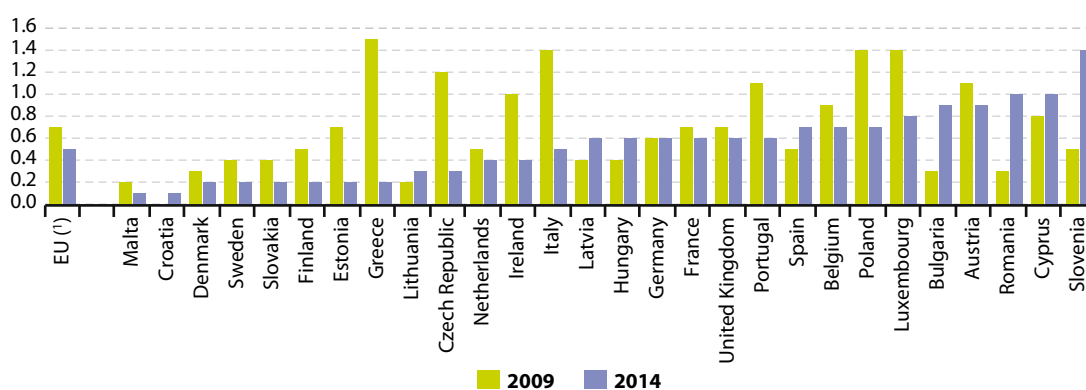
⁽¹⁾ Data refer to the EU composition of the reference period.

Source: European Commission services, Eurostat (online data code: tsdgo220)

In 2014, the EU registered a decrease of 0.2 percentage points in the transposition deficit of Single Market Law. The transposition deficit has stayed below the 1.0% target set by the European Council in 2007 ⁽¹⁴⁾, reaching the 0.5% target proposed by the European Commission in the Single Market Act in 2011 ⁽¹⁵⁾. The results for 2014 represent the best ever registered, as shown by the Single Market Scoreboard ⁽¹⁶⁾.

In the long term (from 2000 to 2014), a decreasing and favourable trend has been registered from a value of 3% to the mentioned last result of 0.5%. Considering the last five-year period (from 2009 to 2014), the indicator reveals mixed short-term tendencies. The 1% target was met every year with the exception of 2011, when the deficit increased to 1.2%.

Figure 10.5: Transposition deficit of Single Market law, by country, 2009 and 2014 (%)



⁽¹⁾ Data refer to the EU composition of the reference period.

Source: European Commission services, Eurostat (online data code: tsdgo220)

⁽¹⁴⁾ The 2001 transposition deficit target of 1.5% was changed to 1.0% in 2007 to be achieved by 2009; see EU Council Conclusions March 2007, 7224/1/07 REV 1, para 9.

⁽¹⁵⁾ Commission Communication (2011), *Single Market Act: Twelve levers to boost growth and strengthen confidence*, COM(2011) 206 final, p. 21.

⁽¹⁶⁾ http://ec.europa.eu/internal_market/scoreboard/performance_by_governance_tool/transposition/index_en.htm



Long term (since 2000)



Short term (since 2009)



How transposition deficit varies across Member States

In 2014, only Slovenia did not comply with the 1 % target established by the European Council in 2007. At 1.4%, Slovenia had the highest transposition deficit in the EU, increasing by 0.9 percentage points since 2009. Except Slovenia, Romania and Cyprus, all Member States were below the 1 % target in 2014. Moreover, 13 Member States met the 0.5 % target proposed by the European Commission in the Single Market Act in April 2011. Another six Member States were close to the target, showing that most countries could reach the 0.5 % target for the transposition deficit with some additional effort.

Croatia and Malta had the lowest transposition deficit across the EU in 2014, at 0.1 %. The strongest improvements since 2009 took place in Greece, which cut its transposition deficit by 1.3 percentage points from 1.5 % to 0.2 %, and Czech Republic and Italy, which both decreased their deficits by 0.9 percentage points to meet the 1 % and 0.5 % targets.

What lies beneath this indicator?

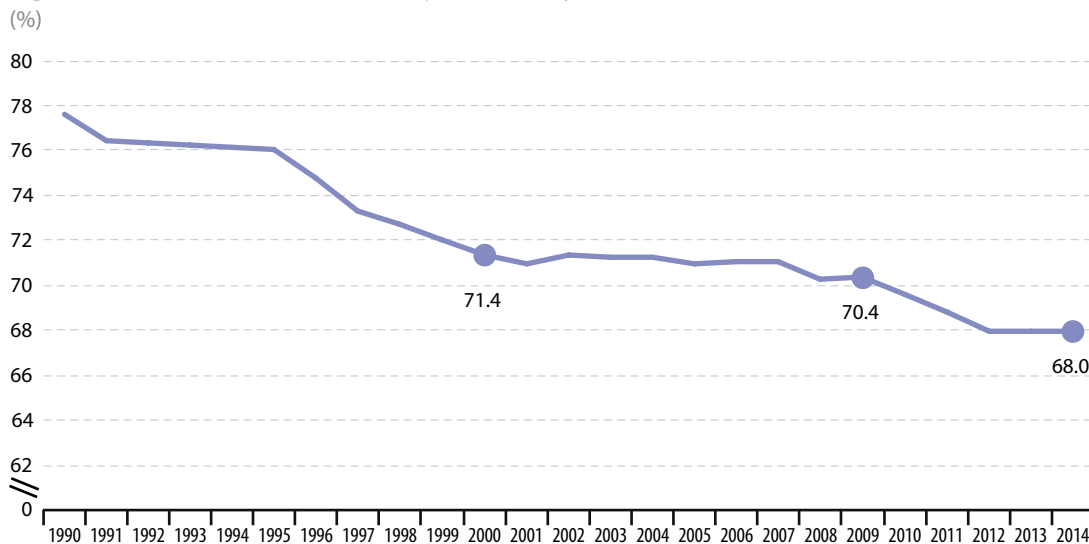
The indicator signals the degree of policy coherence and policy integration among all EU policies and between national, regional and local policies. The so-called 'incompleteness rate' records the percentage of outstanding directives which one or more Member States have failed to transpose in relation to the total number of Single Market directives. The consequence is that the Single Market is not a reality in the areas covered by those directives.

The transposition deficit of EU Single Market law considers the percentage of Single Market directives that have not been yet notified (as national transposition measures) to the Commission in relation to the total number of directives that should have been notified by the deadline. This indicator is calculated twice a year. It takes into account all notifications by 10 May and 10 November each year for directives with a transposition deadline of 30 April or 31 October of the same year, respectively. The indicator is calculated using data extracted directly from the Single Market Scoreboard (SMS), run by DG Internal Market and Services.

Voter turnout

A 3.4 percentage point reduction in voter turnout in national parliamentary elections was recorded in the EU for the long-term period from 2000 to 2014. The decline was strongest in the short-term period from 2009 to 2014, although the share of citizens casting their vote has remained stable since 2012.

Figure 10.6: Voter turnout in national parliamentary elections, EU-28, 1990–2014⁽¹⁾



⁽¹⁾ Data refer to parliamentary elections for all countries, except for Cyprus (only presidential elections), France, Portugal and Romania (both parliamentary and presidential elections).

Source: Eurostat, IDEA (International Institute for Democracy and Electoral Assistance) voter turnout database (online data code: [tsdgo310](#))

The EU average voter turnout in national parliamentary elections was 77.7 % in 1990. Ten years later, after dropping 6.3 percentage points, the share of citizens casting their vote reached 71.4 % in 2000. Since then, voter turnout has dropped further by 3.4 percentage points. The decline was particularly strong in the short term, between 2009 and 2014, when voter turnout fell by 2.4 percentage points. It has, however, remained stable at 68 % since 2012.

Many factors influence voter turnout. Among these a few seem to have a more sizable impact, such as population size and electoral closeness, a more stable population, campaign expenditures and institutional procedures governing the course of the elections⁽¹⁷⁾. Nevertheless, the contemporary erosion of voter turnout may potentially be associated with younger generations not voting in the elections⁽¹⁸⁾.

How voter turnout varies across Member States

Only seven EU Member States had a voter turnout of more than 80 % at their latest national elections, namely Malta, Luxembourg, Belgium, Denmark, Sweden, Cyprus and France. In 12 countries the percentage of eligible voters who cast their vote was between 60 % and 80 %. Only three countries had a voter turnout at national elections that was lower than half of eligible voters: Poland, Romania and Lithuania.

⁽¹⁷⁾ Geys, B. (2006), *Explaining voter turnout: A review of aggregate-level research*, Electoral Studies, vol. 25 (4), pp. 637–663.

⁽¹⁸⁾ Delwit, P. (2013), *The End of Voters in Europe? Electoral Turnout in Europe since WWII*, Open Journal of Political Science, vol. 3 (1), pp. 44–52.



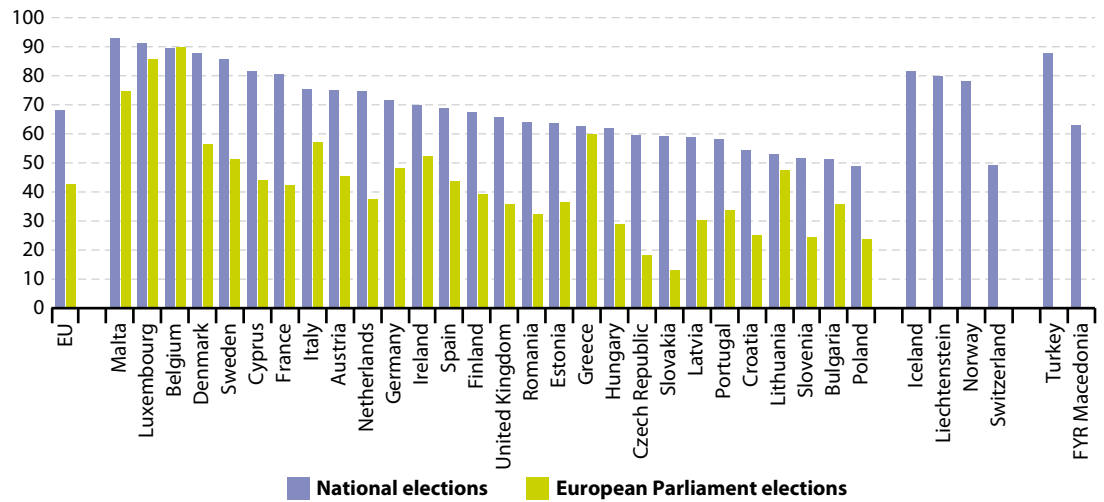
Long term
(since 2000)



Short term
(since 2009)



Figure 10.7: Voter turnout in national and European Parliament elections, by country, 2014⁽¹⁾ (%)



⁽¹⁾ The EU-28 figure for national elections is a Eurostat estimate. Data for national elections refer to the latest year in which national parliamentary elections were held. For all countries, this year lies between 2010 and 2014. Data for EU parliamentary elections are from 2014.

Source: Eurostat, IDEA (International Institute for Democracy and Electoral Assistance) voter turnout database (online data code: [tsdgo310](#))

Much lower participation in EU parliamentary elections compared with national elections

Participation in EU parliamentary elections has been significantly lower than voter turnout in national elections. Over the past 35 years, from 1979 to 2014, there has not only been a significant change in the EU's composition but also a falling trend with regard to voter turnout in EU parliamentary elections, signalling a loss of almost 20 percentage points⁽¹⁹⁾.

With a share of 42.5% for the most recent election in 2014, EU voter turnout did not reach half of the eligible EU population. In six Member States the turnout was lower than 30% and in two of them it did not even reach the 20% threshold. Only three countries were over the 60% threshold: Malta, Luxembourg and Belgium.

The unfavourable performance of EU parliamentary elections compared with national elections may represent accordingly second-order elections in which national issues are more salient than EU ones⁽²⁰⁾. It may also reflect a lack of information on EU matters among EU citizens⁽²¹⁾, as well as a general perception of EU affairs not having a significant impact on national policies and personal interests.

What lies beneath this indicator?

'Voter turnout' is a key aspect indicating the degree of citizens' participation in public affairs both at EU and national levels, signalling the involvement of citizens in society. The indicator measures the number of those who cast a vote or 'turn out' at an election, including those who cast blank or invalid votes. Voter turnout in national and EU parliamentary elections is dependent on the different voting systems of the Member States: for instance, in Belgium, Luxembourg and Greece, voting is compulsory, while in Italy, voting is a civic obligation.

⁽¹⁹⁾ [http://www.europarl.europa.eu/aboutparliament/en/000cdcd9d4/Turnout-\(1979-2009\).html](http://www.europarl.europa.eu/aboutparliament/en/000cdcd9d4/Turnout-(1979-2009).html)

⁽²⁰⁾ Schmidt, V. A. (2013), *Democracy and Legitimacy in the European Union Revisited: Input, Output and Throughput*, Political Studies, 61: 2–22.

⁽²¹⁾ Farrell, D.M. and Scully, R. (2007), *Representing Europe's citizens? Electoral institutions and the failure of parliamentary representation*, Oxford University Press, Oxford.

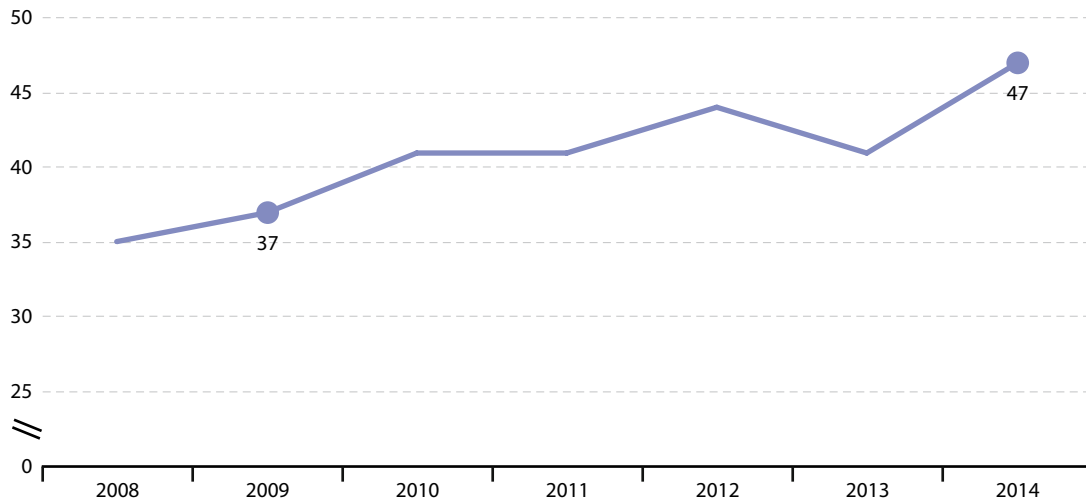
Citizens' online interactions with public authorities

A 10 percentage point increase in citizens' online interactions with public authorities was recorded in the EU in the short term between 2009 and 2014. Overall, almost half of EU citizens used e-government in 2014.



Short term
(since 2009)

Figure 10.8: Individuals using the internet for interaction with public authorities, EU-28, 2008–2014 (% of individuals aged 16 to 74)



Source: Eurostat (online data code: tin00012)

In 2014, 75 % of EU citizens regularly used the internet, which marks an increase of 14 percentage points since 2009⁽²²⁾. Over the same period, the share of EU citizens using the internet in the last 12 months to interact with public authorities increased as well, by 10 percentage points. After a slight drop in 2013, online interactions with public authorities grew again, reaching 47 % in 2014. This means that almost half of EU citizens aged 16 to 74 interacted with public authorities via the internet.

EU target on regular internet usage was met in 2014

Since the launch of the Digital Agenda in 2010, regular internet use⁽²³⁾ in the EU has increased by 10 percentage points, from 65 % in 2010 to 75 % in 2014. The Digital Agenda target for 75 % of the population to be using the internet regularly by 2015 was therefore reached in 2014. Most people in the EU use the internet on a daily basis. Almost two-thirds (65 %) of people aged 16 to 74 in the EU-28 used the internet daily in 2014 compared with 38 % in 2007. However, differences in household take-up and regular internet use by EU citizens were substantial between Member States. Regular use ranged from 90 % and above — in Sweden, Denmark, the Netherlands, Finland and Luxembourg — to 48 % in Romania.

How internet interaction with public authorities varies between Member States

In 2014, internet interaction with public authorities was above 60 % in six countries (Denmark, Sweden, Finland, the Netherlands, Luxembourg and France), reaching the highest point in Denmark with 84 %. In 13 Member States, more than half of the population aged 16 to 74 did not have online interactions with public authorities, varying between 49 % and 10 %. Internet interaction with public authorities increased in all Member States between 2009 and 2014. The strongest increases, although from a low level, took place in Latvia, Greece and Portugal. Greece, in particular, more than tripled its numbers, increasing from 14 %

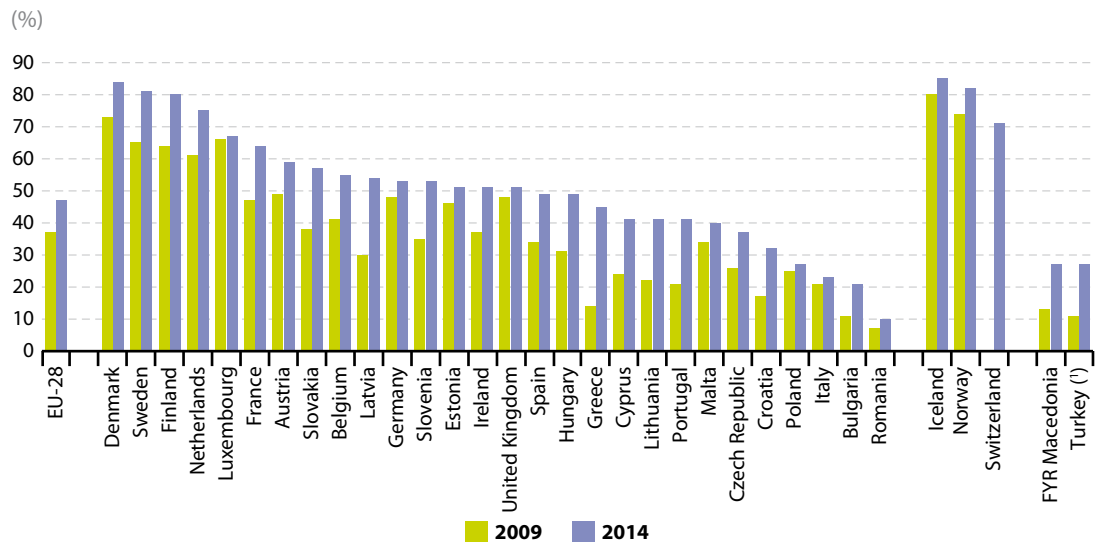
⁽²²⁾ http://ec.europa.eu/eurostat/product?mode=view&code=isoc_ci_ifp_fu

⁽²³⁾ Regular internet use is defined as the percentage of individuals aged 16 to 74 regularly using the internet at least once a week (i.e. every day or almost every day or at least once a week but not every day) on average within the last three months before the survey is taken. Data have been updated to 2014.



to 45 % of online interactions. Luxembourg, Italy and Poland did not follow such a growth pattern but remained close to their 2009 levels, with increases of only 1 percentage point in Luxembourg and 2 percentage points in Italy and Poland. However, the lowest percentage of internet interaction with public authorities in 2014 was registered in Romania at 10 %, which nonetheless experienced a weak growth of the indicator in the past five years (by 3 percentage points).

Figure 10.9: Individuals using the internet for interaction with public authorities, by country, 2009 and 2014



(*) 2010 data (instead of 2009).

Source: Eurostat (online data code: [tin00012](#))

Online public services are perceived as highly satisfying

Once citizens start to use online public services, they generally find the experience highly satisfying with the most appreciated features being the usefulness of information, followed by the ease of finding information and the ease of using online services⁽²⁴⁾. However, lack of trust seems to be the main source of non-use, and has been expressed by non-users with a variety of reasons: a preference for personal contact, higher trust for paper submissions, concern about personal data, or a lack of immediate feedback. Other reasons for non-use include a lack of skills and an incomplete digitalisation of government services⁽²⁵⁾. Transparency is an important element for increasing take up of online public services, because it helps build citizens' trust in public administrations. The data show that this important feature is still not sufficiently at the centre of e-government strategies for many governments, with few exceptions⁽²⁶⁾.

What lies beneath this indicator?

E-government is important for good governance because it can improve the interaction and communication between citizens and public authorities.

The indicator measures the use of the internet to communicate with public authorities, including for obtaining services and information from public authorities' websites, for downloading official forms and for submitting completed forms⁽²⁷⁾.

⁽²⁴⁾ European Commission, *Digital Agenda Scoreboard 2014 — eGovernment*; and Eurostat, ICT survey of households and individuals 2013.

⁽²⁵⁾ Ibid.

⁽²⁶⁾ Ibid.

⁽²⁷⁾ Regarding the use of the internet for political participation, other indicators are available which show that in 2013, 8 % of individuals aged 16 to 74 years in the EU took part in online consultations or voted on civic or political issues (for example, urban planning, signing a petition), 11 % posted opinions on civic or political issues via websites (Source: Eurostat, Survey on ICT usage in households and by individuals).

Environmental taxes compared with labour taxes

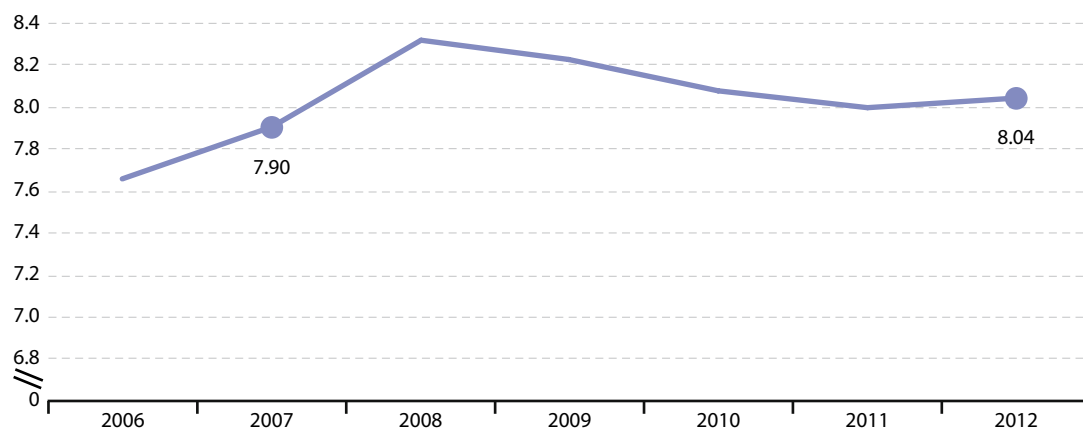
The ratio of labour to environmental taxes increased by 1.8% in the EU between 2007 and 2012. Following a sharp increase in 2008, the ratio has, however, been declining ever since. This trend is counter to the EU goal of shifting the tax burden from labour to energy and environmental taxes ('greening' the taxation system).



Short term
(since 2007)

Figure 10.10: Ratio of labour to environmental taxes, EU-28, 2006–2012⁽¹⁾

(ratio of the share of labour taxes in total revenues from taxes and social contributions to the share of environmental taxes)⁽²⁾



⁽¹⁾ Data are provisional (whole time series). ⁽²⁾ Data on environmental taxes are available until 2013, while data on labour taxes until 2012 only. The ratio of labour to environmental taxes can therefore only be shown until 2012.

Source: Eurostat (online data code: [tsdgo410](#))

Environmental taxation has played an important role in policy debates during the current and previous economic crises. Many have argued that raising environmental taxes could create scope for labour tax cuts and deliver the double dividend of higher employment and a better environment. Also, environmental taxes have been increasingly used to influence the behaviour of economic operators, whether producers or consumers, generating revenues that can potentially be used to promote further environmental protection⁽²⁸⁾.

In 2007 revenues from labour taxes were 7.9 times higher than revenues from environmental taxes. This ratio reached a peak in 2008, followed by a slight drop to about 8.0 in 2012. As a result, over the analysed short-term period since 2007 the tax burden shifted from environmental towards labour taxes.

The share of labour taxes in total revenues from taxes and social contributions has increased...

The share of labour taxes in total revenues from taxes and social contributions in the EU reached 51% in 2012. This is about the same as the level ten years earlier, although there have been fluctuations over this period. Nevertheless, there are large differences in the share of labour taxation among the Member States, ranging from 32.9% to 58.6%. This is accompanied by an overall stagnation in the share of environmental taxes at the EU level, from 6.4% in 2006 to 6.3% in 2013. This trend is moving in the opposite direction to the Europe 2020 strategy's objective 'to shift the tax burden from labour to energy and environmental taxes as part of a 'greening' of the taxation system'⁽²⁹⁾.

With regard to environmental taxes, only two Member States (Bulgaria and Slovenia) showed a share above 10% of environmental taxes in total revenues from taxes and social contributions in 2013. In the remaining Member States the share of environmental taxes ranged from 4.5% to 9.6%.

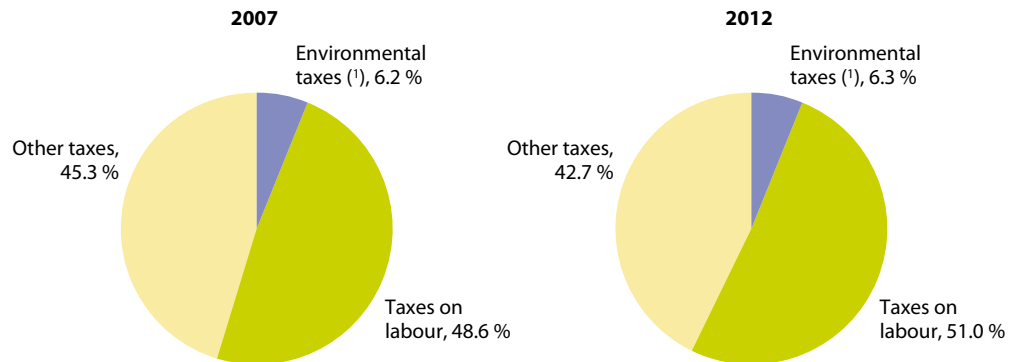
⁽²⁸⁾ http://ec.europa.eu/eurostat/statistics-explained/index.php/Environmental_tax_statistics.

⁽²⁹⁾ European Commission (2010), *Europe 2020 — A strategy for smart, sustainable and inclusive growth*, COM(2010) 2020.



Figure 10.11: Share of environmental and labour taxes in total tax revenues from taxes and social contributions, EU-28, 2007 and 2012

(%)



(¹) Data are provisional.

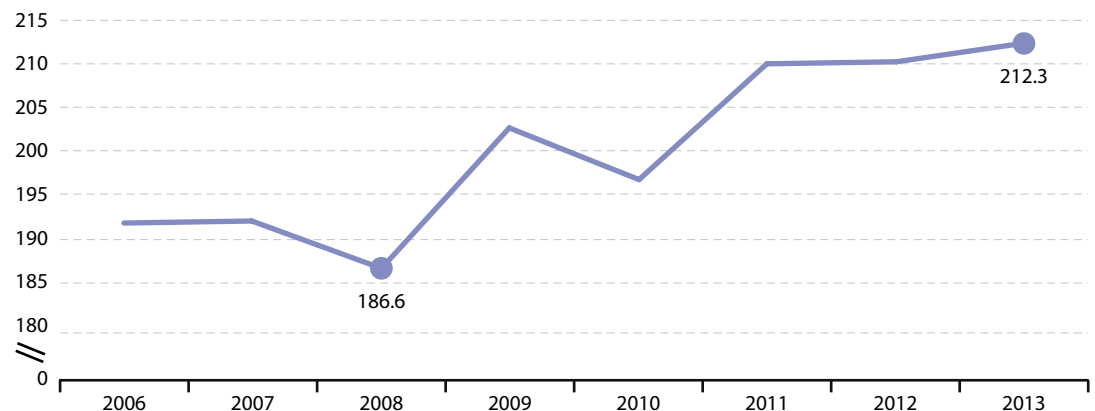
Source: Eurostat (online data code: [tsdgo410](#))

...but the effective tax burden on energy has risen

The implicit tax rate on energy (ITR) is measured as the ratio of energy tax revenues (adjusted for inflation) to final energy consumption and represents the effective tax burden on energy. Energy taxes form the major part of environmental taxes, accounting for more than three quarters of environmental taxes in 2013⁽³⁰⁾. The ITR has risen significantly since the economic crisis began in 2008. This rise mirrors considerable reductions in final energy consumption in the EU (see the analysis of 'final energy consumption' in the 'Sustainable Consumption and Production' chapter, p.73). As a result, the effective tax burden on energy has grown by 13.8% since 2008, reaching EUR212.3 per tonne of oil equivalent in 2013.

Figure 10.12: Implicit tax rate on energy, EU-28, 2006–2013 (¹)

(EUR per tonne of oil equivalent)



(¹) Data are provisional (whole time series).

Source: Eurostat (online data code: [tsdcc360](#))

⁽³⁰⁾ Provisional figures for 2013. The other parts are taxes on transport (20% in 2013) and on pollution and resources (3% in 2013). Also see: http://ec.europa.eu/eurostat/statistics-explained/index.php/Environmental_tax_statistics

What lies beneath this indicator?

One of the policy guiding principles of the EU Sustainable Development Strategy is to ensure prices reflect the real costs of consumption and production activities to society and that polluters pay for the damage they cause to human health and the environment. More specifically, the strategy encourages Member States to consider further steps to shift taxation from labour into resource and energy consumption and/or pollution. The Europe 2020 strategy also calls for a shift from labour to energy and environmental taxes as part of a 'greening' of taxation systems.

The indicator compares the shares of environmental and labour taxes in total revenues from taxes and social contributions. Environmental taxes are defined as taxes where the tax base is a physical unit (or a proxy of a physical unit) of something that has a proven, specific negative impact on the environment and which is identified in ESA 2010⁽³⁾ as a tax. Environmental tax revenues are of four types: energy taxes, transport taxes, pollution taxes and resource taxes.

Taxes on labour are generally defined as personal income taxes, payroll taxes and social contributions of employees and employers that are levied on labour income (both employed and non-employed).

Another important indicator used in this section is the implicit tax rate on energy (ITR), which is defined as the ratio between energy tax revenues and final energy consumption calculated for a calendar year. Energy tax revenues are measured in EUR (deflated) and the final energy consumption as tonnes of oil equivalent. This ratio is deflated with the private final demand price index (basis 100 in 2010).

⁽³⁾ Regulation (EU) No 549/2013 on the European system of national and regional accounts in the European Union.

Annexes





Annex I

Geographical aggregates and countries

EU-28	The 28 Member States of the European Union from 1 July 2013 (BE, BG, CZ, DK, DE, EE, IE, EL, ES, FR, HR, IT, CY, LV, LT, LU, HU, MT, NL, AT, PL, PT, RO, SI, SK, FI, SE, UK)
EU-27	The 27 Member States of the European Union from 1 January 2007 to 30 June 2013 (BE, BG, CZ, DK, DE, EE, IE, EL, ES, FR, IT, CY, LV, LT, LU, HU, MT, NL, AT, PL, PT, RO, SI, SK, FI, SE, UK)
EU-15	The 15 Member States of the European Union from 1 January 1995 to 30 April 2004 (BE, DK, DE, IE, EL, ES, FR, IT, LU, NL, AT, PT, FI, SE, UK)

Note that EU aggregates are back-calculated when enough information is available – for example, data relating to the EU-27 aggregate is presented when possible for periods before Bulgaria and Romania joined the EU in 2007 and the accession of ten Member States in 2004, as if all 27 Member States had always been members of the EU. The abbreviation ‘EU’ is usually used in texts when referring to the EU-28. The label is changed (to EU-27 or EU-15) if the data refer to another aggregate.

European Union Member States

BE	Belgium
BG	Bulgaria
CZ	Czech Republic
DK	Denmark
DE	Germany
EE	Estonia
IE	Ireland
EL	Greece
ES	Spain
FR	France
HR	Croatia
IT	Italy
CY	Cyprus
LV	Latvia
LT	Lithuania
LU	Luxembourg
HU	Hungary
MT	Malta
NL	Netherlands
AT	Austria
PL	Poland
PT	Portugal
RO	Romania
SI	Slovenia



SK	Slovakia
FI	Finland
SE	Sweden
UK	United Kingdom

European Free Trade Association (EFTA)

IS	Iceland
LI	Liechtenstein
NO	Norway
CH	Switzerland

EU candidate countries

ME	Montenegro
MK	The former Yugoslav Republic of Macedonia ⁽¹⁾
AL	Albania
RS	Serbia
TR	Turkey

Potential candidates

BA	Bosnia and Herzegovina
XK	Kosovo ⁽²⁾

Countries from the rest of the world

JP	Japan
KR	South Korea
RU	Russia
US	United States

⁽¹⁾ The name of the former Yugoslav Republic of Macedonia is shown in tables as 'FYR Macedonia'. This does not prejudice in any way the definitive nomenclature for this country, which is to be agreed following the conclusion of negotiations currently taking place on this subject at the United Nations.

⁽²⁾ This designation is without prejudice to positions on status, and is in line with UNSCR 1244 and the ICJ Opinion on the Kosovo Declaration of Independence.



Units of measurement

:	Data not available
%	per cent
°C	Degree Celsius
EUR	euro
kg	kilogram
km	kilometre
Mtoe	million tonnes of oil equivalent
pkm	passenger-kilometre
PPS	Purchasing power standards
tkm	tonne-kilometre
USD	US dollar

Abbreviations

AMS	Aggregated measurement of support
CCS	Carbon capture and storage
CFP	Common Fisheries Policy
CMR	Carcinogenic, mutagenic and reprotoxic
CO ₂	Carbon dioxide
CSR	Corporate social responsibility
DAC	Development Assistance Committee
DMC	Domestic material consumption
EAP	Environmental Action Programme
EDC	Endocrine-disrupting chemicals
EDP	Excessive deficit procedure
EEA	European Environment Agency
EFTA	European Free Trade Association
EMAS	Eco-Management and Audit Scheme
END	Environmental noise directive
EPC	Economic Policy Committee
ESD	Effort Sharing Decision
ESS	European Statistical System
ET 2020	'Education and Training 2020' Framework
EU	European Union
EU ETS	EU Emission Trading System
EU LFS	EU Labour Force Survey
EU SDS	EU Sustainable Development Strategy
EU SILC	EU Statistics on Income and Living Conditions



FAO	UN Food and Agriculture Organization
FDI	Foreign direct investment
GDP	Gross domestic product
GE	Green economy
GERD	Gross domestic expenditure on research and experimental development
GFCF	Gross fixed capital formation
GHG	Greenhouse gas
GNI	Gross national income
GNP	Gross national product
ICT	Information and communications technology
IEA	International Energy Agency
ILO	International Labour Organisation
IMF	International Monetary Fund
IPCC	Intergovernmental Panel on Climate Change
IRTAD	International Road Traffic Accident Database
ISCED	International Standard Classification for Education
ITR	Implicit tax rate
IUCN	International Union for Conservation of Nature
LDCs	Least-developed countries
LLL	Lifelong learning
LMICs	Lower middle-income countries
LULUCF	Land use, land-use change and forestry
MDGs	Millennium development goals
MEA	Multilateral environmental agreement
MIP	Macroeconomic imbalances procedure
MSY	Maximum sustainable yield
NECD	National Emissions Ceilings Directive
NEET	Not in education, employment or training
NGOs	Non-governmental organisations
NH ₃	Ammonia
NMVOG	Non-methane volatile organic compounds
NO ₂	Nitrogen dioxide
NO _x	Nitrogen oxides
O ₃	Ozone
ODA	Official development assistance
OECD	Organisation for Economic Co-operation and Development
OLICs	Other low-income countries
PEC	Primary energy consumption



PM	Particulate matter
OWG	Open working group
R&D	Research and development
REACH	Registration, evaluation, authorisation and restriction of chemicals
RMC	Raw material consumption
RME	Raw material equivalents
RMI	Raw material input
RTD	Research and technological development
SCP	Sustainable consumption and production
SD	Sustainable development
SDGs	Sustainable Development Goals
SDIs	Sustainable development indicators
SGP	Stability and Growth Pact
SME	Small and medium enterprises
SMS	Single Market Scoreboard
SO ₂	Sulphur dioxide
SO _x	Sulphur oxides
SVHC	Substances of very high concern
TAC	Total allowable catch
TFC	Transferable fishing concessions
UAA	Utilised agricultural area
UMICs	Upper middle-income countries
UN	United Nations
UNCSD	United Nations Conference on Sustainable Development
UNEP	United Nations Environment Programme
UNESCO	United Nations Educational, Scientific and Cultural Organization
UNGA	United Nations General Assembly
VAT	Value added tax
VOC	Volatile organic compounds
WCED	World Commission on Environment and Development
WHO	World Health Organization
WMO	World Meteorological Organization
WTO	World Trade Organization



Annex II

List of indicators included in this report, short-term and long-term evaluation results and consistency of long-term trends

The tables below show the list of indicators included in the respective thematic chapters of this 2015 edition of the *Sustainable development in the European Union* monitoring report. They show for each indicator the evaluation results — in the form of weather symbols — for the long- and the short-term evaluation calculated according to the method described in the Introduction (see p. 13) and in Annex III. In addition, the ‘consistency’ of the long-term trend (on which the long-term evaluation is based) is indicated by means of calculating the significance of Spearman’s rank correlation coefficient (ρ) in accordance with Annex III. The significance level 0.01 or 0.05 is indicated in brackets; p-values greater than 0.05 are considered as ‘not significant’. Spearman’s ρ is not calculated for the short-term evaluation due to the short time series.

Table II.1: Evaluation of changes in the socioeconomic development theme, EU-28⁽¹⁾

Indicator	Long-term evaluation (since 2000)	Short-term evaluation (last five-year period)	Consistency of long-term trend
Real GDP per capita			Significant (0.01)
Economic development			
Investment	(?)		Significant (0.01)
Disposable household income	(?)		Significant (0.01)
Household saving			Significant (0.05)
Innovativeness, competitiveness and eco-efficiency			
Labour productivity			Significant (0.01)
Eco-innovation	:	:	:
Research and development expenditure			Significant (0.01)
Energy intensity	(?)		Significant (0.05)
Employment			
Employment	(?)		Not significant
Young people neither in employment nor in education or training	(?)		Not significant
Unemployment			Significant (0.05)




















⁽¹⁾ An explanation of the evaluation method and the meaning of the weather symbols is given in the Introduction and in Annex III.

⁽²⁾ From 2002

⁽³⁾ From 2003



Table II.2: Evaluation of changes in the sustainable consumption and production theme, EU-28 ⁽¹⁾

Indicator	Long-term evaluation (since 2000)	Short-term evaluation (last five-year period)	Consistency of long-term trend
Resource productivity	 ⁽²⁾		Significant (0.05)
Resource use and waste			
Domestic material consumption	 ⁽²⁾		Significant (0.05)
Generation of waste excluding major mineral wastes	 ⁽³⁾	 ⁽⁴⁾	Not significant
Hazardous waste generation	 ⁽⁴⁾	 ⁽⁴⁾	Not significant
Recycled and composted municipal waste			Significant (0.01)
Atmospheric emissions			Significant (0.01)
Consumption patterns			
Electricity consumption of households			Significant (0.01)
Final energy consumption			Not significant
Production patterns			
Environmental management systems	 ⁽⁵⁾	 ⁽⁶⁾	Significant (0.05)
Organic farming	:	 ⁽⁶⁾	:

⁽¹⁾ An explanation of the evaluation method and the meaning of the weather symbols is given in the Introduction and in Annex III.

⁽²⁾ From 2002.






















⁽³⁾ From 2004.

⁽⁴⁾ Last four-year period.

⁽⁵⁾ From 2005; EU-27.

⁽⁶⁾ EU-27.


Table II.3: Evaluation of changes in the social inclusion theme, EU-28 ⁽¹⁾

Indicator	Long-term evaluation (since 2000)	Short-term evaluation (last five-year period)	Consistency of long-term trend
People at risk of poverty or social exclusion	 ⁽²⁾	 ⁽³⁾	Not significant
Monetary poverty and living conditions			
Risk of poverty after social transfers	 ⁽²⁾	 ⁽³⁾	Significant (0.01)
Severe material deprivation	 ⁽²⁾	 ⁽³⁾	Not significant
Income inequalities	 ⁽²⁾	 ⁽³⁾	Not significant
Access to labour market			
Very low work intensity	 ⁽²⁾	 ⁽³⁾	Not significant
Working poor	 ⁽²⁾	 ⁽³⁾	Significant (0.01)
Long-term unemployment	 ⁽²⁾	 ⁽³⁾	Not significant
Gender pay gap	:	 ⁽²⁾	:
Education			
Early leavers from education and training	 ⁽²⁾	 ⁽²⁾	Significant (0.01)
Tertiary education	 ⁽²⁾	 ⁽²⁾	Significant (0.01)
Lifelong learning	 ⁽²⁾	 ⁽²⁾	Not significant
Education expenditure	:	:	:

⁽¹⁾ An explanation of the evaluation method and the meaning of the weather symbols is given in the Introduction and in Annex III.

⁽²⁾ Evaluation based on EU-27; from 2005.












⁽³⁾ Evaluation based on EU-27.

⁽⁴⁾ From 2002.

⁽⁵⁾ From 2003.



Table II.4: Evaluation of changes in the demographic changes theme, EU-28 ⁽¹⁾

Indicator	Long-term evaluation (since 2000)	Short-term evaluation (last five-year period)	Consistency of long-term trend
Employment rate of older workers	 ⁽²⁾		Significant (0.01)
Demography			
Life expectancy and healthy life years at age 65	 ⁽³⁾		Significant (0.01)
Population growth	:	:	:
Total fertility rate	 ⁽⁴⁾		Significant (0.01)
Migration	:	:	:
Old-age dependency	:	:	:
Old-age income adequacy			
Income level of over-65s compared to before	 ⁽⁵⁾	 ⁽⁶⁾	Significant (0.05)
Public finance sustainability			
Government debt	:	 ⁽⁷⁾	:
Retirement			Significant (0.01)
The impact of ageing on public expenditure	:	:	:
Pension expenditure projections	:	:	:

⁽¹⁾ An explanation of the evaluation method and the meaning of the weather symbols is given in the Introduction and in Annex III.

⁽²⁾ From 2002.

⁽³⁾ From 2004.















⁽⁴⁾ From 2001.

⁽⁵⁾ From 2005; Evaluation based on EU-27.

⁽⁶⁾ Evaluation based on EU-27.

⁽⁷⁾ Last three-year period.

**Table II.5:** Evaluation of changes in the public health theme (EU-28) ⁽¹⁾

Indicator	Long-term evaluation (since 2000)	Short-term evaluation (last five-year period)	Consistency of long-term trend
Life expectancy and healthy life years	 ⁽²⁾		Significant (0.01)
Health and health inequalities			
Deaths due to chronic diseases	 ⁽³⁾		Significant (0.01)
Unmet needs for medical health care	:	 ⁽⁴⁾	:
Long-standing illnesses or health problems	 ⁽⁴⁾⁽⁵⁾	 ⁽⁴⁾	Significant (0.01)
Determinants of health			
Production of toxic chemicals	 ⁽²⁾		Significant (0.05)
Exposure to air pollution by particulate matter			Significant (0.01)
Exposure to air pollution by ozone			Not significant
Annoyance by noise	:	 ⁽⁴⁾	:

⁽¹⁾ An explanation of the evaluation method and the meaning of the weather symbols is given in the Introduction and in Annex III.















⁽²⁾ From 2004.

⁽³⁾ From 2002.

⁽⁴⁾ Evaluation based on EU-27.

⁽⁵⁾ From 2005.

Table II.6: Evaluation of changes in the climate and energy theme, EU-28 ⁽¹⁾

Indicator	Long-term evaluation (since 2000)	Short-term evaluation (last five-year period)	Consistency of long-term trend
Greenhouse gas emissions			Significant (0.05)
Primary energy consumption			Not significant
Climate change			
Greenhouse gas emissions by sector	:	:	:
Global surface average temperature	:	:	:
Greenhouse gas emissions intensity of energy consumption			Not significant
Energy			
Energy dependence			Significant (0.01)
Consumption of renewables	 ⁽²⁾		Significant (0.01)
Electricity generation from renewables	 ⁽²⁾		Significant (0.01)
Share of renewable energy in transport	 ⁽²⁾		Significant (0.01)

⁽¹⁾ An explanation of the evaluation method and the meaning of the weather symbols is given in the Introduction and in Annex III.

⁽²⁾ From 2004.



Table II.7: Evaluation of changes in the sustainable transport theme, EU-28 ⁽¹⁾

Indicator	Long-term evaluation (since 2000)	Short-term evaluation (last five-year period)	Consistency of long-term trend
Energy consumption of transport relative to GDP			Not significant
Transport and mobility			
Modal split of freight transport	⁽²⁾	⁽²⁾	Not significant
Volume of freight transport relative to GDP	⁽²⁾	⁽²⁾	Not significant
Modal split of passenger transport			Not significant
Volume of passenger transport relative to GDP			Significant (0.01)
Transport impacts			
Greenhouse gas emissions from transport			Not significant
People killed in road accidents			Significant (0.01)
Average CO ₂ emissions per kilometre from new passenger cars	:	⁽²⁾	:
Emissions of ozone precursors from transport			Significant (0.01)
Emissions of particulate matter from transport			Significant (0.01)















⁽¹⁾ An explanation of the evaluation method and the meaning of the weather symbols is given in the Introduction and in Annex III.
⁽²⁾ Evaluation based on EU-27.

Table II.8: Evaluation of changes in the natural resources theme, EU-28 ⁽¹⁾

Indicator	Long-term evaluation (since 2000)	Short-term evaluation (last five-year period)	Consistency of long-term trend
Common bird index	⁽²⁾	⁽²⁾	Significant (0.05)
Biodiversity			
Protected areas	:	:	:
Fresh water resources			
Water abstraction	:	:	:
Water quality in rivers	⁽²⁾	⁽²⁾	Significant (0.01)
Marine ecosystems			
Fishing capacity	:	:	:
Land use			
Artificial areas	:	⁽⁴⁾	:
Nutrient balance on agricultural land			Significant (0.01)

⁽¹⁾ An explanation of the evaluation method and the meaning of the weather symbols is given in the Introduction and in Annex III.
⁽²⁾ EU aggregate with changing composition.
⁽³⁾ 20 EEA countries.
⁽⁴⁾ Last three-year period.


Table II.9: Evaluation of changes in the global partnership theme, EU-28 ⁽¹⁾

Indicator	Long-term evaluation (since 2000)	Short-term evaluation (last five-year period)	Consistency of long-term trend
Official development assistance (ODA)	 ⁽²⁾		Not significant
Globalisation of trade			
Imports from developing countries	 ⁽²⁾		Significant (0.01)
Imports from least-developed countries	 ⁽²⁾		Significant (0.01)
Subsidies for EU agriculture	 ⁽⁴⁾	 ⁽⁴⁾	Significant (0.01)
Financing of sustainable development			
Financing for developing countries	 ⁽²⁾	 ⁽²⁾	Significant (0.01)
Share of foreign direct investment in low-income countries	:	:	:
Share of official development assistance for low-income countries	 ⁽²⁾	 ⁽²⁾	Not significant
Share of untied assistance	 ⁽²⁾	 ⁽²⁾	Significant (0.01)
Bilateral official development assistance	:	:	:
Global poverty	:	:	:
Global resource management			
CO ₂ emissions per inhabitant	:	:	:
Access to water	:	:	:

⁽¹⁾ An explanation of the evaluation method and the meaning of the weather symbols is given in the Introduction and in Annex III.

⁽²⁾ From 2004.









⁽³⁾ From 2002.

⁽⁴⁾ Evaluation based on EU-27.

⁽⁵⁾ Evaluation based on EU-15.



Table II.10: Evaluation of changes in the good governance theme, EU-28 ⁽¹⁾

Indicator	Long-term evaluation (since 2000)	Short-term evaluation (last five-year period)	Consistency of long-term trend
: ⁽²⁾	:	:	:
Policy coherence and effectiveness			
Citizens' confidence in EU institutions	:	:	:
Infringement cases	 ⁽³⁾	 ⁽⁴⁾	Significant (0.01)
Transposition deficit of EU law	 ⁽⁴⁾	 ⁽⁴⁾	Significant (0.01)
Openness and participation			
Voter turnout			Significant (0.01)
Citizens' online interaction with public authorities	:		:
Economic instruments			
Environmental taxes compared with labour taxes	:		:

⁽¹⁾ An explanation of the evaluation method and the meaning of the weather symbols is given in the Introduction and in Annex III.

⁽²⁾ The chapter contains no headline indicator because none was judged robust and policy-relevant enough to provide a comprehensive overview of the good governance concept.

⁽³⁾ From 2007; Evaluation based on EU-27.

⁽⁴⁾ Evaluation based on EU-27.



Annex III

Description of evaluation methods

Method 1: Evaluation of indicators without targets





The evaluation of indicators without targets, both for the long-term and short-term period, is based on the calculation of the compound annual growth rate (CAGR), using the following formula:

$$(1) \quad CAGR = \left(\frac{y_t}{y_{t_0}} \right)^{\frac{1}{t-t_0}} - 1$$

where: t_0 = base year, t = most recent year, y_{t_0} = indicator value in base year, y_t = indicator value in most recent year

The table below shows the thresholds applied for the evaluation of indicators and the resulting weather symbols.

Table III.1: Thresholds for the evaluation of indicators without targets

Growth rate (CAGR) in relation to desired direction	Symbol
$\geq 1\%$	
$< 1\%$ and $\geq 0\%$	
$< 0\%$ and $\geq -1\%$	
$< -1\%$	

Method 2: Evaluation of indicators with targets

The evaluation of indicators with targets is based on the compound annual growth rate described above and also takes into account targets defined in the EU Sustainable Development Strategy, the Europe 2020 strategy and other relevant political documents. For this type of indicators, the actual (observed) growth rate is compared to the (theoretical) growth rate that would be required to meet the target in the target year. Independently of the year when the target was politically defined, the base years defined above for long-term and short-term evaluation are used for comparing the actual progress with the progress that should have been achieved by now to meet the target in the target year. The evaluation is based on the CAGR formula and includes the following three steps:

Actual (observed) growth rate:

$$(2a) \quad CAGR_a = \left(\frac{y_t}{y_{t_0}} \right)^{\frac{1}{t-t_0}} - 1$$

where: t_0 = base year, t = most recent year, y_{t_0} = indicator value in base year, y_t = indicator value in most recent year



Required (theoretical) growth rate to meet the target:

(2b)

$$CAGR_r = \left(\frac{x_{t_1}}{y_{t_0}} \right)^{\frac{1}{t_1-t_0}} - 1$$

where: t_0 = base year, t_1 = target year, y_{t_0} = indicator value in base year, x_{t_1} = target value in target year





Ratio of actual and required growth rate:

(2c)

$$R_{a/r} = \frac{CAGR_a}{CAGR_r}$$

The table below shows the thresholds applied for the $R_{a/r}$ ratio and the resulting weather symbols.

Table III.2: Thresholds for the evaluation of indicators with targets





$R_{a/r}$ ratio	Symbol
≥ 95 %	
< 95 % and ≥ 80 %	
< 80 % and ≥ 0 %	
< 0 %	

Method 3: Evaluation of decoupling indicators

For decoupling indicators, the CAGR formula as described above for Method 1 is used for calculating the trends of both the pressure and the driving force variables. Depending on the results of both trends, four types of decoupling can be observed: absolute decoupling, favourable relative decoupling, unfavourable relative decoupling and no decoupling.

The table below shows the different types of decoupling based on the trends of the pressure and the driving force variables and the resulting weather symbols.

Table III.3: Thresholds for the evaluation of decoupling indicators

Trend of pressure variable compared with the driving force variable	Type of decoupling	Symbol
The pressure variable is decreasing and the driving force variable is increasing or decreasing slower than the pressure variable	Absolute decoupling	
The pressure variable is decreasing and the driving force variable is decreasing faster than the pressure variable	Favourable relative decoupling	
The pressure variable is increasing and the driving force variable is increasing faster than the pressure variable	Unfavourable relative decoupling	
The pressure variable is increasing and the driving force variable is decreasing or increasing slower than the pressure variable	No decoupling	



Estimation of the 'consistency' of the long-term trends

For all three methods described above, Spearman's rank correlation coefficient (ρ) is calculated to determine the consistency of the trends over time. This method complements the CAGR approach, which only takes into account the indicator values in the base year and in the most recent year and does not consider the trend in-between. Spearman's ρ is obtained by calculating the correlation between the ranks of the years and the ranks of the values of the indicator (from t_0 to t):

(3)

$$\rho = \frac{\sum_i (x_i - \bar{x})(y_i - \bar{y})}{\sqrt{\sum_i (x_i - \bar{x})^2 \sum_i (y_i - \bar{y})^2}}$$

where: x_i = rank of the years, y_i = rank of the indicator values

In case Spearman's ρ is not significant, the classification of the indicator into the calculated evaluation category may be associated with some uncertainty, as the observed trend has evolved in a rather volatile way.

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The Eurostat monitoring report, based on the EU set of sustainable development indicators and published every two years, provides an objective, statistical picture of progress towards the goals and objectives of the EU SDS. The statistics cover a wide range of issues related to sustainable development, and will contribute to raising awareness of the opportunities and challenges lying ahead. Quantitative rules applied consistently across indicators, and visualised through weather symbols, provide a relative assessment of whether Europe is moving in the right direction, and at a sufficient pace, given the objectives and targets defined in the strategy.

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