

Sustainable development in the European Union

A STATISTICAL GLANCE FROM THE VIEWPOINT
OF THE UN SUSTAINABLE DEVELOPMENT GOALS

2016 edition



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OF THE UN SUSTAINABLE DEVELOPMENT GOALS**

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Foreword of First Vice President Timmermans and Commissioner Thyssen



Our planet faces important economic, social and environmental challenges. To tackle these, the UN Sustainable Development Goals define global priorities and aspirations for 2030. This represents an unprecedented opportunity to eliminate extreme poverty and put the world on a sustainable path. The 17 goals reflect European values and provide a political opportunity to promote the European socio-economic model.

The European Union has been strongly committed to reaching an ambitious outcome at UN level with a universal agenda for all countries, rich and poor alike, fully integrating the economic, social and environmental dimensions of sustainability. The European Union will continue to lead the way in achieving these goals.

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. The 2030 Agenda will shape our internal and external policies, ensuring the EU plays its full part. This vision will define our actions, be it our growth strategy or social agenda, our energy and climate goals, our environmental ambitions or our research and innovation programmes. We want to make sure that all of our policies balance social, economic and environmental considerations and contribute to a good standard of living for all Europeans, within the limits of our planet.



With all of its relevant policy initiatives, the Commission will keep up its efforts to ensure that sustainability remains the fundamental and overarching objective of the EU. The global Sustainable Development Goals will also help to shape the way we measure and report on progress. Eurostat has important responsibilities in this respect.

This publication *Sustainable development in the European Union — A statistical glance from the viewpoint of the UN Sustainable Development Goals* provides an overview of where the EU and its Member States stand in the areas relevant for sustainable development, and in this way it will contribute to better informed decisions for a sustainable European future.

Frans Timmermans
First Vice President

Commissioner Marianne Thyssen
Employment, social affairs, skills and
labour mobility
Responsible for Eurostat

Foreword of Eurostat's Director-General

The Sustainable Development Goals (SDGs) and their related targets, approved in September 2015 by the UN General Assembly, provide a new policy framework worldwide towards ending all forms of poverty, fighting inequalities and tackling climate change, while ensuring that no one is left behind.

Sustainable development has long been part of the political agenda of the European Union. This publication is released at the same time as the European Commission Communication on *'Next steps for a sustainable European future: European action for sustainability'*. The Communication shows the significance of the SDGs for Europe and explains how the EU contributes to reaching them.

This publication builds on Eurostat's long experience in monitoring the EU Sustainable Development Strategy. It provides a statistical glance at the current situation in the EU and its Member States, but now from the viewpoint of the SDGs. Each SDG is analysed through a limited number of indicators looking at the overall ambition of the goal in an EU context.

I hope that this publication provides useful insights that will help achieve the SDGs from an EU perspective. Eurostat will continue monitoring progress towards sustainable development in the European Union and is committed to providing high-quality statistical information for this purpose.



Walter Radermacher
Director-General, Eurostat



Acknowledgements

Chief editor

Mariana Kotzeva, Deputy Director General, Eurostat

Executive editor

Barbara Kurkowiak (Eurostat, Unit E2 — Environmental statistics and accounts; sustainable development)

Editors

Markus Hametner, Asya Dimitrova, Anna Dimitrova, Patricia Schindler, Renate Ruech (WU Vienna), Ariane De Rocchi, Bettina Rüegge, Eva Gschwend, Gina Spescha, (INFRAS), Andreas Prah, Doris Knoblauch, Eike Velten, Evelyn Lukat, Katrina Abhold, Katriona McGlade, Keighley McFarland, Timo Kaphengst, Ulf Stein (Ecologic Institute)

Co-editors

Anton Steurer, Fritz Gebhard, Mariana Popova, Nicola Massarelli, Simon Johannes Bley, Dorothea Jung (Eurostat, Unit E2 — Environmental statistics and accounts; sustainable development), Carolyn Avery (ENDS, Haymarket Media Group Ltd)

Production

Production: Carolyn Avery (co-ordinator) and David Young, (ENDS, Haymarket Media Group Ltd)

Infographics: Leonard Dickinson; David Young and Carolyn Avery (ENDS, Haymarket Media Group Ltd)

Cover art direction: Paul Grimes

Expert advisors

Agnieszka Litwinska, Alessandra Palmieri, Andreas Krüger, Anne Foltete, Catherine Coyette, Ebba Barany, Evangelia Ford-Alexandraki, Fabienne Montaigne, Friderike Oehler, Hans-Eduard Hauser, Havard Lien, Jakub Hrkal, Johan Selenius, Jacopo Grazzini, Judita Horvathova, Juraj Stancik, Jürgen Förster, Karin Blumenthal, Maaïke Bouwmeester, Marek Sturc, Maria Smihily, Marilise Wolf-Crowther, Michel Henrard, Miroslav Kukucka, Peter Gal, Piotr Ronkowski, Renato Marra Campanale, Sabine Gagel, Sebastian Reinecke, Stephen Moll, (Eurostat); Silvia Vera Garcia (DG CLIMA); Carlos Berrozpe Garcia, Dorota Panczyk, Katja Weigelt, Milena Reinfeld, Simon Dennison (DG DEVCO); Christoph Maier (DG ECFIN); Ralf Jacob (DG EMPL); Pavlina Nikolova (DG ENER); Anna Ballance, Anna Cheilari, Anna Karasszon, Anne Teller, Barbara Bacigalupi, Cosima Hufler, Ernst Schulte, Frank Vassen, Jakub Weichert, Josiane Masson, Josiane Riviere, Lucia Vergano, Marco Bonetti, Monica Pisani, Rozalina Etrova (DG ENV); Ellen Gorris, Jan Petry, Judith Litjens (DG JUST); Luca Pappalardo (DG HOME); Ian Shepherd, Kenneth Patterson (DG MARE); Paolo Bolsi (DG MOVE); Marialuisa Tamborra (DG RTD); Fabienne Lefebvre (DG SANTE); Mark Henderson (DG TRADE); Alberto Gonzalez Ortiz, Almut Reichel, Andrus Meiner, Barbara Clark, Eva Ivits-Wasser, Jan-Erik Petersen, Johnny Reker, Katarzyna Biala, Lars Mortensen, Marie Cugny-Seguïn, Mihai Tomescu, Roberta Pignatelli (EEA); Melis Sandrine Alguadis (JRC); Tine Delva (SecGen)



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For more information please consult

Eurostat

Bâtiment Joseph Bech
5, rue Alphonse Weicker
2721 Luxembourg

<http://ec.europa.eu/eurostat>

E-mail: estat-user-support@ec.europa.eu

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Introduction: The EU and the Sustainable Development Goals

About this publication

Eurostat's publication *Sustainable development in the European Union — A statistical glance from the viewpoint of the UN Sustainable Development Goals* provides an overview of the current situation of the EU and its Member States on sustainable development in relation to the Sustainable Development Goals (SDGs). This is done in light of the '2030 Agenda for Sustainable Development' ⁽¹⁾ adopted on 25 September 2015 by the UN General Assembly. The publication is structured along the 17 SDGs which are at the core of the 2030 Agenda.

Sustainable development is a fundamental and overarching objective of the EU, enshrined in Article 3 of the Treaty on European Union. Since 2005 and up to 2015 Eurostat has regularly produced biennial monitoring reports of the EU Sustainable Development Strategy (EU SDS), based on the EU set of Sustainable Development Indicators (SDIs). The EU SDS was adopted by the European Council in June 2001 and was then renewed in June 2006 ⁽²⁾. Measuring progress towards sustainable development was an integral part of the EU SDS. Eurostat also monitors the Europe 2020 Strategy ⁽³⁾, which promotes smart, sustainable and inclusive growth in the EU.

This publication is meant as an ad hoc publication, bridging Eurostat's series of monitoring reports of the EU SDS with future regular monitoring of the SDGs in an EU context, foreseen to start in 2017. It is released simultaneously with the Commission Communication '*Next steps for a sustainable European future: European action for sustainability*', which demonstrates the significance of the SDGs for the European Union and explains how the EU contributes to reaching them ⁽⁴⁾.

This publication follows a strictly descriptive approach, presenting a purely statistical picture based on facts and figures. It does not aim to assess effectiveness of existing policies and has a limited focus on progress over time. It does not

⁽¹⁾ United Nations (2015), *Transforming our World: the 2030 Agenda for Sustainable Development*, A/RES/70/1, 25 September 2015.

⁽²⁾ Council of the European Union (2006), *Review of the EU Sustainable Development Strategy (EU SDS) — Renewed Strategy*, 10917/06

⁽³⁾ European Commission, *Europe 2020 — A strategy for smart, sustainable and inclusive growth*, COM(2010) 2020 final, Brussels, 2010.

⁽⁴⁾ European Commission (2016), *Next steps for a sustainable European future: European action for sustainability*, COM(2016)739, Brussels.



cover all relevant EU policies in the context of the 2030 Agenda for Sustainable Development, neither all aspects of the SDGs.

A brief presentation of the 2030 Agenda opens the publication. This is followed by 17 thematic chapters, one for each of the 17 SDGs. The overview of the indicators presented in this publication and notes on methods and sources are included in the annex.

The publication presents data for the EU-28 as a whole and its individual Member States, and where available for the countries of the European Free Trade Association (EFTA), candidate countries and potential candidates. In addition, comparisons between the EU and other major economies in the world (for example, the United States, Canada or Japan) are included when data are available. In general the analysis focuses on the situation in the most recent year for which data are available, except for a short textual description of EU-28 trends. For the analysis of trends, the period from 2000 or 2002 up to the most recent year for which data are available (generally 2014 or 2015) is considered.

The publication includes 51 indicators, presented to reflect the broad objectives and ambitions of the SDGs, interpreted in an EU context. Each SDG is represented through up to four indicators. Contextual indicators are used in some chapters to provide further details on a specific issue, deepen the analysis and reflect the scope of the SDGs more broadly. The indicators have been selected taking into account their relevance from an EU perspective, country coverage, data freshness and quality. With a few exceptions, the indicators stem from already existing indicator sets monitoring EU policies, such as the EU Sustainable Development Indicators ⁽⁵⁾ and the Europe 2020 headline indicators. Some indicators from the UN global list ⁽⁶⁾ have also been included when relevant.

The indicators do not aim at representing the importance of particular targets in the 2030 Agenda, as these are of equal significance. Elements of the 2030 Agenda that are less relevant for the EU because they focus on other parts of the world (for instance where targets specifically refer to developing countries) are not considered. The publication does not prejudge in any way the indicators that will be proposed for a future monitoring of the SDGs and the related targets.

In addition, the indicators used in this publication do not cover means of implementation elements under each SDG, as their measurement is normally outside the scope of official statistics. One exception is made for SDG 17, which is solely focused on means of implementation and global partnership for sustainable development and for which one indicator on official development assistance and one on imports from developing countries are shown.

This publication is based on official statistics which are available in Eurobase, Eurostat's online database. Data are obtained from official European Statistical

⁽⁵⁾ <http://ec.europa.eu/eurostat/web/sdi/indicators>

⁽⁶⁾ The 2030 Agenda for Sustainable Development foresees that the goals and targets are followed up and reviewed using a set of global indicators, complemented by indicators at the regional and national levels. In March 2016, the UN Statistical Commission agreed as a practical starting point on an indicator list containing 241 indicators for global monitoring. This global indicator list has been developed by an Inter-Agency and Expert Group on SDG indicators (IEAG-SDGs) (for details see the next section 'The 2030 Agenda for Sustainable Development'). The global indicators aim to monitor all 169 targets in all their aspects (and not directly the goals, as for Eurostat's publication), which thus results in a long list of 241 indicators. A selection of these indicators has been used for the 'Sustainable Development Goals Report 2016' prepared by the UN system for global monitoring.



System (ESS) sources such as the EU Labour Force Survey (EU LFS) or the EU Statistics on Income and Living Conditions (EU SILC) as well as administrative sources. External sources from other international organisations such as the European Environmental Agency (EEA), the World Bank and OECD are used for a few indicators as well as for presenting international comparisons on existing Eurostat indicators.

The 2030 Agenda for Sustainable Development

The 2030 Agenda for Sustainable Development builds on the Millennium Development Goals (MDGs) ⁽⁷⁾, the Rio+20 UN Conference on Sustainable Development ⁽⁸⁾ and the follow-up of the 2002 Monterrey Financing for Development Conference ⁽⁹⁾. The 2030 Agenda addresses poverty eradication and the economic, social and environmental dimensions of sustainable development together, underpinned by good governance. One of the components of the 2030 Agenda is the definition of a mechanism for follow up and review, which calls for the development of a global indicator framework.

Keeping track of progress in a systematic and transparent way is essential for delivering the 2030 Agenda, by highlighting progress as well as challenges, by demonstrating good practices to accelerate implementation, by ensuring continued commitment, ownership and partnership, and by ensuring transparency, inclusivity and accountability to stakeholders. The 2030 Agenda provides for follow up and review at national, regional and global level.

The development of an indicator framework for monitoring progress towards the SDGs is a technical process guided by the United Nations Statistical Commission (UNSC) ⁽¹⁰⁾. For that purpose, in March 2015 the UNSC established an Inter-Agency and Expert Group on SDG Indicators (IAEG-SDGs) ⁽¹¹⁾. In December 2015, the IAEG-SDGs submitted a report ⁽¹²⁾ to the Statistical Commission, including an Annex with a list of 241 proposed indicators ⁽¹³⁾ to measure global progress towards the 169 targets of the SDGs. The Statistical Commission agreed on the indicator list at its 47th meeting in March 2016, 'as a practical starting point [...] subject to future technical refinement' ⁽¹⁴⁾. The IAEG-SDGs is currently working to refine the indicator list and to improve data availability. Progress in this respect will be presented to the 48th UNSC meeting in March 2017. In June 2016 the UN released a first SDG

⁽⁷⁾ Millennium Summit of the United Nations (2000), *United Nations Millennium Declaration*.

⁽⁸⁾ See: <http://www.uncsd2012.org>.

⁽⁹⁾ See: <http://www.un.org/esa/ffd/monterrey/MonterreyConsensus.pdf>

⁽¹⁰⁾ The United Nations Statistical Commission, established in 1947, is the highest body of the global statistical system. It brings together the Chief Statisticians from member states from around the world. It is the highest decision-making body for international statistical activities especially the setting of statistical standards, the development of concepts and methods and their implementation at the national and international level.

⁽¹¹⁾ The IAEG-SDGs was established by the UNSC with the aim of developing a proposal for a global monitoring framework. It consists of technical experts from 27 UN Member States representing all UN regions and, as observers, representatives from regional and international organisations and agencies.

⁽¹²⁾ *Report of the Inter-Agency and Expert Group on Sustainable Development Goal Indicators*, March 2016.

⁽¹³⁾ See Annex III of the *Report of the Inter-Agency and Expert Group on Sustainable Development Goal Indicators*, March 2016.

⁽¹⁴⁾ United Nations Statistical Commission (2016), *Decisions. Forty-seventh session*, 8–11 March 2011.



report ⁽¹⁵⁾ providing a benchmark for progress. The report gives an overview of progress on each of the 17 SDGs using around 50 indicators from the global indicator framework for which data are available.

The 2030 Agenda also mentions the possibility that global indicators are supplemented by additional indicators for regional and national reporting. Member States may thus have to develop their own indicators sets, while indicators for thematic monitoring are already considered in a number of areas ⁽¹⁶⁾.

Not all of the proposed global indicators are available yet, and data gaps exist not only in developing but also in developed countries. Filling these gaps requires financial resources as well as knowledge-sharing and investments in human capital. A High-level Group for Partnership, Coordination and Capacity-Building for post-2015 monitoring (HLG), comprising representatives from national statistical offices, civil society and international organisations, is mandated by the UNSC to foster global partnership and promote capacity building in the monitoring of sustainable development indicators.

The EU is actively contributing to the establishment of an SDG monitoring system at global, regional and national level. The EU will take the lead in reporting on implementation at EU level and measuring the progress being made internally, as well as the contributions the EU makes to global progress.

The availability of quality data is essential for informed decision-making as well as for the accurate tracking of progress towards the 2030 Agenda. However, the monitoring of the SDGs represents a serious challenge even for Europe — arguably one of the most statistically advanced regions of the world — especially concerning data availability for measuring progress.

⁽¹⁵⁾ United Nations (2016), *The Sustainable Development Goals Report 2016*.

⁽¹⁶⁾ See for example: International Trade Centre (ITC), *The State of Sustainable Markets: Statistics and Emerging Trends 2015*, Geneva, 2015.

Overview of key trends

This section provides an overview of the key trends across the 17 SDGs observed at EU level for the indicators analysed in this publication. A more comprehensive analysis of the current situation in EU Member States can be found in the following thematic chapters.

NO POVERTY



Almost every fourth person in the EU — 23.7 % of the population — is **at risk of poverty or social exclusion** (2015 data). This is a slight improvement on the 2005 situation, when 25.8 % of the population were at risk.

Of those at risk, almost one third or 38.4 million people are affected by more than one dimension of poverty. The most widespread form is relative **monetary poverty**, which affects 10.2 % of the population. Still, the rate of relative monetary poverty in the EU is lower than for other G20 Member States such as the United States, Turkey and Mexico (1).

ZERO HUNGER



Organic farming makes up 6.2 % of the EU's agricultural land (2015 data). The share has grown from 3.6 % over the past decade, with a slower rate of conversion in recent years.

On agricultural land, the EU has an average **nitrogen surplus** of 51 kilograms per hectare (kg/ha), which can lead to environmental pollution (2013 data) (2). However, some countries such as Estonia, Bulgaria, Latvia and Austria have phosphorus deficits that could threaten soil fertility.

The most intensive **livestock production** in the EU occurs in the Netherlands, Malta and Belgium at rates of 2.74–3.57 livestock units per hectare (LSU/ha), while most Member States have a livestock density below 1.50 LSU/ha (2013 data).

(1) See <https://stats.oecd.org/Index.aspx?DataSetCode=IDD>

(2) Data for Member States refer to 2014.

GOOD HEALTH AND WELL-BEING



Girls born in the EU in 2014 can **expect to live** 83.6 years, which is 5.5 years longer than boys. Despite the observed gender gap, this is a steady increase for both sexes since 2004. Among the advanced economies globally, Japan has the highest overall life expectancy for boys and girls.

21.6 % of the EU population **believe their health** is very good and more than two thirds say it is good or very good (2014 data). These levels are similar to those reported in 2007.

The share of the EU population reporting **limited access to health care** due to financial constraints has increased by 0.3 percentage points since 2008, reaching 2.4 % in 2014.

QUALITY EDUCATION



The EU's share of **early leavers from education and training** stands at 11.0 % (2015 data). This is an improvement of 4.3 percentage points since 2006.

About one sixth to almost one quarter of 15-year-old EU children show insufficient abilities in **reading, mathematics and science** as measured by the OECD's PISA study (2012 data). The smallest share of **low achievers** is in science, which has shown the strongest progress since 2000, followed by reading and then maths, which has been improving the slowest. The EU's overall share of low achievers in reading, maths and science is similar to that of the United States, but exceeds the shares of low-achieving pupils in Japan and Korea.

People who have completed **tertiary education** make up 38.7 % of the EU population aged 30 to 34 (2015 data). This means a significant increase since 2002 when only 23.6 % of the population had achieved this level.

More people have also been taking part in adult education. In the EU, 11.7 % of women and 9.7 % of men aged 25 to 64 participate in **lifelong learning** (2015 data). This is a 4.0 and 3.1 percentage points improvement since 2002 for women and men, respectively.

GENDER EQUALITY



The EU's **gender pay gap** stands at 16.1 % (2014 data). This is an improvement compared to 2006 when the gap was 1.6 percentage points higher ^(*).

Women hold 29 % of **seats in national parliaments** across the EU on average (2016 data). This shows positive, albeit slow progress since 2003 when the share was 20 %. The situation varies significantly between Member States.

(*) The 2006 figure refers to the EU-27.



CLEAN WATER AND SANITATION



The **biochemical oxygen demand** (BOD) is an indicator of organic pollution in rivers and the effectiveness of water treatment. According to data from 18 Member States BOD fell by 20.4 % between 2002 and 2012, indicating a steady improvement in water quality.

Although most Member States do not have a problem with access to sanitation and hygiene, in the few countries that are affected by this issue, about 12 million people or 2.4 % of the EU population still lack **access to basic sanitation facilities within their households** (2015 data). The situation has improved since 2005 when 3.7 % of the EU population ^(*) lacked basic sanitation facilities.

AFFORDABLE AND CLEAN ENERGY



Renewable energy makes up 16.0 % of gross final energy consumption in the EU (2014 data). The share has almost doubled since 2004 when it was only 8.5 %.

The EU's **energy productivity** has improved by 26.2 % since 2000, reaching EUR 8.2 per kg of oil equivalent in 2014.

Although **the share of persons that cannot afford to keep their house adequately warm** in the EU decreased by 1.5 percentage points between 2007 and 2015 ^(*), 9.4 % of the EU population is still unable to keep their home warm.

DECENT WORK AND ECONOMIC GROWTH



Real GDP per capita in the EU grew by 1.0 % per year on average between 2000 and 2015. This is comparable to growth rates in other advanced economies, such as the United States, Canada and Japan, but considerably lower than the rate observed in Russia.

70.1 % of people aged 20 to 64 are **employed** in the EU (2015 data). This is a substantial increase compared to 2001 when the employment rate was 66.9 %, but is still slightly lower than the pre-crisis level of 2008.

Long-term unemployment has also deteriorated, reaching 4.5 % in 2015 — 1.5 percentage points above the 2007 level.

15.8 % of **young people** aged 18 to 24 in the EU **are neither in employment nor receiving further education and training** (2015 data). This is one percentage point lower than in 2002. The share increased between 2008 and 2012 as a result of the economic crisis.

^(*) 2005 data refer to the EU-27.

^(*) 2007 data refer to the EU-27.

INDUSTRY, INNOVATION AND INFRASTRUCTURE



The EU spends 2.04 % of its GDP on R&D (2014 data). This represents a moderate improvement since 2000, when the EU's **R&D intensity** was 1.79 %. At the global level, other advanced economies such as South Korea, Japan and the United States still outperform the EU in terms of this indicator.

The performance of EU Member States measured by the **eco-innovation index** ranges from around 50 in Bulgaria to 167 in Denmark (2015 data). Nordic EU countries as well as Ireland, Germany and Luxembourg can be considered as eco-innovation leaders, whereas central and eastern European countries as well as Greece, Cyprus and Malta lag behind.

Employment in high- and medium-high technology manufacturing accounts for 5.7 % of total employment in the EU (2015 data) and shows a marginal decrease from 2008 (5.9 %).

95 % of EU enterprises have a fixed or mobile **broadband access to the internet** (2015 data). This is a considerable increase since 2007, when only 77 % of EU enterprises had access.

REDUCED INEQUALITIES



GDP per capita in the EU is EUR 26 500 (2015 data) ⁽⁹⁾, which represents an increase of EUR 3 600 compared to 2000.

Regional GDP per capita dispersion (the ratio between the richest and poorest regions) ranges from 7.8 in the United Kingdom to only 1.6 in Finland (2014 data).

The household **gross disposable income per capita** in the EU stands at 21 629 purchasing power standards (PPS) (2015 data). Nineteen Member States have decreased the distance to the EU average since 2004, but the EU still lags behind other advanced economies in the world such as the United States, Australia, Canada and Japan.

High-income earners in the EU earn about five times more than low-income earners (2015 data). This distribution has barely changed since 2010. However, compared with other G20 countries, the EU still has the lowest **income quintile share ratio**.

⁽⁹⁾ The indicator is calculated using GDP in chain-linked volumes normalised to 2010 prices to show the development over time excluding inflation.



SUSTAINABLE CITIES AND COMMUNITIES



Between 2000 and 2014, the concentration of **particulate matter** (PM₁₀) to which urban population in the EU is potentially exposed has decreased by 21.6 % and stands now at 22.5 micrograms per cubic meter (µg/m³), which is well below the annual limit value of 40 (µg/m³).

The EU recycles (including composting) 43.5 % of its **municipal waste** (2014 data). This represents an important shift towards sustainable waste management compared to 2000, when only 25.2 % of **municipal waste** was disposed of in this way. However, about three quarters of Member States still recycle less municipal waste than the EU average.

One in five or 20.4 % of people in the EU report 'high' or 'very high' levels of **difficulty in accessing public transport** (2012 data). Location appears to have a big impact as less than 10 % of people living in cities experience 'high' or 'very high' levels of difficulty in accessing public transport.

RESPONSIBLE CONSUMPTION AND PRODUCTION



EUR 2.00 of gross domestic product (GDP) are generated for every kilogram of material consumed in the EU (2015 data). This is a 33 % improvement in the EU's **resource productivity** since 2000.

The EU's **domestic material consumption** has also improved, decreasing in 2015 to 13.2 tonnes per capita. This is a reduction of 2.3 tonnes since 2000.

On average the EU generates 1 806 kilograms (kg) of **waste** (excluding major mineral waste) per capita (2014 data), which is a favourable decline compared to 1 907 kg per capita in 2004.

CLIMATE ACTION



The EU reduced its **greenhouse gas (GHG) emissions** by 23 % between 1990 and 2014. Compared with other industrialised countries, the EU is leading in GHG emission reductions after the Russian Federation.

The **global average near-surface temperature** has increased significantly since the start of the 20th century and regularly hits new records. When compared to pre-industrial times, the average temperature over the period 2006 to 2015 has risen by 0.84°C (?). This means that almost half of the warming towards the 2°C threshold (®) has already taken place.

In **Europe**, the current decade is the hottest on record, at 1.5°C above pre-industrial times.

(?) EEA (2016), *Global and European temperatures*, HatCRUT4 data.

(®) *United Nations Framework Convention on Climate Change (2015), Paris Agreement*, Paris, United Nations.

LIFE BELOW WATER



Although there are increasing efforts to meet global targets for Marine Protected Areas (MPAs), the current **sufficiency of sites designated under the Habitats Directive for marine habitats and species conservation** in the EU is at 55 %, in contrast to a sufficiency index of 92 % for the terrestrial equivalents (2013 data).

The EU **fish catch** amounted to 5 112 555 tonnes in 2015, which is 22 % less than in 2000. Data on sustainability of fishing in the major fishing areas do not provide a clear trend so far.

LIFE ON LAND



Compared to the maritime sites, the **sufficiency of sites designated under the Habitats Directive for terrestrial habitats and species conservation** in the EU is quite high at 92 % (2013 data).

The **abundance and diversity of common birds** in the EU has declined by 12.6 % between 1990 and 2014. The group of common farmland birds shows the biggest decline with their population falling by 31.5 %, indicating that agricultural ecosystems are under particular pressure.

Built-up and artificial areas cover 4.1 % of the EU land area (2012 data). Large differences between Member States are generally the result of varying population densities and shares of rural areas.

PEACE, JUSTICE AND STRONG INSTITUTIONS



4 698 **intentional homicide offences** were recorded in the EU in 2014. The number of offences has been steadily decreasing by more than 100 offences a year since 2008 ^(*).

Police forces are the most trusted institution in the EU, with a **citizens' confidence** level of 5.9 out of 10 points. They are followed by the legal system, with a confidence rating of 4.6 out of 10 points, and the political system, with a score of 3.5 out of 10 points (2013 data).

(*) Excluding data for Poland.



PARTNERSHIP FOR THE GOALS



The EU and its Member States spend 0.47 % of their collective gross national income (GNI) on **Official Development Assistance** (ODA) in 2015, which is a slight improvement compared to 2005 ⁽¹⁰⁾. Nevertheless, the EU falls short of its target of allocating 0.7 % of its GNI to ODA. Most EU countries, which have all adopted individual ODA targets (0.7 % of GNI for those that joined before 2004, and 0.33 % for those that joined later), have not yet fully met their commitments.

The EU collectively provides more ODA than the other members of the Development Assistance Committee (DAC) of the Organisation for Economic Cooperation and Development (OECD) combined ⁽¹¹⁾.

With **imports from developing countries** valued at EUR 834.9 billion in 2014, the EU is the world's most open market for developing countries. Excluding fuels, developing countries' exports to the EU surpass their exports to the USA, Canada, Japan and China combined. Considerable progress in this direction has been achieved since 2002, when EU imports from developing countries were valued at EUR 358.8 billion. The EU is also the largest importer of goods from least developed countries, the overall share of imports from these countries being 2.3 % in total EU imports.

⁽¹⁰⁾ The 0.47 % value refers to the EU's collective ODA, which is the sum of EU-28 ODA as well as EU Institutions' ODA not imputed to EU Member States.

⁽¹¹⁾ European Commission (2016), *Financing Global Sustainable Development: Illustrations of EU contributions to the 2030 Agenda*, p. 5.

1

No poverty



**End poverty
in all its forms
everywhere**

Scope of SDG 1

- Eradicate extreme poverty.
- Halve the proportion of people living in poverty in all its dimensions.
- Implement social protection systems and measures for all and achieve coverage of the poor and the vulnerable.
- Ensure equal rights and access to economic and natural resources, technology, basic and financial services and all forms of property.
- Build the resilience of the poor and the vulnerable and reduce their exposure to economic, social and environmental shocks.
- Mobilise resources for the implementation of programmes and policies to end poverty in all its dimensions.
- Create policy frameworks to accelerate poverty eradication actions.

‘Extreme poverty rates have been cut by more than half since 1990. While this is a remarkable achievement, one in five people in developing regions still live on less than \$1.25 a day, and there are millions more who make little more than this daily amount, plus many people risk slipping back into poverty.’

‘Poverty is more than the lack of income and resources to ensure a sustainable livelihood. Its manifestations include hunger and malnutrition, limited access to education and other basic services, social discrimination and exclusion as well as the lack of participation in decision-making. Economic growth must be inclusive to provide sustainable jobs and promote equality.’

Source: United Nations, www.un.org/sustainabledevelopment/poverty/

Rationale for the indicators presented

SDG 1 includes the goal of halving the number of people living in poverty based on national definitions. In the EU, three main aspects are considered: monetary poverty, limited access to labour markets and material deprivation. These are aggregated in the indicator **people at risk of poverty or social exclusion**, which encompasses individuals affected by one or more of these problems. By referring to both monetary poverty and social exclusion, the indicator highlights other issues, in addition to relative low income, that can put people at a disadvantage. It also emphasises that these issues are closely interlinked. Combined, they reflect the extent to which parts of the population are at risk of exclusion and marginalisation from economic, social and cultural activities that other people regularly participate in.

SDG 1 also calls for the eradication of extreme poverty. The UN describes extreme poverty as having to live on less than USD 1.25 per day, which was updated to USD 1.90 per day in 2015 ⁽¹⁾. While these are good measures for detecting the poorest on a global scale, they apply less to the EU, which has a higher standard of living.

Tackling poverty is important for reaching the ambitions of other SDGs. Poverty can harm people's lives and severely limit their opportunities by affecting their health and well-being. It can also lower their children's educational outcomes. This can further cause a long-term loss of economic productivity and hamper inclusive and sustainable economic growth.

The indicators presented in this chapter are also used for monitoring EU policies, in particular the Europe 2020 Strategy ⁽²⁾ and the EU Sustainable Development Strategy ⁽³⁾.

(1) The poverty line of USD 1.90 a day is mainly used to track extreme poverty at the global level, and to measure progress on global goals set by the World Bank, the United Nations and other development organisations. For more information see <http://www.worldbank.org/en/topic/poverty/brief/global-poverty-line-faq>

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

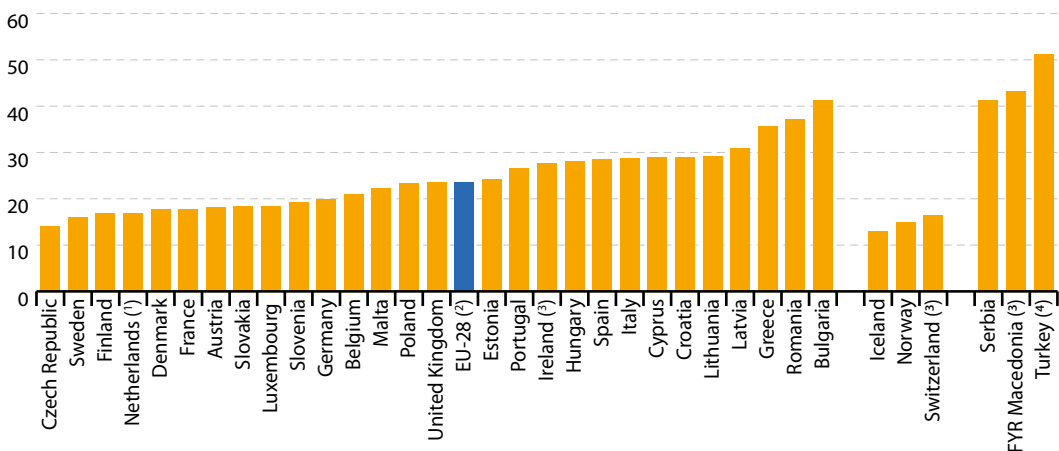
(3) See <http://ec.europa.eu/eurostat/web/sdi/indicators>



People at risk of poverty or social exclusion

Currently **23.7 % of the EU population, accounting for 118.8 million people, is at risk of poverty or social exclusion.** This share has fallen by 2.1 percentage points since 2005 ^(*) but the decline has not been continuous. While the share started to fall after 2005, it began to grow again in 2009 after the onset of the economic crisis. However, it did not return to its 2005 level and has been falling slowly since 2012.

Figure 1.1: People at risk of poverty or social exclusion, by country, 2015
(% of the population)



(¹) Provisional data; (²) Estimated data; (³) 2014 data instead of 2015; (⁴) 2013 data instead of 2015.

Source: Eurostat (online data code: [t2020_50](#))

While almost one quarter of people in the EU are at risk of poverty or social exclusion, they are not distributed evenly across Member States. The **lowest shares are observed in the Czech Republic and some northern Member States**, which are characterised by high social protection expenditure and a strong welfare state.

High poverty levels are concentrated in southern European, eastern European and the Baltic countries, where more than a quarter of the population falls into this category. Exceptions are the Czech Republic, Slovakia, Slovenia, Malta and Poland, where the share is below the overall EU figure. At the very end of the scale, in Bulgaria more than 40 % of the population report being at risk of poverty or social exclusion.

Two **EFTA countries**, Iceland and Norway, also report low shares of people living at risk of poverty or social exclusion, at 13.0 % and 15.0 %, respectively. In Iceland, this

(⁴) 2005 data refer to an estimate for the EU-27.

2015



Almost a quarter of the EU population is at risk of poverty or social exclusion

is an even lower share than in the best performing Member State. The Nordic EU Member States and the listed EFTA countries thus form a region with comparably low shares of people at risk of poverty or social exclusion.

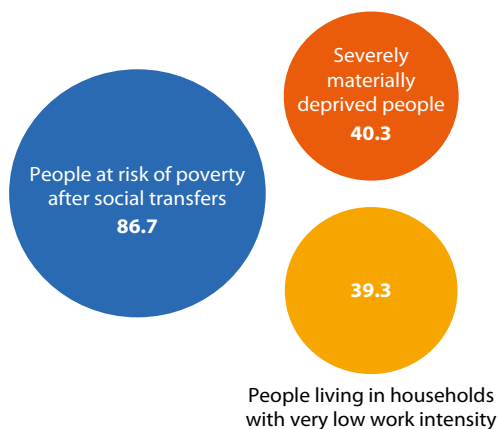
EU candidate countries Serbia, FYR Macedonia and Turkey report shares of people at risk of poverty or social exclusion comparable to the EU Member States with the highest shares.

Some sub-groups tend to be more affected by poverty or social exclusion than others. Unemployed people and single parents are the most at risk — roughly two thirds of those who are unemployed and around half of single parents with dependent children are affected by poverty or social exclusion ^(f).

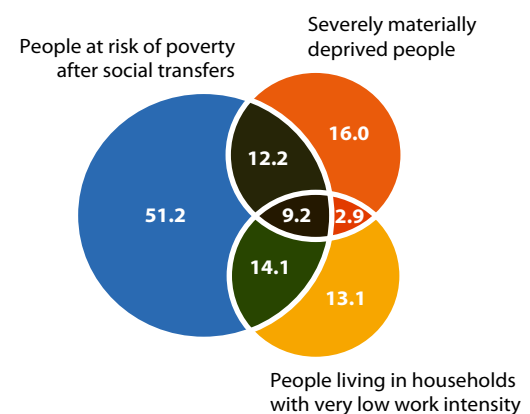
People are considered to be at risk of poverty or social exclusion if they are affected by one or more of the following phenomena: monetary poverty, severe material deprivation, or very low work intensity. Of these, **the most common form of poverty is monetary poverty** with 86.7 million people at risk after social transfers in the EU (see Figure 1.2). This is followed by severe material deprivation, affecting 40.3 million people and those living in households with very low work intensity, affecting 39.3 million people. **Almost one third of all people at risk of poverty or social exclusion — 38.4 million people — are affected by more than one dimension of poverty.** Of those, 9.2 million people are affected by all three forms.

Figure 1.2: Aggregation of sub-indicators of ‘People at risk of poverty or social exclusion’, EU-28, 2015 ⁽¹⁾
(million people)

Total number for each sub-indicator



Combination of sub-indicators (with intersections)



⁽¹⁾ Estimated data.

Source: Eurostat (online data code: ilc_pees01)

^(f) Eurostat data sources: ilc_pees02 and ilc_pees03.



There are large disparities in the three indicators across EU countries, although a similar pattern can be seen for the indicators **monetary poverty** and **severe material deprivation**. Regarding these two indicators, rates are generally lower in northern and western Member States and higher in eastern and southern Member States. Overall, 10.2 % of the EU population are at risk of monetary poverty. This rate is lower than in many G20 countries such as the United States, Turkey and Mexico ⁽⁶⁾.

The share of people living in households with **very low work intensity** ⁽⁷⁾, does not reveal the same regional distribution as the monetary poverty and severe material deprivation indicators. The share of those living in households with very low work intensity is for the most part lower in eastern EU Member States than in the other countries.

A low share in one form of poverty or social exclusion does not necessarily imply a low value in another, which is the case for some eastern Member States. These disparities can be explained by different factors influencing the three sub-indicators: the overall economic development of a country affects the threshold at which one is considered monetarily poor; the standard of living may impact the number of materially deprived; and the state of the labour market can influence the number of households with very low work intensity.

For more information

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⁽⁶⁾ For more information, see Eurostat 2016, *The EU in the world — living conditions* and the OECD database <https://stats.oecd.org/Index.aspx?DataSetCode=IDD>.

⁽⁷⁾ People living in households with very low work intensity are people aged 0–59 living in households where the adults worked 20 % or less of their total work potential during the past year.

2

Zero hunger



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

Scope of SDG 2

- End hunger and ensure access to safe, nutritious and sufficient food.
- End all forms of malnutrition.
- Double the agricultural productivity and incomes of small-scale food producers.
- Ensure sustainable food production systems and implement resilient agricultural practices.
- Maintain the genetic diversity of seeds, cultivated plants and farmed and domesticated animals and their related wild species.
- Increase investment in rural infrastructure and agricultural research to enhance agricultural productive capacity.
- Correct and prevent trade restrictions and distortions in world agricultural markets.
- Ensure proper functioning of food commodity markets and facilitate access to market information to limit extreme food price volatility.

‘It is time to rethink how we grow, share and consume our food.’

‘If done right, agriculture, forestry and fisheries can provide nutritious food for all and generate decent incomes, while supporting people-centred rural development and protecting the environment.’

‘Right now, our soils, freshwater, oceans, forests and biodiversity are being rapidly degraded. Climate change is putting even more pressure on the resources we depend on, increasing risks associated with disasters such as droughts and floods. Many rural women and men can no longer make ends meet on their land, forcing them to migrate to cities in search of opportunities.’

‘A profound change of the global food and agriculture system is needed if we are to nourish today’s 795 million hungry and the additional 2 billion people expected by 2050.’

‘The food and agriculture sector offers key solutions for development, and is central for hunger and poverty eradication.’

Source: United Nations, www.un.org/sustainabledevelopment/hunger/

Rationale for the indicators presented

Food security and the elimination of hunger are central aspects of SDG 2. The goal also considers improving nutrition, which is vital for a healthy and productive society. But because EU countries have largely overcome these challenges, this chapter focuses on another main aspect of this SDG, for which developed countries can become leading examples, namely promoting sustainable food production systems. Sustainable agriculture is not only important for ensuring that the natural resources upon which the agricultural economy depends are treated cautiously but also for ensuring food security and ending hunger, which are all addressed by SDG 2.

Having a high share of **area under organic farming** is often seen as an important contribution to sustainable agriculture. It helps protect natural resources and biodiversity by prohibiting the use of synthetic pesticides and fertilisers, growth hormones, antibiotics and genetically modified organisms. Compared with conventional farming, it enhances soil health and natural fertility and reduces indirect use of energy and water. However, it is often less productive.

Gross nutrient balance on agricultural land can also provide insights into agricultural sustainability by giving an indication of production intensity. In areas of intensive livestock production, for example, high levels of manure often lead to surpluses of nitrogen and phosphorus in the environment. These nutrients leach into surface water and groundwater, causing pollution and over-fertilisation, which harm water quality and biodiversity. Intensive cropping systems that use a lot of fertiliser can cause the same problems. At the same time, soils that face nutrient deficits are more threatened by degradation and erosion.

Intensive livestock production is often associated with harmful environmental impacts that undermine sustainable agriculture. High total **livestock density** can lead to high greenhouse gas emissions, nutrient surpluses, the spread of antibiotic-resistant microbes, and animal welfare issues. In Europe, intensive livestock production often relies on imported feed, which has been shipped over long distances with no knowledge of the methods used to produce it and whether these might impact biodiversity, water quality and soil health in its region of origin. On the other hand, extensive, pasture-based livestock production can benefit the environment by increasing farmland-specific biodiversity as well as carbon stocks and humus levels in the soil. Very low or falling livestock densities can indicate land abandonment and the loss of traditional pastures in Europe ⁽¹⁾.

The indicators presented in this chapter are also used for monitoring the EU Sustainable Development Strategy ⁽²⁾.

⁽¹⁾ It has to be noted that national average values in gross nutrient balance and livestock density cannot be relied on to provide useful insights because high intensity of agriculture and its associated negative impacts mostly occur locally. This means that low values in these indicators do not automatically mean that no intensive agriculture exist in the country assessed.

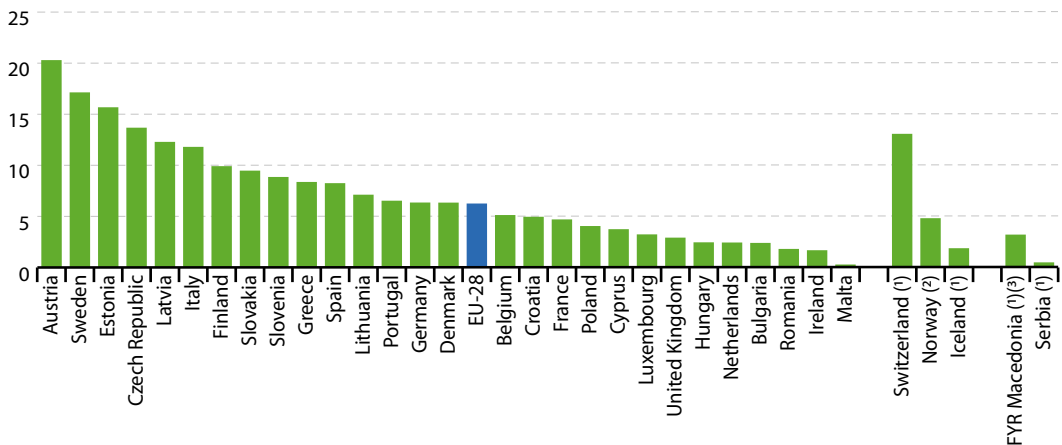
⁽²⁾ See <http://ec.europa.eu/eurostat/web/sdi/indicators>



Area under organic farming

Organic farming can be found in all Member States and 6.2 %, over 10 million hectares, of the EU's agricultural area is farmed this way. The share has increased over the past decade from 3.6 % in 2005 ^(*).

Figure 2.1: Area under organic farming, by country, 2015 ⁽¹⁾
(% of utilised agricultural area)



(¹) Provisional data; (²) Estimated data; (^{*)} 2014 instead of 2015.

Source: Eurostat (online data code: tsdpc440)

There are **large differences in the area of agricultural land farmed organically across the EU**. Organic farming is most prevalent in Austria, with one fifth of its agricultural area farmed organically, followed by Sweden and Estonia. In contrast, organic farming is not strongly developed in countries such as Malta, Ireland and Romania, with shares below 2 %.

Regional differences exist. Organic farming particularly occurs in regions with extensive livestock production systems based on permanent grassland. However, it is less likely in regions with large areas of plains where more intensive production systems prevail.

Among the countries with the largest areas of utilised agricultural land — Spain, Germany, France and the United Kingdom ^(*) — the area under organic farming varies between 8.2 % and 2.9 %.

Looking at **EFTA countries**, Switzerland's share of organic farming is comparable with the higher performing EU countries.



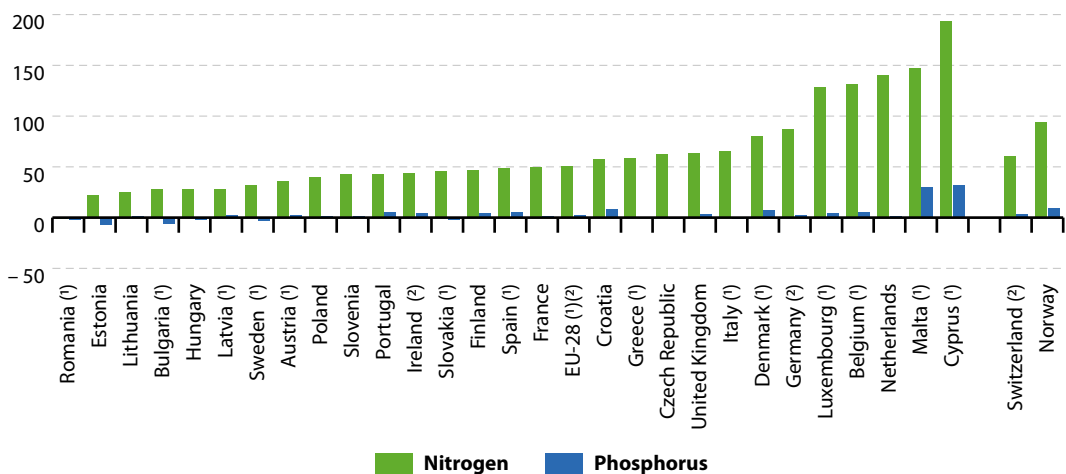
(^{*)} 2005 data is an estimate for the EU-27.

(^{*)} See Land use: number of farms and areas of different crops by type of farming (online data code: ef_oluft)

Gross nutrient balance on agricultural land

EU farmers spread more nitrogen on agricultural land than can be used by plants. On average, the current nitrogen surplus is 51 kg/ha^(*). While still high, the surplus has fallen by 12 kg/ha in the EU since 2000.

Figure 2.2: Gross nutrient balance on agricultural land, by country, 2014
(kilograms per hectare)



(*) Data are estimates; (†) 2013 data instead of 2014.

Source: Eurostat (online data code: t2020_rn310)

2013



51 kg

average nitrogen surplus per hectare of agricultural land

There is a large variation in nitrogen surpluses across Member States. In the two Mediterranean island countries, Cyprus and Malta, and the Benelux countries, nitrogen surpluses are two to four times higher than the overall EU figure. In contrast, Romania reports a slight nitrogen deficit (-1 kg/ha) and the Baltic countries along with Bulgaria and Hungary only have a small surplus (ranging from 22 kg/ha to 28 kg/ha).

High nitrogen surpluses often coincide with high livestock densities and a dominance of intensive agricultural practices in such countries. Persistent nutrient surpluses indicate that an area may be at threat of environmental pollution.

With the exception of Lithuania and Latvia, **most countries with a low nitrogen surplus also report a phosphorus deficit**, in particular Estonia, Bulgaria, Sweden, Hungary and Romania. These countries are at particular risk of continuous soil degradation. A high phosphorus surplus is reported in the Mediterranean countries Cyprus and Malta, and to a lesser extent Croatia.

Nitrogen surpluses in **EFTA countries** Norway and Switzerland are above the EU average. Both countries also show a slight phosphorus surplus.

(†) Refers to an EU-28 estimate for 2013.

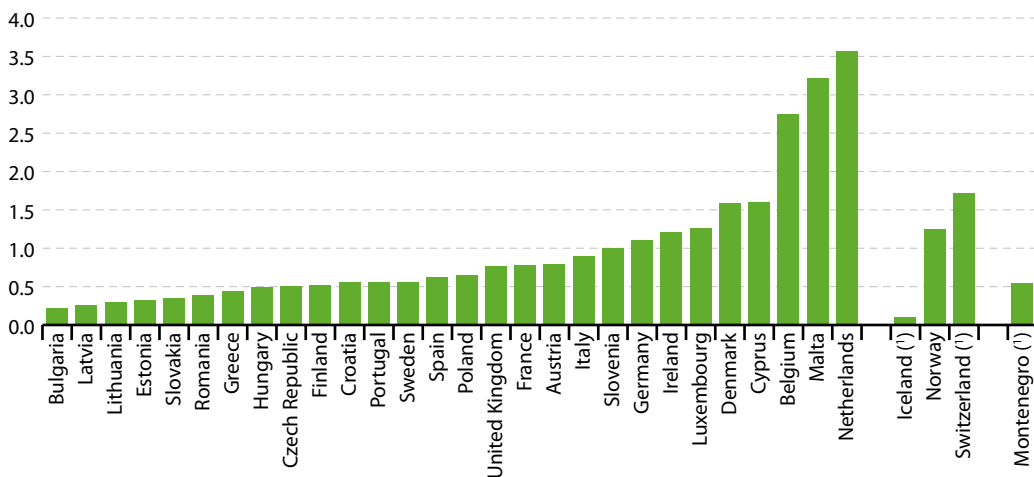


Livestock density

The number of animals farmed per hectare of utilised agricultural area varies by up to 3.35 LSU/ha across EU Member States.

In most countries the total livestock density is below 1.5 LSU/ha, though the Netherlands, Malta and Belgium stand out with much higher rates of 2.74–3.57 LSU/ha. This reflects the different conditions and structure of agriculture.

Figure 2.3: Livestock density index, by country, 2013
(livestock units per ha)



(*) 2010 data instead of 2013.

Source: Eurostat (online data code: [tsdpc450](#))

The lowest total livestock densities are reported in the Baltic and the Balkan regions and in other parts of eastern Europe.

The highest total livestock densities are found in the Netherlands, Malta and Belgium. These countries also have the highest grazing livestock densities which reflect the relative intensiveness of livestock production. In Malta, however, both the total and the grazing livestock is decreasing.

The structure of agriculture differs between and within countries. Livestock production can be very high locally or regionally, but be levelled out by the national average. In the case of Bulgaria, which has the lowest total livestock density in the EU, the many small agricultural holdings (less than 2 ha of agricultural land) account for more than half of the total livestock.

The EFTA countries Switzerland and Norway show comparably high total livestock densities, while Iceland has the lowest of all European countries, reflecting both market and general farming conditions.

2013



80 %

of EU Member States have a livestock density index below 1.5 LSU/ha



For more information

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3

Good health and well-being



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

Scope of SDG 3

- Reduce maternal mortality.
- Reduce neonatal mortality and under-5 mortality.
- End epidemics of mortal diseases.
- Reduce premature mortality and promote mental health and well-being.
- Prevent and treat substance abuse of narcotic drugs and alcohol.
- Halve the number of deaths and injuries from road traffic accidents.
- Ensure universal access to sexual and reproductive health-care services.
- Achieve universal health coverage.
- Reduce the number of deaths and illnesses caused by chemicals and air, water and soil pollution and contamination.
- Implement WHO Framework Convention on Tobacco Control.
- Support research and development of vaccines and medicines and provide access to medicines for all.
- Increase health financing and health workforces in developing countries.
- Strengthen capacity for early warning, risk reduction and management of health risks.

‘Ensuring healthy lives and promoting the well-being for all at all ages is essential to sustainable development. Significant strides have been made in increasing life expectancy and reducing some of the common killers associated with child and maternal mortality. Major progress has been made on increasing access to clean water and sanitation, reducing malaria, tuberculosis, polio and the spread of HIV/AIDS. However, many more efforts are needed to fully eradicate a wide range of diseases and address many different persistent and emerging health issues.’

Source: United Nations, www.un.org/sustainabledevelopment/health/

Rationale for the indicators presented

SDG 3 aims to ensure healthy lives and promote well-being. To achieve these objectives, it calls for action to reduce premature mortality and to promote well-being and mental health. The indicator **life expectancy at birth** is a conventional measure of a population's general health and overall mortality level, and provides an insight into the quality of care available. However, longevity is not the only guide to well-being. The absence of disease or sickness, measured through a forecast of **healthy life years**, is also a relevant aspect.

Health is strongly linked to other areas related to sustainable development. It is influenced by environmental issues, such as air quality, and by socio-economic factors such as living conditions. Good health is also necessary for a person to be productive and have the resources to contribute to communal life. Thus a healthy population also ensures added value for the economy and society.

To reach the overall objective of ensuring healthy lives, SDG 3 also includes specific well-being targets such as reducing illnesses and deaths from pollution, decreasing injuries due to road traffic accidents, prevention and treatment of substance abuse, and implementing the WHO Tobacco Control. The indicator **self-perceived health**, which records people's assessment of their own health, offers a good overview as to whether efforts in these areas are providing results.

Universal health coverage is another central issue for SDG 3. Limited access to health services not only places a burden on a person's health but also on a country's productivity and social protection systems. The extent to which adequate health coverage for all is achieved can be measured with the indicator **unmet needs for medical care**. It reveals the share of the population that has difficulty accessing medical examinations or treatments because of a lack of money.

The indicators on life expectancy at birth, healthy life years and self-reported unmet needs for medical care are also used for monitoring the EU Sustainable Development Strategy (1).

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

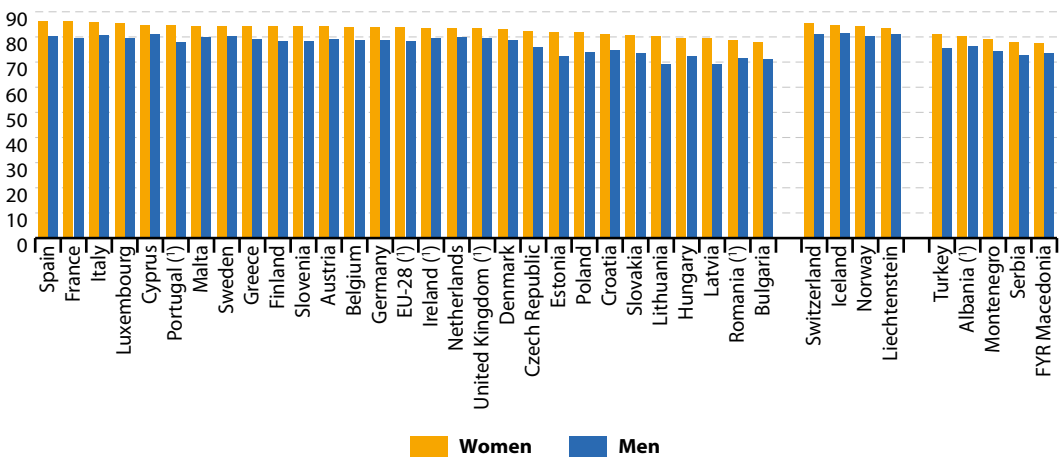


Life expectancy and healthy life years at birth

Girls born in the EU in 2014 can expect to live 83.6 years, 5.5 years longer than boys (78.1 years). Despite the gender gap, this is a steady increase for both sexes since 2004. A global comparison shows that life expectancy is higher in Japan, South Korea, Australia and Canada ^(?).

However, when it comes to disability-free life expectancy (or life expectancy without activity limitation), measured in healthy life years, there is only a small gender gap. **Girls can expect to spend 61.8 years in good health compared with 61.4 years for boys ^(?).** This shows that while women tend to live longer than men, they are on average likely to spend a greater share of their lives with a disability.

Figure 3.1: Life expectancy at birth, by country, 2014
(years)



(1) Data are estimates and/or provisional.
Source: Eurostat (online data code: tsdph100)

Life expectancy varies substantially across the EU by 8.2 years for girls and 11.8 years for boys. The upper end of the scale is dominated by some Mediterranean and northern EU countries, where life expectancy reaches at least 83.6 years for females and 78.0 years for males. Girls can expect to live the longest in Spain (86.2 years) and boys in Cyprus (80.9 years). In contrast, some countries that joined the EU in 2004 or after report the lowest levels of life expectancy for both sexes. Boys born in Latvia and girls born in Bulgaria can expect to have the lowest life span in the EU, 69.1 years and 78.0 years, respectively.

2014

83.6

78.1

Life expectancy in years at birth for girls and boys in the EU

(?) Source: World Health Organisation (World Health Statistics). For more information see Eurostat 2015: [The EU in the world — health](#).
(?) Source: Eurostat (online data code: tsdph100).

At 81 years or above, male life expectancy in three of the four **EFTA countries** — Switzerland, Iceland and Liechtenstein — **surpasses** the best performing EU Member States.

Differences in healthy life years across the EU are even greater than for life expectancy. Girls in Malta and boys in Sweden have **the highest number of expected healthy life years**, 74.3 years and 73.6 years respectively. These two groups can expect to live more than ten years longer without disability or disease than the EU average. At the other end of the scale, **boys in Latvia and girls in Slovakia** are expected to live 9.9 and 7.2 years less in good health, respectively, than the EU average. Interestingly, although girls in Bulgaria have the lowest life expectancy among EU countries, they are expected to spend more years in good health compared to the overall EU figure. These figures show that the expected number of healthy life years differs by almost 20 years for females and 22 years for males across Member States.



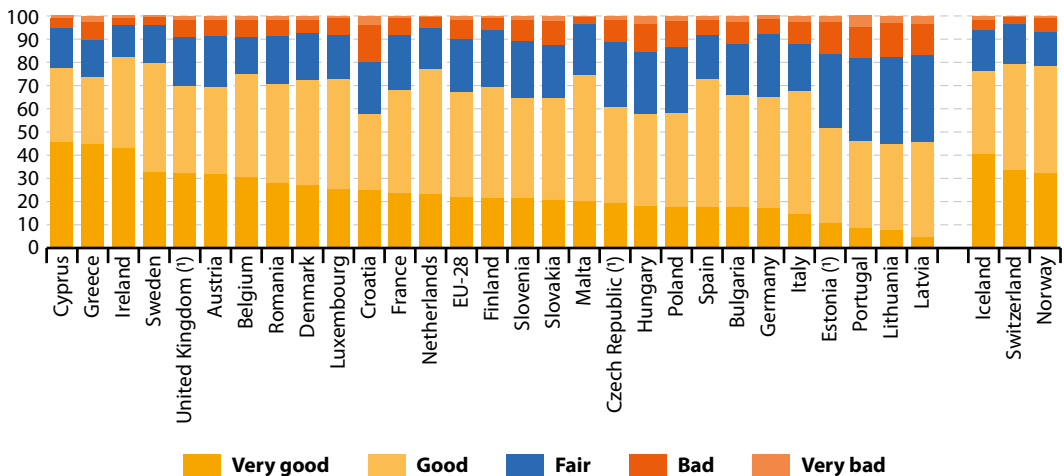
Self-perceived health

21.6 % of the EU population perceives their health to be very good.

While this appears not to have changed from 21.6 % in 2007 ^(*), the rate had actually been increasing steadily between 2008 and 2012 before falling again. Furthermore, **two thirds of the population judge their health as being either good or very good**, a value that had also been more or less increasing continuously between 2007 and 2012 before decreasing again slightly.

Figure 3.2: Self-perceived health, by country, 2014

(%)



(†) Data with low reliability.

Source: Eurostat (online data code: [hlth_silc_10](#))

The average number of people judging their health as very good is almost ten times higher in the Member State with the highest rates than the one with the lowest. **People in Cyprus, Greece and Ireland**, which all have healthy life expectancy above the overall EU figure, **are most likely to perceive their health as being very good**, with 45.3 %, 44.8 % and 42.9 % of the respective populations falling into this category. In contrast, the Baltic countries and Portugal have the **lowest share** of people reporting very good health (under 11 % each).

Despite women having a longer life expectancy than men, they are less likely to rate their health as being very good or good in all Member States. This gender gap can be observed in all age groups; however, it is lowest for 16 to 24 year olds and generally increases with age.

With 32 % to 40 % of their populations reporting that they feel in very good health, the **EFTA countries** Iceland, Switzerland and Norway are below the leading EU Member States on this indicator.

(*) The 2007 value refers to the EU-27.

2014

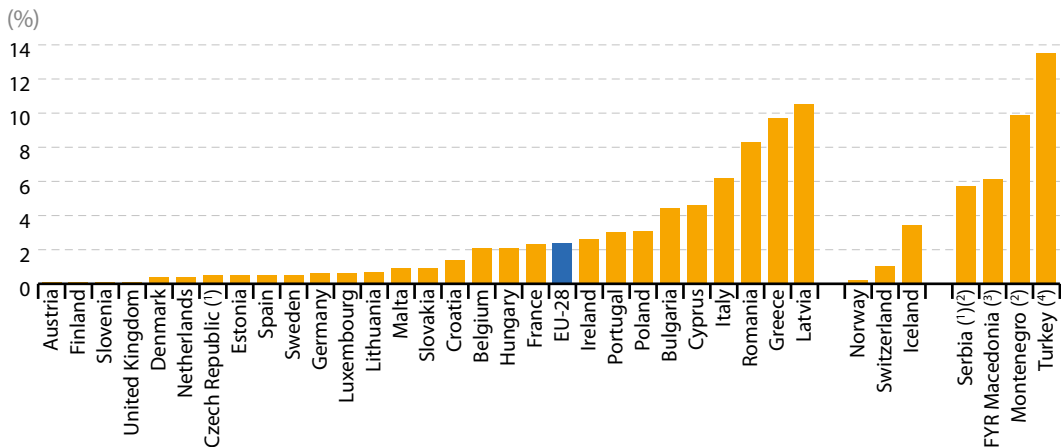


Over one fifth of the EU population assesses its health as being very good and around two thirds consider it to be good or very good

Self-reported unmet needs for medical care

Throughout the EU, **2.4 % of the population reports limited access to health care due to monetary constraints**. This is slightly higher than in 2008, when 2.1 %^(*) of the population reported their needs for medical care were unmet due to their financial situation. Although this share decreased between 2008 and 2009, it started increasing again in 2010.

Figure 3.3: Self-reported unmet needs for medical care due to monetary constraints, by country, 2014



(¹) Data have low reliability; (²) 2013 data instead of 2014; (³) 2012 data instead of 2014; (⁴) 2009 data instead of 2014.

Source: Eurostat (online data code: [tsdph270](#))

2014



2.4 %

of the EU population reports limited access to health care due to financial reasons

In more than half of Member States, less than 1 % of the population reports difficulty accessing medical care due to monetary constraints. This share is lowest in **Austria, Finland, Slovenia and the United Kingdom** (less than 0.1 % of their respective populations).

While in the EU less than 3 % of people report having problems accessing health care due to lack of money, in some Member States health care access seems to be a bigger challenge. In Latvia and Greece, where **access to health care is most often restricted by financial means**, the rate is around four times higher than the overall figure for the EU. These countries also have a relatively high share of people at risk of poverty or social exclusion and a high share of private household out-of-pocket expenditure on healthcare⁽⁴⁾. Interestingly, while Greece ranks higher than most EU Member States in terms of life-expectancy and self-perceived health, the opposite holds true for Latvia. Therefore, no straightforward link between life expectancy and unmet needs for medical care can be identified.

(⁴) 2008 data refer to EU-27.

(⁵) See health care expenditure by financing agent (online data code: [hlth_sha_hf](#)).



The **EFTA country Norway** is almost on a par with the best performing EU Member States for this indicator. In contrast, Iceland has a higher share of people reporting unmet needs for medical care due to financial constraints than the EU as a whole.

For more information

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4

Quality education



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

Scope of SDG 4

- Ensure that all children complete free, equitable and quality primary and secondary education.
- Ensure access to quality early childhood development, care and pre-primary education for all children.
- Ensure equal access to affordable and quality technical, vocational and tertiary education.
- Increase the number of youth and adults having relevant skills for employment, decent jobs and entrepreneurship.
- Eliminate gender disparities in education and ensure equal access to all levels of education.
- Ensure achievement of literacy and numeracy.
- Ensure acquisition of the knowledge and skills needed to promote sustainable development.
- Build and upgrade education facilities and provide a safe, non-violent and inclusive learning environment.
- Expand the number of scholarships for enrolment in higher education available to developing countries.
- Increase the supply of qualified teachers.

‘Obtaining a quality education is the foundation to improving people’s lives and sustainable development. Major progress has been made towards increasing access to education at all levels and increasing enrolment rates in schools particularly for women and girls. Basic literacy skills have improved tremendously, yet bolder efforts are needed to make even greater strides for achieving universal education goals. For example, the world has achieved equality in primary education between girls and boys, but few countries have achieved that target at all levels of education.’

Source: United Nations, www.un.org/sustainabledevelopment/education/

Rationale for the indicators presented

An inclusive and quality education for all is an essential element of sustainable development. SDG 4 calls not only for all girls and boys to have access to primary and secondary education but also to be able to complete their schooling. The indicator **early leavers from education and training** provides an insight into progress towards these objectives by measuring the share of a country's population aged 18 to 24 who have at most lower secondary education and are not in further education or training. Leaving school early has a big impact on people's lives. People with a low level of education may not only face greater difficulties in the labour market but also have a higher risk of poverty and social exclusion.

SDG 4 focuses on both granting greater and more equitable access to education and training and ensuring its high quality. An important objective of this goal is that education systems deliver high levels of numeracy and literacy and enable other foundational skills to be acquired. The indicator on **low achievers in reading, maths and science** provides key insights into the performance of school systems and pupils' basic skills attainment. Basic skills, such as reading a simple text or performing simple calculations, provide the foundations for learning, gaining specialised skills and personal development. These skills are also essential for people to fully participate in and contribute to society.

SDG 4 also demands affordable and quality tertiary education for all women and men. The indicator on **tertiary educational attainment** helps to directly monitor this goal. Tertiary education is important because people with higher qualifications are more employable and are less likely to face poverty in a knowledge-based economy. Investing efficiently in education and training systems that deliver high-quality and up-to-date services lays the foundation of a country's long-term prosperity. On the other hand, low levels of tertiary education can hinder competitiveness and undermine the potential for growth.

Increasing the number of youth and adults who have relevant skills for employment is another aim of SDG 4. Underpinning the ongoing quest for a high-quality labour force with up-to-date skills is the goal of **lifelong learning** ⁽¹⁾. Adult education and training covers the longest time span in a person's learning process. After an initial phase of education and training, lifelong learning is crucial for improving and developing skills, adapting to technical developments, advancing a career or returning to the labour market. The indicator on participation in lifelong learning is important for monitoring this aspect of SDG 4.

The indicators presented in this chapter are also used for monitoring EU policies, in particular the Europe 2020 strategy ⁽²⁾ and the EU Sustainable Development Strategy ⁽³⁾.

(1) Lifelong learning is the lifelong, voluntary and self-motivated pursuit of knowledge for personal or professional reasons. The overall aim of learning is to improve knowledge, skills and competences. The intention to learn distinguishes learning activities from non-learning activities such as cultural activities or sports activities. For further information see: http://ec.europa.eu/eurostat/statistics-explained/index.php/Glossary:Lifelong_learning

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

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

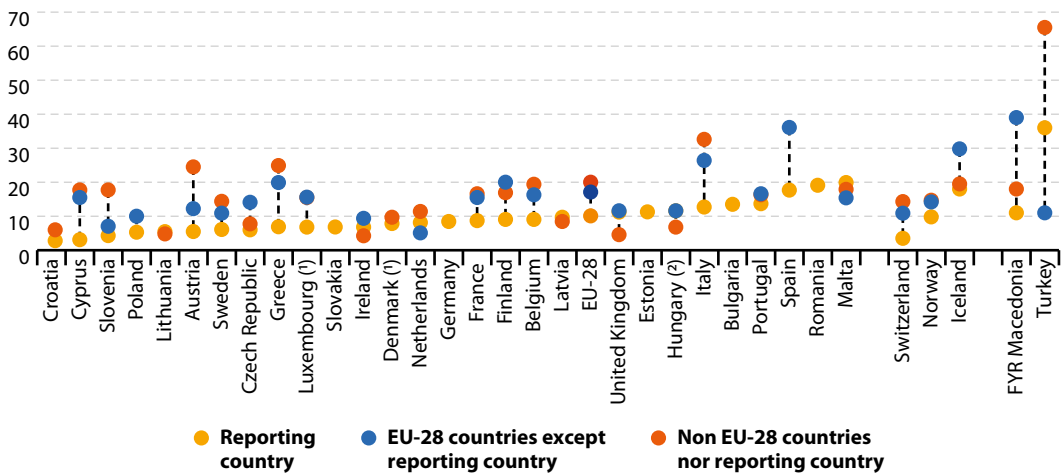


Early leavers from education and training

The overall share of people aged 18 to 24 in the EU who are early leavers from education and training is 11.0 % ⁽⁴⁾. This is a considerable improvement over 2006, when the rate was 4.3 percentage points higher.

An individual's country of birth strongly influences the rate of early leaving from education and training across the EU. **People who study away from the country in which they were born tend to find it more difficult to complete their education.** On average, people born outside the EU are two times as likely to leave education and training early than people studying in their country of birth.

Figure 4.1: Early leavers from education and training by group of country of birth, by country, 2015 (% of population aged 18–24)



⁽¹⁾ Some data have low reliability; ⁽²⁾ Values for 'EU-28 countries except reporting country' and 'reporting country' are the same.

Source: Eurostat (online data code: [edat_lfse_02](#))

Across the EU, rates of early leaving from education and training are generally **higher for people studying in another Member State than the one they were born in** (see the rates for 'EU-28 countries except reporting country' in Figure 4.1). The rates are **even higher for those born in a non-EU country**. The United Kingdom, Ireland, Lithuania, Latvia and Hungary are exceptions, with people born outside the EU showing considerably lower rates of early leaving than the other groups for which data are available. In the Netherlands and Malta people born in another Member State have the lowest rate of early school leaving among the three groups, whereas in Hungary the rate is the same for people born in the country and in another Member State.

⁽⁴⁾ Source: Eurostat (online data code: [t2020_40](#))

2015



11.0%

of people aged 18–24 in the EU are early leavers from education and training



The largest differences in early leaving between the native population and people born elsewhere are observed in southern Europe (Italy, Spain and Greece) and Austria, with gaps of more than 18 percentage points.

EFTA countries report similar patterns of early leaving as in the EU.

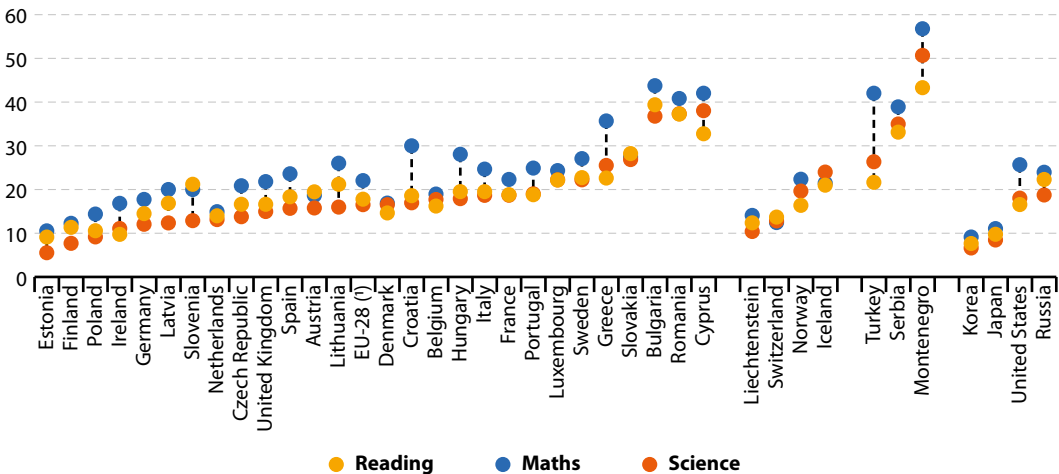


Low achievers in reading, maths and science

One sixth (16.5 %) of pupils in Europe show insufficient abilities in science as measured by the OECD's PISA study ^(⁶). **Performance in reading and mathematics is even poorer, with 17.8 % and 22.0 % shares of low achievers** among 15-year-old EU citizens, respectively. Achievement in science has shown the strongest progress at the EU level since 2000, while improvement in mathematical competences has been the slowest. Compared to other advanced economies in the world, the EU's overall share of low achievers in reading and science is similar to that in the United States, but slightly lower for maths. However, the share of low-achieving pupils in the EU exceeds those in Japan and Korea, which are below 12 % and 10 %, respectively.

Figure 4.2: Low achievers in reading, maths and science, by country, 2012

(share of 15-year-old pupils who are below proficiency level 2 on the PISA scales for reading, maths and science)



(⁽¹⁾) Data are estimates.

Source: OECD, PISA 2012 Results

There are large discrepancies in the overall performance in reading, maths and science across countries. However, performance in all three areas of basic skills seems to be closely related. The highest shares of low achievers in the basic subjects are recorded in some eastern and southern European countries. In particular **in Bulgaria and Romania the shares of pupils failing to acquire competences in the key subjects surpasses 36 % and are almost double the EU average.** However, no clear geographical pattern can be observed, with a number of eastern

⁽⁶⁾ PISA is an international study launched by the OECD in 1997. It aims to evaluate education systems worldwide every three years by assessing 15 year olds' competencies in the key subjects: reading, mathematics and science. For further details see <http://www.oecd.org/pisa/>

2012



More than one sixth of pupils in the EU show insufficient abilities in reading, maths and science, with performance in maths lagging behind the most

Member States performing better than the EU average while some northern and western European countries show lower rates of acquisition of basic skills than the EU average. **Among the top performers are Estonia, Finland, Poland and the Netherlands, which have shares of low achievers in each of the basic subjects (reading, maths and science) below 15 %.** As a general trend, in almost all Member States pupils perform best in science, whereas performance in maths tends to lag behind that of the other two subjects.

The shares of pupils with insufficient skills in reading, maths and science in the EU **candidate countries** Turkey and Serbia are around the level of the worst performing EU Member States. However, Montenegro records the highest share of low-achieving pupils among all reporting countries — exceeding 43 %.

The share of low-achieving pupils in Liechtenstein and Switzerland is comparable to the best performing EU Member States, whereas the figures for the other **EFTA countries** — Norway and Iceland — are close to the EU average.

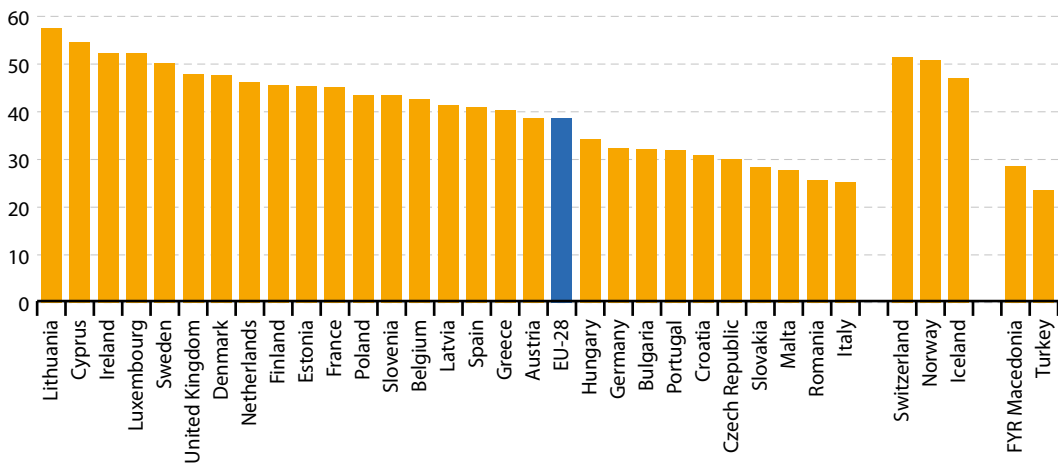


Tertiary education

Almost four out of ten (38.7 %) people aged 30 to 34 in the EU have successfully completed tertiary education. This means the share has almost doubled since 2002, when the tertiary educational attainment rate was 23.6 %.

Figure 4.3: Tertiary educational attainment, by country, 2015

(% of the population aged 30–34) (1)



(1) The indicator is defined as the percentage of the population aged 30–34 who have successfully completed tertiary studies (for example, university, higher technical institution).

Source: Eurostat (online data code: [tsdsc480](#))

There is more than a twofold difference in tertiary attainment rates between the top Member States and those at the bottom. Overall, in about two thirds of Member States the tertiary education attainment rate is above or equal to the overall EU figure. The **highest shares** can be observed in **Lithuania, Cyprus, Ireland, Luxembourg and Sweden, where at least half of the population aged 30 to 34 have completed tertiary education.** In contrast, the **lowest shares of tertiary graduates** are found in **Italy and Romania at around 25 %.**

The **EFTA countries** Norway and Switzerland are at the level of the best performing EU countries.

In contrast, tertiary education levels in the **candidate countries** FYR Macedonia and Turkey are lower than in the majority of EU Member States.

2015



38.7 %

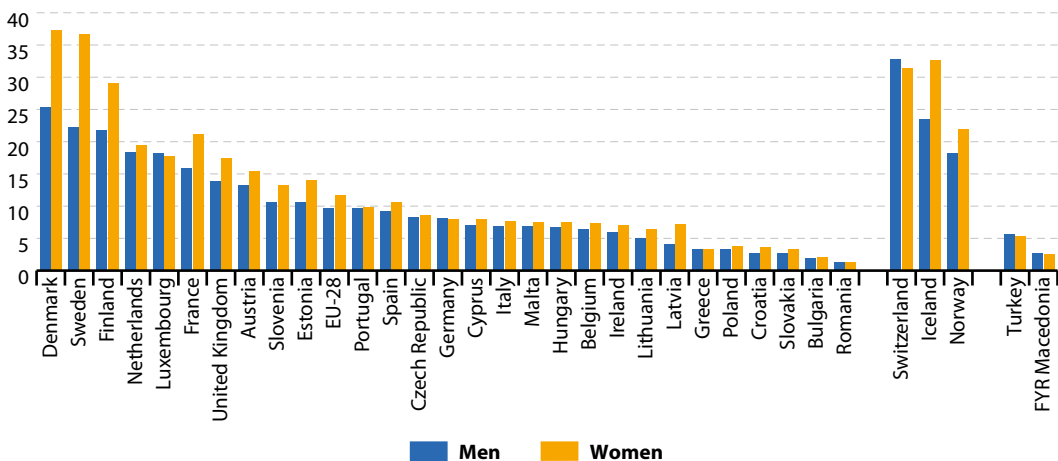
of the EU population aged 30–34 has completed tertiary education

Lifelong learning

In the EU, 11.7 % of women and 9.7 % of men participate in lifelong learning. Women also appear to be forging ahead in this area, with lifelong learning rates improving by four percentage points since 2002 compared with three percentage points for men.

Figure 4.4: Participation in lifelong learning by sex, by country, 2015

(% of population aged 25–64) ⁽¹⁾



⁽¹⁾ Lifelong learning refers to persons aged 25–64 who stated that they received education or training in the four weeks preceding the survey (numerator). The denominator consists of the total population of the same age group, excluding those who did not answer to the question 'participation in education and training'.

Source: Eurostat (online data code: tsdsc440)

2015



11.7 % of women and 9.7 % of men in the EU participate in lifelong learning

Improvements observed for the EU as a whole mask **differences at the Member State level**, especially when it comes to women.

Overall, northern and western Member States tend to have the highest participation rates. **Denmark and Sweden** especially stand out with the **largest shares of women and men involved in lifelong learning — over 36 % for women and over 22 % for men**. **Romania**, on the other hand, **shows the lowest share for both sexes at 1.3 %**. This rate is 29 times lower for women and 19 times lower for men than the rates in Denmark. In general, lifelong learning seems to be a less common form of educational attainment in eastern and southern European countries.

Women generally have higher participation rates across the board, except for Luxembourg and Germany, where slightly more men tend to engage in lifelong learning. **Greece and Romania show no perceivable difference in gender participation rates**. On the other hand, **the largest gender gaps** are seen in **Sweden** (14.4 percentage points) and **Denmark** (12 percentage points).

Switzerland shows not only a higher share of men participating in lifelong learning among **EFTA countries** but also the highest share of men across all European countries, at 32.8 %.



For more information

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5

Gender equality



Achieve gender equality and empower all women and girls

Scope of SDG 5

- End all forms of discrimination against women and girls.
- Eliminate all forms of violence against all women and girls in the public and private spheres.
- Eliminate all harmful practices for women.
- Recognise and value unpaid care and domestic work.
- Ensure women's full and effective participation and equal opportunities for leadership at all levels of decision-making in political, economic and public life.
- Ensure universal access to sexual and reproductive health and reproductive rights.
- Undertake reforms to give women equal rights and access to economic and natural resources, technology, basic and financial services and all forms of property.
- Enhance the use of enabling technology to promote women's empowerment.
- Adopt and strengthen sound policies and legislation to promote gender equality.

'While the world has achieved progress towards gender equality and women's empowerment under the Millennium Development Goals (including equal access to primary education between girls and boys), women and girls continue to suffer discrimination and violence in every part of the world.'

'Gender equality is not only a fundamental human right, but a necessary foundation for a peaceful, prosperous and sustainable world.'

'Providing women and girls with equal access to education, health care, decent work, and representation in political and economic decision-making processes will fuel sustainable economies and benefit societies and humanity at large.'

Source: United Nations, www.un.org/sustainabledevelopment/gender-equality/

Rationale for the indicators presented

SDG 5 calls for the end of all forms of discrimination against women and girls. Many women experience some sort of discrimination or inequality in their private or public life. One area where this persists is the labour market. The **gender pay gap**, measuring the average difference in aggregate gross hourly earnings of women and men, is often used to gain an insight into progress towards tackling inequalities. A significant part of the gender pay gap is due to the fact that women are over-represented in lower paid industries. However, other factors also play a role. These include vertical segregation in the labour market, traditions, stereotypes and unequally distributed care responsibilities. The result of the gender pay gap is that women tend to earn less over their lifetime. This can affect future pension rights and may result in women being more prone to experiencing poverty in old age.

SDG 5 also calls for women's full and effective participation and equal opportunities for leadership at all decision-making levels in political, economic and public life. The indicator on **women's representation in national parliaments** helps to monitor these priorities. Women make up more than half of the EU population and electorate, yet they continue to be under-represented in decision-making positions at all levels ⁽¹⁾. Equal participation by women and men in decision-making is a matter of justice, respect for human rights and good governance. It is needed to better reflect the composition of society, to strengthen democracy and allow it to function properly ⁽²⁾.

The indicator on gender pay gap is also used to monitor the EU Sustainable Development Strategy ⁽³⁾.

⁽¹⁾ According to *Recommendation Rec(2003)3 of the Committee of Ministers to Member States on balanced participation of women and men in political and public decision-making*, the representation of either women or men should not fall below 40 %.

⁽²⁾ *Council Conclusions of 7 December 2015 on 'Equality between women and men in the field of decision-making'*.

⁽³⁾ See <http://ec.europa.eu/eurostat/web/sdi/indicators>

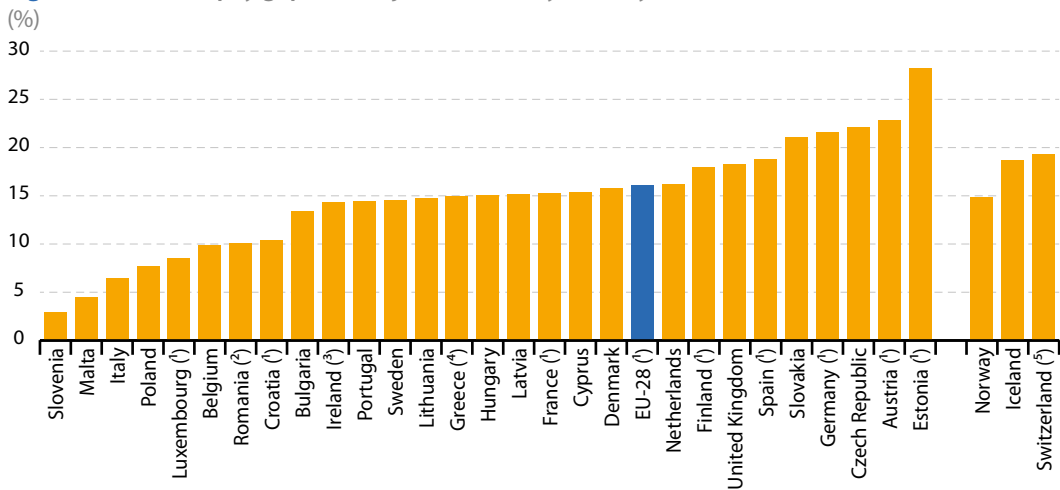


Gender pay gap

The gender pay gap in the EU is 16.1 %^(*). This is 1.6 percentage points lower than in 2006 in the EU-27.

The slight reduction in the gender pay gap indicates that the hourly gross earning of women are slowly catching up with those of men.

Figure 5.1: Gender pay gap in unadjusted form, by country, 2014



(*) Data are provisional; (†) Data are estimated; (‡) 2012 data instead of 2014; (§) 2010 data instead of 2014; (¶) 2013 data instead of 2014.

Source: Eurostat (online data code: tsdsc340)

The gender pay gap varies by 25 percentage points across Member States. **Estonia has by far the largest gender pay gap in the EU at 28.3 %**. This is almost twice the EU average and ten times higher than the country with the smallest gap (Slovenia).

The central and eastern European countries report gaps of 15 % or lower, with Estonia, the Czech Republic and Slovakia the exceptions. **The smallest gaps can be seen in some southern European countries**, in particular Italy (6.5 %), Malta (4.5 %) and Slovenia (2.9 %).

The **EFTA countries** have relatively high gender pay gaps of 15 % or more.

2014



16.1 %

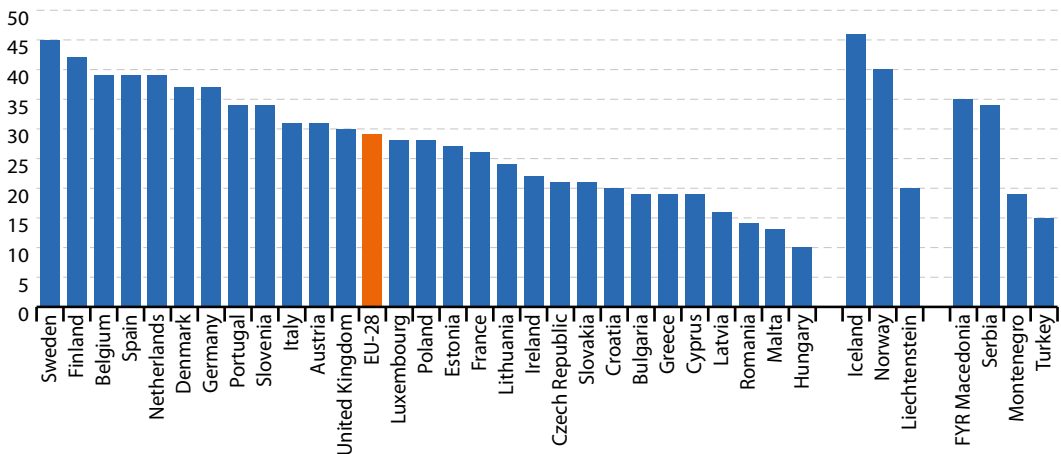
Gender pay gap
in the EU

(*) The gender pay gap is the average hourly wage difference between male and female employees across the entire economy.

Women's representation in national parliaments

Women hold 29 % of seats in national parliaments in the EU ^(*). This reflects positive but slow progress compared with 2003 when women occupied only 20 % of seats.

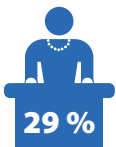
Figure 5.2: Proportion of seats held by women in national parliaments (single/lower house), by country, 2016 ^(†)
(%)



^(†) The data refer to the 3rd quarter of 2016.

Source: European Commission ^(*)

2016



of seats in national parliaments are held by women in the EU

The overall EU figure conceals very large variations in the share of women in national parliaments across Member States, from nearly half in Sweden to only 10 % in Hungary.

In 12 Member States the female representation in national parliaments is 30 % or more. Two of these have already achieved balanced participation, with **more than 40 % of seats in national parliaments held by women in Sweden and Finland.**

In contrast, **the lowest proportion of female representatives can be seen in some eastern and southern European countries.** Particularly in Hungary, Malta and Romania less than 15 % of parliamentary seats are held by women.

The **EFTA countries** Iceland and Norway have shares of female parliamentarians comparable to the best performing EU Member States. Also the EU candidate countries Serbia and FYR Macedonia have higher shares than the majority of EU Member States.

^(*) National parliaments (single/lower house). Source: http://ec.europa.eu/justice/gender-equality/gender-decision-making/database/politics/national-parliaments/index_en.htm, Data collected 25–26 July 2016.

^(†) See DG JUST Database 'Women and men in decision-making'.



For more information

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6

Clean water and sanitation



Ensure availability and sustainable management of water and sanitation for all

Scope of SDG 6

- Achieve access to safe and affordable drinking water.
- Achieve access to sanitation and hygiene and end open defecation.
- Improve water quality.
- Increase water-use efficiency and ensure sustainable withdrawals and supply of freshwater.
- Implement integrated water resources management.
- Protect and restore water-related ecosystems.
- Support developing countries in water- and sanitation-related activities and programmes.
- Support local communities in improving water and sanitation management.

‘Clean, accessible water for all is an essential part of the world we want to live in. There is sufficient fresh water on the planet to achieve this. But due to bad economics or poor infrastructure, every year millions of people, most of them children, die from diseases associated with inadequate water supply, sanitation and hygiene.’

‘Water scarcity, poor water quality and inadequate sanitation negatively impact food security, livelihood choices and educational opportunities for poor families across the world. Drought afflicts some of the world’s poorest countries, worsening hunger and malnutrition.’

By 2050, at least one in four people is likely to live in a country affected by chronic or recurring shortages of fresh water.’

Source: United Nations, www.un.org/sustainabledevelopment/water-and-sanitation/

Rationale for the indicators presented

SDG 6 sets the challenge of achieving good water quality, safe drinking water and healthy water ecosystems. Important insights into whether water is suitable for basic and commercial uses can be gained using the indicator **biochemical oxygen demand** (BOD) in rivers. BOD measures the amount of oxygen required for microbiological decomposition of organic compounds in water. It can be used as an indicator of organic pollution in rivers and the effectiveness of water treatment. High BOD levels may indicate faecal contamination or impaired ecosystem health.

Another objective of SDG 6 is to achieve adequate and equitable sanitation and hygiene for all and to end open defecation. This ambition mainly focuses on the situation of developing and least developed countries. For capturing the situation at the EU level, the indicator on **population having neither a bath, nor a shower, nor indoor flushing toilet in their household** can be considered as the most appropriate one for this objective. The availability of basic sanitation facilities is crucial for a healthy life and people's well-being. Households without sanitation facilities are considered to be severely deprived.

The BOD indicator is also used to monitor the EU Sustainable Development Strategy (!).

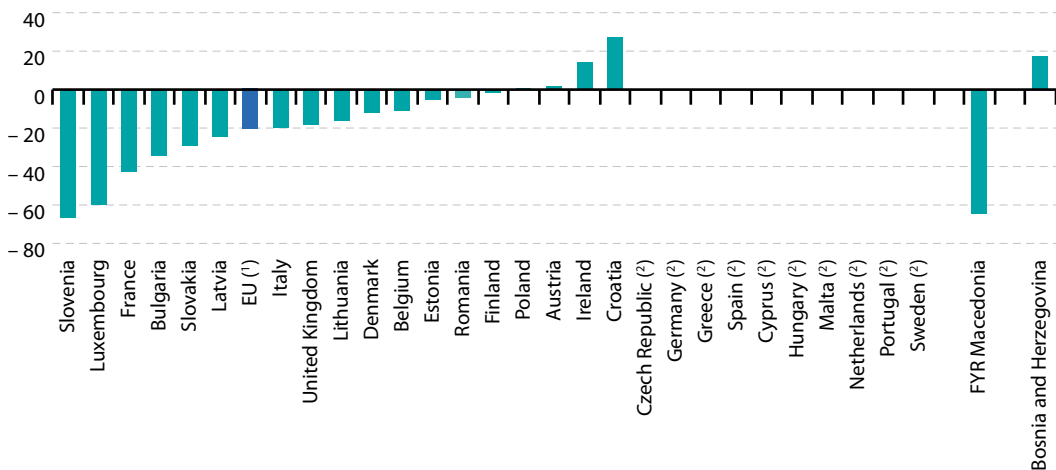
(!) See <http://ec.europa.eu/eurostat/web/sdi/indicators>



Water quality in rivers

The biochemical oxygen demand (BOD) in rivers in the reporting 18 Member States of the EU amounts to 2.19 milligrams of O₂ per litre ⁽²⁾. Between 2002 and 2012, BOD fell by 20.4 %, indicating steady improvement in water quality.

Figure 6.1: Change of biochemical oxygen demand in rivers from 2002 to 2012, by country (% change between 2002 and 2012)



⁽¹⁾ The EU-aggregate is based on 18 Member States; ⁽²⁾ No data available.

Source: Eurostat (online data code: [tsdnr330](#))

Six Member States report pronounced reductions in BOD levels between 2002 and 2012, exceeding the average decrease for the EU ⁽³⁾. Of these, Slovenia and Luxembourg show the biggest improvements in organic compounds in rivers, reducing their BOD levels by more than half compared to 2002. **Only two EU Member States report significant deterioration in the water quality of rivers in the same time period**, with BOD levels increasing by 14.4 % in Ireland and 27.5 % in Croatia. It should be noted that BOD levels in Croatia had actually been falling until 2011 but increased considerably in 2012. In Finland, Poland and Austria, BOD levels in rivers have barely changed since 2002.

The accession state FYR Macedonia, with a reduction in BOD of 64.0 % between 2002 and 2012, shows an improvement in water quality of rivers that is comparable to the best performing EU Member States.

2012



20.4 %
fall in BOD in
European rivers
since 2002

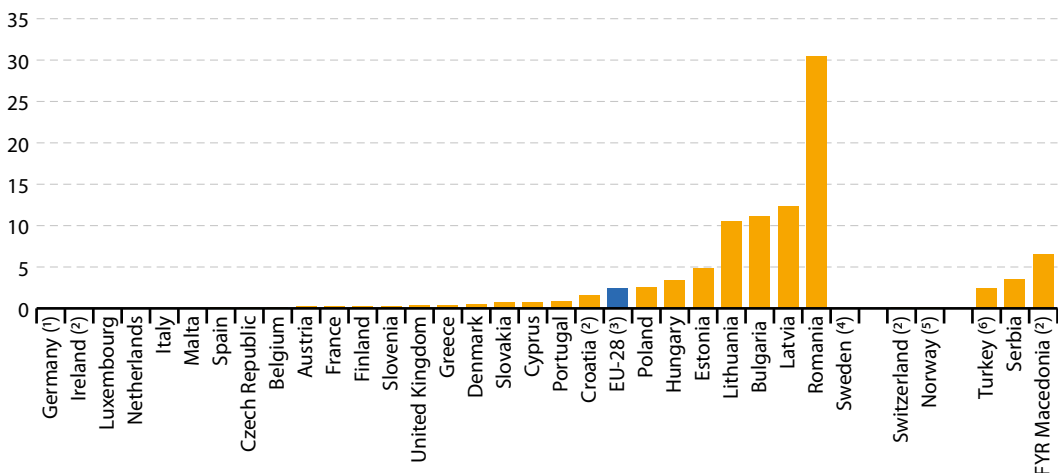
⁽³⁾ European Union (aggregate changing according to the context).

⁽⁴⁾ The EU figure is calculated from data of 18 Member States only. Therefore, this figure may not be representative for the whole EU.

Sanitation and hygiene

Currently, **2.4 % of EU citizens^(*), or about 12 million people, still do not have access to basic sanitation facilities in their households.** In the few Member States where this is an issue, the situation has improved since 2005, when 3.7 % of the EU population^(**) were lacking basic facilities.

Figure 6.2: Share of population having neither a bath, nor a shower, nor indoor flushing toilet in their household, by country, 2015
(% of total population)



(¹) 2012 data instead of 2015; (²) 2014 instead of 2015; (³) Data are estimates; (⁴) No data available; (⁵) 2011 data instead of 2015; (⁶) 2013 data instead of 2015.

Source: Eurostat (online data code: [ilc_mdho05](#))

2015



2.4 %

of the EU population still lack access to basic sanitation facilities in their households

The majority of Member States do not have a problem with access to sanitation and hygiene, but the population in a few EU countries is still affected by this form of deprivation.

Households most likely to be without basic sanitation facilities tend to be in eastern European countries that joined the EU in 2004 or later. Among them, **Romania is the most clearly deprived with almost a third of its population (30.5 %) not having access to these basic facilities.** Latvia (12.3 %), Bulgaria (11.1 %) and Lithuania (10.6 %) also have considerably high shares. Another group of countries, including Estonia (4.9 %), Hungary (3.4 %) and Poland (2.6 %), are also above the EU figure of 2.4 % but markedly below the worst performing Member States. With the exception of Estonia, Member States in which more than 2 % of the population lack basic sanitation facilities also have a share of severely materially deprived people that is equal to or above the overall EU figure^(*).

(^{*}) This data refers to an estimate for the EU-28.

(^{**}) This data refers to an estimate for the EU-27.

([†]) See [t2020_53](#)



Households in the **EFTA countries** are fully equipped with a bath, shower and indoor flushing toilet.

Above the total EU figure — similar to Estonia, Hungary and Poland — are the **candidate countries** FYR Macedonia (6.6 %) and Serbia (3.5 %).

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7

Affordable and clean energy



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

Scope of SDG 7

- Ensure universal access to energy services.
- Increase the share of renewable energy.
- Double the rate of improvement in energy efficiency.
- Facilitate access to clean energy research and technology and promote investment in energy infrastructure and clean energy technology.
- Expand infrastructure and upgrade technology for energy services in developing countries.

‘Energy is central to nearly every major challenge and opportunity the world faces today. Be it for jobs, security, climate change, food production or increasing incomes, access to energy for all is essential.’

‘Sustainable energy is opportunity — it transforms lives, economies and the planet.’

‘UN Secretary-General Ban Ki-moon is leading a Sustainable Energy for All initiative to ensure universal access to modern energy services, improve efficiency and increase use of renewable sources.’

Source: United Nations, www.un.org/sustainabledevelopment/energy/

Rationale for the indicators presented

To achieve the aim of SDG 7 of ensuring an affordable and clean energy system, **the share of renewable energy in total energy consumption** needs to increase. Renewable energy sources are ones that are practically inexhaustible or renew within a human lifetime. In contrast, fossil energy sources regenerate over millions of years and are the main source for man-made greenhouse gas emissions, thus contributing significantly to climate change.

Energy productivity is another main pillar of an affordable, reliable, sustainable and modern energy system envisaged in SDG 7. A more efficient energy system reduces the energy used to provide services and products. This means it also reduces costs, dependencies and environmental impacts linked to energy supply and use. The **energy productivity** indicator measures the amount of economic output that is produced per unit of energy used.

SDG 7 also emphasises the need for universal access to energy services. This can be limited due to factors such as low household income, high energy costs and low energy efficiency. The indicator on self-reported **inability to keep home adequately warm** is used here as a proxy and supports the monitoring of energy affordability.

The indicator on renewable energy is also used to monitor EU policies, in particular the Europe 2020 strategy ⁽¹⁾ and the EU Sustainable Development Strategy ⁽²⁾.

⁽¹⁾ See <http://ec.europa.eu/eurostat/web/europe-2020-indicators/europe-2020-strategy/headline-indicators-scoreboard>

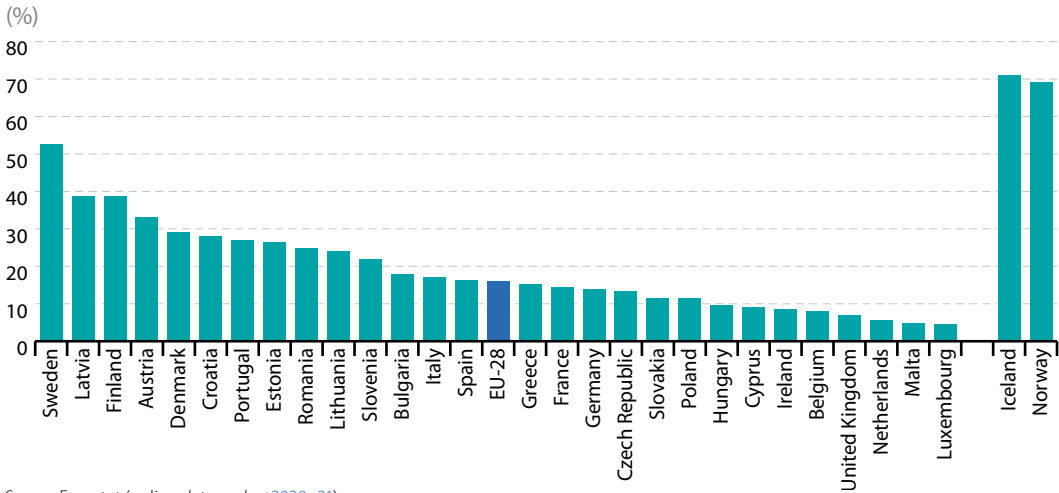
⁽²⁾ See <http://ec.europa.eu/eurostat/web/sdi/indicators>



Share of renewable energy

The overall share of renewable energy in final energy consumption in the EU is at 16.0 %. It has almost doubled since 2004 when renewables comprised only 8.5 % of final energy consumption. Support schemes for renewable energy technology and falling renewable energy system costs were the two main drivers of this increase.

Figure 7.1: Share of renewable energy in gross final energy consumption, 2014



Source: Eurostat (online data code: t2020_31)

At Member State level, there are very wide differences in the share of renewable energy in final energy consumption.

Sweden has the largest share with 52.6 % of renewable energy in final energy consumption, **followed by Latvia and Finland**, both with a 38.7 % share. These particularly high shares are mainly reached through the use of hydropower and/or biomass. Wind and solar energy are also increasingly contributing to rising shares of renewable energy in final energy consumption in EU countries.

At the lower end of the range are the Benelux countries, as well as the United Kingdom and Malta. Luxembourg has the lowest share of renewable energy consumption, with 4.5 %.

The **EFTA countries** Iceland (71.1 %) and Norway (69.2 %) consume more renewable energy in relation to their gross final energy consumption than any EU Member State because of their large potential for hydropower and geothermal energy generation.

2014



16.0 %

of final energy consumption in the EU is provided by renewable sources

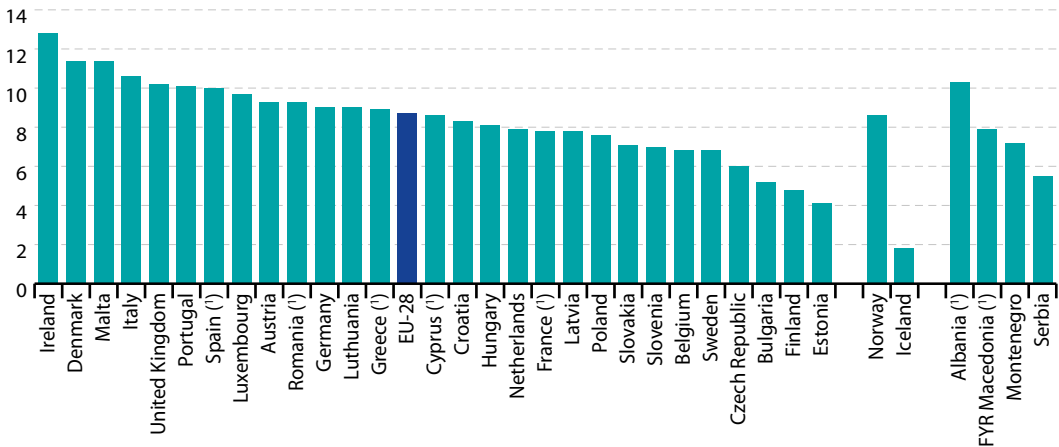
Energy productivity

The energy productivity of the EU is EUR 8.2 per kg of oil equivalent.

This is an improvement of 26.2 % compared to 2000, with all Member States contributing to the increase.

Figure 7.2: Energy productivity, by country, 2014

(PPS per kg of oil equivalent)



(¹) Data are provisional

Source: Eurostat (online data code: t2020_rd310)

2014



8.2

euros worth of products and services produced per kilogram of oil equivalent in the EU

At the Member State level, there are large disparities in energy productivity, ranging from 4.1 to 12.8 purchasing power standards (PPS) (²) per kg of oil equivalent. However, differences do not only result from different degrees of efficiency in countries' industries, but can also reflect a country's economic specialisation, for example, the prevalence of energy-intensive industries or the service-based economy.

Estonia, Finland and Bulgaria have particularly low energy productivity levels, with less than 6 PPS per kg of oil equivalent. Estonia is at the bottom of the ranking, producing around three times less from the same amount of energy than the country at the top. This is mainly due to inefficiencies in its industry and transport sectors.

Ireland and Denmark, whose economies emphasise the service sector, as well as Malta, have the highest energy productivity among Member States, at more than 11 PPS per kg of oil equivalent.

EFTA countries Norway and Iceland show large differences in their energy productivities at EUR 8.6 and EUR 1.8 per kg of oil equivalent, respectively.

(²) For comparison of Member States, purchasing power standards (PPS) are used instead of euros to adjust for price level differences.

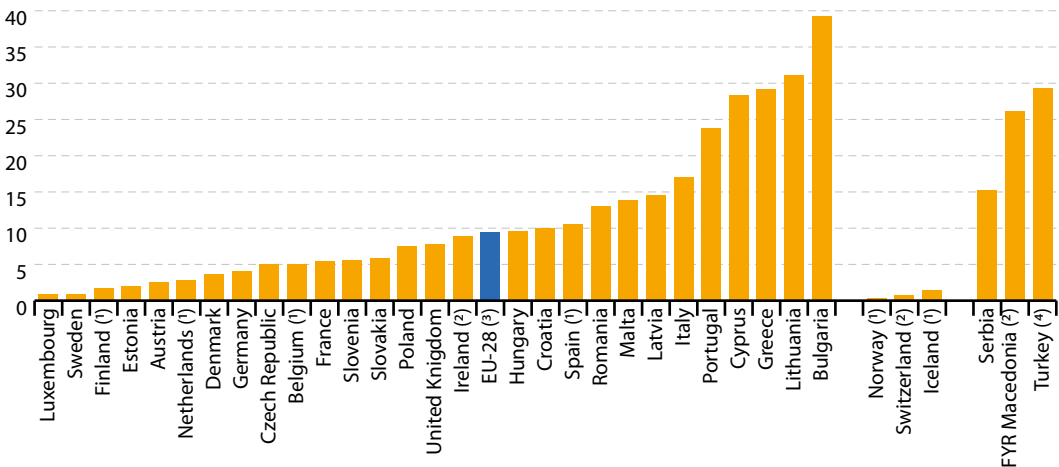


Inability to keep home adequately warm

The **inability to keep homes adequately warm affects 9.4 % of the EU population** ^(*). This is just 1.5 percentage points lower than in 2007 ^(†). Gains had been made until the economic crisis of 2009, which caused unemployment to rise and put pressure on wage levels and social payments and led to a setback in many Member States. The indicator did not fall back to its 2007 level until 2012, after which it continued to improve.

Figure 7.3: Share of population that cannot afford to keep home adequately warm, by country, 2015

(% of total population)



(†) Data are provisional; (†) Data for 2014 instead of 2015; (†) Data are estimates; (*) Data for 2013 instead of 2015.

Source: Eurostat (online data code: ilc_mdex01)

In more than two thirds of Member States, less than 10 % of the population cannot afford to keep their home adequately warm. **Northern European countries**, with particularly cold winters, **have the lowest shares** of the population struggling to keep their homes adequately warm (9 % or less). Lithuania and Latvia are an exception, reporting some of the highest percentages in the EU.

The problem is also **widespread in southern, central and eastern Europe**. Bulgaria has by far the highest share of people who are unable to keep their home adequately warm (39.2 %). Also in Lithuania, Greece and Cyprus more than a quarter of the population is affected by this problem.

2015



9.4 %

of the EU population cannot keep their homes adequately warm

(*) The data refer to estimates for the EU-28.

(†) The data refer to the EU-27 in 2007.

In the **EFTA countries** Norway, Iceland and Switzerland, less than 1.5 % of the population are unable to keep their homes adequately warm, which is comparable to the best performing EU countries.

The **EU candidate countries** have rates for this indicator that are above most of the EU Member States.

For more information

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EEA (2016), *Progress on energy efficiency in Europe*, EEA indicator.

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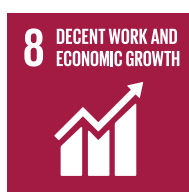
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Schumacher, K. et al. (2015), *How to end energy poverty? Scrutiny of current EU and Member States instruments*, Study for the European Parliament's Committee on Industry, Research and Energy.

8

Decent work and economic growth



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

Scope of SDG 8

- Sustain per capita economic growth.
- Achieve higher levels of economic productivity.
- Promote development-oriented policies.
- Improve global resource efficiency and decouple economic growth from environmental degradation.
- Achieve full and productive employment, decent work and equal pay for work of equal value.
- Reduce the proportion of youth not in employment, education or training.
- Eradicate forced labour and end modern slavery, human trafficking and child labour in all its forms.
- Protect labour rights and promote safe and secure working environments.
- Promote sustainable tourism.
- Expand access to banking, insurance and financial services for all.
- Increase Aid for Trade support for developing countries.
- Develop and operationalise a global strategy for youth employment.

'Roughly half the world's population still lives on the equivalent of about US\$2 a day. And in too many places, having a job doesn't guarantee the ability to escape from poverty. This slow and uneven progress requires us to rethink and retool our economic and social policies aimed at eradicating poverty.'

'A continued lack of decent work opportunities, insufficient investments and under-consumption lead to an erosion of the basic social contract underlying democratic societies: that all must share in progress. The creation of quality jobs will remain a major challenge for almost all economies well beyond 2015.'

'Sustainable economic growth will require societies to create the conditions that allow people to have quality jobs that stimulate the economy while not harming the environment. Job opportunities and decent working conditions are also required for the whole working age population.'

Source: United Nations, www.un.org/sustainabledevelopment/economic-growth/

Rationale for the indicators presented

SDG 8 calls for sustainable and inclusive growth, which ensures that economic benefits are shared across the population and among generations. **The growth rate of gross domestic product** (GDP) is commonly used as a proxy for increases in a country's material living standards and is closely linked to several other SDG priorities relevant to economic development such as employment and investment in research and development (R&D).

SDG 8 also pushes for countries to realise full and productive employment for all, drawing particular attention to young people. The indicators on **employment, share of young people neither in employment nor in education or training** (NEET rate) and **long-term unemployment** provide insights into the progress made in these areas.

Employment is also essential for achieving the overall ambition of other SDGs. For example, increasing employment is a key condition for making societies more inclusive by reducing poverty and inequality. High and persistent unemployment leads to social exclusion and increases the risk of poverty. Young people are particularly vulnerable to changes in the labour market and thus face high risk of poverty and social exclusion during economic downturns. Hence, focusing on youth and long-term unemployment indicators is important for monitoring progress towards the SDGs. Also in the absence of an adequate and well-functioning social protection system, long-term unemployment can have negative implications for economic growth and social cohesion.

The indicators presented in this chapter are also used for monitoring EU policies, in particular the Europe 2020 strategy ⁽¹⁾ and the EU Sustainable Development Strategy ⁽²⁾.

⁽¹⁾ See <http://ec.europa.eu/eurostat/web/europe-2020-indicators/europe-2020-strategy/headline-indicators-scoreboard>

⁽²⁾ See <http://ec.europa.eu/eurostat/web/sdi/indicators>

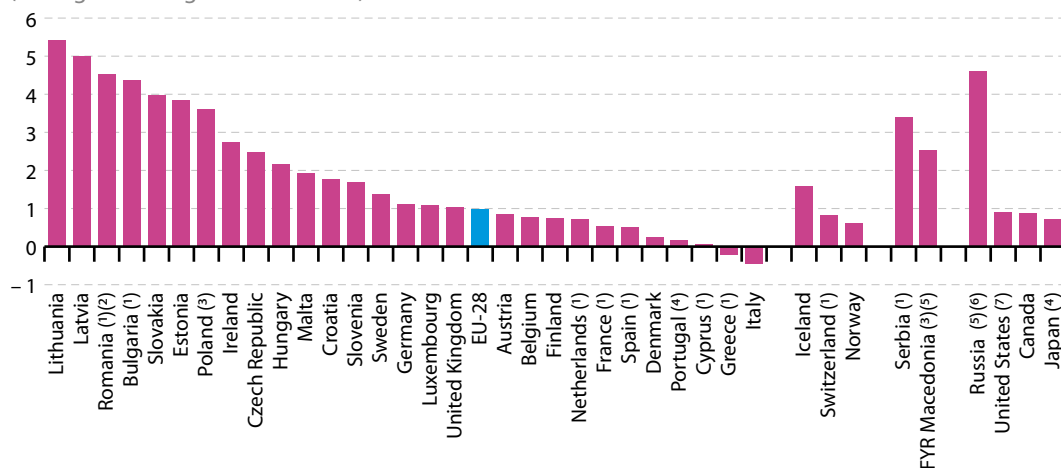


Growth rate of GDP per capita

Since 2000 real GDP per capita in the EU has grown by 1.0 % per year on average. It had been rising continuously between 2000 and 2007 until it was interrupted by the economic crisis. In 2009, real GDP per capita recorded a sharp decline of 4.6 %. After a period of fluctuation, it grew moderately in 2014 and more strongly, by 1.9 %, in 2015.

Among the **G8 economies**, the EU's GDP per capita growth rate over the period 2000 to 2015 is comparable to those observed in the United States, Canada and Japan but considerably lower than the rate in Russia (4.6 %).

Figure 8.1: Real GDP per capita growth rate, by country, 2000–2015
(average annual growth rate in %)



(1) 2015 data are provisional; (2) Break in time series in 2012; (3) All data are estimates; (4) 2015 data are estimates; (5) Change 2000–2013; (6) 2000 and 2013 data are estimates; (7) Change 2000–2014; 2014 data are estimates.

Source: Eurostat (online data code: [tsdec100](#), [naida_10_gdp](#) and [naida_10_pe](#))

Since 2000 the average annual growth rate of real GDP per capita has been positive in all Member States, with the exception of Greece and Italy, where it fell by an average of 0.2 % and 0.5 % per year, respectively.

Growth has been fastest in central and eastern EU countries, which also have relatively low levels of nominal GDP per capita (see Chapter 10). Strong growth rates in less advanced economies are largely attributed to increased investment and adoption of new technologies, which drive up productivity. Although these countries are gradually catching up with living standards in richer EU economies, in absolute terms the gap remains substantial.

The lowest positive average annual growth rates of real GDP per capita (1 % or less) can be seen in countries with already high nominal levels of GDP per capita and in some Mediterranean EU countries, such as Spain, Portugal and Cyprus.

2015



1.0 %

Average annual growth in real GDP per capita in the EU since 2000



The **EFTA and EU candidate countries** follow a similar pattern as EU Member States — the higher the nominal level of GDP per capita, the lower the growth rate reported. Iceland's real GDP per capita growth rate is higher than the advanced EU economies and is comparable to the moderately growing central and eastern European countries.

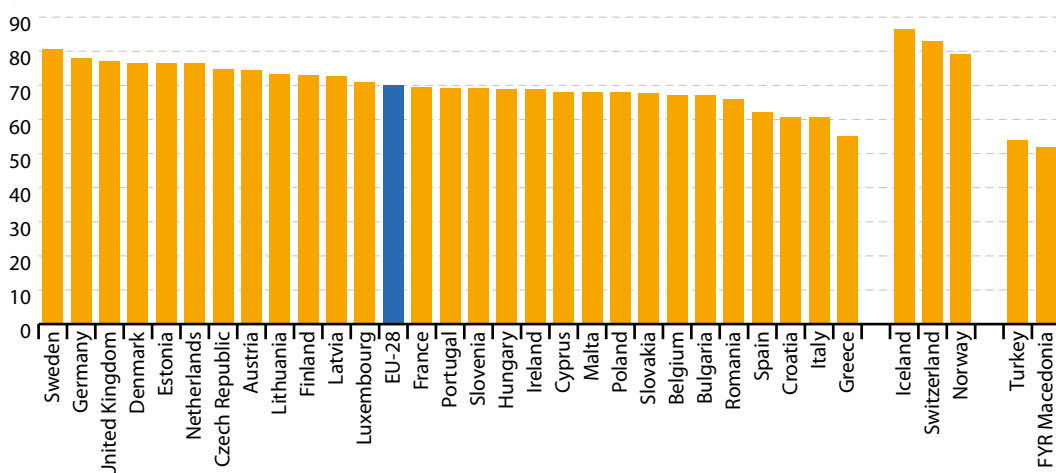


Employment and unemployment rates

The employment rate among the EU population aged 20 to 64 is 70.1 %. This is a 3.2 percentage point increase since 2001. The upward trend in employment stalled in 2009 due to the effects of the economic crisis on the EU labour market. However, the employment rate started to recover in 2014 and has almost returned to its pre-crisis level in 2008.

Figure 8.2: Employment rate, age group 20–64, by country, 2015

(%)



Source: Eurostat (online data code: t2020_10)

There are **large disparities in employment levels across the EU Member States**, with variations of more than 25 percentage points (see Figure 8.2). **The highest employment rates can be seen in some northern and western European countries**, in particular Sweden, Germany, the United Kingdom, Denmark, Estonia and the Netherlands (above 75 %).

In contrast, 16 Member States report employment rates below the EU as a whole. These include all of the **Mediterranean and eastern European countries**, with the exception of the Czech Republic and the Baltic countries. Countries in the Mediterranean region have some of the lowest employment rates in the EU, in particular Greece, Italy and Croatia (60.5 % or lower). The large variations in employment rates across Member States are likely to reflect differences in economic development, demographic trends, labour market structures and policies, as well as the asymmetric impact of the recent economic crisis.

Employment rates in the **EFTA countries** are between 9 and 16 percentage points above the EU as a whole. In Iceland and Switzerland, employment rates are above those observed in the best performing EU Member States.

2015

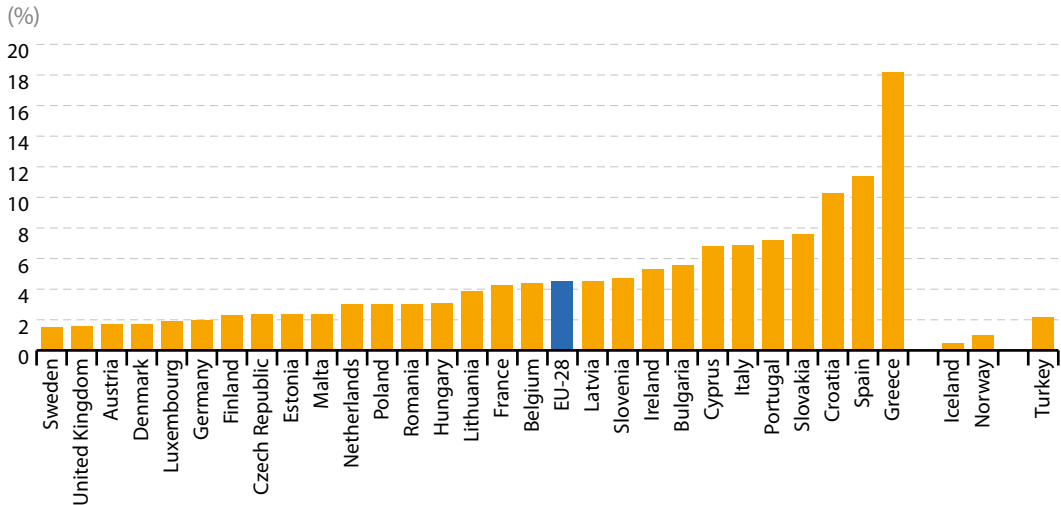


70.1 %

of people aged
20–64 in the EU are
employed

The EU's long-term unemployment rate, referring to people aged 15 to 74 who have been unemployed for a year or longer, **has reached 4.5 %**. This represents a 1.5 percentage point increase since 2007. Long-term unemployment grew continuously between 2008 and 2013 but has been falling since then.

Figure 8.3: Long-term unemployment rate, by country, 2015



Source: Eurostat (online data code: [tsdsc330](#))

The EU's long-term unemployment rate masks large variation between Member States, with the indicator ranging from 1.5 % in Sweden to 18.2 % in Greece (see Figure 8.3).

Similar to other unemployment indicators, **long-term unemployment rates are generally highest in southern Europe** (see Figure 8.3). Some eastern European countries (Bulgaria and Slovakia) also fall into this group, along with Ireland and Latvia.

In contrast, the **lowest long-term unemployed rates tend to be in northern and western European countries**, which also have the highest employment rates in the EU. Sweden and the United Kingdom are the best-performing Member States, with long-term unemployment rates three times lower than the EU total.

Looking at the **EFTA countries**, long-term unemployment in Norway and Iceland is lower than in the best performing EU countries (1.0 % or lower).



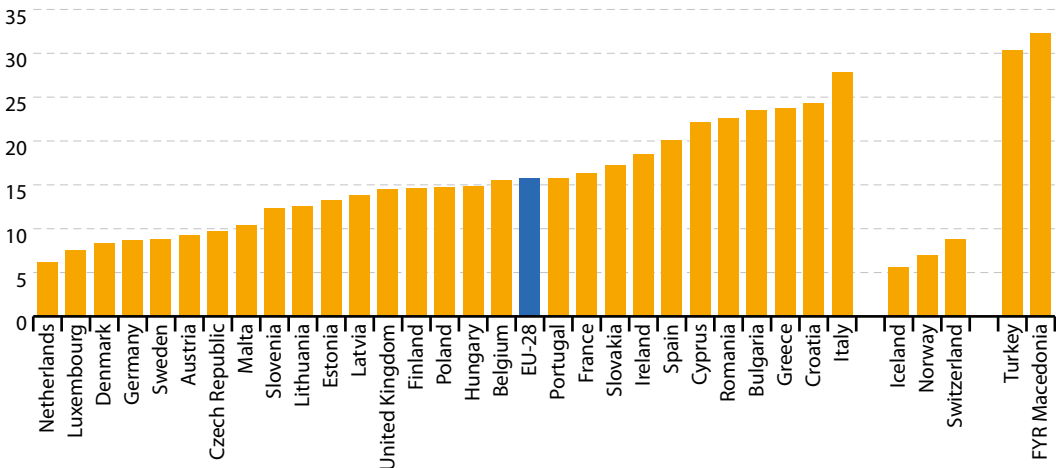
Young people neither in employment nor in education or training

The EU's NEET rate, referring to young people aged 18 to 24 who are neither in employment nor in education and training, stands at 15.8 %.

This represents a one percentage point decrease since 2002. The NEET rate reached a decade low of 14.0 % in 2008 before peaking at 17.2 % in 2012. This increase has been driven by a rise in youth unemployment as a result of the economic crisis.

The NEET rate for women is slightly higher than that for men — 16.3 % against 15.4 % respectively — although the gender gap has closed slightly since 2008. Among men, unemployment is the main reason for falling into the NEET group, whereas for women the main reason is economic inactivity.

Figure 8.4: Young people neither in employment nor in education or training, by country, 2015
(% of population aged 18–24)



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

The EU total conceals very large variations in NEET rates between Member States, ranging from 6.2 % in the Netherlands to 27.9 % in Italy.

The NEET rate tends to be particularly high in southern Europe. All EU countries in the Mediterranean region, with the exception of Malta and Slovenia, report NEET rates higher than 15 %. The Member States that joined the EU in 2007 (Bulgaria and Romania) as well as Ireland and Slovakia also fall in to this group. In most of these countries, unemployment is the main factor contributing to the high NEET rates. In Bulgaria, Romania and Italy, however, economic inactivity is the primary driver behind these trends.

2015



15.8 %
of young people
aged 18–24 in the
EU are neither in
employment nor in
education or
training

Northern and central EU Member States tend to have relatively low levels of young people not in employment and not receiving further education and training. In seven of these countries, the NEET rate was under 10 %, which is comparable to the rates reported in the **EFTA countries**.

The **EU candidate countries** Turkey and FYR Macedonia have higher NEET rates than the worst performing EU countries.

Men in Italy and Croatia and women in Italy and Romania have by far the highest NEET rates in the EU (27 % or higher). All central and eastern EU countries, with the exception of Croatia, Poland and Slovenia, report higher NEET rates for women than for men. The difference is largest in Romania, the Czech Republic and Estonia (5 percentage points or higher). The EU candidate country Turkey follows a similar pattern, with a particularly large difference — 43.1 % of women fall in to the NEET group compared to 17.4 % of men.

For more information

European Commission (Directorate-General for Employment, Social Affairs and Inclusion) (2016), *Employment and Social Developments in Europe 2015*, Luxembourg, Publications Office of the European Union.

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9

Industry, innovation and infrastructure



Build resilient infrastructure, promote inclusive and sustainable industrialisation and foster innovation

Scope of SDG 9

- Develop infrastructure to support economic development and human well-being.
- Promote inclusive and sustainable industrialisation and raise industry's share of employment and GDP.
- Increase access to financial services for small-scale enterprises and their integration into value chains and markets.
- Upgrade infrastructure and industries to make them sustainable.
- Enhance research and upgrade the technological capabilities of industrial sectors.
- Facilitate infrastructure development in developing countries.
- Support domestic technology development, research and innovation in developing countries.
- Increase access to information and communications technology.

'Investments in infrastructure — transport, irrigation, energy and information and communication technology — are crucial to achieving sustainable development and empowering communities in many countries. It has long been recognised that growth in productivity and incomes, and improvements in health and education outcomes require investment in infrastructure.'

'Inclusive and sustainable industrial development is the primary source of income generation, allows for rapid and sustained increases in living standards for all people, and provides the technological solutions to environmentally sound industrialisation.'

'Technological progress is the foundation of efforts to achieve environmental objectives, such as increased resource and energy-efficiency. Without technology and innovation, industrialisation will not happen, and without industrialisation, development will not happen.'

Source: United Nations, www.un.org/sustainabledevelopment/infrastructure-industrialization/

Rationale for the indicators presented

SDG 9 calls on countries to foster innovation to provide a sustainable foundation for future prosperity and well-being. **Expenditure on research and development (R&D) or R&D intensity** is one of the most common measures of innovation input. R&D intensity, expressed as R&D expenditure as a percentage of gross domestic product (GDP), shows an economy's level of investment in generating new knowledge. R&D and innovation are crucial for long-term economic development and well-being because they drive economic growth, job creation, labour productivity and resource efficiency. Innovation is also needed to find solutions to societal challenges such as climate change and clean energy, security and active and healthy ageing.

Another aim of the SDG 9 is to make infrastructure and industries more sustainable by increasing resource efficiency and adopting more environmentally sound technologies and production processes. The **eco-innovation index** helps to comprehensively assess the sustainability of new production processes by applying 16 indicators grouped into five thematic areas: eco-innovation inputs, eco-innovation activities, eco-innovation outputs, resource efficiency and socio-economic outcomes ⁽¹⁾. Eco-innovation reduces the use of natural resources and decreases the release of harmful substances across the whole life cycle, bringing economic, social and environmental benefits. Environmental benefits include improved resource productivity, in particular better material and energy efficiency, lower greenhouse gas (GHG) emissions and reduced waste generation, which is beneficial for companies and end users.

SDG 9 also seeks to boost industry's share of employment and GDP and to upgrade technology to make industries more sustainable. The indicator on **employment in high- and medium-high manufacturing**, as a measure of this sector's contribution to the economy and the labour market, provides an insight into progress towards these goals. Manufacturing is an important driver of job creation and if pursued with environmentally sound technologies and industrial processes it can contribute to inclusive and sustainable development. High-tech industry sectors, in particular, are key drivers of economic growth and productivity, and generally provide high value-added and well-paid employment.

SDG 9 further highlights the availability of infrastructure for promoting the digital and knowledge-based economy. The indicator on **enterprises with broadband internet access** (fixed or mobile) gives an insight into progress on one of the most important components of the information and communication technology (ICT) infrastructure. ICT facilitates the circulation, access to and transfer of knowledge, and the diffusion of innovation. This in turn promotes productivity growth, societal learning and creativity. Increasing broadband internet access for business use is an important enabling factor in this process.

The indicators on R&D, eco-innovation and business broadband connectivity are also used for monitoring EU policies, in particular the Europe 2020 strategy ⁽²⁾ and the EU Sustainable Development Strategy ⁽³⁾.

⁽¹⁾ For more information see: https://ec.europa.eu/environment/ecoap/eco-innovation-scoreboard-eco_en

⁽²⁾ <http://ec.europa.eu/eurostat/web/europe-2020-indicators/europe-2020-strategy/headline-indicators-scoreboard>

⁽³⁾ <http://ec.europa.eu/eurostat/web/sdi/indicators>

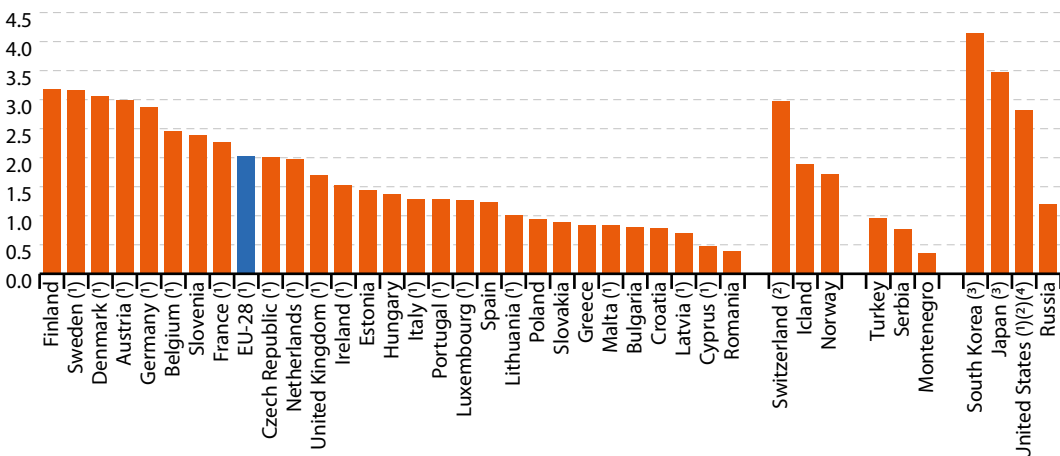


Research and development expenditure

Gross domestic expenditure on R&D as a percentage of GDP in the EU stands at 2.04 %. Between 2000 and 2007, R&D intensity was relatively stable in the EU at around 1.80 %. In 2009, when the economic crisis began, R&D intensity rose to 1.94 %. Since 2011 it has been growing slowly, reaching 2.04 % in 2014 and remaining at the same level in the following year.

At the international level, **R&D intensity in the EU lags behind advanced economies such as South Korea (4.15 %), Japan (3.47 %) and the United States (2.81 %)**, but it is considerably higher than in Russia (1.19 %).

Figure 9.1: Gross domestic expenditure on R&D (R&D intensity), by country, 2014
(% of GDP)



(¹) Data are estimates and/or provisional; (²) 2012 data; (³) 2013 data; (⁴) Definition differs.

Source: Eurostat (online data code: t2020_20)

R&D intensity in the EU shows very large country variations, ranging from 0.38 % to 3.17 % (see Figure 9.1). The Nordic Member States **Finland, Sweden and Denmark are by far the most R&D-intensive economies in the EU**, each spending more than 3.00 % of their annual GDP on R&D. **Some central and western Member States** such as Austria, Germany, Belgium, Slovenia and France also **share a pattern of high R&D expenditure**, exceeding 2.00 % of GDP. This is in contrast with **most southern and eastern EU countries**, where **R&D intensity tends to be lower**. In all Member States that joined the EU after 2004, R&D spending as a percentage of GDP is half the EU average or less, with the exception of Slovenia (2.39 %), the Czech Republic (2.00 %), Estonia (1.44 %) and Hungary (1.37 %).

2014



2.04 %

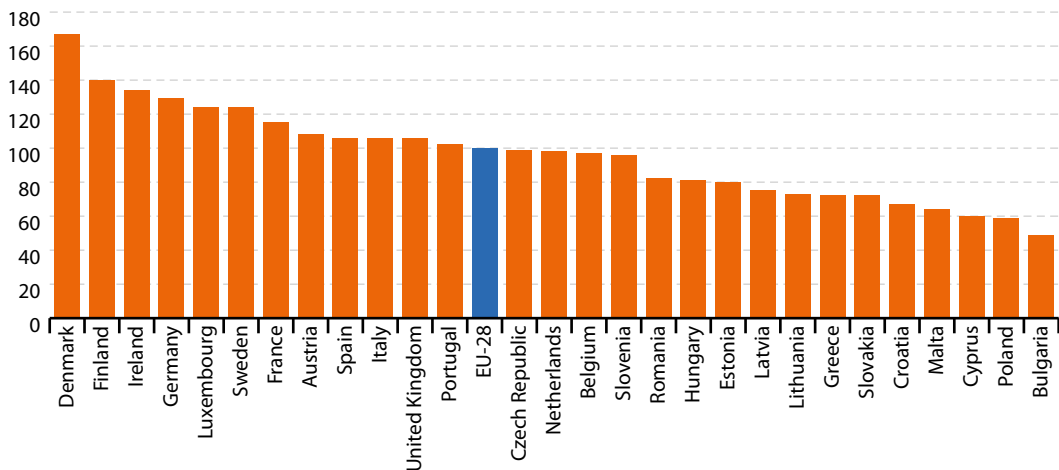
of the EU's GDP is spent on research and development

Switzerland's R&D intensity is almost 50 % above the EU average (2.97 %), whereas other EFTA countries such as Iceland and Norway show moderate levels slightly below 2.00 %. Switzerland's outstanding innovation performance is due to several factors including its long tradition of supporting R&D, the strong public-private links in the funding and conduct of research, the exceptionally high private spending on R&D and its distinguished universities (*).

The **eco-innovation index** is another, more holistic approach to measuring innovativeness of EU countries. The index captures the different aspects of eco-innovation by ranking countries based on 16 indicators grouped into five thematic areas: eco-innovation inputs, eco-innovation activities, eco-innovation outputs, resource efficiency and socio-economic outcomes. The index shows how well individual Member States perform in different dimensions of eco-innovation compared to the EU average of 100. **The overall performance of EU countries ranges from around 50 in Bulgaria to 167 in Denmark** (see Figure 9.2).

Figure 9.2: Eco-innovation index, by country, 2015

(index EU-28 = 100)



Source: European Commission, Eco-Innovation Observatory (online data code: t2020_rt200)

The **Nordic countries as well as Ireland, Germany and Luxembourg belong to the eco-innovation leaders in the EU**, scoring more than 20 % above the EU average (see Figure 9.2). With the exception of Ireland and Luxembourg, these countries are also characterised by above-average R&D expenditure.

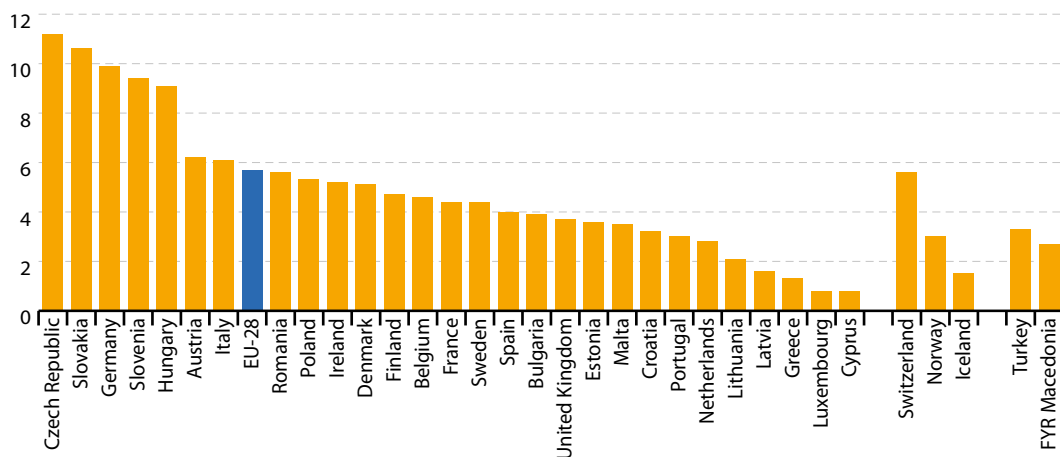
At the lower end of the spectrum are **eastern European countries, Greece and the small southern European island countries Cyprus and Malta**, where **eco-innovation seems to be still weakly developed**. In particular, Cyprus, Poland and Bulgaria score only 60 % or less compared with the EU average in terms of eco-innovation.

(*). World Bank (2012), *Golden Growth: Restoring the Lustre of the European Economic Model*.

Employment in high- and medium-high technology manufacturing

High- and medium-high technology manufacturing in the EU makes up 5.7 % of total employment, which is close to the 2008 level (5.9 %).

Figure 9.3: Employment in high- and medium-high technology manufacturing, by country, 2015 (% of total employment)



Source: Eurostat (online data code: tsc00011)

Across the EU, employment shares in high- and medium-high technology manufacturing range from **11.2 % in the Czech Republic**, which also has the largest employment share in total manufacturing in the EU ^(*), to **0.8 % in Cyprus**.

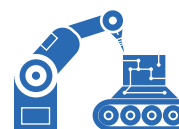
Considerable shares are also reported by some central European countries such as **Slovakia** (10.6 %), **Germany** (9.9 %), **Slovenia** (9.4 %) and **Hungary** (9.1 %), where manufacturing in general comprises a high share of total employment (above 20 %).

Notably, three quarters of Member States report employment shares in high and medium-high manufacturing that are lower than the EU total. The **importance of the sector is particularly low in Cyprus, Luxembourg and Greece**, where its share is four to seven times lower than the EU total.

Of the EFTA countries, only Switzerland reports similarly high shares of employment in high- and medium-high technology manufacturing in total employment (5.6 %) as the EU.

In the candidate countries **Turkey and FYR Macedonia the importance of this sector in total employment is relatively low**, accounting for 3.3 % and 2.7 % of total employment, respectively.

2015



5.7 %

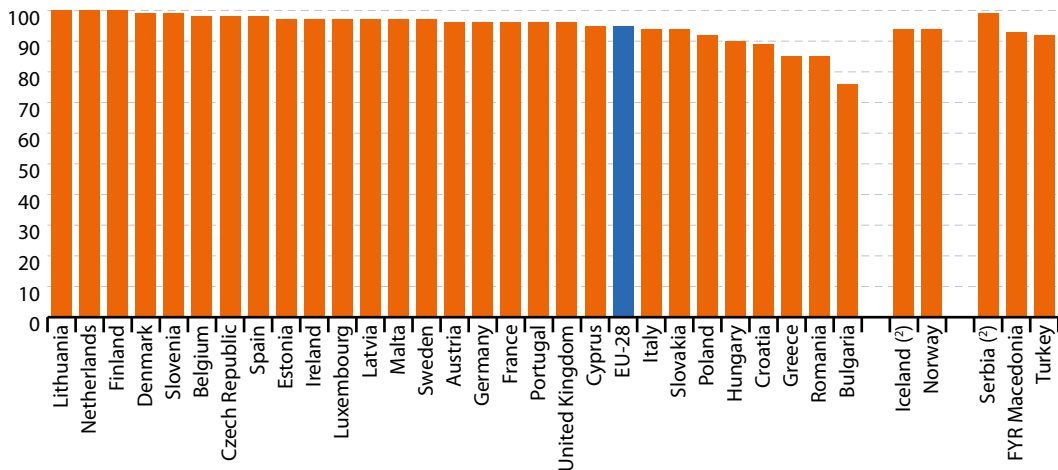
of EU workforce is employed in high- and medium-high technology manufacturing

(*) See: Employment by sex, age and economic activity (online data code: lfsa_egan2).

Enterprises with broadband internet access

Business broadband connectivity in Europe is relatively high, with **95 % of EU enterprises having a fixed or mobile broadband internet access**. This represents considerable progress since 2007, when only 77 % of European businesses were connected to the internet in this way.

Figure 9.4: Enterprises with broadband internet access (fixed or mobile), by country, 2015 ⁽¹⁾
(% of enterprises)



⁽¹⁾ Refers to enterprises with at least 10 persons employed in the given NACE sectors; ⁽²⁾ Data for 2014 instead of 2015.

Source: Eurostat (online data code: tin00090)

2015



95 %

of enterprises in the EU have fixed or mobile broadband access to the internet

Nearly three quarters of Member States report a level of access to fixed or mobile broadband internet for their enterprises that is above the EU average.

All enterprises in Lithuania, Netherlands and Finland (100 % each) have internet access. So do nearly all those in Denmark and Slovenia (99 % each), and Belgium, the Czech Republic and Spain (98 % each). At the other end of the spectrum, **business uptake of broadband is lowest in Bulgaria** (76 %), **Romania** and **Greece** (85 % each).

The **EFTA countries** Iceland and Norway have slightly lower level of enterprises' broadband access than the best performing EU countries (94 % both).

Looking at the EU **candidate countries**, broadband access is almost universal in Serbia (99 %) and widespread in FYR Macedonia (93 %) and Turkey (92 %).



For more information

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10

Reduced inequalities



Reduce inequalities within and among countries

Scope of SDG 10

- Achieve and sustain income growth of the bottom 40 % of the population.
- Promote social, economic and political inclusion of all.
- Ensure equal opportunity and reduce inequalities of outcome.
- Adopt relevant policies to achieve greater equality.
- Improve regulation and monitoring of global financial markets and institutions.
- Enhance representation of developing countries in decision-making in global economic and financial institutions.
- Facilitate orderly, safe, regular and responsible migration and mobility of people.
- Implement the principle of special and differential trade treatment for developing countries.
- Encourage Official Development Assistance and financial flows to states where the need is greatest.
- Reduce transaction costs of migrant remittances.

‘The international community has made significant strides towards lifting people out of poverty. The most vulnerable nations — the least-developed countries, the landlocked developing countries and the small island developing states — continue to make inroads into poverty reduction. However, inequality still persists and large disparities remain in access to health and education services and other assets.’

‘Additionally, while income inequality between countries may have been reduced, inequality within countries has risen. There is growing consensus that economic growth is not sufficient to reduce poverty if it is not inclusive and if it does not involve the three dimensions of sustainable development — economic, social and environmental.’

‘To reduce inequality, policies should be universal in principle paying attention to the needs of disadvantaged and marginalised populations.’

Source: United Nations, <http://www.un.org/sustainabledevelopment/inequality/>

Rationale for the indicators presented

SDG 10 highlights the importance of combating social, economic and political disparities by promoting economic inclusion of all people regardless of their sex, age and ethnicity. **Gross domestic product (GDP) per capita** and **real adjusted gross disposable income of households per capita** are important measures for monitoring this goal by assessing differences in income and living standards across different countries and regions. **GDP per capita** provides a measure of the total per capita income from the production of goods and services in a country. It is often used as an indication of the average material well-being of people.

However, not all of this income necessarily accrues to households: some parts may be retained by corporations and the government, and some of it may be appropriated by non-residents, for instance by subsidiaries repatriating profits to their parent company abroad. At the same time, GDP per capita does not capture household income received from investments abroad, for example, in the form of dividends and interest receipts. In contrast, **household disposable income** provides a broader picture of household income by accounting for taxes and social contributions and monetary and in-kind social benefits. Therefore, the indicator on household disposable income complements GDP per capita by providing an insight into the purchasing power of households and their ability to invest in goods and services or save for the future.

The **income quintile share ratio**, which shows the distribution of income between different population groups in the same country or region, also refers to the economic dimension of inequality highlighted in SDG 10. The indicator reveals the way income is distributed within a country, thus complementing the analysis of disparities between countries based on GDP per capita and household disposable income.

Apart from being an issue of social justice, high and growing income inequality threatens social cohesion, drags down economic growth and stalls progress in poverty reduction, health and well-being. Economic inequalities exacerbate inequalities of opportunity — large disparities in access to education, health-care services and jobs as well as land and other productive assets — which limit social mobility and realisation of human capital. High levels of inequality are believed to undermine democratic participation and the ability of people to work together to meet common challenges.

The indicators presented in this chapter are also used for monitoring the EU Sustainable Development Strategy (1).

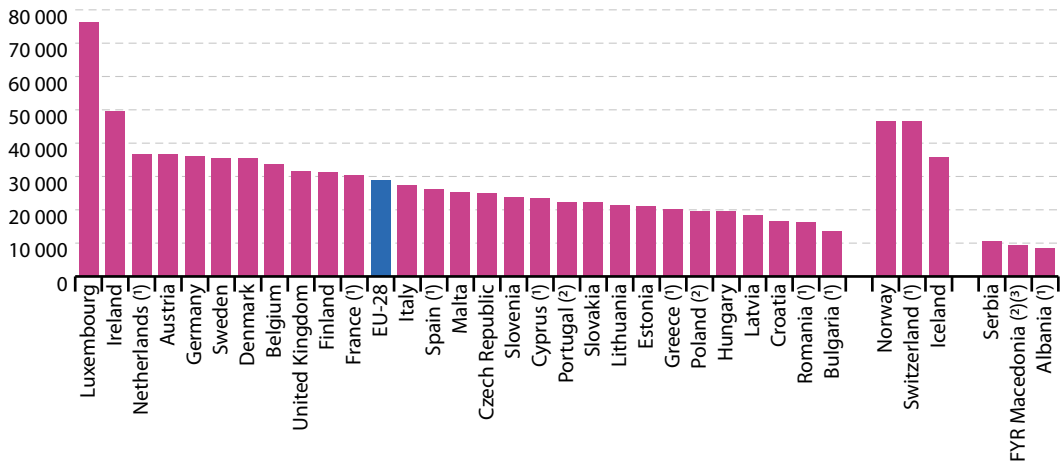
(1) See <http://ec.europa.eu/eurostat/web/sdi/indicators>



GDP per capita

GDP per capita in the EU is EUR 26 500 ⁽²⁾. This represents an increase of EUR 3 600 compared to 2000. GDP per capita had been increasing continuously from 2000 to 2008, but the economic crisis interrupted this upward trend. As a result, in 2009 GDP per capita fell by 4.6 % compared to the previous year before gradually picking up again in the following years.

Figure 10.1: GDP per capita, by country, 2015
(Purchasing power standards (PPS) per capita)



⁽¹⁾ Provisional data; ⁽²⁾ Estimated data; ⁽³⁾ 2013 data instead of 2015.
Source: Eurostat (online data code: nama_10_pc)

There is a large variation in income and living standards enjoyed by citizens in different EU countries. **Northern and western European countries dominate the higher end of the spectrum** (see Figure 10.1). Luxembourg and Ireland have by far the highest levels of GDP per capita among Member States — nearly six and four times higher, respectively, than the country at the bottom end of the scale ⁽³⁾.

Central and eastern European countries report levels of GDP per capita below the overall EU level. All Mediterranean EU countries, with the exception of France, fall into this group as well. The lowest levels of GDP per capita were reported in the Member States that joined the EU in 2007 or after — Bulgaria, Romania and Croatia — where levels are about two times lower than in the EU as a whole.

GDP per capita in **EFTA countries** is comparable to those observed in the best performing EU countries (25 % to 60 % above the overall EU level).

2015



26 500

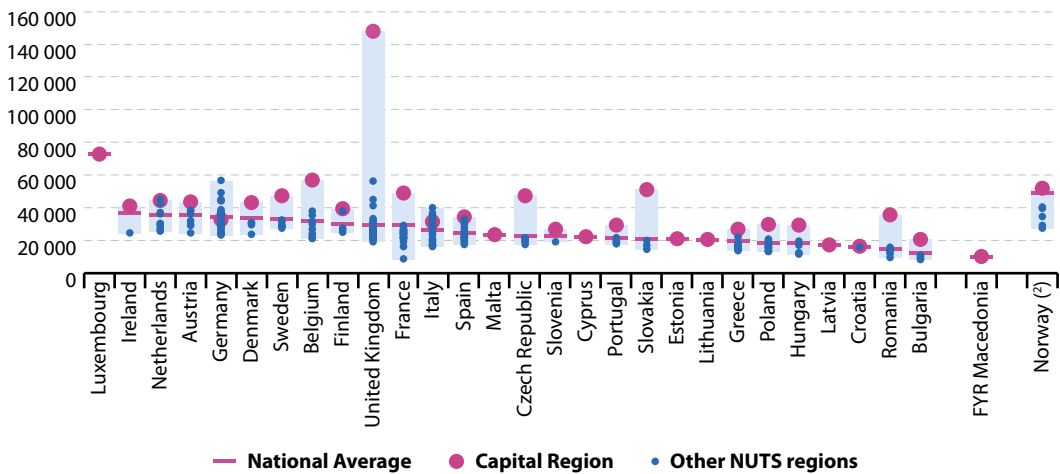
euros of GDP
per capita
in the EU

⁽¹⁾ The indicator is calculated using GDP in chain-linked volumes normalised to 2010 prices in order to show the development over time excluding inflation.
⁽²⁾ The exceptionally high figure for Luxembourg can to some extent be attributed to one specific feature of its economy, namely the very large number of cross-border workers in the country who contribute to its GDP but are not counted as part of its resident population.

Disparities in GDP per capita persist even more so between regions in the same country.

The ratio between the regions with the highest and lowest GDP per capita in Member States with more than two NUTS level 2 (*) regions ranges from 7.8 in the United Kingdom to 1.6 in Finland (see Figure 10.2).

Figure 10.2: GDP per capita, by NUTS 2 regions, 2014 (1)
(purchasing power standard (PPS) per inhabitant)



(1) The light blue shaded area shows the range of the highest to lowest region for each country. The pink bar shows the national average. The pink circle shows the capital city region. The blue circles show the other regions; (2) 2013 data.

Source: Eurostat (online data code: [nama_10r_2gdp](#))

Capital regions tend to generate the highest levels of GDP per capita in a country. The only exceptions among Member States with more than two NUTS 2 level regions are in Germany, Italy and the Netherlands. In many cases, regions with a very high GDP per capita are highly specialised in particular economic activities, such as financial and business services, research and innovation or technology and ICT. Regional disparities are particularly pronounced in the United Kingdom, France, Romania and Slovakia. All of these countries report at least a threefold difference between the regions with highest and lowest level of GDP per capita, with their capital regions recording the highest levels.

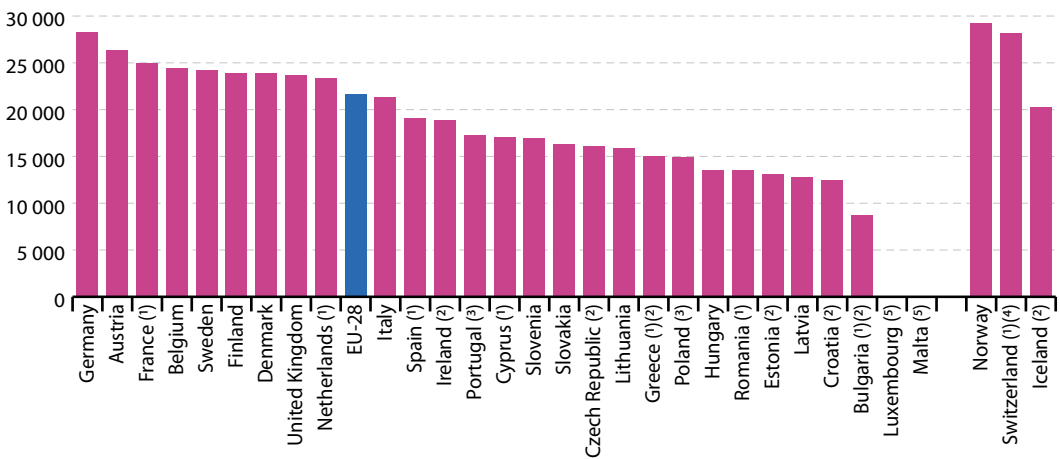
(*) The nomenclature of territorial units for statistics (NUTS) is a geographical categorisation of the territory of the EU into regions at three different levels. For more information see: <http://ec.europa.eu/eurostat/web/nuts/overview>



Household disposable income

Across the EU, the average gross disposable income of households per capita expressed in purchasing power standards (PPS) is PPS 21 629. Since 2004, 19 Member States have decreased the distance to the EU average in terms of per capita disposable income. From an international perspective, the EU's household adjusted income per capita lags behind that of the United States, Australia, Canada and Japan, but is above the level in other major economies such as Korea and Russia ⁽⁵⁾.

Figure 10.3: Real adjusted gross disposable income of households per capita, 2015 (purchasing power standards (PPS))



⁽¹⁾ Data are provisional; ⁽²⁾ 2014 data; ⁽³⁾ Data are estimate; ⁽⁴⁾ 2013 data; ⁽⁵⁾ No data.

Source: Eurostat ([tec00113](https://ec.europa.eu/eurostat/tgm/table.do?code=tec00113))

Germany and Austria have the highest disposable household income per capita in the EU, followed by France and the northern European countries.

To illustrate the disparity across the EU, on average a household in Germany has a disposable income per capita that is more than three times higher than the one available to a household in Bulgaria.

High levels of GDP per capita do not necessarily translate into high levels of household disposable income. For example, Ireland and the Netherlands have the second and the third highest GDP per capita in the EU, respectively, but their household disposable income is close to or below the EU average. One reason for this discrepancy is the presence of a significant number of foreign subsidiaries of multinational enterprises, which play an important role in overall GDP. In contrast, although France has a GDP per capita close to the EU average, it ranks third in terms of household disposable income.

2015

21 629

purchasing power standards of disposable household income per capita in the EU

⁽⁵⁾ The international comparison is in USD. Source: Eurostat (2016), *The EU in the World*, p.38.

Similar to the GDP per capita figures, **the lower end of the spectrum is dominated by central and eastern Member States**. In Bulgaria, disposable household income per capita is less than half that of the EU overall. However, some central and eastern Member States have been catching up with the rest of Europe in terms of income levels. Over the past decade, in Romania the distance to the EU average has decreased by 32 percentage points, in Slovakia by almost 24 percentage points and in Poland and Lithuania by almost 19 percentage points.

Looking at the **EFTA countries**, the household disposable income per capita of Norway exceeds that of Germany, whereas Swiss disposable income per capita is similar to the best performing EU Member States.

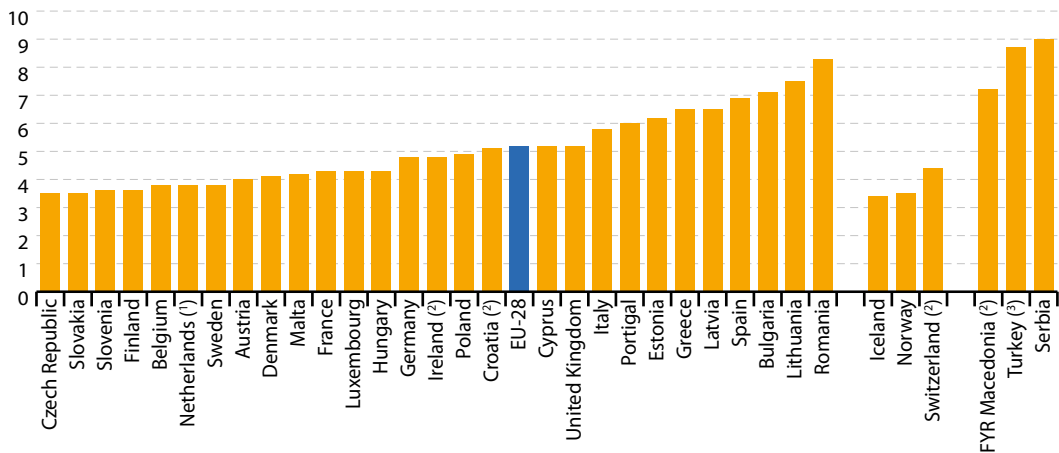


Inequality of income distribution

The EU has an income quintile share ratio of 5.2, which means the richest 20 % of the population earn more than five times more than the poorest 20 %. While the top earners receive about 39 % of the total income in the EU, the poorest 20 % earn less than 8 % (°). The situation has not improved significantly since 2010 when the income share distribution among the EU population was very similar.

Income inequality is an even bigger challenge at a global level. In all G20 members outside the EU for which data are available, the proportion of income received by the highest quintile exceeds 40 % of the total. Inequality is greatest in South Africa, with the top quintile receiving 69 % of all income, followed by Brazil (57 %) and Mexico (54 %) (°). Among G20 members, only India, Canada and Australia come close to the EU ratio of 5.2, with income quintile share ratios of 5.4, 5.8 and 5.9, respectively.

Figure 10.4: Inequality of income distribution, EU-28, 2015
(income quintile share ratio)



(°) Provisional data; (°) 2014 data instead of 2015; (°) 2013 data instead of 2015.

Source: Eurostat (online data code: [tsdsc260](#))

Income inequality across the EU varies substantially. **The highest income quintile share ratios are reported from the Baltic countries, some countries in eastern and southern Europe** (Romania, Bulgaria, Spain, Greece, Portugal, Italy and Cyprus) and the United Kingdom. In these Member States, high-income earners receive between 39 % and 44 % of the total national income, while

(°) Source: Eurostat (online data code: [llc_di01](#)).

(°) Source: World Bank (Poverty and Inequality database) — latest available data.

2015



5.2

times difference in
income distribution
between rich and
poor in the EU
population

low-income earners receive between 5 % and 8 % ⁽⁶⁾. Apart from Cyprus, these countries also share relatively high at-risk-of poverty rates (See Chapter 1).

Income is most equally distributed in three central European countries (the Czech Republic, Slovakia and Slovenia), **followed by countries in western and northern Europe**. The Czech Republic is not only the Member State with the lowest inequality based on the income quintile share ratio, but also the one with the lowest relative poverty as measured by the share of the population at risk of poverty or social exclusion (See Chapter 1).

In all depicted **EFTA countries**, income is more equally distributed than in most of the EU. Iceland has a more egalitarian income distribution than the best performing EU countries. In contrast, **candidate countries** have exceptionally high inequality levels. In particular, Turkey and Serbia have income quintile share ratios higher than any EU country.

For more information

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⁽⁶⁾ Data source: Eurostat (online data code: ilc_di01).

11

Sustainable cities and communities



Make cities and human settlements inclusive, safe, resilient and sustainable

Scope of SDG 11

- Ensure access to adequate, safe and affordable housing and basic services and upgrade slums.
- Provide access to safe, affordable, accessible and sustainable transport systems.
- Enhance inclusive and sustainable urbanisation.
- Protect and safeguard the world's cultural and natural heritage.
- Reduce the number of deaths and people affected and decrease economic losses caused by disasters.
- Reduce the adverse environmental impact of cities.
- Provide access to safe, inclusive and accessible, green and public spaces.
- Support positive economic, social and environmental links between urban, peri-urban and rural areas by development planning.
- Adopt and implement integrated sustainable development policies and plans and holistic disaster risk management.
- Support least developed countries in building sustainable and resilient buildings.

'Cities are hubs for ideas, commerce, culture, science, productivity, social development and much more. At their best, cities have enabled people to advance socially and economically.'

'However, many challenges exist to maintaining cities in a way that continues to create jobs and prosperity while not straining land and resources. Common urban challenges include congestion, lack of funds to provide basic services, a shortage of adequate housing and declining infrastructure.'

'The challenges cities face can be overcome in ways that allow them to continue to thrive and grow, while improving resource use and reducing pollution and poverty. The future we want includes cities of opportunities for all, with access to basic services, energy, housing, transportation and more.'

Source: United Nations, www.un.org/sustainabledevelopment/cities/

Rationale for the indicators presented

SDG 11 focuses on making cities and human settlements inclusive, safe, resilient and sustainable. The indicator **urban population exposure to air pollution by particulate matter** provides insights into urbanisation's social and environmental impacts. Pollutants such as tiny particles of matter suspended in the air reduce people's life satisfaction and perception of their well-being. Exposure to the finest and therefore most hazardous types of particulate matter can lead to many chronic and acute respiratory and cardiovascular diseases. Because the major sources of particulate matter such as domestic and commercial combustion, traffic and industrial activities are more concentrated in urban areas, people living in towns and cities are at greater risk. A growing population, increasing urbanisation and economic growth may even increase air pollution. Therefore reducing particulate matter is necessary for tackling air pollution in cities and the substantial disease burden it causes.

Sustainable management of municipal waste is another objective of SDG 11. Most municipal waste is generated by households, but it also comes from small businesses and public institutions. Capturing the **recycling rate of municipal waste** is one way of monitoring progress towards reducing the environmental impacts of cities and human settlements. Recycling activities reduce the amount of waste going to landfills and help to create jobs. Increasing the recycling rate is seen as necessary for creating sustainable cities and human settlements and reducing the damage they can cause to the environment.

Improving the accessibility to public transport, as measured by the **distribution of population by level of difficulty in accessing public transport**, is particularly important for gauging progress towards SDG 11. Good transport networks have a big impact on economic growth and allow people to commute to work and to travel for leisure. They can expand labour markets, offer more opportunities and improve quality of life. Therefore a high level of accessibility to public transport is an important pillar for solving the environmental challenges cities face.

The indicators urban population exposure to air pollution and recycling rate of municipal waste are also used to monitor the EU Sustainable Development Strategy (1).

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

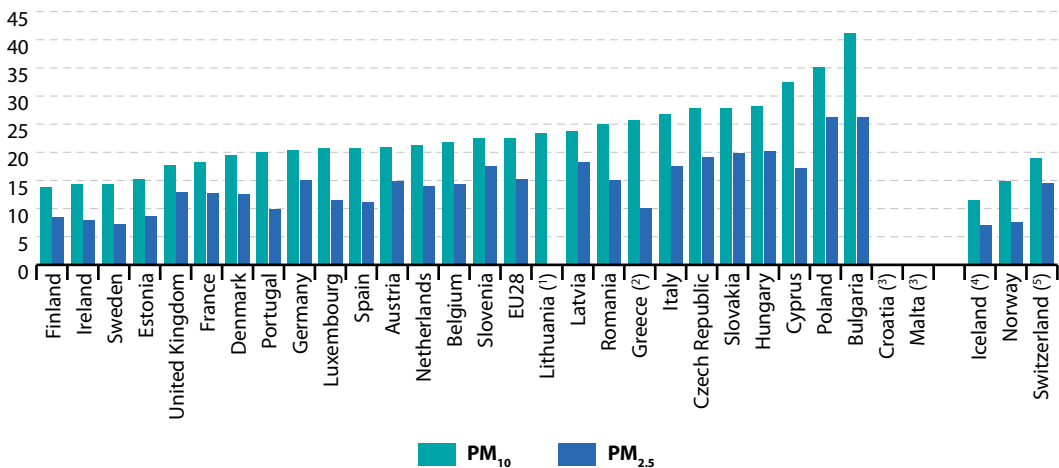


Exposure to air pollution in urban areas

In the EU the urban population is on average exposed to 22.5 $\mu\text{g}/\text{m}^3$ of particulate matter (PM_{10}). Between 2000 and 2014, this value has decreased by 21.6 %, indicating a steady improvement in air quality.

The overall population-weighted figure for the EU is well below the 40 $\mu\text{g}/\text{m}^3$ threshold set by EU health-based standards and objectives ^(*).

Figure 11.1: Urban population exposure to air pollution by particulate matter, by country, 2014 (micrograms per cubic metre)



⁽¹⁾ No data available for $\text{PM}_{2.5}$; ⁽²⁾ 2013 data for $\text{PM}_{2.5}$ (instead of 2014); ⁽³⁾ No data for $\text{PM}_{2.5}$ and PM_{10} ; ⁽⁴⁾ 2013 data for PM_{10} and $\text{PM}_{2.5}$ (instead of 2014); ⁽⁵⁾ 2013 data for PM_{10} and 2009 data for $\text{PM}_{2.5}$ (instead of 2014).

Source: European Environment Agency, Eurostat (online data code: [tsdph370](#))

The total figure for the EU conceals **significant variations between Member States**, with exposure levels ranging from 13.7 $\mu\text{g}/\text{m}^3$ in Finland to 41.2 $\mu\text{g}/\text{m}^3$ in Bulgaria. In fact, Bulgaria is the only Member State where the population-weighted concentration of PM_{10} exceeds the annual limit value. Cyprus and Poland also face the problem of being exposed to a relatively high concentration of PM_{10} , with values of 32.4 $\mu\text{g}/\text{m}^3$ and 35.2 $\mu\text{g}/\text{m}^3$, respectively.

As a general trend, **the lowest population-weighted concentration of air pollution** by PM_{10} — two times or more below the annual limit value — **is recorded for urban areas in northern and western Member States**. Estonia from the Baltic countries and Portugal from the southern European countries also fall into this group.

^(*) Source: [European Commission](#) (2016).

2014



The population-weighted annual mean concentration of PM_{10} in the EU is 22.5 $\mu\text{g}/\text{m}^3$, which is well below the annual limit of 40 $\mu\text{g}/\text{m}^3$

PM_{2.5} refers to particulate matter with a diameter of up to 2.5 micrometres. It is more hazardous than PM₁₀ as the potential for causing health problems is directly related to particle size. The annual limit value of PM_{2.5} is set at 25 µg/m³ according to the health-based standards and objectives established by the EU ⁽³⁾. While the population-weighted concentration of PM_{2.5} in the EU as a whole is 9.8 µg/m³ below the limit value at 15.2 µg/m³, Bulgaria and Poland (26.1 µg/m³ each) it.

The urban populations of northern European countries such as **Sweden** (7.2 µg/m³), **Ireland** (7.8 µg/m³), **Finland** (8.4 µg/m³) and **Estonia** (8.6 µg/m³) have the **lowest average exposure to PM_{2.5}**.

The PM_{2.5} values in the Member States with the least polluted urban areas are similar to those in the **EFTA countries** Iceland (7.0 µg/m³) and Norway (7.6 µg/m³).

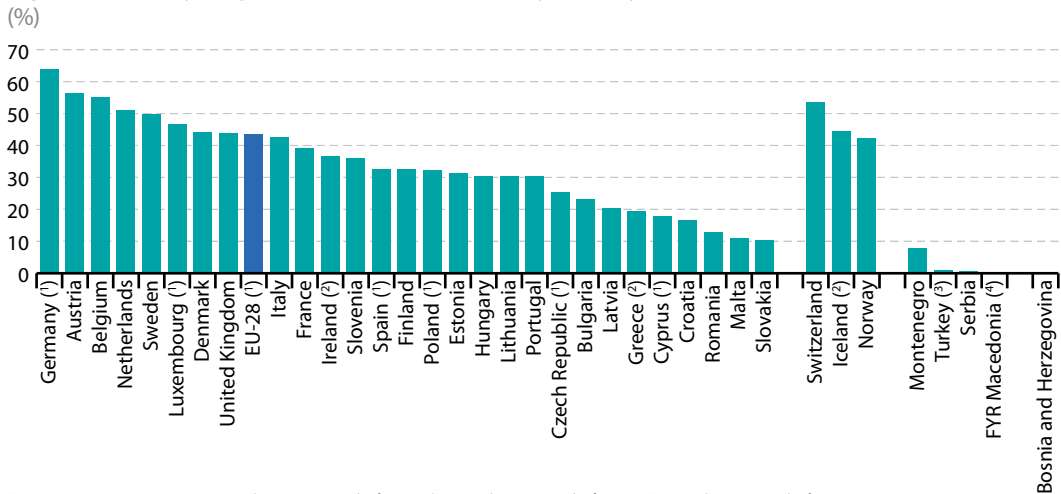
⁽³⁾ Source: [European Commission](#) (2016).

Recycling rate of municipal waste

The EU recycles (including composting) 43.5 % of its municipal waste.

This is an important shift towards sustainable waste management compared to 2000, when only 25.2 % of EU municipal waste was disposed of in this way ⁽⁴⁾.

Figure 11.2: Recycling rate of municipal waste, by country, 2014



⁽¹⁾ Data are (Eurostat) estimates; ⁽²⁾ 2013 instead of 2014; ⁽³⁾ 2012 data instead of 2014; ⁽⁴⁾ 2011 data instead of 2014.

Source: Eurostat (online data code: t2020_rt120)

Despite the large body of EU waste legislation, there are vast differences in the recycling rates of municipal waste across Member States. **In general, central and northern Member States** with dedicated and diverse policy instruments and strict regulations on waste management **tend to recycle more of their municipal waste. Germany** has by far **the highest recycling rate** in the EU (63.8 %).

In contrast, there are countries that only recycle a small part of their municipal waste. The **lowest rates occur in some eastern and southern European countries**, in particular **Slovakia** (10.3 %), **Malta** (10.9 %) and **Romania** (13.0 %).

Overall, about three quarters of Member States have a recycling rate below the overall EU figure. This may be explained by the fact that several Mediterranean and eastern Member States recycle less than 20 % of their municipal waste, whereas Germany recycles over 60 % of its municipal waste.

Looking at the **EFTA countries**, Switzerland's recycling rate (53.5 %) is comparable to that of EU's best performing Member States, whereas the rates observed in Norway and Iceland are comparable with the overall EU figure (42.2 % and 44.6 %, respectively).

In the **EU candidate countries** the recycling **rate** of municipal waste **is especially low**. In Montenegro 7.9 % of municipal waste is recovered by recycling or composting, while in Turkey, Serbia, FYR Macedonia and Bosnia Herzegovina the rate is only 1 % or less.

⁽⁴⁾ Data from the year 2000 refer to an Eurostat estimate for EU-27.

2014



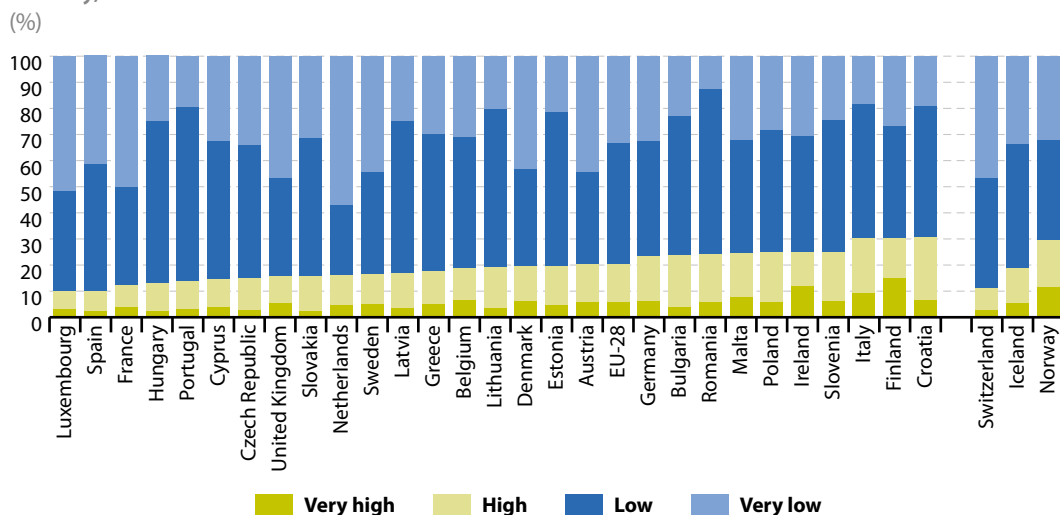
43.5%

recycling rate for municipal waste in the EU, with about three quarters of Member States having rates below this average

Accessibility of public transport

One in five or 20.4 % of people in the EU report 'high' or 'very high' levels of difficulty in accessing public transport.

Figure 11.3: Distribution of population by level of difficulty in accessing of public transport, by country, 2012



Source: Eurostat (online data code: ilc_hcmp06)

2012



20.4%

of the population in the EU report 'very high' or 'high' difficulty in accessing public transport

Overall, in all Member States the proportion of population reporting 'high' or 'very high' difficulty in accessing public transport varies between 10 % and 30 %.

Ten Member States report 'high' or 'very high' levels of difficulty above the overall EU figure. People in Croatia, Finland and Italy report the most difficulty with around 30 % of the population finding access difficult.

Location appears to have a **big impact** on people's experience catching public transport. **Cities** tend to provide the **best access**, with **only 9.7 % of population living in cities reporting high or very high levels of difficulty**. This increases to 37.4 % when people in rural areas are asked about their experience.

When **only considering the population living in cities**, **Malta and Italy have the highest share** of the population reporting 'high' or 'very high' difficulty at 24.8 % and 22.7 %, respectively. Malta is among the countries most affected by urban sprawl, which raises the cost of accessing public transport ^(*).

When looking at the **EU's neighbours**, Switzerland has a low 11.2 % share of the population reporting high or very high difficulty levels compared with 18.9 % for Iceland and 29.6 % for Norway.

^(*) EEA (2016), *Urban sprawl in Europe*.



For more information

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12

Responsible consumption and production

12 RESPONSIBLE CONSUMPTION AND PRODUCTION



Ensure sustainable consumption and production patterns

Scope of SDG 12

- Implement the 10-year framework of programmes on sustainable consumption and production.
- Achieve sustainable management and efficient use of natural resources.
- Halve per capita global food waste and reduce food losses.
- Achieve environmentally sound management of chemicals and all wastes throughout their life cycle and reduce their release to air, water and soil.
- Reduce waste generation.
- Encourage companies to adopt sustainable practices and to report on sustainability.
- Promote sustainable public procurement practices.
- Ensure awareness of people on sustainable development and lifestyles in harmony with nature.
- Strengthen scientific and technological capacity in developing countries to move to sustainable patterns of consumption and production.
- Develop tools to monitor sustainable development impacts for sustainable tourism.
- Rationalise inefficient fossil-fuel subsidies.

‘Sustainable consumption and production is about promoting resource and energy efficiency, sustainable infrastructure, and providing access to basic services, green and decent jobs and a better quality of life for all. Its implementation helps to achieve overall development plans, reduce future economic, environmental and social costs, strengthen economic competitiveness and reduce poverty.’

‘Sustainable consumption and production aims at “doing more and better with less;” increasing net welfare gains from economic activities by reducing resource use, degradation and pollution along the whole lifecycle, while increasing quality of life. It involves different stakeholders, including business, consumers, policy makers, researchers, scientists, retailers, media, and development cooperation agencies, among others.’

‘It also requires a systemic approach and cooperation among actors operating in the supply chain, from producer to final consumer. It involves engaging consumers through awareness-raising and education on sustainable consumption and lifestyles, providing consumers with adequate information through standards and labels and engaging in sustainable public procurement, among others.’

Source: United Nations, www.un.org/sustainabledevelopment/sustainable-consumption-production/

Rationale for the indicators presented

SDG 12 calls for countries to promote sustainable consumption and production to allow economies to grow while reducing their ecological footprints. This 'green growth' can only be achieved if more products can be made from fewer materials. The indicator **resource productivity** directly monitors this by relating what an economy produces in terms of gross domestic product (GDP) to the materials it uses based on its domestic material consumption (DMC).

Closely related to resource productivity is the responsible consumption of materials. The aim of sustainable consumption and production patterns is to increase gains from economic activities while reducing resource use and material consumption, thus decoupling economic growth from the use of natural resources. The indicator **domestic material consumption** refers to the overall amount of materials directly used within an economy and provides insights into whether fewer resources are being used in absolute terms. However, the indicator does not fully capture the environmental footprint of imports and exports because it does not account for upstream 'hidden' material flows embodied in these products.

Waste management is another important component of resource efficiency, as envisioned in SDG 12. Waste represents a considerable loss to an economy in the form of materials and energy. To ensure sustainable consumption and production patterns, significant changes in handling waste are needed. Prevention, reduction, recycling and reuse of waste are all essential for reducing the amount of resources an economy uses. The indicator on **generation of waste excluding major mineral wastes** monitors progress achieved towards reducing waste generation and adds to the analysis of a country's resource efficiency.

The indicators presented in this chapter are also used for monitoring the EU Sustainable Development Strategy (1).

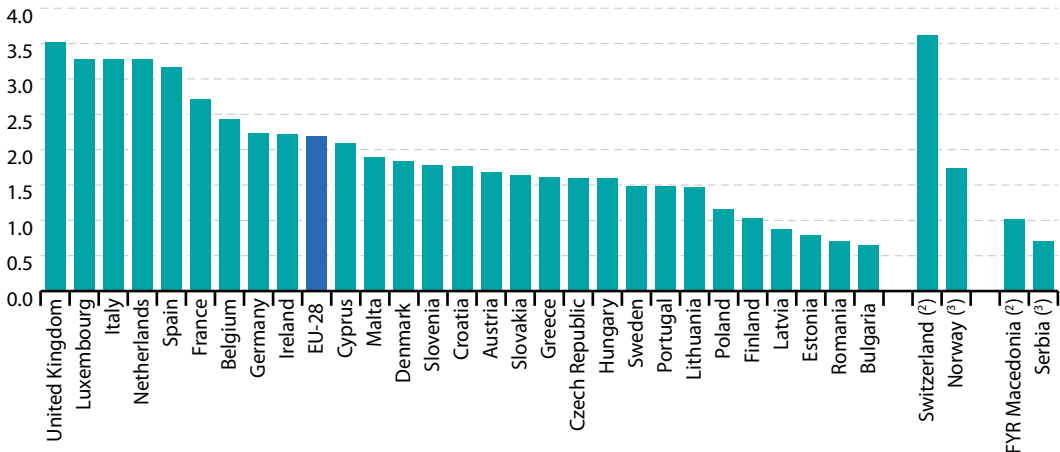
(1) See: <http://ec.europa.eu/eurostat/web/sdi/indicators>



Resource productivity

Resource productivity in the EU is EUR 2.00 per kilogram ⁽²⁾. This means for every kilogram of material consumed, EUR 2.00 of gross domestic product (GDP) are generated. The EU has shown strong gains in this indicator, improving by 33 % since 2000. This positive development has been driven by an overall fall in domestic material consumption and an increase in GDP, indicating absolute decoupling of economic growth from resource use.

Figure 12.1: Resource productivity, by country, 2015 ⁽¹⁾
(purchasing power standards (PPS) per kg)



⁽¹⁾ Data for all EU-28 countries are provisional and Eurostat estimates; ⁽²⁾ 2013 data instead of 2015; ⁽³⁾ 2014 data instead of 2015.

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

While the EU as a whole has achieved long-term gains in resource productivity, large disparities can be seen across Member States. **Only nine countries, all in western Europe, report resource productivity above the overall EU level.** These tend to have higher levels of GDP per capita and **economies dominated by the services sector, which are less resource-intensive** (such as financial and high-tech innovation services). High environmental regulation standards also play a role.

In contrast, **countries with a large share of industry tend to have more resource-intensive economies and hence lower resource productivity levels.** This is the case with most **central and eastern EU countries**, in particular Bulgaria, Romania, Latvia and Estonia where resource productivity is under 0.9 PPS per kg ⁽³⁾.

In comparison, the **EFTA** country Switzerland surpasses the best performing EU Member States. This can be explained by the low levels of domestic material consumption (see Figure 12.2) and high share of services sector, in particular financial, in the economy.

⁽²⁾ Resource productivity is calculated using GDP in chain-linked volumes normalised to 2010 prices to show the development over time of the indicator excluding inflation.

⁽³⁾ Resource productivity is calculated using GDP in current prices expressed in purchasing power standards (PPS) to allow cross-country comparisons in 2015.

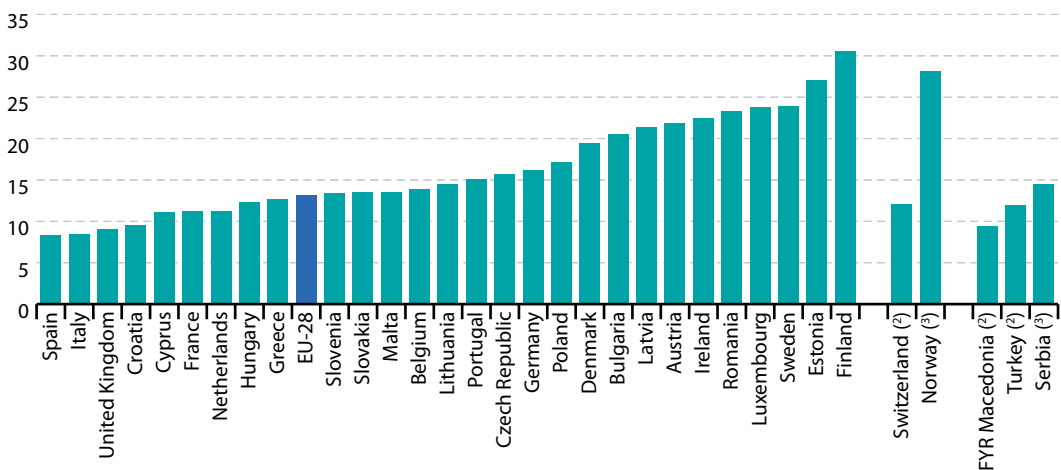


Domestic material consumption

Domestic material consumption in the EU is 13.2 tonnes per capita.

This is 2.3 tonnes per person lower than in 2000, but the fall has not been continuous. Consumption had been rising before the financial crisis, peaking at 16.6 tonnes in 2007, but dropped sharply when the economy started to slow down, particularly between 2008 and 2010. This implies that the favourable reduction in DMC could be a temporary result of the crisis and not reflect a major transformation of EU consumption and production patterns.

Figure 12.2: Domestic material consumption, by country, 2015⁽¹⁾
(tonnes per capita)



(¹) Data are provisional and Eurostat estimates; (²) 2013 data instead of 2015; (³) 2014 data instead of 2015.

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

2015



13.2

tonnes of domestic material consumption per capita in the EU

Domestic material consumption varies by more than 22.2 tonnes per capita across the EU. The countries at the bottom of the ranking, Finland and Estonia, consume more than three times the resources per person reported in the countries at the top — Italy, Spain and the United Kingdom. Reasons for these large differences lie in the structure of the respective economy, climatic conditions and variations in population density.

Consumption rates generally are lower in southern Member States, all of which report levels below 15.1 tonnes per capita. In contrast, **northern EU countries tend to have higher levels of domestic material consumption**.

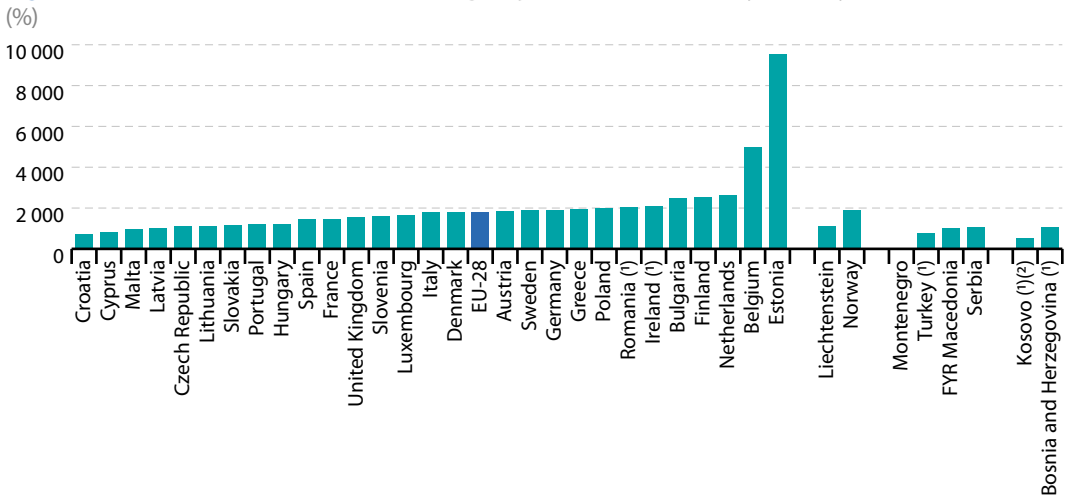
The **EFTA country** Switzerland and the **EU candidate country** Serbia have levels of domestic material consumption close to the EU as a whole, however, resource productivity in Serbia is much lower (see Figure 12.1) due to the country's lower GDP.



Generation of waste excluding major mineral waste

On average, each EU inhabitant generates 1 806 kilograms of waste (excluding major mineral waste). This is an improvement compared to 1 907 kg in 2004, but the trend has not been continuous. Waste generation increased during the mild economic recovery of 2010–2012, indicating that the overall positive development is not likely to represent a sustainable shift.

Figure 12.3: Generation of waste excluding major mineral wastes, by country, 2014



(1) 2012 data instead of 2014; (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.

Source: Eurostat (online data code: [tsdc210](#))

Large country variations in the generation of waste, excluding major mineral waste, can be observed within the EU, with differences of up to 8 791 kg per capita.

Overall, 12 Member States generate waste per capita above the overall EU level.

Estonia generates exceptionally high amounts, with levels twice as high as the next biggest producer (Belgium) and 13 times higher than the lowest producer (Croatia). This can be explained by the high extraction of oil from oil shale in Estonia, which results in high amounts of hazardous waste.

Three small Member States in the Mediterranean region generate less than 1 000 kg of waste per capita (Croatia, Cyprus and Malta). Waste generation tends to be lower in southern and eastern Member States, which also report low levels of domestic material consumption and GDP.

The **EU candidate and potential candidate countries** generate low levels of waste.

2014



1 806 kg
of waste generated
per capita in the EU

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13

Climate action



Take urgent action to combat climate change and its impacts

Scope of SDG 13

- Strengthen resilience and adaptive capacity to climate-related hazards and natural disasters.
- Integrate climate change measures into national policies, strategies and planning.
- Improve education, awareness-raising and capacity on climate change mitigation and adaptation.
- Implement the commitment to the United Nations Framework Convention on Climate Change and operationalise the Green Climate Fund.
- Raise capacity for climate change-related planning and management in least developed countries.

‘Climate change is now affecting every country on every continent. It is disrupting national economies and affecting lives, costing people, communities and countries dearly today and even more tomorrow.’

‘People are experiencing the significant impacts of climate change, which include changing weather patterns, rising sea level, and more extreme weather events. The greenhouse gas emissions from human activities are driving climate change and continue to rise. They are now at their highest levels in history. Without action, the world’s average surface temperature is projected to rise over the 21st century and is likely to surpass 3 degrees Celsius this century — with some areas of the world expected to warm even more. The poorest and most vulnerable people are being affected the most.’

‘Affordable, scalable solutions are now available to enable countries to leapfrog to cleaner, more resilient economies. The pace of change is quickening as more people are turning to renewable energy and a range of other measures that will reduce emissions and increase adaptation efforts.’

‘But climate change is a global challenge that does not respect national borders. Emissions anywhere affect people everywhere. It is an issue that requires solutions that need to be coordinated at the international level and it requires international cooperation to help developing countries move toward a low-carbon economy.’

Source: United Nations, www.un.org/sustainabledevelopment/climate-change-2/

Rationale for the indicators presented

SDG 13 encompasses the need to combat climate change and to strengthen countries' resilience and capacity to adapt to its impacts, giving a special focus on the need of having in place integrated strategies to achieve this goal. Improving education, raising awareness and building human institutional capacity will contribute to this goal. In a nutshell, SDG 13 calls to combat climate change with integrated strategies of mitigation, adaptation and mainstream climate finance. The two selected indicators presented in this chapter provide a first introduction only from a complementary perspective.

The dominant cause of climate change is the rise in man-made **greenhouse gas emissions** (GHG emissions) over the past 250 years. The development of GHG emissions in each country provides insights into progress towards taking action to mitigate GHG emissions and combat climate change. Because most GHG emissions arise from the production and supply of energy, progress towards a clean energy system (SDG 7) will also directly reduce GHG emissions.

The rise in **global near-surface average temperature** is the most obvious indicator of climate change. This indicator complements GHG emissions in helping to monitor climate change. Records show a link between temperature and the amount of greenhouse gases in the atmosphere with a time lag between emission and temperature rise. The global community has agreed to limit the global temperature rise to well below 2°C above pre-industrial levels in order to limit the extent of climate-related hazards ⁽¹⁾.

The indicators presented in this chapter are also used for monitoring EU policies, in particular the Europe 2020 strategy ⁽²⁾ and the EU Sustainable Development Strategy ⁽³⁾.

⁽¹⁾ COP21, *Paris Agreement* of 2015.

⁽²⁾ See <http://ec.europa.eu/eurostat/web/europe-2020-indicators/europe-2020-strategy/headline-indicators-scoreboard>

⁽³⁾ See <http://ec.europa.eu/eurostat/web/sdi/indicators>

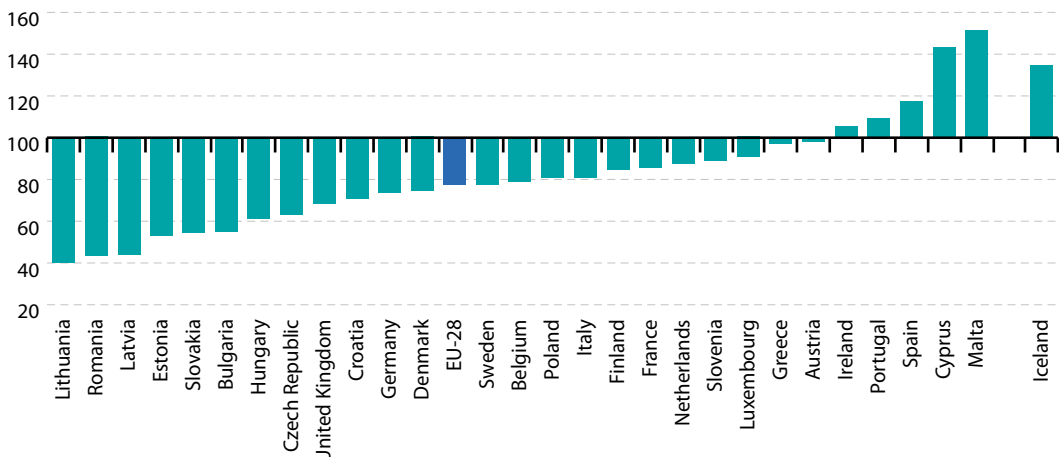


Greenhouse gas emissions

The EU has reduced its GHG emissions by 23 % compared to 1990, mainly through reductions in the supply and use of energy across all sectors (– 24 %) (4).

Compared with other industrialised countries (Annex I of the Kyoto Protocol), the **EU has the second largest GHG emission reduction achieved so far after the Russian Federation** (– 29 % in 2014 compared to 1990). **Most other industrialised countries** such as Australia (+ 25 %), New Zealand (+ 23 %), Canada (+ 21 %) as well as Japan and the United States (both + 7 %) **have increased their emissions** over the same period (5). Iceland has reduced its emissions by 34 %.

Figure 13.1: Greenhouse gas emissions, by country, 2014 (1)
(index 1990 = 100)



(1) Total emissions, including international aviation and indirect CO₂ emissions, but excluding emissions from international navigation and land use, land-use change and forestry.

Source: European Environment Agency; Eurostat (online data code: t2020_30)

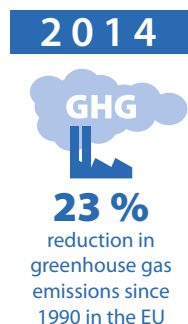
At Member State level, there are significant differences in GHG emission trends since 1990. While most countries have reduced their GHG emissions, the scope of these reductions is varying. Five countries increased their emissions.

The **largest reductions have been made in the Baltic countries and in some eastern European countries**, for example Lithuania (– 59 %), Romania and Latvia (both – 56 %). In absolute terms, Germany shows the largest reductions followed by the UK and Romania. Germany and the UK are among the EU's biggest GHG emitters.

The largest increases are reported in the island countries Cyprus (+ 43 %) and Malta (+ 51 %).

(4) EEA (2016), Data viewer on greenhouse gas emissions and removals, sent by countries to UNFCCC and the EU Greenhouse Gas Monitoring Mechanism (EU Member States).

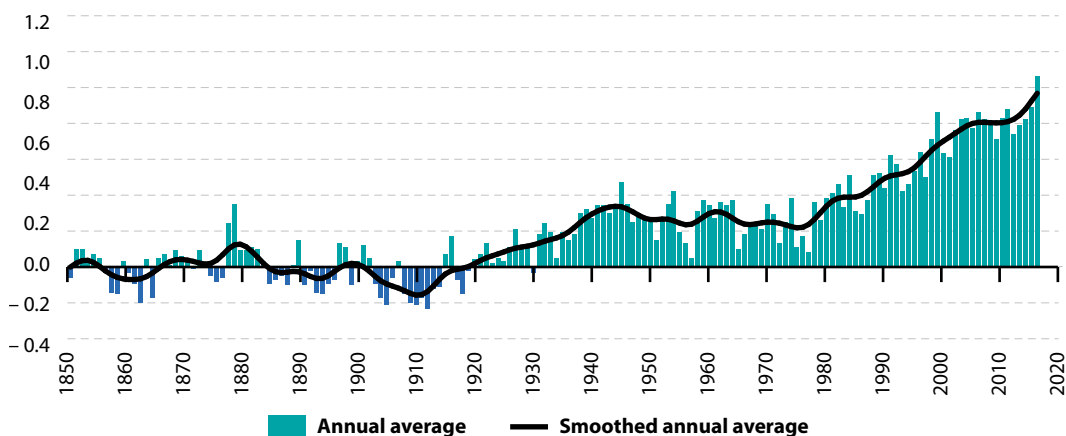
(5) UNFCCC (2016), [National Inventory Submissions 2016](#).



Global and European near-surface average temperature

The average **global near-surface temperature has been rising since the beginning of the 20th century**. The warmest years since records began have been 1998 (the first year exceeding pre-industrial levels by more than 0.8 °C), followed by new records in 2010 and 2014 (0.88 °C and 0.89 °C above pre-industrial levels, respectively). In 2015, the global near-surface temperature increase passed the 1 °C mark for the first time, being 1.06 °C above pre-industrial levels.

Figure 13.2: Global annual mean temperature deviations, 1850–2015
(Temperature deviation in °C, compared to 1850–1899 average)



Source: European Environment Agency (EEA), based on the HadCRUT4 dataset from the UK Met Office Hadley Centre.

2015



0.84 °C

difference in average surface temperature since 2006 compared with the pre-industrial era

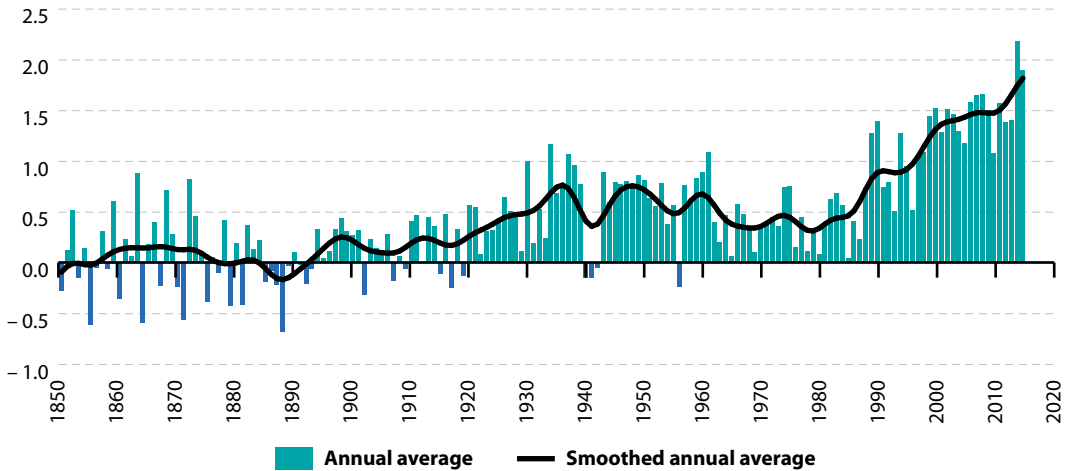
Over the period 2006 to 2015, global near-surface average temperature was 0.84 °C above pre-industrial levels. This means that **almost half of the warming towards the 2 °C threshold has already taken place**.

Warming is much stronger over land than over the ocean and, as a consequence, the temperature rise is higher over the northern hemisphere (where most of the Earth's land area is located) than over the southern hemisphere. At about 1 °C above pre-industrial levels, the average temperature increase in the northern hemisphere for the period 2006 to 2015 was much higher than in the southern hemisphere (slightly below 0.7 °C).



In Europe, this decade is the hottest on record at 1.5 °C above pre-industrial times. The warmest years on record in Europe were 2014 and 2015, at 2.2 °C and 1.9 °C above pre-industrial levels, respectively. Significant warming was observed over the Iberian Peninsula mainly during summer, north-eastern Europe mainly during winter, and in mountainous regions ⁽⁶⁾.

Figure 13.3: European annual mean temperature deviations over land areas, 1850–2015
(temperature deviation in °C, compared to 1850–1899 average)



Source: European Environment Agency, based on the [HadCRUT4](#) dataset from the UK Met Office Hadley Centre.

⁽⁶⁾ EEA (2016): [Global and European temperatures](#): HadCRUT4 data and past trends of European temperature.

For more information

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14

Life below water



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

Scope of SDG 14

- Prevent and reduce marine pollution.
- Sustainably manage and protect marine and coastal ecosystems and achieve healthy and productive oceans.
- Minimise and address the impacts of ocean acidification.
- End overfishing, destructive fishing practices and restore fish stocks.
- Conserve at least 10 % of coastal and marine areas.
- End fisheries subsidies which contribute to overcapacity and overfishing as well as to illegal, unreported and unregulated fishing.
- Increase economic benefits to small island developing states and least developed countries from the sustainable use of marine resources.
- Increase scientific knowledge, research capacity and transfer marine technology to improve ocean health.
- Provide access for small-scale artisanal fishers to marine resources and markets.
- Implement international law as reflected in United Nations Convention on the Law of the Sea (UNCLOS).

‘The world’s oceans — their temperature, chemistry, currents and life — drive global systems that make the Earth habitable for humankind.’

‘Our rainwater, drinking water, weather, climate, coastlines, much of our food, and even the oxygen in the air we breathe, are all ultimately provided and regulated by the sea. Throughout history, oceans and seas have been vital conduits for trade and transportation.’

‘Careful management of this essential global resource is a key feature of a sustainable future.’

Source: United Nations, www.un.org/sustainabledevelopment/oceans/

Rationale for the indicators presented

SDG 14 calls for the conservation and sustainable use of the oceans, seas and marine resources to ensure their availability for future generations. Marine Protected Areas (MPAs) and MPA networks are an important tool for conserving vulnerable marine environmental habitats, biodiversity and ecosystems. MPAs also provide wider socio-economic benefits in the form of sustainable environmental tourism and small-scale fisheries, as well as research and development of blue-biotechnology. Under the EU Habitats Directive, EU Member States designate marine Sites of Community Importance (SCIs) as part of efforts to establish a coherent European ecological network known as 'Natura 2000'.

The **marine sufficiency index** expresses for each Member State the share of species and habitats of Community Importance, for which the European Commission considers the national network of marine SCIs to be sufficient in terms of number, extent, distribution and representativeness. In doing so, this indicator provides information on the safeguarding of marine ecosystems, whose healthy functioning and services are essential for meeting SDG 14.

SDG 14 also aims to combat the overexploitation of marine resources, especially fish stocks. Overfishing ⁽¹⁾ is a global issue that reduces fish populations and affects the health of fish stocks. It not only impacts the health and productivity of marine ecosystems but also the food security of millions of people who rely on fish as an essential source of protein. The indicator **total fish catches from major fishing areas** is not directly related to sustainable fishing, but provides a picture of the amount and origin of fishing yields in the EU and its Member States which contribute to the availability of food supplies.

Reliable indicators on maximum sustainable yield exploitation rate looking at specific stocks (certain species in specific subareas) are needed for an improved monitoring of overfishing. In line with the international laws, such as the United Nations Convention on the Law of the Sea (UNCLOS), the indicator **average rate of fishing compared to the rate that will deliver maximum sustainable yield (MSY)** is used as a measure of overfishing. When the rate of fishing is aligned on MSY (indicator value = 1 or less), fish stocks will be able to grow to their most productive size and catches will, on average over the long term, be at their highest sustainable level.

The indicator on marine sufficiency index is also used to monitor the EU Sustainable Development Strategy ⁽²⁾.

(1) Overfishing: Taking out of the sea more than natural population growth can sustain. Overfishing has a number of causes, the most ruthless being 'chronic over capacity' of modern fishing fleets to effectively take far more fish than can be replaced (EEA glossary <http://glossary.eea.europa.eu>).

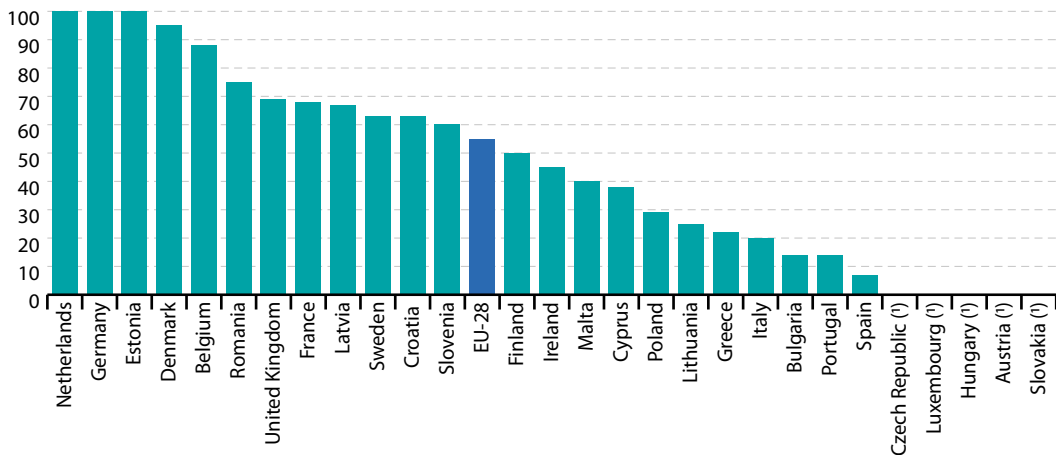
(2) See <http://ec.europa.eu/eurostat/web/sdi/indicators>



Sufficiency of protected marine areas

The marine Sites of Community Importance (SCIs) designated under the Habitats Directive are considered as sufficient for 55 % of the marine habitats and species listed in the Habitats Directive. This rate is much lower than the sufficiency recorded for terrestrial habitats and species (see Chapter 15).

Figure 14.1: Sufficiency of marine sites designated under the EU Habitats Directive, by country, 2013 (sufficiency index)



(¹) Landlocked countries.

Source: Eurostat (online data code: [tsdnr210](#))

A significant number of new sites are currently being added to the list of protected areas in the EU — in particular by the UK, Spain and Portugal (²). These designations will bring EU MPA coverage significantly closer to achieving Aichi Target 11 of the global Strategic Plan for Biodiversity 2011–2020, adopted under the Convention on Biological Diversity and according to which 10 % of marine (and coastal) areas are to be conserved by 2020 (⁴).

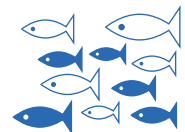
At Member State level, the network of designated sites in **Germany, Estonia and the Netherlands** cover all their marine habitats and species listed in the annexes of the Habitats Directive. The level of completion for Denmark (95 %) and Belgium (88 %) is also very high. With the exception of France, Croatia and Slovenia, all **Member States in the Mediterranean** region show sufficiency levels below the EU figure (⁵). Spain ranks last in the index with 7 % sufficiency of sites.

(²) European Environment Agency (EEA) (2015b).

(³) Although the Aichi target has been reached for near-shore areas in all European regional seas up to 1 nautical mile, only two have reached this target for offshore areas beyond the 12 nautical mile limit (EEA, 2015b).

(⁴) Area of similar character in terms of the biota (fauna and flora) present in it (Source: <http://glossary.eea.europa.eu>).

2013



55 %

sufficiency of sites designated for marine habitats and species conservation in the EU, which is much lower than for terrestrial sites



There is no clear correlation between the extent of marine territory and sufficiency levels. A low level of sufficiency does not indicate a lack of protected marine areas. Rather it shows that the sites proposed do not sufficiently cover the marine habitats and species listed under the Habitats Directive for that Member State and/or biogeographic region.

In general, it can be said that northern European Member States have higher levels of sufficiency than their southern partners. However, this is not consistently the case and overall the indicator presents a mixed picture.

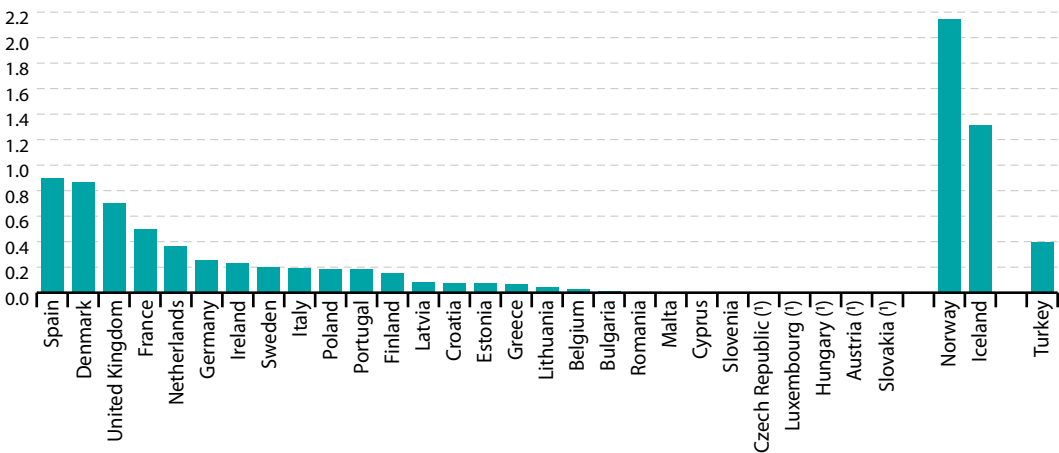


Fish catches from major fishing areas

The EU fish catch from major fishing areas amounted to 5 112 555 tonnes in 2015. **Between 2000 and 2015, the EU fish catch declined by 22 %.**

The total EU fish catch is higher but comparable to that of industrialised nations such as Japan (3 630 364 tonnes) and the United States (4 954 467 tonnes) ⁽⁶⁾.

Figure 14.2: Total catches from major fishing areas, by country, 2015
(million tonnes)



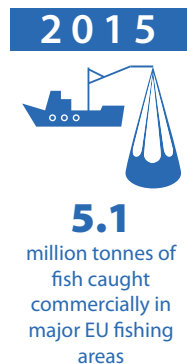
(*) Landlocked countries which do not have a fishing fleet.

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

The fish catch varies greatly between EU countries. Spain is the Member State with the highest catch, with 901 512 tonnes of fish. **Together Spain, Denmark and the UK account for almost half of the EU total catch.**

The majority of Member States with fishing fleets have low national catches of less than 200 000 tonnes of fish. The lowest 11 catches (under 100 000 tonnes of fish each) come from eastern and south-eastern Member States, with the addition of Belgium. For these countries, marine fisheries can be considered as of low economic importance. One exception is Greece, where fisheries are of high socio-economic importance — despite having the 8th lowest catch, employment in the fisheries sector in Greece is third highest in the EU ⁽⁷⁾.

The eight highest catches in the EU come from Member States which border the Atlantic ocean including the North Sea. Of the total fish catch from major fishing areas in 2015, 77 % was taken from the North East Atlantic ⁽⁸⁾ while only 8 % of the



⁽⁶⁾ FAO (2014).

⁽⁷⁾ European Union (2016).

⁽⁸⁾ The United Nations Food and Agricultural Organisation (FAO) divides the world's oceans into major fishing areas.

EU catches were from the Mediterranean and the Black Sea and 15 % from other fishing areas (Eastern Central Atlantic, Western Indian Ocean, South West Atlantic, South East Atlantic and North West Atlantic).

Data on sustainability of fishing in the major fishing areas — measured as the ratio of average rate of fishing to the fishing mortality at Maximum Sustainable Yield (F/F_{msy})⁽⁹⁾ — do not provide a clear trend so far⁽¹⁰⁾. According to the available data on maximum sustainable yield exploitation compiled by Scientific, Technical and Economic Committee for Fisheries (STCEP), half of the stocks assessed in the major fishing area of North East Atlantic were exploited at sustainable levels in 2014⁽¹¹⁾. In the Mediterranean, assessment data are sufficiently available only for few stocks, of which only two (10% of the assessed stocks) were found to be fished at sustainable levels⁽¹²⁾.

Looking at **EFTA countries**, Norway's fish catches (2 146 074 tonnes) are more than double the size of the EU Member State with the largest catch (Spain). This may be attributed not only to Norway's long coastline and access to very productive marine areas, but also to its long-standing tradition in sustainable and environmentally friendly fisheries management and regulations⁽¹³⁾.

⁽⁹⁾ Annualised Fishing mortality rate, F , is the ratio of the yearly catch from a stock divided by the average amount of exploitable fish of that stock in the sea during the same year. It is a measure of fishing pressure.

⁽¹⁰⁾ European Commission Joint Research Centre (JRC), Institute for the Protection and Security of the Citizen (IPSC), (2016), *Scientific, technical and economic committee for fisheries — 51st plenary meeting*.

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15

Life on land



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

Scope of SDG 15

- Conserve, restore and sustainably use terrestrial and inland freshwater ecosystems.
- Implement sustainable management of all types of forests.
- Combat desertification, restore degraded land and soil and achieve a land degradation-neutral world.
- Conserve mountain ecosystems.
- Reduce the degradation of natural habitats, halt the loss of biodiversity, and protect threatened species.
- Ensure sharing of benefits from the utilization of genetic resources and promote appropriate access to such resources.
- End poaching and trafficking of protected species.
- Prevent introduction and reduce the impact of invasive alien species on land and water ecosystems.
- Integrate ecosystem and biodiversity values into planning, development processes, poverty reduction strategies and accounts.
- Mobilise and increase financial resources to conserve biodiversity and ecosystems.
- Finance sustainable forest management.
- Enhance global support to combat poaching and trafficking of protected species.

'Forests cover 30 per cent of the Earth's surface and in addition to providing food security and shelter, forests are key to combating climate change, protecting biodiversity and the homes of the indigenous population. Thirteen million hectares of forests are being lost every year while the persistent degradation of dry lands has led to the desertification of 3.6 billion hectares.'

'Deforestation and desertification — caused by human activities and climate change — pose major challenges to sustainable development and have affected the lives and livelihoods of millions of people in the fight against poverty. Efforts are being made to manage forests and combat desertification.'

Source: United Nations, www.un.org/sustainabledevelopment/biodiversity/

Rationale for the indicators presented

A key aim of SDG 15 is to halt biodiversity loss and to protect, restore and use terrestrial and inland water ecosystems sustainably.

The Birds and Habitats Directives are the two main legal EU instruments for preventing the loss of biodiversity. Sites of Community Importance (SCIs) need to be designated and managed under the Habitats Directive to maintain or restore favourable conservation status of natural habitat types and species (other than birds) of European Union interest. The **terrestrial sufficiency index** expresses for each Member State the share of species and habitats as listed in the Habitats Directive, for which the European Commission considers the national network of terrestrial Sites of Community Importance (SCIs) to be sufficient in terms of number, extent, distribution and representativeness.

Birds occur high in food chains and are sensitive to environmental change (both anthropogenic and natural). They are widespread, diverse and mobile, living in most terrestrial and marine habitats ⁽¹⁾. Hence, population abundance and diversity of common bird species can provide information on the status of the more widespread ecosystems. The **common bird index** shows the population abundance and diversity compared to the base year 1990 for a selection of common bird species associated with specific habitats. Thus, this indicator gives insights into the general ambition of SDG 15.

Halting and reversing land degradation is another major target of SDG 15. Habitat loss, fragmentation and soil degradation can occur when natural ecosystems are converted to intensively managed arable land or are used for infrastructure and urban settlements. The indicator on **artificial land cover** shows the percentage of built-up and non-built-up artificial areas ⁽²⁾ in Member States.

The indicators presented in this chapter are also used for monitoring the EU Sustainable Development Strategy ⁽³⁾.

⁽¹⁾ For more information on the use of bird population data as a general indicator of environmental status, read *'Wild bird indicators: using composite population trends of birds as measures of environmental health'*.

⁽²⁾ Built-up areas consist of all kinds of settlements; non-built-up artificial areas include, for example, roads and railways.

⁽³⁾ See <http://ec.europa.eu/eurostat/web/sdi/indicators>

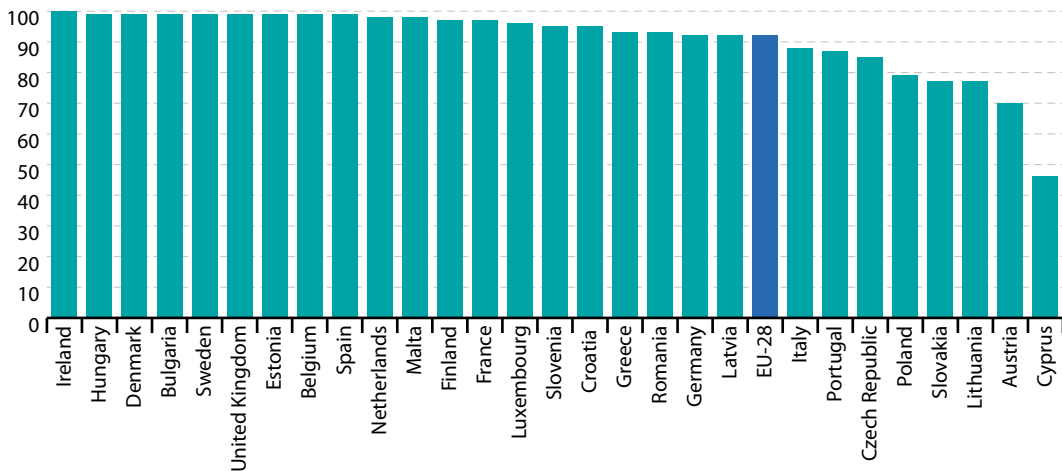
⁽⁴⁾ EEA (2015), *State of Nature in the EU*.



Sufficiency of protected terrestrial sites

The degree to which Member States have completed their network of Sites of Community Importance (SCIs) is high throughout most of the EU, with **an overall coverage of 92 % of the terrestrial habitats and species listed in the Habitats Directive.**

Figure 15.1: Sufficiency of terrestrial sites designated under the EU Habitats Directive, by country, 2013
(sufficiency index)

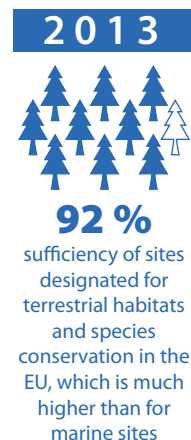


Source: Eurostat (online data code: [tsdnr210](#))

In **all but five Member States** the network of designated sites cover **85 % or more** of the terrestrial habitats and species listed in the annexes of the Habitats Directive. Ireland has fully completed its network, closely followed by eight other countries, which have completed 99 % of their networks.

There is a relatively **low level of completion in some south-eastern and central European countries.** Cyprus has by far the lowest sufficiency index among Member States at 46 %, 24 percentage point below the second country at the bottom. Levels are also low in Austria, Lithuania, Slovakia and Poland (under 80 % each).

To promote the effective implementation of the Habitats Directive, the European Commission recommends Member States draw up a **management plan for each protected area.** In 2012, only a few countries such as Sweden, Denmark, Cyprus, Finland and France had management plans for more than 75 % of their designated sites. Other countries such as Bulgaria, Ireland and Poland reported no plans at all ⁽⁴⁾.

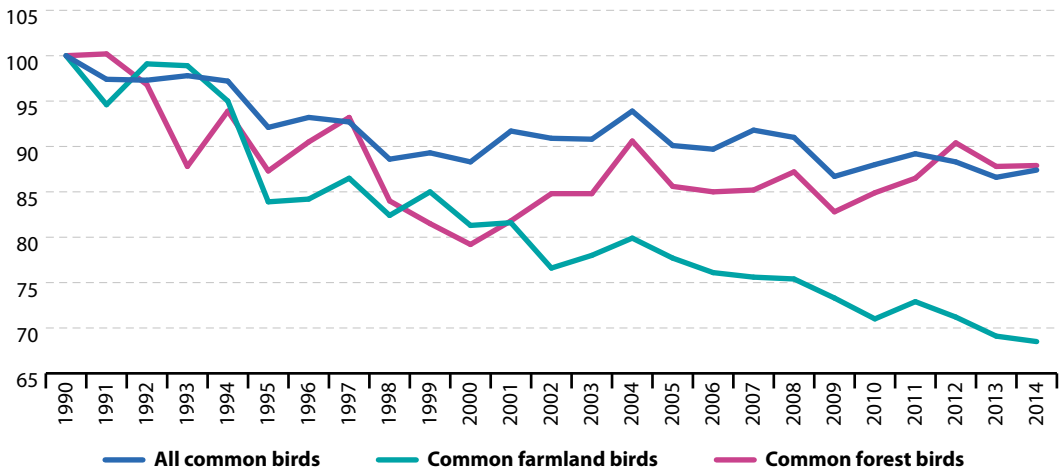


Common bird index

The population status of all common birds in the EU only reaches **87.4 % compared to the baseline year 1990**. All species groups are in decline relative to the baseline year, in particular common farmland birds (68.5 %).

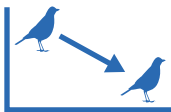
Figure 15.2: Common bird index, EU, 1990–2014

(Index (1990 = 100))



Source: European Commission, Eco-Innovation Observatory (online data code: tsdnr100)

2014



12.6 %
fall in the
abundance and
diversity of all
common birds in
the EU since 1990

The index of all common species has declined by **12.6 % since 1990**. Common farmland species show the biggest declines, with their populations falling by 31.5 % compared to 1990. This indicates that **agricultural ecosystems are under particular pressure**.

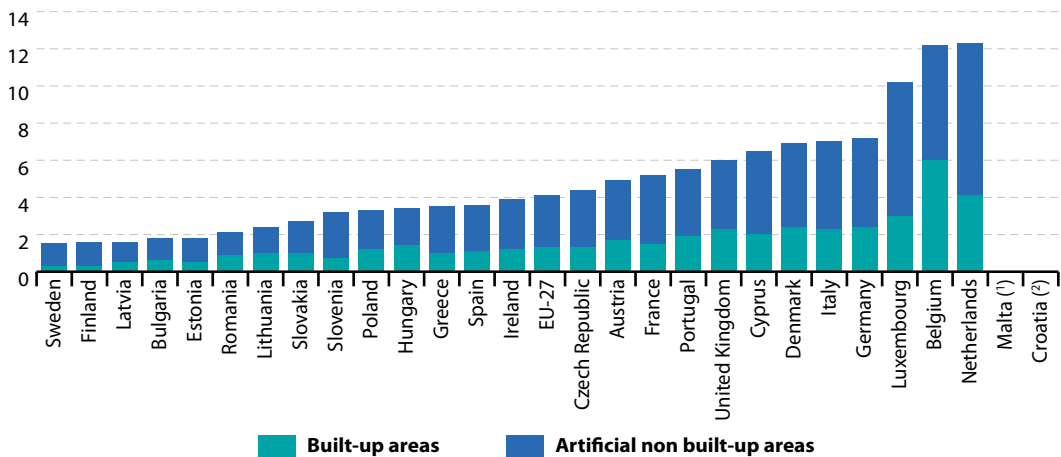
Common forest species appear to be coping better, showing an overall decline of 'only' 12.1 %. This is slightly better than the aggregate of all common species and less than half of the declining rate observed for farmland bird species. Furthermore, the trend in forest bird populations has been relatively stable since 2004. This suggests that **forest ecosystems are less threatened than other ecosystems**.



Artificial land cover

Built-up and artificial areas cover 4.1 % of the EU land area ^(¹). According to analysis from the European Environmental Agency (EEA), the share of artificial land areas has been increasing over the past decades, but the rate of land take is slowing down ^(²).

Figure 15.3: Artificial land cover — built-up and artificial non built-up areas, by country, 2012
(% of total land cover)



(¹) Data for Malta: Built-up areas: 18.7 %, artificial non-built-up areas: 13.6 %; (²) No data available.

Source: Eurostat (online data code: tsdnr510)

The share of artificial land cover varies widely across Member States. Artificial areas for all kinds of infrastructure (non-built-up areas) exceed those areas used for buildings (built-up areas), except for Malta. **Sweden, Latvia and Finland have the lowest artificial land cover**, all with only 1.6 % or less built-up and artificial area. Generally, countries with lower population densities and higher shares of rural areas tend to have less artificial land cover (for example, Finland, Sweden, Slovenia, the Baltic countries and the Balkan countries Bulgaria, Romania and Greece).

In contrast, **the Benelux countries have the highest artificial land coverage** among Member States (Luxembourg 10.1 %, Belgium 12.1 % and the Netherlands 12.3 %), mainly because of their high population density.

2012

4.1 %
of the land in the EU
is covered by
built-up and
artificial areas

(¹) Data refer to the EU-27.

(²) See: European Environmental Agency (EEA), [Land take](#), Accessed on: 06.10.2016

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Davis, M., Naumann, S., McFarland, K., Graf, A., Evans, D. (2014), *Literature Review: The ecological effectiveness of the Natura 2000 Network*, ETC/BD report to the EEA.

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16

Peace, justice and strong institutions



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

Scope of SDG 16

- Reduce all forms of violence and related death rates.
- End abuse, exploitations, trafficking and all forms of violence against children.
- Promote the rule of law and ensure equal access to justice.
- Reduce illicit financial and arms flows and combat all forms of organised crime.
- Reduce corruption and bribery.
- Develop effective, accountable and transparent institutions.
- Ensure responsive, inclusive, participatory and representative decision-making.
- Enhance the role of developing countries in institutions of global governance.
- Provide legal identity for all.
- Ensure public access to information and protect fundamental freedoms.
- Strengthen national institutions to prevent violence and combat terrorism and crime.
- Promote and enforce non-discriminatory laws and policies for sustainable development.

‘Goal 16 of the Sustainable Development Goals is dedicated to the promotion of peaceful and inclusive societies for sustainable development, the provision of access to justice for all, and building effective, accountable institutions at all levels.’

Source: United Nations, www.un.org/sustainabledevelopment/peace-justice/

Rationale for the indicators presented

The overall aim of SDG 16 is to promote peace and justice. The goal thus calls for the reduction of all forms of violence and crime. The indicator **intentional homicide** offences provides an insight into the crime level observed in a country by reflecting the number of unlawful deaths purposefully inflicted on persons by another person, including serious assault leading to death and death as a result of a terrorist attack. The number of homicide offences, which can be compared between countries regardless of different legal systems and crime definitions, may be thus considered as a proxy for the general level of security within the respective country. Peace, stability and security are important factors for the sustainable development of all countries. High levels of violence, insecurity and injustice have serious impacts on quality of life as well as on social and economic development. They can also reflect weak public institutions and poor government performance, resulting in overall instability of a state and its society.

SDG 16 also promotes effective, accountable and transparent institutions. A society's level of **trust in its institutions** can be used as a proxy for a state's stability, functionality and efficiency. The indicator trust in institutions broken down by the three main types of institutions — police, legal and political system — provides insights into their perceived performance. The indicator also gives information on a country's level of good governance. Low levels of corruption and transparent structures underpin well performing and reliable institutions. Generally, trust in institutions is important for economic activities and their success, as it increases the confidence of investors and consumers. A lack of confidence could thus negatively affect the overall economic situation of a state.

A similar indicator on 'good governance' referring to citizens' confidence in EU institutions is also used for monitoring the EU Sustainable Development Strategy (1).

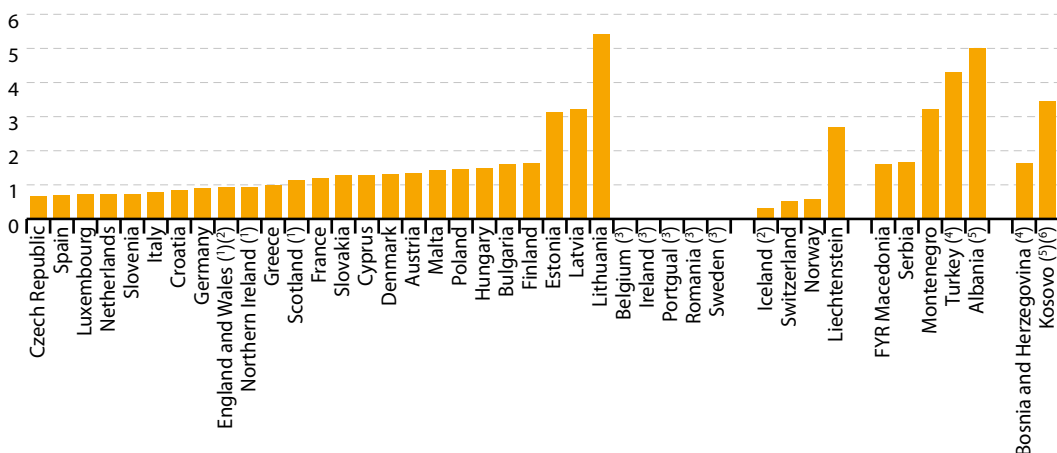
(1) See <http://ec.europa.eu/eurostat/web/sdi/indicators>

Intentional homicide offences

There were **4 698 intentional homicide offences recorded in the EU in 2014** ⁽²⁾. The number of offences has been steadily decreasing by more than 100 offences a year since 2008, apart from 2010 when the number remained almost unchanged from the previous year ⁽³⁾.

Figure 16.1: Intentional homicide offences, by country, 2014

(Per 100 000 inhabitants)



(¹) No aggregated data for UK; data shown separately for England and Wales, Northern Ireland and Scotland, due to differences in the respective legal systems; (²) 2013 data; (³) No data available; (⁴) 2012 data; (⁵) 2011 data; (⁶) 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.

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

By far the highest rate of homicide offences among Member States are recorded in the Baltic countries. Lithuania reports the highest rate of 5.4 per 100 000 inhabitants, almost twice the rates reported in Estonia and Latvia, and eight times higher than in the country with the lowest rate.

In the remaining Member States homicide offences vary from 1.6 per 100 000 inhabitants in Finland down to 0.7 per 100 000 inhabitants in the Czech Republic.

Apart from Liechtenstein, **rates of violence are generally lower in the EFTA countries**, ranging from 0.3 homicide offences per 100 000 inhabitants in Iceland to 0.6 in Norway.

2014



4 698

intentional
homicide offences
in the EU

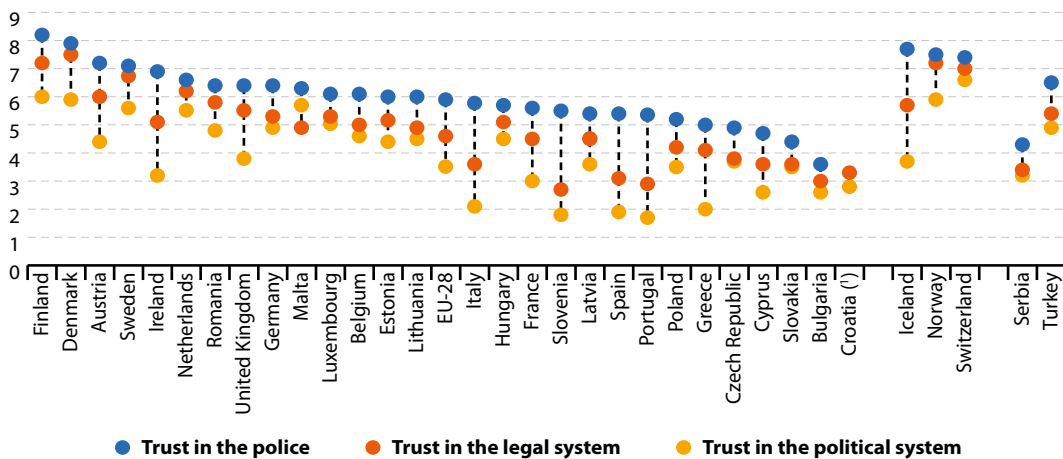
(²) The EU figures exclude Belgium, Ireland, Portugal, Romania and Sweden due to data availability. 2013 data are used for England and Wales for the same reason.

(³) Excluding data for Poland.

Trust in institutions

EU citizens are most likely to trust their police forces, giving them a confidence score of 5.9 out of 10 points. **Trust levels are lower for the legal system**, rated 4.6 out of 10 points, and the political system, which has the lowest confidence rate among the three, 3.5 out of 10 points.

Figure 16.2: Trust in institutions by type of institution, by country, 2013
(Rating 0–10)



(*) No data for 'trust in the police'.

Source: Eurostat (online data code: [ilc_pw03](#))

2013



The police force is the most trusted institution across the EU

In almost all Member States the police is the most trusted institution, and the political system receives the lowest trust scores. Malta is an exception, with trust in the legal system the lowest.

Member States show significant differences in overall confidence levels and the gaps in trust between the different institutions. These gaps are particularly pronounced in southern European countries (Portugal, Slovenia, Italy, Spain and Greece) and in Ireland.

Citizens in northern European countries generally tend to have higher levels of trust in their institutions. Police forces and the legal system achieve especially high scores in Finland, Austria, the Netherlands and the Scandinavian countries, above 6 points out of 10 for both.

In contrast, particularly low levels of trust in the legal system are observed in southern Europe, led by Slovenia with 2.7 out of 10 points.

Almost all Member States rank the political system as being the least trusted institution. This phenomenon is particularly pronounced in southern Europe, with the political system in Portugal receiving the lowest score of 1.7 points out of 10. Malta is an exception, reporting one of the highest levels of trust in the political system.



For more information

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UN (2015), *State of crime and criminal justice worldwide*, Report of the Secretary-General, United Nations, Doha.

17

Partnership for the goals



Strengthen the means of implementation and revitalise the global partnership for sustainable development finance

Scope of SDG 17

- Strengthen domestic resource mobilisation to improve the capacity for public revenues.
- Implement fully the Official Development Assistance commitments in developed countries.
- Mobilise additional financial resources for developing countries.
- Assist developing countries in attaining long-term debt sustainability.
- Adopt and implement investment promotion for least developed countries.
- Enhance regional and international cooperation on and access to science, technology and innovation.
- Promote proliferation of environmentally sound technologies to developing countries on favourable terms.
- Operationalise the capacity-building mechanism for science, technology and innovation, and enhance the use of enabling technology in least developed countries.
- Enhance international support to developing countries in their national plans to implement all the sustainable development goals.
- Promote a universal, rules-based, open, non-discriminatory and equitable multilateral trading system under WTO.
- Increase the exports of developing countries.
- Implement duty-free and quota-free market access for all least developed countries according to WTO decisions.
- Enhance global macroeconomic stability.
- Enhance policy coherence for sustainable development.
- Respect each country's policy space and leadership to establish and implement policies for poverty eradication and sustainable development.
- Enhance the global partnership for sustainable development.
- Promote effective public, public-private and civil society partnerships.
- Enhance capacity-building support to developing countries to increase the availability of quality statistical data.
- Develop measurement of progress on sustainable development and support statistical capacity-building in developing countries.



'A successful sustainable development agenda requires partnerships between governments, the private sector and civil society. These inclusive partnerships built upon principles and values, a shared vision, and shared goals that place people and the planet at the centre, are needed at the global, regional, national and local level.'

'Urgent action is needed to mobilise, redirect and unlock the transformative power of trillions of dollars of private resources to deliver on sustainable development objectives. Long-term investments, including foreign direct investment, are needed in critical sectors, especially in developing countries. These include sustainable energy, infrastructure and transport, as well as information and communications technologies. The public sector will need to set a clear direction. Review and monitoring frameworks, regulations and incentive structures that enable such investments must be retooled to attract investments and reinforce sustainable development. National oversight mechanisms such as supreme audit institutions and oversight functions by legislatures should be strengthened.'

Source: United Nations, www.un.org/sustainabledevelopment/globalpartnerships/



Rationale for the indicators presented

The aim of SDG 17 is to revitalise the global partnership for sustainable development, and to mobilise the full range of means of implementation necessary to achieve the 2030 Agenda. It underpins and complements the means of implementation under the specific goals. Unlike the other 16 goals which mainly focus on ‘substantive’ targets, meaning that these targets are specific and outcome-oriented rather than process-oriented, goal 17 relates exclusively to the means necessary for the implementation of the ‘substantive’ goals. It recognises that in addition to having a shared vision of goals and aspirations for the planet and people, there has to be effective implementation of change on the ground. This involves building inclusive partnerships between governments, the private sector and civil society, as well as the mobilisation of public and private, financial and non-financial means by which the SDGs can be delivered.

Means of implementation refer to financial and non-financial, public and private, domestic and international actions as well as enabling policies, the measurement of which is normally outside the scope of official statistics. It is for this reason alone that, pending the development of a more comprehensive monitoring approach for SDG 17, the focus of this chapter is limited to Official Development Assistance (ODA) and imports from developing countries alone. However, harnessing all means of implementation — also and especially including non-ODA resources will be crucial in delivering on the SDGs.

The indicator **Official Development Assistance as share of gross national income (GNI)** measures the disbursements from OECD and EU countries in support of countries eligible for assistance ⁽¹⁾. In doing so, the indicator acts as a proxy for measuring the level of partnership being offered by higher income to lower income countries. This indicator is also relevant in view of the EU’s commitment of reaching an ODA of 0.7 % of GNI within the timeframe of the 2030 Agenda and 0.15 % of GNI to ODA for Least Developed Countries (LDCs).

As one of the seven action areas identified under SDG 17 to mobilise the full range of means of implementation, international trade as an engine for development has a significant role to play in helping countries achieve inclusive growth and sustainable development. The indicator **imports from developing countries**, therefore, gives an insight into the EU’s trading relationship with its developing country partners. The indicator is particularly relevant as it is a consequence not only of the EU’s market access preferences provided to developing and least developed countries, but also of the assistance provided in the form of aid for trade.

The indicators presented in this chapter are also used for monitoring the EU Sustainable Development Strategy ⁽²⁾.

⁽¹⁾ OECD (2016) DAC list of ODA recipients, <http://www.oecd.org/dac/stats/documentupload/DAC%20List%20of%20ODA%20Recipients%202014%20final.pdf>

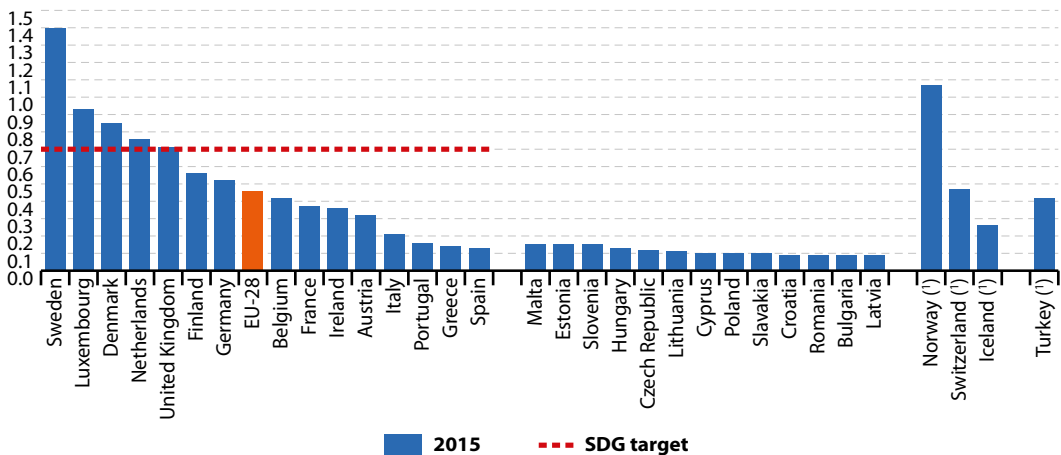
⁽²⁾ See <http://ec.europa.eu/eurostat/web/sdi/indicators>

Official Development Assistance

The EU's collective spending on **Official Development Assistance (ODA)** is **0.47 % of gross national income (GNI) ⁽³⁾**, just over two thirds of the way to meeting the target of providing **0.7 % of GNI as ODA agreed in 2015**. Compared to 2005, the EU's ODA has increased only slightly as a percentage of GNI, growing by 0.05 percentage points.

In comparison, ODA from the non-EU members of the OECD Development Assistance Committee (DAC) was 0.21 % of their combined GNI in 2015. For instance, the United States provided 0.17 % of GNI and Japan 0.22 % of GNI ⁽⁴⁾.

Figure 17.1: Official Development Assistance as share of gross national income, 2015
(% of GNI)



(1) 2014 data instead of 2015.

Source: Eurostat (online data code: tsdgp100) and http://europa.eu/rapid/press-release_MEMO-16-1363_en.htm

2015



0.47 %
of the EU's gross national income goes towards Official Development Assistance

Only five Member States have reached or exceeded the target of spending 0.7 % of their GNI on ODA. Expenditure on ODA as a share of GNI ranges from 0.09 % (Bulgaria, Latvia, Romania and Croatia) to 1.41 % (Sweden). The absolute figures vary from EUR 13 million for Malta to EUR 16.558 billion for the United Kingdom.

No central or eastern European country allocates more than 0.15 % of their GNI for ODA. In contrast, northern European and Benelux countries are the biggest donors, with shares of ODA in GNI above or close to the overall EU share of 0.47 %. These countries generally have a higher GDP per capita than their eastern counterparts.

Looking at the EFTA countries, Norway spends a share of its GNI on ODA that is comparable to the best performing EU donor countries (it reached 1.05 % of GNI in 2015).

(3) The 0.47 % value refers to the EU's collective ODA, which is the sum of EU-28 ODA as well as EU Institutions' ODA not imputed to EU Member States. The graph above shows a value of 0.46 % of GNI spent for ODA, which refers to the EU-28 only.

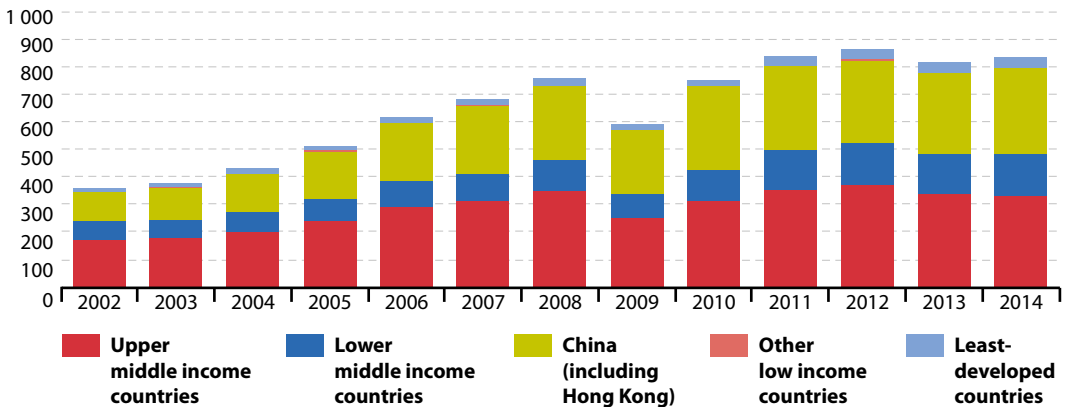
(4) OECD data on net ODA (preliminary for 2015), <https://data.oecd.org/oda/net-oda.htm>



EU imports from developing countries

EU imports from developing countries are valued at EUR 834.9 billion and represent 49.3 %^(*) of total EU imports. Between 2002 and 2014, EU imports from developing countries more than doubled, from EUR 358.8 billion in 2002. Imports from China were the single largest factor behind this trend, with their absolute value having more than tripled since 2002. Fuels excluded, imports from developing countries to the EU surpass those from developing countries to the United States, Canada, Japan and China combined^(**).

Figure 17.2: EU imports from developing countries by income group, EU-28, 2002–2014
(EUR billion, at current values)



Source: Eurostat (online data code: tsdgp210)

The absolute amount of EU imports from least developed countries (LDCs) is almost three times the 2002 value. The overall share of imports from these countries in total EU imports stands at 2.3 %, up from 1.5 % in 2002. This indicates progress towards the objective of increasing the share of imports from the poorest countries of the world. Europe is the largest importer of goods from least developed countries, at 26 % of their total exports. As members of a Customs Union, EU Member States give the same preferential market access and simplified rules of origin to developing and least developed countries.

China is by far the biggest exporter to the EU from all developing countries. With a share of 18.5 % in total EU imports, China also is the biggest exporter overall to the EU, followed by the United States and Russia.

Among the EU Member States, Portugal had the highest share of imports from developing countries in general and from LDCs more specifically; the latter appears to be due mainly to the trade relations of Portugal with its former colony Angola.

(*) Source: Eurostat online data codes: ext_lt_maineu and tsdgp210.

(**) See <http://ec.europa.eu/trade/policy/eu-position-in-world-trade>

2015



With imports from developing countries valued at EUR 834.9 billion, the EU is the world's most open market for developing countries' exports

For more information

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Annexes

Annex I: Abbreviations and acronyms

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)
G8	The eight most industrialised countries (Canada, France, Germany, Italy, Japan, Russia, the United Kingdom and the United States)
G20	A group of 19 major economies and the European Union (Argentina, Australia, Brazil, Canada, China, France, Germany, India, Indonesia, Italy, Japan, Republic of Korea, Mexico, Russia, Saudi Arabia, South Africa, Turkey, the United Kingdom, the United States, and the European Union)

Note that EU aggregates are back-calculated when enough information is available — for example, data relating to the EU-28 aggregate is presented when possible for periods before Croatia joined the EU in 2013 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-15).



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

AL	Albania
MK	The former Yugoslav Republic of Macedonia ⁽¹⁾
ME	Montenegro
RS	Serbia
TR	Turkey

POTENTIAL CANDIDATES

BA	Bosnia and Herzegovina
XK	Kosovo ⁽²⁾

UNITS OF MEASUREMENT

%	Per cent
°C	Degree Celsius
EUR	Euro
Kg	Kilogram
Kg/ha	Kilograms per hectare
LSU/ha	Livestock units per hectare
µg/m ³	Micrograms per cubic meter
Mg O ₂	Milligram carbon dioxide
PPS	Purchasing power standards

(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 position or status, and is in line with UNSCR 1244 and the ICJ Opinion on the Kosovo Declaration of Independence.

ABBREVIATIONS

BOD	Biochemical oxygen demand
CO ₂	Carbon dioxide
DAC	Development Assistance Committee
DMC	Domestic material consumption
DG CLIMA	Directorate-General for Climate Action
EEA	European Environment Agency
EFTA	European Free Trade Association
EU	European Union
EU LFS	EU Labour Force Survey
EU SILC	EU Statistics on Income and Living Conditions
FAO	Fisheries and Agriculture Organisation
GDP	Gross domestic product
GHG	Greenhouse gas
GNI	Gross national income
IAEG-SDGs	Inter-Agency and Expert Group on Sustainable Development Goals
ICJ	International Court of Justice
ICT	Information and communications technology
ILO	International Labour Organisation
IPCC	Intergovernmental Panel on Climate Change
ITPS	Intergovernmental Technical Panel on Soils
LDC	Least developed countries
LSE	London School of Economics
MDGs	Millennium Development Goals
MPA	Marine Protected Area
MSY	Maximum sustainable yield
NACE	Statistical Classification of Economic Activities in the European Community
NASA	National Aeronautics and Space Administration
NEET	Neither in employment nor in education or training
NUTS	Nomenclature of Territorial Units for Statistics
ODA	Official Development Assistance
OECD	Organisation for Economic Co-operation and Development



PISA	Programme for International Student Assessment
PM	Particulate matter
R&D	Research and development
SDGs	Sustainable Development Goals
SCIs	Sites of Community Importance
UN	United Nations
UNCLOS	The United Nations Convention on the Law of the Sea
UNECE	United Nations Economic Commission for Europe
UNEP	United Nations Environment Programme
UNESCO	United Nations Educational, Scientific and Cultural Organization
UNFCCC	United Nations Framework Convention on Climate Change
UNICEF	United Nations International Children's Emergency Fund
UNSC	United Nations Statistical Commission
UNSCR	United Nations Security Council Resolution
UNODC	United Nations Office on Drugs and Crime
WHO	World Health Organisation

Annex II: Overview of indicators presented in this publication

The publication presents 51 indicators, which with a few exceptions, stem from already existing indicator sets for monitoring EU policies such as Europe 2020 ⁽¹⁾, the EU Sustainable Development Strategy ⁽²⁾. Some of them are also included in the global SDG indicator set as agreed at the 47th United Nations Statistical Commission session in March 2016 ⁽³⁾. The table below illustrates the overlap between these indicator sets. Some indicators are not featured in any of the indicator sets mentioned above. However, they are deemed important for monitoring the overall ambitions of the SDGs from an EU perspective. The overview is complemented by the information on geographical coverage and most recent data points for the available data.

Table 1: Indicators presented in this publication

Indicator	Europe 2020 indicators	EU SDI set	UN global list of SDG indicators	Most recent year	Data coverage
Chapter 1: No poverty					
People at risk of poverty or social exclusion	x	x	x	2015	EU-28 and all EU Member States
People at risk of poverty after social transfers	x	x	x	2015	EU-28 and all EU Member States
Severely materially deprived people	x	x	x	2015	EU-28 and all EU Member States
People living in households with very low work intensity	x	x	x	2015	EU-28 and all EU Member States
Chapter 2: Zero hunger					
Area under organic farming		x	x	2015	EU-28 and all EU Member States
Gross nutrient balance on agricultural land		x		2014	EU-28 and all EU Member States
Livestock density index		x		2013	All EU Member States ⁽¹⁾
Chapter 3: Good health and well-being					
Life expectancy at birth and healthy life years		x		2014	EU-28 and all EU Member States
Self-perceived health				2014	EU-28 and all EU Member States
Self-reported unmet needs for medical care due to monetary constraints		x		2014	EU-28 and all EU Member States
Chapter 4: Quality education					
Early leavers from education and training	x	x		2015	EU-28 and all EU Member States
Low achievers in reading, maths and science		x	x	2012	EU-28 and all EU Member States

Note: 'x' in the columns referring to existing indicator sets — the same or a similar indicator is used in the respective set.

⁽¹⁾ An EU aggregate for this indicator is missing.

⁽²⁾ See <http://ec.europa.eu/eurostat/web/europe-2020-indicators/europe-2020-strategy/headline-indicators-scoreboard>

⁽³⁾ See <http://ec.europa.eu/eurostat/web/sdi/indicators>

⁽⁴⁾ See Annex III of the *Report of the Inter-Agency and Expert Group on Sustainable Development Goal Indicators*, March 2016.



Indicator	Europe 2020 indicators	EU SDI set	UN global list of SDG indicators	Most recent year	Data coverage
Tertiary educational attainment (population aged 30 to 34)	x	x		2015	EU-28 and all EU Member States
Lifelong learning		x	x	2015	EU-28 and all EU Member States
Chapter 5: Gender equality					
Gender pay gap		x		2014	EU-28 and all EU Member States
Proportion of seats held by women in national parliaments (both houses)			x	2016 (3rd quarter)	EU-28 and all EU Member States
Chapter 6: Clean water and sanitation					
Biochemical oxygen demand in rivers		x	x	2002–2012	EU aggregate based on 18 Member States; all EU Member States except for the Czech Republic, Germany, Greece, Spain, Cyprus, Hungary, Malta, Netherlands, Portugal and Sweden
Share of total population having neither a bath, nor a shower, nor indoor flushing toilet in their household			x	2015	EU-28 and all EU Member States except for Sweden
Chapter 7: Affordable and clean energy					
Share of renewable energy in gross final energy consumption	x	x	x	2014	EU-28 and all EU Member States
Energy productivity			x	2014	EU-28 and all EU Member States
Share of people that cannot afford to keep home adequately warm				2015	EU-28 and all EU Member States
Chapter 8: Decent work and economic growth					
Growth rate of GDP per capita		x	x	2000–2015	EU-28 and all EU Member States
Employment rate (age group 20–64)	x	x		2015	EU-28 and all EU Member States
Long-term unemployment rate (age group 15–74)		x		2015	EU-28 and all EU Member States
Young people neither in employment nor in education and training		x	x	2015	EU-28 and all EU Member States
Chapter 9: Industry, innovation and infrastructure					
Gross domestic expenditure on R&D	x	x	x	2014	EU-28 and all EU Member States
Eco-innovation index		x		2015	EU-28 and all EU Member States
Employment in high- and medium-high technology manufacturing			x	2015	EU-28 and all EU Member States
Enterprises with broadband internet access				2015	EU-28 and all EU Member States

Note: 'x' in the columns referring to existing indicator sets — the same or a similar indicator is used in the respective set.

Indicator	Europe 2020 indicators	EU SDI set	UN global list of SDG indicators	Most recent year	Data coverage
Chapter 10: Reduced inequalities					
GDP per capita by country		x		2015	EU-28 and all EU Member States
GDP per capita by NUTS 2 regions				2014	All EU Member States (276 regions)
Real adjusted gross disposable income of households per capita		x		2015	EU-28 and all EU Member States except for Luxembourg and Malta
Income quintile share ratio		x	x	2015	EU-28 and all EU Member States
Chapter 11: Sustainable cities and communities					
Urban population exposure to air pollution by particulate matter		x	x	2014	EU-28 and all EU Member States exception for Croatia and Malta
Recycling rate of municipal waste			x	2014	EU-28 and all EU Member States
Distribution of population by level of difficulty in accessing public transport			x	2012	EU-28 and all EU Member States
Chapter 12: Responsible consumption and production					
Resource productivity		x		2015	EU-28 and all EU Member States
Domestic material consumption		x	x	2015	EU-28 and all EU Member States
Generation of waste excluding major mineral wastes		x		2014	EU-28 and all EU Member States
Chapter 13: Climate action					
Greenhouse gas emissions	x	x		2014	EU-28 and all EU Member States
Global and European near-surface average temperature		x		2015	Not applicable
Chapter 14: Life below water					
Sufficiency index for marine sites proposed by Member States under the Habitats Directive		x	x	2013	EU-28 and all EU Member States except for Croatia and landlocked countries (Czech Republic, Luxembourg, Hungary, Austria and Slovakia)
Fish catches from major fishing areas				2015	EU-28 and all EU Member States except for landlocked countries (Czech Republic, Luxembourg, Hungary, Austria and Slovakia)
Average rate of fishing compared to the rate delivering maximum sustainable yield (MSY)					Not applicable

Note: 'x' in the columns referring to existing indicator sets — the same or a similar indicator is used in the respective set.



Indicator	Europe 2020 indicators	EU SDI set	UN global list of SDG indicators	Most recent year	Data coverage
Chapter 15: Life on land					
Sufficiency index for terrestrial sites proposed by Member States under the Habitats Directive		x	x	2013	EU-28 and all EU Member States
Common bird index		x	x	2014	EU changing aggregate
Artificial land cover		x		2012	EU-27 and all EU Member States except for Croatia and Malta
Chapter 16: Peace, justice and strong institutions					
Intentional homicide offences			x	2014	All EU Member States except for Belgium, Ireland, Portugal, Romania and Sweden
Trust in institutions by type of institutions				2013	EU-28 and all EU Member States, except for Croatia for 'trust in the police'
Chapter 17: Partnership for the goals					
Official Development Assistance as a share of gross national income		x	x	2015	EU-28 and all EU Member States
EU imports from developing countries		x		2014	EU-28 and all EU Member States

Note: 'x' in the columns referring to existing indicator sets — the same or a similar indicator is used in the respective set.

Annex III: Methods and sources

CHAPTER 1

People at risk of poverty or social exclusion

This indicator is defined as the share of the population either at risk of poverty, severely materially deprived or living in a household with a very low work intensity.

Monetary poverty is measured by the indicator 'people at risk of poverty after social transfers'. The indicator measures the share of people with an equivalised disposable income below the risk-of poverty threshold. This threshold is set at 60 % of the national median equivalised disposable income after monetary social transfers. Social transfers are benefits provided by national or local governments, including benefits relating to education, housing, pensions or unemployment.

Material deprivation covers issues relating to economic strain, durables and housing and dwelling environment. Severely materially deprived people are living in conditions greatly constrained by a lack of resources and cannot afford at least four of the following: to pay their rent or utility bills or hire purchase instalments or other loan payments; to keep their home warm; to pay unexpected expenses; to eat meat, fish or other protein-rich nutrition every second day; to spend a week-long holiday away from home; to own a car; to own a washing machine; to own a colour TV; to own a telephone.

Very low work intensity describes the number of people aged 0 to 59 living in households where the adults worked less than 20 % of their work potential during the past year. The indicator is based on the data from the EU statistics on income and living conditions (EU-SILC).

CHAPTER 2

Area under organic farming

The indicator is defined as the share of total utilised agricultural area (UAA) occupied by organic farming (existing organically farmed areas and areas in process of conversion). Organic farming is a method of production, which puts the highest emphasis on environmental protection and, with regard to livestock production, animal welfare considerations. It avoids or largely reduces the use of synthetic chemical inputs such as fertilisers, pesticides, additives and medical products. Farming is only considered to be organic at the EU level if it complies with Council Regulation (EC) No 834/2007, which has set up a comprehensive framework for the organic production of crops and livestock and for the labelling, processing and marketing of organic products, while also governing imports of organic products into the EU. The detailed rules for the implementation of this Regulation are laid down in Commission Regulation (EC) No 889/2008.



Gross nutrient balance on agricultural land

'Gross nutrient balance' lists all inputs and outputs and calculates the 'gross nutrient surplus' as the difference between total inputs and total outputs. The Gross nutrient balance per hectare is derived by dividing the total gross nutrient surplus by utilised agricultural area (UAA).

The inputs of the gross nutrient balance are nutrients supplied in:

- mineral fertilisers;
- manure;
- other organic fertilisers (excluding manure);
- seeds and planting material;
- atmospheric deposition;
- biological nitrogen fixation.

The outputs of the gross nutrient balance are nutrients removed with:

- harvest of crops (cereals, dried pulses, root crops, industrial crops, vegetables, fruit, ornamental plants, other harvested crops);
- harvest and grazing of fodder (fodder from arable land, permanent and temporary pasture consumption);
- crop residues removed from the field.

The nutrient inputs and outputs have been estimated for each item of the balance from basic data by multiplying with coefficients to convert the data into nutrient content. Basic data (fertiliser consumption, livestock numbers, crop production, utilised agricultural area) are mostly derived from agricultural statistics. Coefficients are mainly estimated by research institutes and can be based on models, statistical data, measured data as well as expert judgements. Various other sources, for example FAOSTAT database, national inventory submissions to UNFCCC and to UNECE-CLRTAP, or EMEP modelled data have also been used.

Livestock density index

The indicator provides the number of livestock units (LSU) per hectare of utilised agricultural area (UAA) and it is based on data from the Farm Structure Survey (FSS).

The LSU is a reference unit which facilitates the aggregation of livestock from various species and ages. The Eurofarm LSU coefficients, which are at the basis of this indicator, are established by convention (originally, they were related to the animals' feed requirements, the reference being a dairy cow with an annual yield of 3 000 kilograms of milk, without additional concentrated feeding stuffs). In the interpretation of the livestock density index, the limits of this theoretical unit are to be taken into account. The livestock species aggregated in the LSU total, for the purpose of this indicator, are: equidae, cattle, sheep, goats, pigs, poultry and rabbits. Livestock density is indicative of the intensiveness of production of animal products.

CHAPTER 3

Life expectancy and healthy life years

Life expectancy at birth is defined as the mean number of years still to be lived by a person at birth, if subjected throughout the rest of his or her life to the current mortality conditions. The indicator 'healthy life years' (HLY) at birth measures the number of years that a person at birth is still expected to live in a healthy condition. HLY is a health expectancy indicator which combines information on mortality and activity limitation. The data required are the age-specific prevalence (proportions) of the population in healthy and unhealthy conditions and age-specific mortality information. A healthy condition is defined by the absence of long-lasting limitations in activities that people usually do. The indicator is calculated separately for males and females. The indicator is also called disability-free life expectancy (DFLE). The indicator is based on the data from the EU statistics on income and living conditions (EU-SILC).

Self-perceived health

Self-perceived health expresses respondent's own assessment of his or her health. The concept is operationalised by a question on how a person perceives his/her health in general using one of the answer categories very good/ good/ fair/ bad/ very bad. The indicator is based on the data from the EU statistics on income and living conditions (EU-SILC).

Self-reported unmet need for medical care due to monetary constraints

This indicator is defined as the share of the population reporting that at least once in the previous 12 months they could not afford a medical examination or treatment. The indicator is based on the data from the EU statistics on income and living conditions (EU-SILC).

CHAPTER 4

Early leavers from education and training

The indicator is defined as the percentage of the population aged 18–24 with at most lower secondary education and who were not in further (formal or non-formal) education or training during the last four weeks preceding the survey. Lower secondary education refers to ISCED (International Standard Classification of Education) 2011 level 0–2 for data from 2014 onwards and to ISCED 1997 level 0–3C short for data up to 2013. The indicator is based on the data from the EU Labour Force Survey (EU LFS).

Low achievers in reading, maths and science

The indicator is based on the results of the worldwide study Programme for International Student Assessment (PISA) conducted by the Organisation for Economic Co-operation and Development (OECD) in member and non-member



nations and assessing the 15-year-old school pupils' scholastic performance on mathematics, science and reading. The results are reported in terms of percentages of the student population at each of the predefined levels of proficiency in mathematics literacy, science literacy and reading literacy. The scores are divided into six proficiency levels ranging from the lowest, level 1, to the highest, level 6. Low achievement is defined as performance below level 2: reading (score < 407.47), mathematics (score < 420.07) and science (score < 409.54).

Tertiary educational attainment

The indicator is defined as the percentage of the population aged 30–34 who have successfully completed tertiary studies (for example, university, higher technical institution). This educational attainment refers to ISCED (International Standard Classification of Education) 2011 level 5–8 for data from 2014 onwards and to ISCED 1997 level 5–6 for data up to 2013. The indicator is based on the data from EU Labour Force Survey (EU LFS).

Lifelong learning

The indicator lifelong learning refers to the percentage of the population aged 25 to 64 who stated that they received either formal or non-formal education or training in the four weeks preceding the survey. The indicator is based on the data from EU Labour Force Survey (EU LFS).

CHAPTER 5

Gender pay gap

The unadjusted 'gender pay gap' (GPG) represents the difference between average gross hourly earnings of male paid employees and of female paid employees as a percentage of average gross hourly earnings of male paid employees. The population consists of all paid employees in enterprises with 10 employees or more. Gross hourly earnings include paid overtime and exclude non-regular payments. From the reference year 2006 onwards, the GPG is computed annually by the European Statistical System (ESS) according to three main guidelines; the GPG is: unadjusted, i.e. without correcting for differences in individual characteristics of employed men and women (for example, experience and education) and for differences due to sectoral and occupational gender segregations (i.e., there are more men than women in certain sectors or occupations with, on the average, higher earnings compared to other sectors or occupations); calculated using gross hourly earnings — this choice aims at excluding from the measurement differences among EU Member States in terms of use of part time work; benchmarked on a harmonised source across the EU, the Structure of earnings survey (SES) conducted every four years in Member States. The unadjusted GPG for the EU and the euro area is calculated by Eurostat (only for the aggregated NACE sections B to S without O) as the weighted mean of the gender pay gaps in EU Member States, using the numbers of employees in Member States as weights.

Proportion of seats held by women in national parliaments

The indicator covers the proportion of seats held by women in national parliaments. The national parliament is the national legislative assembly and sometimes it can consist of two chambers or houses (upper house, typically the senate, and lower house, typically the chamber of representatives). In a unicameral system there is only one single house. The data collected refer to President (Speaker/leader of the house) and Members of parliament (count includes the President) and are split into upper and lower houses where relevant.

The indicator is based on the data from the European Commission database monitoring the numbers of men and women in key decision-making positions.

CHAPTER 6

Biochemical oxygen demand in rivers

This indicator is defined as the mean annual five-day biochemical oxygen demand (BOD5) in rivers, as an average of all data from available measuring stations. No weighting is applied.

BOD5 is a measure of the amount of oxygen required by aerobic microorganisms to decompose organic matter in a water sample over a period of five days in the dark at 20 °C and is expressed in milligrams of oxygen per litre (mg O₂/L). It is a measure of the quality of water: the lower the value of BOD5, the lower the organic pollution of the water. Data are collected by the European Environment Agency (EEA) in the framework of the EIONET and shared with Eurostat.

Share of population having neither a bath, nor a shower, nor indoor flushing toilet in their household

This indicator refers to the percentage of persons in the total population living in a private household having neither a bath, nor a shower and not having indoor flushing toilet for the sole use of their household. A 'private household' means 'a person living alone or a group of people who live together in the same private dwelling and share expenditures, including the joint provision of the essentials of living'. The indicator is based on the data from the EU statistics on income and living conditions (EU-SILC) survey.

CHAPTER 7

Share of renewable energy in gross final energy consumption

The indicator is used for monitoring progress towards the renewable energy targets of the Europe 2020 strategy implemented by Directive 2009/28/EC on the promotion of the use of energy from renewable sources. The indicator measures how extensive the use of renewable energy is and, by implication, the degree to which renewable fuels have substituted fossil and/or nuclear fuels.

In a simplified manner, the indicator is calculated as a ratio of renewable energy consumption to all energy consumption. The numerator takes into account



consumption of all energy from renewable sources (for example, hydro plants, windmills, solar panels, geothermal energy and combustible renewables (solid, liquid and gaseous biofuels and renewable fraction of wastes). The denominator takes into account all final energy consumption: fossil fuels (coal, natural gas, crude oil and petroleum products), nuclear energy, renewable energy, non-renewable wastes as well as electricity and derived heat produced from these fuels. Each fuel source is taken into account only once — for example if coal is transformed to electricity in a power plant, only electricity is taken into account.

This indicator is calculated on the basis of Directive 2009/28/EC on the promotion of the use of energy from renewable sources. The indicator is based on the data from the energy balances obtained from the national authorities competent for energy statistics.

Energy productivity

The indicator is defined as the gross domestic product (GDP) divided by gross inland consumption of energy calculated for a calendar year. For the calculation, Eurostat uses the GDP either in the unit of euros in chain-linked volumes to the reference year 2010 at 2010 exchange rates or in the unit PPS (purchasing power standard). Whereas the unit euros in chain-linked volumes allows observation of energy productivity trends over time in a single geographical area, the unit PPS allows countries to be compared for the same year. The gross inland consumption of energy is calculated as the sum of the gross inland consumption of the five types of energy: coal, electricity, oil, natural gas and renewable energy sources. In addition, each of these figures is calculated as an aggregation of different data on production, storage, trade (imports/exports) and consumption/use of energy. Since GDP is measured in EUR million or PPS million and gross inland consumption in thousand tonnes of oil equivalent, energy productivity is available in both EUR per kg of oil equivalent and in PPS per kg of oil equivalent. The source data used for the calculation are the energy balances obtained from the national authorities competent for energy statistics and the annual national accounts compiled in accordance with the European System of Accounts — ESA 2010.

Share of population that cannot afford to keep home adequately warm

This indicator is defined as the share of the population which is in the state of enforced inability to keep their home adequately warm. It refers to affordability (ability to pay), regardless of whether the household actually needs to keep it adequately warm. The indicator is based on the data from the EU statistics on income and living conditions (EU-SILC).

CHAPTER 8

Growth rate of GDP per capita

GDP includes goods and services that have markets (or which could have markets) and products which are produced by general government and non-profit institutions. It is often used as an indicator of how well off a country is, as it is a measure of average real income in that country. However, it is not a complete measure of economic welfare. For example, GDP does not include most unpaid household work. Neither does GDP take account of negative effects of economic activity, like environmental degradation. Real GDP per capita is calculated as the ratio of real GDP to the average population of a specific year. For measuring the growth rate of real GDP, the GDP at current prices are valued in prices of the previous year. Accordingly, price movements will not inflate the growth rate. Annual and quarterly national accounts volume figures are expressed in chain-linked volumes with a reference year 2010.

Employment rate

The employment rate is calculated by dividing the number of persons aged 20 to 64 in employment by the total population of the same age group. The survey covers the entire population living in private households and excludes those in collective households such as boarding houses, halls of residence and hospitals. The 'employed population' consists of those persons 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. The indicator is based on the data from the EU Labour Force Survey (EU LFS).

Long-term unemployment rate

The long-term unemployment rate refers to the share of people who are out of work and have been actively seeking employment for at least one year. An unemployed person is defined as a person aged 15 to 74 (or aged 16 to 74 in Spain, the United Kingdom, Iceland and Norway) without work during the reference week, currently available for work and who was either actively seeking work in the last four weeks or had already found a job to start within the next three months. The unemployment period is defined as the duration of a job search or as the length of time since the last job was held (if shorter than the time spent on a job search). This definition follows International Labour Organization (ILO) guidelines. The indicator is based on the data from the EU statistics on income and living conditions (EU-SILC).

Young people neither in employment nor in education and training

The indicator young people neither in employment nor in education and training (NEET) corresponds to the percentage of the population aged 18–24 who are not employed (i.e. unemployed or inactive according to the International Labour Organization definition) and not involved in further (formal or non-formal) education or training (in the four weeks preceding the survey). The indicator is based on the data from the EU Labour Force Survey (EU LFS).



CHAPTER 9

Gross domestic expenditure on research and development

Research and experimental development (R&D) comprise creative and systematic work undertaken in order to increase the stock of knowledge — including knowledge of humankind, culture and society — and to devise new applications of available knowledge. Gross domestic expenditure on R&D (GERD) includes expenditure on research and development by business enterprises, higher education institutions, as well as government and private non-profit organisations and is expressed as a percentage of GDP.

Eco-innovation index

The eco-innovation index shows how well individual Member States perform in eco-innovation compared to the EU average, which is equated with 100. For 2010–2012, the average used for indexing to 100 is the average of 27 EU Member States. From 2013 onwards, the average used is calculated from the data for 28 EU Member States. The index is based on 16 indicators from nine contributors (Eurostat, European Environmental Agency, Cleantech, ISO, Patstat, Scopus, Meltwater, Water Footprint Network and Orbis) in five areas: eco-innovation inputs, eco-innovation activities, eco-innovation outputs, environmental outcomes and socio-economic outcomes. The overall score of an EU Member State is calculated by the unweighted mean of the 16 sub-indicators. The relevant target in the Roadmap is for an increase in the funding for research that contributes to the environmental knowledge base. Such increases will improve a Member State's positioning according to the index. Although the index is published annually, its sub-indicators are often not, so the index is a collation of the most recent data available each year. As its units are relative it cannot indicate progress in absolute terms.

Employment in high- and medium-high technology manufacturing sectors

The indicator shows the employment in high- and medium-high technology manufacturing sectors as a share of total employment. The definition of high- and medium-high technology manufacturing sectors is based on a selection of relevant items of NACE Rev. 2 on 2-digit level and is oriented on the ratio of highly qualified working in this area. The indicator is based on the data from the European Labour force Survey (EU LFS).

Enterprises with fixed broadband internet access

Broadband refers to telecommunications in which a wide band of frequencies is available to send data. Broadband telecommunication lines or connections are defined as those transporting data at high speeds, with data transfer speed for uploading and downloading data (also called capacity) equal to or higher than 144 kbit/s (kilobits per second). The technologies most widely used for broadband internet access are digital subscriber line (DSL) and its variations (xDSL), or cable modem (connects your computer to a local television line). The term internet

access for enterprises means having an external connection from the enterprise to the internet through an 'internet service provider' (ISP). This indicator is defined as enterprises that are connectable to an exchange which has been converted to support xDSL-technology, to a cable network upgraded for internet traffic, or to other broadband technologies. It includes fixed and mobile connections.

CHAPTER 10

GDP per capita

GDP per capita is calculated as the ratio of real GDP to the average population in a specific year. In cross-countries comparisons, the gross domestic product (GDP) as national accounts aggregate is converted into comparable volume aggregates by using purchasing power parities (PPPs). PPPs serve thus as currency conversion rates to convert expenditures expressed in national currencies into an artificial common currency (the purchasing power standard, PPS), eliminating the effect of price level differences across countries. The use of PPPs ensures that the GDP of all countries is valued at a uniform price level and thus reflects only differences in the actual volume of the economy.

Household disposable income

Real adjusted gross disposable income of households per capita in PPS is calculated as the adjusted gross disposable income of households and non-profit institutions serving households (NPISH) divided by the purchasing power parities (PPP) of the actual individual consumption of households and by the total resident population. 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 care and housing. Household disposable 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. The source data are the non-financial Annual Sector Accounts (ASA) compiled in accordance with the European System of Accounts (ESA 2010).

Inequality of income distribution

The income quintile share ratio is defined as the total income received by the 20 % of the population with the highest income (top quintile group) divided by that received by the 20 % of the population with the lowest income (lowest quintile group). 'Income' in this context refers to the equivalised disposable income, which is the total income of a household, after tax and other deductions, that is available for spending or saving, divided by the number of household members converted into equalised adults; household members are equalised or made equivalent by weighting each according to their age. The indicator is based on the data from the EU statistics on income and living conditions (EU-SILC).



CHAPTER 11

Urban population exposure to air pollution by particulate matter

The indicator shows the population-weighted concentration of PM_{10} and $PM_{2.5}$ to which the urban population is potentially exposed.

Fine and coarse particulates (PM_{10}), i.e. particulates whose diameters are less than 10 micrometres, can be carried deep into the lungs where they can cause inflammation and a worsening of the condition of people with heart and lung diseases.

Fine particulates ($PM_{2.5}$) are those whose diameters are less than 2.5 micrometres. They are therefore a subset of the PM_{10} particles. Their deleterious health impacts are more serious than PM_{10} as they can be drawn further into the lungs and may be more toxic.

In 2008, the Environment Council adopted Framework Directive 96/62/EC on ambient air quality assessment and management. The first Daughter Directive (1999/30/EC) relating to limit values for PM_{10} and other pollutants in ambient air fixed an annual limit value of $40 \mu\text{g}/\text{m}^3$, but did not fix limits for $PM_{2.5}$. Annual reporting must follow Commission Decision 2004/224/EC of 20 February 2004 laying down arrangements for the submission of information under Council Directive 96/62/EC in relation to limit values for certain pollutants in ambient air.

The new Directive 2008/50/EC of the European Parliament and of the Council of 21 May 2008 on ambient air quality and cleaner air for Europe entered into force on 11 June 2008, including already limits for $PM_{2.5}$. The Directive establishes the need to reduce pollution to levels which minimise harmful effects on human health, paying particular attention to sensitive populations, and the environment as a whole, to improve the monitoring and assessment of air quality including the deposition of pollutants and to provide information to the public. The directive places a requirement on Member States to assess and reduce population exposure to concentrations of $PM_{2.5}$ by 2020. The magnitude of the required reduction depends on national average concentrations between 2009 and 2011. Where concentrations for those years were greater than $22 \mu\text{g}/\text{m}^3$, all appropriate measures should be used to reduce below $18 \mu\text{g}/\text{m}^3$ by 2020. It should be noted that the WHO guideline value is $10 \mu\text{g}/\text{m}^3$. The source data are measured and collected under the Air Quality Framework Directive. Based on the annual submissions of Member States' measured concentrations, the data is updated annually by the European Environment Agency (EEA) assisted by the Topic Centre on Air Pollution and Climate Change Mitigation (ETC/ACM), and provided further to Eurostat for dissemination.

Recycling rate of municipal waste

The recycling rate is the tonnage recycled from municipal waste divided by the total municipal waste arising. Recycling includes material recycling, composting and anaerobic digestion. Municipal waste consists to a large extent of waste generated by households, but may also include similar wastes generated by small businesses and public institutions and collected by the municipality; this latter part of municipal waste may vary from municipality to municipality and from country

to country, depending on the local waste management system. For areas not covered by a municipal waste collection scheme the amount of waste generated is estimated. Data collection, validation and dissemination are performed by the Environmental Data Centre (EDC) on Waste hosted at Eurostat.

Distribution of population by level of accessibility of public transport

The distribution of population by level of difficulty in accessing public transport (bus, metro, tram and similar) refers to the share of population divided according to the level of difficulty they perceive in accessing public transport. Assessment of difficulty is based on the following levels: very high / high / low / very low. The reference period is current situation.

If the respondent or another household member has a physical disability and if the available public transport is not adapted to her/his disability, this is a difficulty in the accessibility. If the public transport is too far away or has inappropriate timetable, the access is considered as difficult. Consequently, the differences in the use of public transport across areas with different levels of urbanisation reflect not only the availability, but also the accessibility of public transport in terms of proximity to bus, metro or tram stations. The indicator is based on the data from the EU statistics on income and living conditions EU-SILC survey.

CHAPTER 12

Resource productivity

Resource productivity is defined as the ratio between gross domestic product (GDP) and domestic material consumption (DMC). Resource productivity of the EU is expressed by the amount of GDP generated per unit of material consumed in a national economy, i.e. GDP/DMC in EUR per kg. The indicator 'domestic material consumption' (DMC) is based on the Economy-wide Material Flow Accounts (EW-MFA). The theory of EW-MFA includes compilations of the overall material inputs into national economy, the changes of material stock within the economy and the material outputs to other economies or to the environment. EW-MFA covers all solid, gaseous, and liquid materials, except water and air. Water included in products is included.

Domestic material consumption

Domestic material consumption (DMC) measures the total amount of materials directly used by an economy and is defined as the annual quantity of raw materials extracted from the domestic territory of the focal economy, plus all physical imports minus all physical exports of traded products. The indicator 'domestic material consumption' (DMC) is based on the Economy-wide Material Flow Accounts (EW-MFA). The theory of EW-MFA includes compilations of the overall material inputs into national economy, the changes of material stock within the economy and the material outputs to other economies or to the environment. EW-MFA covers all solid, gaseous, and liquid materials, except water and air. Water included in products is included.



The classification of materials used in EW-MFA and for which DMC is calculated is a Eurostat based system. EW-MFA includes the material categories: biomass, metal ores, non-metallic minerals, fossil energy materials/carriers, other products, waste for final treatment and disposal.

It is important to note that the term 'consumption' as used in DMC denotes apparent consumption and not final consumption. DMC does not include upstream hidden flows related to imports and exports of products.

Generation of waste excluding major mineral wastes

The indicator presents the amount of waste, excluding major mineral wastes, generated in the EU-28 and expressed in kg per inhabitant. The indicator allows waste generation over time to be monitored for the EU as a whole and the development of waste generation to be compared between countries.

The indicator covers hazardous (hz) and non-hazardous (nh) waste from all economic sectors and from households, including waste from waste treatment (secondary waste) but excluding most mineral waste.

The indicator covers all wastes except the following waste categories: mineral wastes, soil and dredging spoils. Combustion wastes and solidified, stabilised and vitrified wastes are included. The indicator is based on data compiled according to the waste categories listed in Annex I to the Waste Statistics Regulation (Regulation 2150/2002/EC).

CHAPTER 13

Greenhouse gas emissions

The indicator shows trends in total man-made emissions of the 'Kyoto basket' of greenhouse gases, which are carbon dioxide (CO₂), methane (CH₄), nitrous oxide (N₂O), and the so-called F-gases (hydrofluorocarbons (HFCs), perfluorocarbons (PFCs), nitrogen trifluoride (NF₃) and sulphur hexafluoride (SF₆)). These gases are aggregated into a single unit, CO₂ equivalents, using gas-specific global warming potential (GWP) factors.

The main indicator includes greenhouse gas (GHG) emissions from all sectors, including international aviation, but excludes emissions coming from international navigation and from land use, land-use change and forestry. It presents the annual total GHG emissions indexed to 1990. The source data is provided by the European Environment Agency (EEA). It is based on the EU's annual GHG inventory reports to the United Nations Framework Convention on Climate Change (UNFCCC).

Global and European near-surface average temperature

This indicator shows absolute changes and rates of change in average near-surface temperature for the globe and for Europe. Annual temperature deviations are shown relative to the 1850–1899 average, which serves as a proxy for the pre-industrial temperatures. The values are taken from the HadCRUT4 data set provided by the Climatic Research Unit, University of East Anglia and the UK Met Office Hadley Centre and are also published by the European Environment Agency.

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.

CHAPTER 14

Sufficiency index for marine sites proposed by Member States under the Habitats Directive

Biodiversity, a contraction of biological diversity, refers to the number, variety and variability of living organisms, including mankind, within a given area. Areas protected for the preservation of biodiversity are proposed by the EU Member States under the Habitats Directive. Marine Protected Areas (MPAs) refer to geographically distinct zones for which conservation objectives can be set. These sites are not strict nature reserves which exclude human activity but can place limitations on harmful human activities such as recreation, fishing and mining. They are often established in an attempt to strike a balance between ecological constraints and economic activity, so that goods and services can continue to be delivered by sea.

The marine sufficiency index expresses, for each Member State, the share of species and habitats of Community Importance, for which the European Commission considers the national network of marine Sites of Community Importance (SCIs) under the Habitats Directive to be sufficient in terms of number, extent, distribution and representativeness. The collection of source data is based on reporting obligations of the Member States under the terms of the Habitats Directive and compiled by the European Environment Agency and its European Topic Centre on Biological Diversity on behalf of the European Commission Directorate-General for the Environment (DG ENV).

Fish catches from major fishing areas

Fish are a natural, biological, mobile (sometimes over wide distances) and renewable resource. Aside from fish farming, fish cannot be owned until they have been caught. For this reason, fish stocks continue to be regarded as a common resource, which therefore need to be managed collectively. This has led to a range of policies and international agreements that regulate the amount of fishing, as well as the types of fishing techniques and gear used to catch fish. Catches cover the quantities of fish, crustaceans, molluscs and other aquatic organisms caught by the EU and associated countries (in live weight equivalent of the landings). They exclude catches in inland waters and are calculated as the sum of catches in the seven fishing regions covered by EU legal acts. These are the following Food and Agriculture Organisation (FAO) major fishing areas: 21 — Atlantic, Northwest, 27 — Atlantic, Northeast, 34 — Atlantic, Eastern Central, 37 — Mediterranean and Black Sea, 41 — Atlantic, Southwest, 47 — Atlantic, Southeast and 51 — Indian Ocean, Western. Catch statistics are submitted to Eurostat by the national authorities under the terms of the relevant EU Council Regulations.



Average rate of fishing compared to the rate delivering maximum sustainable yield (MSY)

The average rate of fishing, or fishing mortality rate (usually represented by F) measures the rate of reduction in the size of a fish stock of abundance N over time, i.e. the rate of fish death due to fishing per unit time is proportional to the abundance of the population with coefficient $-F$. Over any given time period, F is equivalent to the total annual catch divided by the average abundance of fish over the time period. Maximum sustainable yield (MSY) can be defined as the largest average catch or yield that can continuously be taken from a stock under existing environmental conditions. F_{msy} (also 'fishing mortality at MSY' or 'MSY fishing mortality level') is the level of fishing intensity that, if applied constantly year after year, would result in MSY. The ratio F/F_{msy} describes how far a stock is fished above ($F/F_{msy} > 1$) or below ($F/F_{msy} < 1$) F_{msy} .

CHAPTER 15

Sufficiency index for terrestrial sites proposed by Member States under the Habitats Directive

Biodiversity, a contraction of biological diversity, refers to the number, variety and variability of living organisms, including mankind, within a given area.

Areas protected for the preservation of biodiversity are proposed by the EU Member States under the Habitats Directive. Terrestrial protected areas refer to geographically distinct zones for which conservation objectives can be set. These sites are not strict nature reserves which exclude human activity but can place limitations on harmful human activities. The terrestrial sufficiency index expresses, for each Member State, the share of species and habitats of Community Importance, for which the European Commission considers the national network of terrestrial Sites of Community Importance (SCIs) under the Habitats Directive to be sufficient in terms of number, extent, distribution and representativeness. The collection of source data is based on reporting obligations of the Member States under the terms of the Habitats Directive and compiled by the European Environment Agency and its European Topic Centre on Biological Diversity on behalf of the European Commission Directorate-General for the Environment (DG ENV).

Common bird index

This indicator is an index and integrates the population abundance and the diversity of a selection of common bird species associated with specific habitats. Rare species are excluded. Three groups of bird species are represented: common farmland species (39 species), common forest species (34 species) and all common bird species (167 species) which include the farmland species, the forest species and a further 94 common species (generalists, as opposed to the farmland and forest specialists). Farmland birds have a high dependence on cultivated land during the nesting season and for feeding during most of the year, while forest birds are equally dependent on wooded areas. An agreed European list of bird species is used for the calculation of each of the EU indices of the farmland, forest

and all common species, while for the national farmland bird indices, each country chooses the species to be covered. This means that different species are covered in each country, according to their occurrence; for example, for the farmland birds, only the Skylark is included in the indices of all countries. The indices should be judged only in their overall development rather than in their annual fluctuation because they are the result of a modelling procedure. The whole time series is recalculated each time new data are added. The source data used for this indicator are provided by the European Bird Census Council (EBCC) and its Pan-European Common Bird Monitoring Scheme (PECBMS) programme.

Artificial land cover

This indicator measures the total artificial area with its subunits of total built-up area and total artificial non-built-up area divided by the total area in the country. It provides a view on the share of artificial land cover on the total land. 'Built-up areas' cover areas with buildings and greenhouses (roofed constructions built for permanent purpose) whereas artificial non-built-up areas include streets and sealed surfaces (areas or linear features characterised by an artificial and/or impervious cover of hard artificial materials, concrete, gravel). Total land cover is the surface area of land in the country including artificial land, cropland, woodland, scrubland, grassland, bare land, water and wetland.

Eurostat provides land cover and land use data through the EU harmonised data collection LUCAS — a Land Use and Cover Area frame Survey. Data are available for 2009 and 2012. The LUCAS survey is carried out every three years. In 2009 LUCAS survey covered 23 EU countries; data for four EU countries (BG, CY, MT, RO) are not available. For 2012, data exist for all 27 EU Member States.

CHAPTER 16

Intentional homicide offences

This indicator shows the number of intentional homicide offences cases recorded per hundred thousand inhabitants. The intentional homicide is defined as unlawful death purposefully inflicted on a person by another person. Data on intentional homicide also include serious assault leading to death and death as a result of a terrorist attack. It excludes attempted homicide, manslaughter, death due to legal intervention, justifiable homicide in self-defence and death due to armed conflict. The indicator is based on data on crime and criminal justice collected jointly by Eurostat and UNODC from administrative sources.

Trust in institutions

The indicator was constructed based on the answers provided by the respondent to the questions about the degree of trust in particular institutions: the legal system, the political system and the police. The response scale used was from 0 to 10, where 0 means no trust at all and 10 complete trust. The term 'legal system' refers to the entire system for interpreting and enforcing the laws and not to a specific legal entity within the country. Trust in the legal system is supposed to measure, for example, opinions and attitudes towards the effectiveness and



efficiency of the institutions such as the courts, the fairness of its procedures and decisions, and the extent to which the sentences given out reflect the values and desires of citizens.

The term 'political system' refers to a complete set of institutions, interest groups (such as political parties, trade unions), the relationships between those institutions and the political norms and rules that govern their functions. The term 'police' refers to the police as an institution. The indicator is based on the data from the EU statistics on income and living conditions EU-SILC survey.

CHAPTER 17

Official Development Assistance

Official Development Assistance (ODA) consists of grants or loans by the official sector to countries or territories on the official recipient list of the OECD's Development Assistance Committee ⁽¹⁾, or to multilateral agencies. Its main objective is to promote economic development and welfare in the recipient countries. The indicator is defined as a share of gross national income and based on data published by the OECD.

EU imports from developing countries

This indicator is defined as the value at market prices of EU imports from the DAC countries, as determined by the OECD Development Assistance Committee. The indicator is successively broken down by income groups of countries referring to the World Bank definition. DAC (Development Assistance Committee) countries refer to developing countries and territories on Part I of the OECD/DAC list of Aid Recipients.

(1) [http://ec.europa.eu/eurostat/statistics-explained/index.php/Glossary:Development_Assistance_Committee_\(DAC\)](http://ec.europa.eu/eurostat/statistics-explained/index.php/Glossary:Development_Assistance_Committee_(DAC))

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Sustainable development in the European Union

A STATISTICAL GLANCE FROM THE VIEWPOINT OF THE UN SUSTAINABLE DEVELOPMENT GOALS

This Eurostat publication, entitled *Sustainable development in the European Union — A statistical glance from the viewpoint of the UN Sustainable Development Goals*, provides an overview of the current situation of the EU and its Member States on sustainable development in relation to the Sustainable Development Goals (SDGs). This publication follows a strictly descriptive approach, presenting a purely statistical picture based on facts and figures. It provides rather a snapshot of the starting position of the EU and its Member States and is not intended as a regular SDG monitoring exercise at EU level.

The analysis in this publication is based on a limited number of indicators, which are relevant to the EU perspective and capture the broader objective and ambition of each SDG. Each goal is analysed through two to four indicators. In total, 51 indicators are presented in the report, mainly obtained from the European Statistical System and disseminated by Eurostat.

The analysis of Member States' performance and international comparisons focus on the most recent year for each indicator. EU-28 trends over time are also presented, covering the period from 2000 or 2002 up to the most recent year for which data are available (2014 or 2015).

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