



Review of the UNECE list of environmental indicators

DIMITRIOS MEIMARIS



Expected outcome:
List of reviewed indicators and detailed suggestions for update and revisions of the list of environmental indicators - list of new indicators to be considered.

START DATE 20 MAY 2021

UNECE list of environmental indicators

- ▶ An Environmental Indicator is a numerical value that helps us to describe the condition of the environment in a specific area.
- ▶ Environmental indicators make it possible to compare environmental conditions between different areas and to measure the effectiveness of environmental policy measures.
- ▶ The UNECE Guidelines for applying environmental indicators in Eastern Europe, Caucasus and Central Asia was first presented in 2006.
- ▶ The global SDG indicators of the UN Statistics Division have had an important role in the evolution of the UNECE list of environmental indicators.
- ▶ The current revision of the list takes into account the Countries Reports on the Current state and development of the Shared Environmental Information System (SEIS) that were published earlier this year.

Revised Guidelines for the Application of Environmental Indicators

Created by Michael Nagy , last modified on 03 May, 2021

The following table presents the revised set of indicators as presented in the background document "Revised Guidelines for the Application of Environmental Indicators" for the 17th session of the Joint Task Force on Environmental Statistics and Indicators. Indicators for which draft metadata sheets are available for download are presented with a hyperlink.

Please use the filter to find a certain indicator or groups of indicators, or scroll down the list.

▼ Component = Sub-component = Topic =

ID = Indicator (English) = Indicator (Russian) =

Indicator theme (old) =

Component	Sub-component	Topic	ID	Indicator (English)
Environmental conditions and quality	Physical conditions	Atmosphere, climate and weather	B-1.1	Average annual deviations from average temperature (in country, in capital, second major city, area or region)
			B-1.2	Annual average temperature (in country, in capital, second major city, area or region)
			B-1.3	Maximum monthly average temperature (in country, in capital, second major city, area or region)
			B-1.4	Minimum monthly average temperature (in country, in capital, second major city, area or region)
			B-2.1	Annual deviation from the average precipitation (in country, in capital, second major city, area or region)
			B-2.2	Annual precipitation (in country, in capital, second major city, area or region)
			B-2.3	Maximum monthly precipitation (in country, in capital, second major city, area or region)
			B-2.4	Minimum monthly precipitation (in country, in capital, second major city, area or region)
			B-2.5	Percentage of land area suffering from unusually wet or dry conditions (Standard Precipitation Index)
			B-2.6	Occurrence of extremes of temperatures and precipitation
	Soil characteristics	E-2.1	Agricultural area affected by water erosion	
		E-2.2	Agricultural area affected by wind erosion	
		E-2.4	Proportion of land that is degraded over total land area (SDG indicator 15.3.1)	

Guidelines for the Application of Environmental Indicators

The Joint Task Force revised the Guidelines for the Application of Environmental Indicators in Eastern Europe, Caucasus, Central Asia and South-Eastern Europe. With this revision the online version of the Guidelines was created.

In the Online Guidelines each indicator is presented through three files: description of the indicator, table for the production of the indicator, and glossary of terms.

The latest update for each indicator is indicated with a relevant date.

Indicator	Description	Production	Glossary of terms
A. Air pollution and ozone depletion			
A1. Emissions of pollutants into the atmospheric air (updated October 2014)	PDF	XLS	PDF
A2. Ambient air quality in urban areas (updated October 2014)	PDF	XLS	PDF
A3. Consumption of ozone-depleting substances (updated October 2014)	PDF	XLS	PDF
B. Climate change			
B1. Air temperature (updated October 2014)	PDF	XLS	PDF
B2. Atmospheric precipitation (updated October 2014)	PDF	XLS	PDF
B3. Greenhouse gas emissions (updated October 2014)	PDF	XLS	PDF
C. Water			
C1. Renewable freshwater resources (updated October 2014)	PDF	XLS	PDF
C2. Freshwater abstraction (updated October 2014)	PDF	XLS	PDF
C3. Total water use (updated October 2014)	PDF	XLS	PDF

Guidelines for the Application of Environmental Indicators

ALIGNED WITH THE FRAMEWORK FOR THE DEVELOPMENT OF ENVIRONMENT STATISTICS

- The environmental challenges are global
- Co-operation between countries is required
- International Environmental Indicators sets are used to describe the condition of the environment
- Substantial effort is needed for the collection and processing of environmental data



European Environment Agency

Established 1994

https://www.eea.europa.eu/data-and-maps/indicators#c0=30&c12-operator=or&b_start=0



Organisation for Economic Co- operation and Development

Established 1961

<https://www.oecd.org/environment/indicators-modelling-outlooks/data-and-indicators.htm>



Eurostat

Established 1953

<https://ec.europa.eu/eurostat/web/sdi/indicators>

EEA environmental indicators

- ▶ Climate change adaptation (40)
- ▶ Water and marine environment (32)
- ▶ Biodiversity - Ecosystems (22)
- ▶ Climate change mitigation (11)
- ▶ Agriculture (9)
- ▶ Air pollution (9)
- ▶ Environment and health (9)
- ▶ Transport (9)
- ▶ Soil (8)
- ▶ Energy (7)
- ▶ Industry (7)
- ▶ Land use (7)
- ▶ Resource efficiency and waste (6)
- ▶ Sustainability transitions (3)

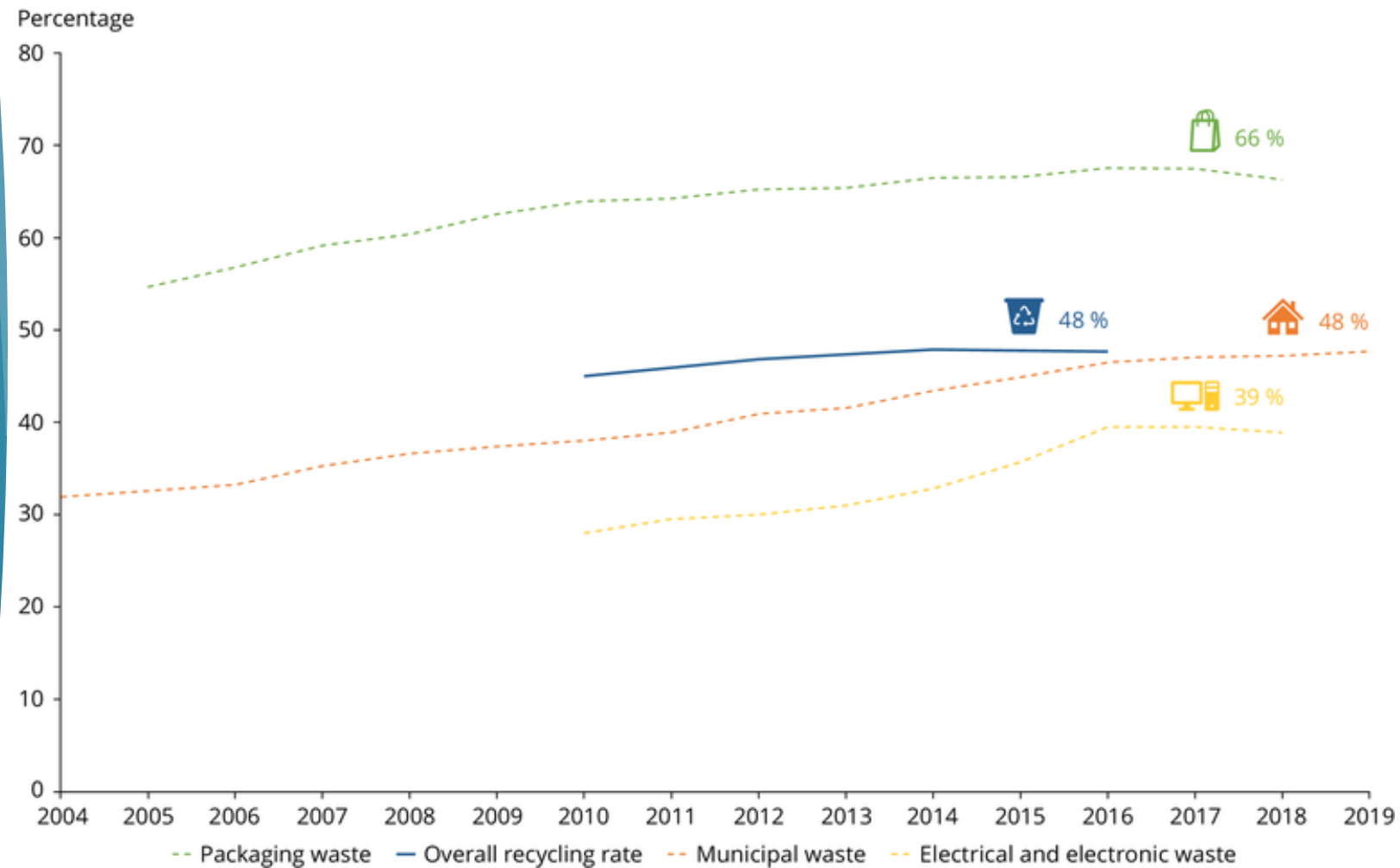
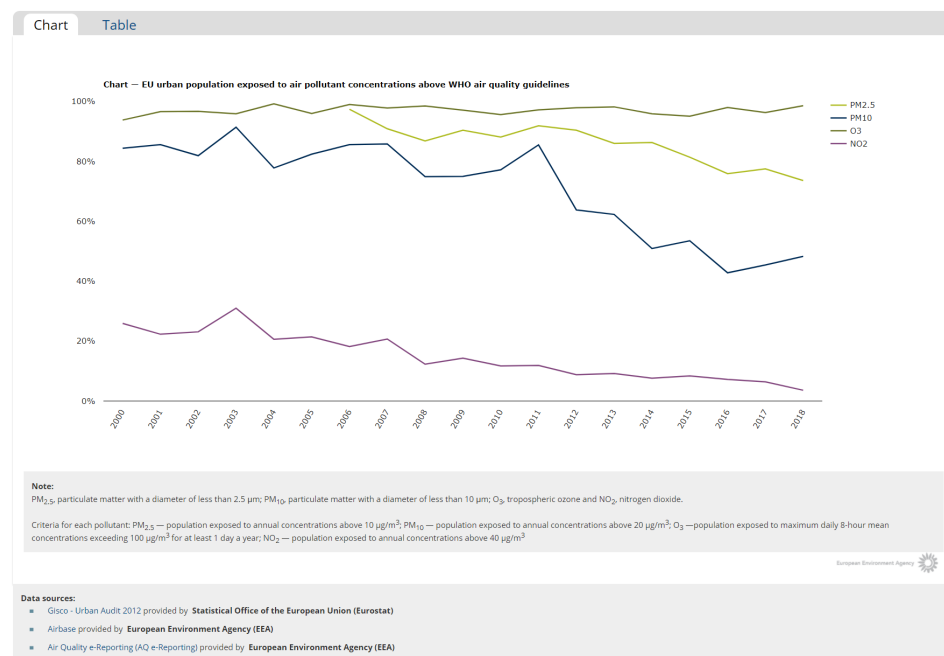


Fig. 2: EU urban population exposed to air pollutant concentrations above WHO air quality guidelines



Indicator definition

This indicator shows the fraction of the EU-28 urban population that is potentially exposed to ambient air concentrations of six key pollutants (PM_{2.5}, PM₁₀, O₃, NO₂, SO₂ and BaP) that are in excess of the EU limit or target values (EU, 2004, 2008) set for the protection of human health, and to concentrations of these pollutants in excess of the WHO Guidelines (WHO, 2000, 2006).

The indicator is based on measurements of air pollutants as reported under the Air Quality Directives (EU, 2004, 2008) and the Decisions on the exchange of information (EU, 1997, 2011).

Units

Concentration:

- micrograms (mg) of pollutant per cubic metre for PM_{2.5}, PM₁₀, O₃, NO₂ and SO₂.
- Nanograms (ng) of pollutant per cubic metre for BaP.

Urban population (POP): number of inhabitants in the 'core city' and, from 2016 on, 'greater city' of the Urban Audit cities represented by the urban stations taken into account in the calculations.

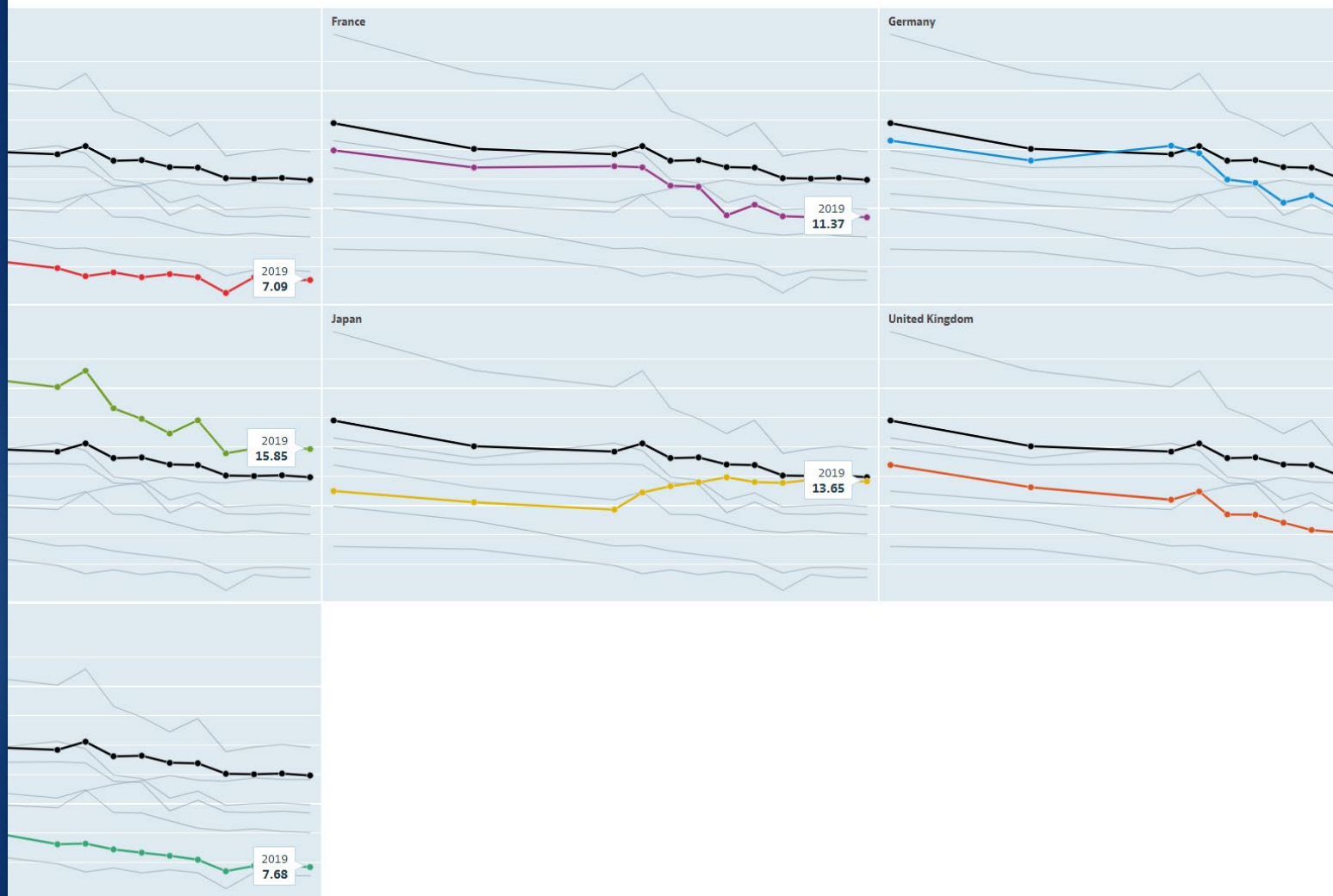
Percentage of the urban population.

EEA: Detailed information on 85 indicators



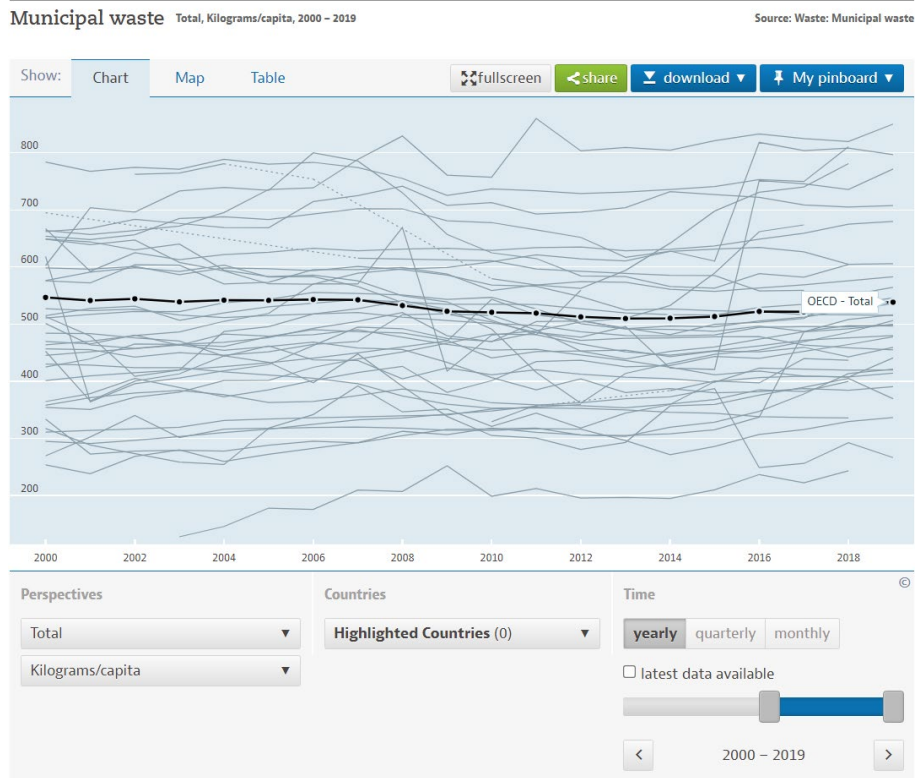
EEA State of the Environment Reports were also considered

Pressure to PM2.5, Micrograms per cubic metre, 2000 – 2019



OECD Environmental indicators

- [Air and climate](#)
- [Biodiversity](#)
- [Environmental policy](#)
- [Forest resources](#)
- [Materials](#)
- [Waste](#)
- [Water](#)



Definition of Municipal waste

Municipal waste is defined as waste collected and treated by or for municipalities. It covers waste from households, including bulky waste, similar waste from commerce and trade, office buildings, institutions and small businesses, as well as yard and garden waste, street sweepings, the contents of litter containers, and market cleansing waste if managed as household waste. The definition excludes waste from municipal sewage networks and treatment, as well as waste from construction and demolition activities. This indicator is measured in thousand tonnes and in kilograms per capita.

Detailed information on 15 indicators
(Indicator sub-groups exist in some cases)

Eurostat SDG Indicators

Goal 1 - No poverty (sdg_01)

Goal 2 - Zero hunger (sdg_02)

Goal 3 - Good health and well-being (sdg_03)

Goal 4 - Quality education (sdg_04)

Goal 5 - Gender equality (sdg_05)

Goal 6 - Clean water and sanitation (sdg_06)

Goal 7 - Affordable and clean energy (sdg_07)

Goal 8 - Decent work and economic growth (sdg_08)

Goal 9 - Industry, innovation and infrastructure (sdg_09)

Goal 10 - Reduced inequalities (sdg_10)

Goal 11 - Sustainable cities and communities (sdg_11)

Goal 12 - Responsible consumption and production (sdg_12)

Goal 13 - Climate action (sdg_13)

Goal 14 - Life below water (sdg_14)

Goal 15 - Life on land (sdg_15)

Goal 16 - Peace, justice and strong institutions (sdg_16)

Goal 17 - Partnerships for the goals (sdg_17)

SDG 14 'LIFE BELOW WATER'



SDG 14 aims to conserve oceans by ensuring their sustainable use. This includes protecting and restoring of marine and coastal ecosystems, conserving at least 10 % of coastal and marine areas as well as preventing and reducing marine pollution and the impacts of ocean acidification.

[> read more](#)

[« Previous](#)

[Overview](#)

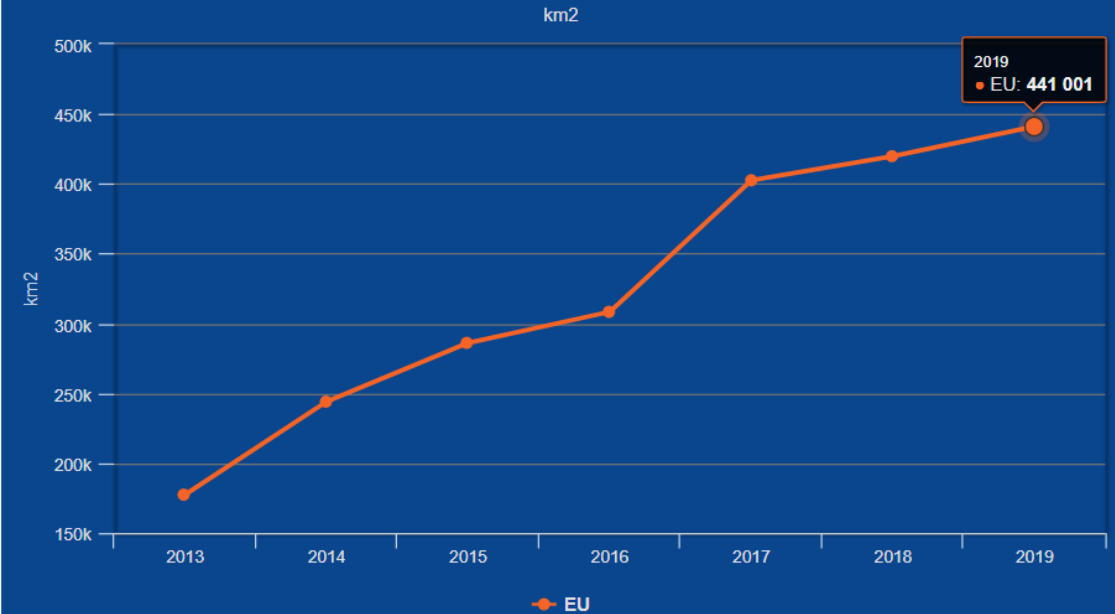
[Next »](#)

COMPARE YOUR COUNTRY'S PROGRESS

Select countries ▾

eurostat

Surface of marine sites designated under Natura 2000



Detailed metadata for Eurostat SDG environmental indicators

https://ec.europa.eu/eurostat/cache/metadata/en/sdg_14_10_esmsip2.htm

eurostat

Surface of marine sites designated under Natura 2000 (source: DG ENV, EEA) (sdg_14_10)

ESG-05 Indicator Profile (ESG-05-0P)

Compiling agency: Eurostat, the statistical office of the European Union

Eurostat metadata	
Reference metadata	
1. Contact	
1.1. Contact organisation	Eurostat, the statistical office of the European Union
1.2. Contact organisation email	EEA-Environment, statistics and accounts, sustainable development
1.3. Contact email address	e-mail contact: EEA-SDG-MONITORING@ec.europa.eu

Eurostat Quality Profile	
1.1. Source data	ETC SD
1.2. Frequency of dissemination	Every year
1.3. Timeliness	T+1 year
1.4. Accuracy and precision	At ETC SD
1.5. Consistency - time	At ETC SD
1.6. Consistency - space	T+1 year
1.7. Consistency - other	T+1 year

Description of Eurostat quality grading system under the following link

For any question on data and metadata, please contact: EEA-SDG-MONITORING@ec.europa.eu

Download

1. Contact		208
1.1. Contact organisation	Eurostat, the statistical office of the European Union	
1.2. Contact organisation email	EEA-Environment, statistics and accounts, sustainable development	
1.3. Contact email address	e-mail contact: EEA-SDG-MONITORING@ec.europa.eu	
2. Metadata update		208
2.1. Metadata last verified	11/08/2018	
2.2. Metadata last period	01/04/2019	
2.3. Metadata last update	01/04/2019	
3. Relevance		208
The indicator is part of the EU Sustainable Development Goals (SDG) indicator set. It is used to monitor progress towards SDG 14 on conserving and sustainably using the oceans, seas and marine resources for sustainable development which is enshrined in the European Commission's Directive under the European Green Deal. SDG 14 aims to protect and ensure the sustainable use of oceans. This includes the reduction of marine pollution and the impacts of ocean acidification, the ending of overfishing and the conservation of marine and coastal areas and ecosystems. SDG 14 has strong interlinkages with a broad range of other SDGs, as oceans sustain coastal economies and livelihoods, contribute to food production and function as a carbon sink. The indicator can be considered in relation to the global SDG indicator 14.3.1 'Coverage of protected areas in marine areas'. The Natura 2000 network comprises both marine and terrestrial protected areas designated under the EU Habitats and Birds Directives with the goal to maintain or restore a favourable conservation status for habitat types and species of EU interest. The EU Habitats and Birds Directives and the Natura 2000 network highlight the importance of preservation, conservation and restoration of habitats and marine habitats and species in Europe. The EU is also engaged in discussions at the United Nations Ocean Assembly towards an international legally binding agreement on the conservation of biodiversity in areas beyond national jurisdiction (BBNJ).		
4. Statistical Indicator		208
4.1. Data description	The indicator measures the surface of marine sites designated under Natura 2000. The Natura 2000 network comprises both marine and terrestrial protected areas designated under the EU Habitats and Birds Directives with the goal to maintain or restore a favourable conservation status for habitat types and species of EU interest. The area of these sites can provide an indication of the implementation of the Natura 2000 network, and the 'completeness' of its coverage within Member State marine zones. Data provided by the Member States to the Commission are consolidated at year level by the European Environment Agency and the European Topic Centre on Biological Diversity (EEA ETC BD) and collected by European Commission Directorate-General for the Environment.	
4.2. Unit of measure	km ² and marine protected area (%)	
4.3. Reference Period	Calendar year	
4.4. Frequency - month		
4.5. Frequency - year	Yearly	
4.6. Source data	Data provided by the Member States to the Commission are consolidated at year level by the European Environment Agency - European Topic Centre on Biological Diversity (EEA ETC BD). Data provider: European Environment Agency (EEA).	
5. Frequency and Timeliness of dissemination		208
5.1. Frequency of dissemination	Every year	
5.2. Timeliness	T+1 year	
5.3. Consistency - time	Year data points are disseminated within one year after the reference year.	
6. Coverage and comparability		208
6.1. Reference area	AEU MI	
6.2. Comparability - geographical	AEU MI	
6.3. Comparability - time	AEU MI	
6.4. Coverage - time	AEU MI	

UNECE				Topic	Status	EEA				OECD				Eurostat SDG Indicators				Other considerations	Comments	Keep	Discard	Modify	Add	Core Set	Rationale			
ID	Description	Progress	Type			ID	Description	Topic	Type	Relevance	ID	Description	Topic	Type	Relevance	ID	Description										Topic	Type
Environmental conditions and quality																												
Physical Conditions																												
Atmosphere, climate and weather																												
B-1.1	Average annual deviations from average temperature (in country, in capital, second major city, area or region)						Observed annual mean temperature change from 1960 to 2019 (left panel) and projected 21st century change under different emissions scenarios (right panels) in Europe	Climate change adaptation	A	Not an exact match						sdg_13_30	Mean near-surface temperature deviation	Climate action										
B-1.2	Annual average temperature (in country, in capital, second major city, area or region)						Observed annual mean temperature change from 1960 to 2019 (left panel) and projected 21st century change under different emissions scenarios (right panels) in Europe	Climate change adaptation																				Modification suggestion to correspond to EEA indicator
B-1.3	Maximum monthly average temperature (in country, in capital, second major city, area or region)																											
B-1.4	Minimum monthly average temperature (in country, in capital, second major city, area or region)																											
B-2.1	Annual deviation from the average precipitation (in country, in capital, second major city, area or region)																											
B-2.2	Annual precipitation (in country, in capital, second major city, area or region)						Mean precipitation	Climate change adaptation																			Modification suggestion to correspond to EEA indicator	
B-2.3	Maximum monthly precipitation (in country, in capital, second major city, area or region)																											
B-2.4	Minimum monthly precipitation (in country, in capital, second major city, area or region)																											
B-2.5	Percentage of land area suffering from unusually wet or dry conditions (Standard Precipitation Index)						Heavy precipitation in Europe	Climate change adaptation																			Modification suggestion to correspond to EEA indicator	
B-2.6	Occurrence of extremes of temperatures and precipitation						Heavy precipitation in Europe	Climate change adaptation																				

A template was introduced, with information for indicators from the different sets and the resulting suggestions.

161 UNECE Indicators were considered.
For each one of them all related information
from the indicator sets of EEA, OECD and
Eurostat was used to fill in the template.

UNECE				Topic	Status	EEA					OECD					Eurostat SDG Indicators				
ID	Description	Progress	Type			ID	Description	Topic	Type	Relevance	ID	Description	Topic	Type	Relevance	ID	Description	Topic	Type	Relevance
B-3.1	Aggregated GHG emissions per capita						Total greenhouse gas emission trends and projections in Europe	Climate change mitigation				Air and GHG emissions	Air and climate		Not an exact match	sdg_13_10	Greenhouse gas emissions (source: EEA)	Climate action		
B-3.2	Aggregated GHG emissions per square kilometre						Total greenhouse gas emission trends and projections in Europe	Climate change mitigation								sdg_13_11	Greenhouse gas emissions (source: EEA)	Climate action		
B-3.3	Aggregated GHG emissions per unit of GDP						Total greenhouse gas emission trends and projections in Europe	Climate change mitigation				Air and GHG emissions	Air and climate		Not an exact match	sdg_13_12	Greenhouse gas emissions (source: EEA)	Climate action		
B-3.4	Aggregated GHG emissions by sectors (Energy, Industrial Processes, Solvent and Other Product use, Agriculture, Land use and forestry, Waste)						Greenhouse gas emissions from transport in Europe									sdg_13_20	Greenhouse gas emissions intensity of energy consumption (source: EEA and Eurostat)	Climate action		
B-3.5	Aggregated GHG emissions (CO ₂ equivalents)						Total greenhouse gas emission trends and projections in Europe					Air and GHG emissions	Air and climate			sdg_13_12	Greenhouse gas emissions (source: EEA)	Climate action		

Analysis of the information in the template was done in close co-operation with the UNECE Secretariat and Dr Tobias Garstecki, UNECE biodiversity consultant.

Outcome

Suggestions

- | | |
|---------------------|-------|
| ► Keep indicator | ► 112 |
| ► Discard indicator | ► 27 |
| ► Modify indicator | ► 22 |
| ► Add indicator | ► 24 |



Thank you for your attention!