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**Joint Task Force on Environmental Statistics
and Indicators**

Twentieth session
Geneva, 16 and 17 October 2023
Item 6 of the provisional agenda
**Review of the Guidelines for the Application
of Environmental Indicators**

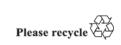# Selected metadata sheets for individual priority indicators*

Note by the secretariat

Summary

     This document complements the Revised Guidelines for the Application of Environmental Indicators: 2023 Edition (ECE/CEP–CES/GE.1/2023/4) with selected metadata sheets for individual priority indicators for discussion at the twentieth session of the Joint Task Force on Environmental Statistics and Indicators.

     Members of the Joint Task Force on Environmental Statistics and Indicators are invited to endorse this document, which will provide the foundation for the publication of the Guidelines together with detailed metadata sheets for each of the indicators.

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*   * The present document was submitted unedited owing to time constraints.

Please recycle

I. Introduction

1.   At its fourteenth session, the Joint Task Force on Environmental Statistics and Indicators emphasized the need to keep the Guidelines on Environmental Statistics and Indicators under review and work towards their alignment with the 2030 Agenda for Sustainable Development. In its following sessions, the Joint Task Force requested the secretariat to review the United Nations Economic Commission for Europe (ECE) set of environmental indicators and the associated guidelines in particular to:

(a)   Inform better the recent global policies (such as the 2030 Agenda, Paris Agreement and Sendai Framework for Disaster-risk Reduction);

(b)   Link them with statistical frameworks, such as the United Nations Framework for the Development of Environment Statistics (FDES) and the System of Environmental-Economic Accounting – Central Framework (SEEA-CF);

(c)   Increase user-friendliness of the metadata.

2.   The process of the review of the Guidelines is discussed in detail in ECE/CEP–CES/GE.1/2023/4.

3.   The Annex of this document presents the updated metadata of selected priority indicators for review and discussion by members of the Joint Task Force on Environmental Statistics and Indicators. As requested by the Joint Task Force, the content and structure of the indicator metadata sheets is similar to the indicator descriptions used in the original Guidelines (see "Description" files at https://unece.org/guidelines-application-environmental-indicators). The information has been updated to reflect current policy information needs (for example links to relevant Sustainable Development Indicators are provided) and refer to the most recent methodological guidance. Furthermore, a list of statistics and other data needed to compile the indicator has been added.

4.   The order of the indicator sheets follows the structure of the United Nations Framework for the Development of Environment Statistics (FDES) which is also used as the underlying framework for presenting the indicators in document ECE/CEP–CES/GE.1/2023/4. The following metadata sheets can be found in the Annex:

- I. Indicator B-1.1 Mean temperature anomaly (compared to climate normal 1961–1990);

- II. Indicator B-1.2 Annual average temperature (in country, in capital, second major city, area or region);

- III. Indicator B-2.2 Annual precipitation (in country, in capital, second major city, area or region);

- IV. Indicator E-2.4 Proportion of land that is degraded over total land area (SDG 15.3.1);

- V. Indicator D-1.1 Share of total protected areas (IUCN categories) in the country area;

- VI. Indicator D-4.4 Red List Index (SDG 15.5.1);

- VII. Indicator D-4.2 Share of species threatened (mammals, birds, fishes, reptiles, amphibians, invertebrates, vascular plants, mosses, lichens, fungi, algae);

- VIII. Indicator D-3.1 Forest area as a proportion of total land area (SDG 15.1.1);

- IX. Indicator D-3.8 Forest fires (area burnt by forest fires);

- X. Indicator A-2.8 PM10: Annual mean level of PM10 in cities (population weighted) (SDG indicator 11.6.2);

- XI. Indicator A-2.9 PM2.5: Annual mean concentration in cities;

- XII. Indicator A-2.11 SO2: Annual mean concentration in cities;

- XIII. Indicator A-2.12 NO2: Annual mean concentration in cities;

- XIV. Indicator C-17.2 NO2: Proportion of bodies of water with good ambient water quality (SDG indicator 6.3.2).

5.　Metadata sheets for the remaining indicators will be generated gradually by the ECE Secretariat, taking into account comments received from the Joint Task Force.

Annex

Metadata sheets for selected indicators

I. Indicator B-1.1 Mean temperature anomaly (compared to climate normal 1961–1990)

A. General

Parameter	Description
Indicator theme (Indicator Guidelines version 2009)	B: Climate change
Component (FDES)	1: Environmental conditions and quality
Sub-component (FDES)	1.1: Physical conditions
Indicator topic (FDES)	1.1.1: Atmosphere, climate and weather
ID and name in previous indicator guidelines	B1: Air temperature
First publication	19/7/2022
Latest update	-
Indicator definition	The indicator shows the annual average temperature of the air, its development over a given period of time, and deviations from a long-term average in the country as a whole and in particular regions.
Unit of measure	Degrees Celsius (°C)
Coverage	Air temperature
Spatial aggregation	National territory, individual cities, and other selected areas
Reference period	Calendar year (monthly disaggregation recommended)
Update frequency	Annual
Purpose	The air temperature is directly linked to the state of the Earth's climate system. The indicator shows trends in the variation of the annual average temperature and provides a measure of changes that can be related both to cyclic natural changes in the climate and to anthropogenic impact on global climate change.

Parameter	Description
Policy context	Change in air temperature - observed over a long period of time - is an evidence of one of climate change's most serious effects, which has been especially noticeable in recent decades. There is mounting evidence that the increase of anthropogenic emissions of greenhouse gases (GHG) is one of the reasons for recently observed rapid increases in average annual temperature. Countries which are Parties to the United Nations Framework Convention on Climate Change (UNFCCC) have to carry out systematic observations of the climate change parameters, create databases and conduct research related to the climate system.
Link with SDG indicators	
Methodology for indicator calculation	The network of hydro-meteorological stations in a given country collects data over long periods of time. The methodology recommended by WMO should be applied (see methodological references).
Comments	-

B.   Policy references

Title of the reference document	Link
Paris Agreement	https://unfccc.int/process-and-meetings/the-paris-agreement
Sendai Framework for Disaster Risk Reduction 2015-2030	https://www.unisdr.org/we/inform/publications/43291

C.   Methodology references

Title of the reference document	Link
WMO Guidelines on the Calculation of Climate Normals	https://library.wmo.int/index.php?lvl=notice_display&id=20130#.Ytas-5AzaUl
WMO Guide to Instruments and Methods of Observation (WMO-No. 8)	https://library.wmo.int/index.php?id=12407&lvl=notice_display#.YtbB_5AzaUk

D.   Data and statistics needed to compile the indicator

ID	Data item	FDES topic
261	Temperature: Mean annual temperature	1.1.1: Atmosphere, climate and weather

E. International databases containing this indicator

Name of the database	Link
n/a	n/a

II. Indicator B-1.2 Annual average temperature (in country, in capital, second major city, area or region)

A. General

Parameter	Description
Indicator theme (Indicator Guidelines version 2009)	B: Climate change
Component (FDES)	1: Environmental conditions and quality
Sub-component (FDES)	1.1: Physical conditions
Indicator topic (FDES)	1.1.1: Atmosphere, climate and weather
ID and name in previous indicator guidelines	B1: Air temperature
First publication	19/7/2022
Latest update	-
Indicator definition	The indicator shows the annual average temperature of the air, its development over a given period of time, and deviations from a long-term average in the country as a whole and in particular regions.
Unit of measure	Degrees Celsius (°C)
Coverage	Air temperature
Spatial aggregation	National territory, individual cities, and other selected areas
Reference period	Calendar year (monthly disaggregation recommended)
Update frequency	Annual
Purpose	The air temperature is directly linked to the state of the Earth's climate system. The indicator shows trends in the variation of the annual average temperature and provides a measure of changes that can be related both to cyclic natural changes in the climate and to anthropogenic impact on global climate change.

Parameter	Description
Policy context	Change in air temperature - observed over a long period of time - is an evidence of one of climate change's most serious effects, which has been especially noticeable in recent decades. There is mounting evidence that the increase of anthropogenic emissions of greenhouse gases (GHG) is one of the reasons for recently observed rapid increases in average annual temperature. Countries which are Parties to the United Nations Framework Convention on Climate Change (UNFCCC) have to carry out systematic observations of the climate change parameters, create databases and conduct research related to the climate system.
Link with SDG indicators	n/a
Methodology for indicator calculation	The network of hydro-meteorological stations in a given country collects data over long periods of time. The methodology recommended by WMO should be applied (see methodological references).
Comments	-

B.   Policy references

Title of the reference document	Link
Paris Agreement	https://unfccc.int/process-and-meetings/the-paris-agreement
Sendai Framework for Disaster Risk Reduction 2015-2030	https://www.unisdr.org/we/inform/publications/43291

C.   Methodology references

Title of the reference document	Link
WMO Guidelines on the Calculation of Climate Normals	https://library.wmo.int/index.php?lvl=notice_display&id=20130#.Ytas-5AzaUl
WMO Guide to Instruments and Methods of Observation (WMO-No. 8)	https://library.wmo.int/index.php?id=12407&lvl=notice_display#.YtbB_5AzaUk

D.   Data and statistics needed to compile the indicator

ID	Data item	FDES topic
261	Temperature: Mean annual temperature	1.1.1: Atmosphere, climate and weather

E.   International databases containing this indicator

Name of the database	Link
n/a	n/a

III.   Indicator B-2.2 Annual precipitation (in country, in capital, second major city, area or region)

A.   General

Parameter	Description
Indicator theme (Indicator Guidelines version 2009)	B: Climate change
Component (FDES)	1: Environmental conditions and quality
Sub-component (FDES)	1.1: Physical conditions
Indicator topic (FDES)	1.1.1: Atmosphere, climate and weather
ID and name in previous indicator guidelines	B2: Atmospheric precipitation
First publication	19/7/2022
Latest update	14/7/2023
Indicator definition	The indicator measures annual precipitation. Precipitation (the total volume of water precipitated to a certain surface area for a given period of time) means water, in either liquid or solid state, falling out of the clouds or depositing from the air on the land surface, on various materials or plants.
Unit of measure	Linear depth of the precipitated water in millimetres (mm)
Coverage	Precipitation
Spatial aggregation	National territory (disaggregation by smaller areas recommended)
Reference period	Calendar year (disaggregation by month recommended)
Update frequency	Annual
Purpose	The indicator provides a measure of the state of the climate system as well as the impact of precipitation on the change in quantity of surface waters and ground waters and on soil and biota. Analysis of the perennial sets of the main climate formation characteristics, such as atmospheric precipitation, air temperature and air humidity, makes it possible to evaluate the precipitation structure change in a certain area and to assess the dynamics of past and future changes in precipitation volumes and related changes in climate.

Parameter	Description
Policy context	Atmospheric precipitation is one of the most important characteristics of climate. Atmospheric precipitation generates renewable freshwater resources (surface waters and ground waters) and thus influences the state of all components of the environment (soil, forests, fauna and flora). The volume, quality and distribution of atmospheric precipitation as well as its seasonal and annual distribution are very significant for agriculture and forestry. In addition, the quantity of atmospheric precipitation influences the state of ambient air by regulating its humidity, and it limits the dispersion of suspended particulate matter in lower layers of the atmosphere.
Link with SDG indicators	n/a
Methodology for indicator calculation	Collection of data on the quantity of atmospheric precipitation should be carried out by the network of meteorological stations. Methodological guidance is provided by WMO (see methodological reference documents).
Comments	-

B. Policy references

Title of the reference document	Link
Paris Agreement	https://unfccc.int/process-and-meetings/the-paris-agreement/the-paris-agreement
United Nations Framework Convention on Climate Change	https://unfccc.int/

C. Methodology references

Title of the reference document	Link
WMO Guide to Instruments and Methods of Observation (WMO-No. 8)	https://library.wmo.int/index.php?id=12407&lvl=notice_display#.YtbB_5AzaUk

D. Data and statistics needed to compile the indicator

ID	Data item	FDES topic
160	Precipitation	2.6.1: Water resources

E. International databases containing this indicator

Name of the database	Link
WMO Catalogue for Climate Data	https://climatedata-catalogue.wmo.int/

IV. Indicator E-2.4 Proportion of land that is degraded over total land area (SDG 15.3.1)

A. General

Parameter	Description
Indicator theme (Indicator Guidelines version 2009)	E: Land and soil
Component (FDES)	1: Environmental conditions and quality
Sub-component (FDES)	1.1: Physical conditions
Indicator topic (FDES)	1.1.4: Soil characteristics
ID and name in previous indicator guidelines	E2: Area affected by soil erosion
First publication	20/7/2022
Latest update	14/7/2023
Indicator definition	Land degradation is defined as the reduction or loss of the biological or economic productivity and complexity of rain fed cropland, irrigated cropland, or range, pasture, forest and woodlands resulting from a combination of pressures, including land use and management practices.
Unit of measure	%
Coverage	All degraded land
Spatial aggregation	National
Reference period	Calendar year
Update frequency	Annual
Purpose	This indicator measures achievement of SDG target 15.3: By 2030, combat desertification, restore degraded land and soil, including land affected by desertification, drought and floods, and strive to achieve a land degradation-neutral world.
Policy context	Prevention of soil degradation and desertification
Link with SDG indicators	15.3.1 Proportion of land that is degraded over total land area
Methodology for indicator calculation	Area of degraded land divided by total land area.
	Land degradation is defined as the reduction or loss of the biological or economic productivity and complexity of rain fed cropland, irrigated cropland, or range, pasture, forest and woodlands resulting from a combination of pressures, including land use and management practices.
	Total land area is the total surface area of a country excluding the area covered by inland waters, like major rivers and lakes.
	For more information on method of computation and data sources see "Metadata of SDG indicator 15.3.1"

Parameter	Description
Comments	-

B. Policy references

Title of the reference document	Link
Transforming our world: the 2030 Agenda for Sustainable Development	https://sdgs.un.org/2030agenda
United Nations Convention to Combat Desertification in those Countries experiencing serious Drought and/or Desertification, particularly in Africa	https://www.unccd.int/
United Nations Framework Convention on Climate Change	https://unfccc.int/

C. Methodology references

Title of the reference document	Link
Metadata of SDG indicator 15.3.1: Proportion of land that is degraded over total land area	https://unstats.un.org/sdgs/metadata/files/Metadata-15-03-01.pdf

D. Data and statistics needed to compile the indicator

ID	Data item	FDES topic
262	Land cover type	1.2.1: Land cover
263	Land productivity	1.2.2: Ecosystems and biodiversity
264	Soil organic carbon stock	2.4.1: Soil resources
265	Total land area	1.1.3: Geological and geographical information

E. International databases containing this indicator

Name of the database	Link
SDG Indicators Database	https://unstats.un.org/sdgs/dataportal/database

V. Indicator D-1.1 Share of total protected areas (International Union for Conservation of Nature (IUCN) categories) in the country area

A. General

Parameter	Description
Indicator theme (Indicator Guidelines version 2009)	D: Biodiversity
Component (FDES)	1: Environmental conditions and quality

Parameter	Description
Sub-component (FDES)	1.2: Land cover, ecosystems and biodiversity
Indicator topic (FDES)	1.2.2: Ecosystems and biodiversity
ID and name in previous indicator guidelines	D1: Protected areas
First publication	7/9/2021
Latest update	-
Indicator definition	The indicator shows the total area of protected areas and other effective area-based conservation measures (terrestrial, freshwater and marine – within territorial seas) in compliance with the national legislation, as a share of the overall area of the country. Wherever data are available, this indicator is further broken down by IUCN WCPA protected areas management categories, to demonstrate their respective extent and share in the total area of the country.
Unit of measure	Percentage of the total country territory (for territorial seas: percentage of total territorial seas)
Coverage	All nationally designated protected areas and other effective area-based conservation measures conforming to the IUCN definitions of a protected area and other effective area-based conservation measures
Spatial aggregation	National territory
Reference period	End of each calendar year or nearest date within that calendar year
Update frequency	Annual
Purpose	Area-based conservation including protected areas and other effective area-based conservation measures is the most effective and most widely used response to the degradation of ecosystems and the loss of biodiversity. The share of a country's area designated as protected areas or other effective area-based conservation measures therefore demonstrates the extent to which areas important for conserving ecosystems and biodiversity, with the ecosystem services provided by them and the human wellbeing benefits supported by these ecosystem services, are protected.

Parameter	Description
Policy context	Ecosystems and biodiversity have strong intrinsic values, provide multiple ecosystem services to human societies, and thereby support sustainable development and human wellbeing on Earth. They enable nature-based solutions to a wide range of challenges to Society. Protected areas and other effective area-based conservation measures are essential for conserving ecosystems and biodiversity. The IUCN WCPA protected area management categories are the globally accepted classification system for protected areas by management objective. Trends in the use of the various management categories therefore provide more information about the use of the protected areas as conservation instruments.
Link with SDG indicators	14.5.1 Coverage of protected areas in relation to marine areas; related, but not identical
	15.1.2 Proportion of important sites for terrestrial and freshwater biodiversity that are covered by protected areas, by ecosystem type: related, but not identical
	15.4.1 Coverage by protected areas of important sites for mountain biodiversity; related, but not identical
Methodology for indicator calculation	Share of protected areas and other effective area-based conservation measures (%) = (total area of protected areas in hectares or km2/ total area of the country/coastal seas in hectares or km2) × 100.
	Broken down separately for protected areas and other effective area-based conservation measures, and for IUCN WCPA PA management categories
Comments	-

B. Policy references

Title of the reference document	Link
United Nations Convention on Biological Diversity (CBD)	https://www.cbd.int/
Council Directive 92/43/EEC of 21 May 1992 on the conservation of natural habitats and of wild fauna and flora	https://environment.ec.europa.eu/topics/nature-and-biodiversity/habitats-directive_en
Recommendation No. 16 (1989) of the standing committee on areas of special conservation interest of the Convention on the Conservation of European Wildlife and Natural Habitats (Bern Convention)	https://search.coe.int/bern-convention/Pages/result_details.aspx?ObjectId=0900001680746c25

Title of the reference document	Link
Communication from the Commission to the European Parliament, the Council, the European Economic and Social Committee and the Committee of the Regions. EU Biodiversity Strategy for 2030. Bringing nature back into our lives.	https://eur-lex.europa.eu/legal-content/EN/TXT/?qid=1590574123338&uri=CELEX:52020DC0380

C. Methodology references

Title of the reference document	Link
Guidelines for Applying Protected Area Management Categories	https://portals.iucn.org/library/sites/library/files/documents/pag-021.pdf
Evaluating official marine protected area coverage for Aichi Target 11: Appraising the data and methods that define our progress. Aquatic Conservation: Marine and Freshwater Ecosystems 24: 8-23.	https://www.researchgate.net/publication/285402181_Evaluating_official_marine_protected_area_coverage_for_Aichi_Target_11_Appraising_the_data_and_methods_that_define_our_progress

D. Data and statistics needed to compile the indicator

ID	Data item	FDES topic
58	Total areas under protection (IUCN categories of protected areas)	1.2.2: Ecosystems and biodiversity
59	Areas under category Ia protection (IUCN category "strict nature reserve")	1.2.2: Ecosystems and biodiversity
60	Areas under category Ib protection (IUCN category "wilderness area")	1.2.2: Ecosystems and biodiversity
61	Areas under category II protection (IUCN category "national park")	1.2.2: Ecosystems and biodiversity
62	Areas under category III protection (IUCN category "national monument or feature")	1.2.2: Ecosystems and biodiversity
63	Areas under category IV protection (IUCN category "habitat/species management area")	1.2.2: Ecosystems and biodiversity
64	Areas under category V protection (IUCN category "protected landscape / seascape")	1.2.2: Ecosystems and biodiversity
65	Areas under category VI protection (IUCN category "protected area with sustainable use of natural resources")	1.2.2: Ecosystems and biodiversity
66	Country area	1.1.3: Geological and geographical information

ID	Data item	FDES topic
226	Total areas designated as other effective area-based conservation measures	1.2.2: Ecosystems and biodiversity
227	Area of territorial seas (up to 12 nm) per country	1.1.3: Geological and geographical information

E. International databases containing this indicator

Name of the database	Link
World Database on Protected Areas (IUCN)	https://www.iucn.org/our-work/protected-areas-and-land-use

VI. Indicator D-4.4 Red List Index (SDG 15.5.1)

A. General

Parameter	Description
Indicator theme (Indicator Guidelines version 2009)	D: Biodiversity
Component (FDES)	1: Environmental conditions and quality
Sub-component (FDES)	1.2: Land cover, ecosystems and biodiversity
Indicator topic (FDES)	1.2.2: Ecosystems and biodiversity
ID and name in previous indicator guidelines	D4: Threatened and protected species
First publication	14/7/2023
Latest update	14/7/2023
Indicator definition	The Red List Index measures change in aggregate extinction risk across groups of species. It is based on genuine changes in the number of species in each category of extinction risk on The IUCN Red List of Threatened Species (www.iucnredlist.org) is expressed as changes in an index ranging from 0 to 1.
Unit of measure	Index
Coverage	Species
Spatial aggregation	National territory
Reference period	Calendar year
Update frequency	Annual

Parameter	Description
Purpose	The world's species are impacted by a number of threatening processes, including habitat destruction and degradation, overexploitation, invasive alien species, human disturbance, pollution and climate change. This indicator can be used to assess overall changes in the extinction risk of groups of species as a result of these threats and the extent to which threats are being mitigated.
Policy context	SDG Goal 15: Protect, restore and promote sustainable use of terrestrial ecosystems, sustainably manage forests, combat desertification, and halt and reverse land degradation and halt biodiversity loss.
	Target 15.5: Take urgent and significant action to reduce the degradation of natural habitats, halt the loss of biodiversity and, by 2020, protect and prevent the extinction of threatened species.
	United Nations Convention on Biodiversity: Amidst a dangerous decline in nature threatening the survival of 1 million species and impacting the lives of billions of people, the GBF aims to halt and reverse nature loss. The framework consists of global targets to be achieved by 2030 and beyond to safeguard and sustainably use biodiversity.
Link with SDG indicators	15.5.1 Red List Index
Methodology for indicator calculation	The Red List Index is calculated at a point in time by first multiplying the number of species in each Red List Category by a weight (ranging from 1 for 'Near Threatened' to 5 for 'Extinct' and 'Extinct in the Wild') and summing these values. This is then divided by a maximum threat score, which is the total number of species multiplied by the weight assigned to the 'Extinct' category. This final value is subtracted from 1 to give the Red List Index value.
Comments	-

B. Policy references

Title of the reference document	Link
United Nations Convention on Biological Diversity (CBD)	https://www.cbd.int/
Transforming our world: the 2030 Agenda for Sustainable Development	https://sdgs.un.org/2030agenda

C. Methodology references

Title of the reference document	Link
Metadata for SDG indicator 15.5.1: Red List Index	https://unstats.un.org/sdgs/metadata/files/Metadata-15-05-01.pdf
Guidelines for Using the IUCN Red List Categories and Criteria, Version 14	https://www.iucnredlist.org/resources/redlistguidelines

Guidelines for Application of IUCN Red
List Criteria at Regional and National
Levels, Version 4

https://portals.iucn.org/library/node/10336

D. Data and statistics needed to compile the indicator

ID	Data item	FDES topic
270	Number of species on the IUCN list according to IUCN Red List categories	1.2.2: Ecosystems and biodiversity

E. International databases containing this indicator

Name of the database	Link
IUCN Red List Statistics	https://www.iucnredlist.org/statistics

VII. Indicator D-4.2 Share of species threatened (mammals, birds, fishes, reptiles, amphibians, invertebrates, vascular plants, mosses, lichens, fungi, algae)

A. General

Parameter	Description
Indicator theme (Indicator Guidelines version 2009)	D: Biodiversity
Component (FDES)	1: Environmental conditions and quality
Sub-component (FDES)	1.2: Land cover, ecosystems and biodiversity
Indicator topic (FDES)	1.2.2: Ecosystems and biodiversity
ID and name in previous indicator guidelines	D4: Threatened and protected species
First publication	6/10/2021
Latest update	14/7/2023
Indicator definition	The indicator shows the percentage of nationally threatened species (i. e. those assessed as either vulnerable, endangered or critically endangered according to the IUCN Red List assessment criteria, in national assessments), including mammals, birds, fishes, reptiles, amphibians, invertebrates, vascular plants, mosses, lichens, fungi and algae.
	This indicator requires a disaggregation by taxonomic groups of species. Priority should be given to vertebrates and vascular plants.
	Member States are encouraged to assess the status of their biodiversity, using the appropriate IUCN Red List guidance.
Unit of measure	%

Parameter	Description
Coverage	Mammals, birds, fishes, reptiles, amphibians, invertebrates, vascular plants, mosses, lichens, fungi
Spatial aggregation	National territory
Reference period	End of each calendar year or nearest date within that calendar year
Update frequency	Annual
Purpose	The indicator provides a measure of the state of biodiversity in terms of the number of nationally threatened species, also providing information on the effectiveness of national efforts to improve conservation status of species on their territory. This indicator was kept as priority indicator upon the wish of some countries. It only makes sense if it refers to NATIONAL threat status: Under IUCN Red List rules, each species can be assigned a global assessment category, and can also be assessed at a sub-global (regional, national, sub-national, …) levels, depending on policy needs. Increasing occurrence of globally threatened species within a country might actually be a good sign (they might congregate there because they are better protected than elsewhere), but an increase of the percentage of nationally threatened species would indicate a negative trend. For the sake of comparability, it is also critical that national assessments are carried out using the IUCN RL criteria and regional assessment methodology, not national assessment categories and methodologies.
Policy context	Ecosystems and biodiversity have strong intrinsic values, provide multiple ecosystem services to human societies, and thereby support sustainable development and human wellbeing on Earth. They enable nature-based solutions to a wide range of challenges to Society. The proportion of threatened species within the overall species complement of a country is an important measure of the status of biodiversity. The indicator is relevant to SDG target 15.5 ("Take urgent and significant action to reduce the degradation of natural habitats, halt the loss of biodiversity and, by 2020, protect and prevent the extinction of threatened species"), as well as SDG target 15.9 ("By 2020, integrate ecosystem and biodiversity values into national and local planning, development processes, poverty reduction strategies and accounts").
Link with SDG indicators	14.4.1 Proportion of fish stocks within biologically sustainable levels; A relatively loose relationship 15.5.1 Red List Index; Related, but not the same

Parameter	Description
Methodology for indicator calculation	Percentage of species threatened = Number of species threatened / total number of species x 100%.
	Broken down separately for each taxonomic group as listed under "coverage" above. Priority should be given to vertebrates and vascular plants.
Comments	-

B. Policy references

Title of the reference document	Link
United Nations Convention on Biological Diversity (CBD)	https://www.cbd.int/
United Nations Convention on Biological Biodiversity: Post-2020 Global Biodiversity Framework	https://www.cbd.int/doc/c/409e/19ae/369752b245f0 5e88f760aeb3/wg2020-05-l-02-en.pdf
Communication from the Commission to the European Parliament, the Council, the European Economic and Social Committee and the Committee of the Regions. EU Biodiversity Strategy for 2030. Bringing nature back into our lives.	https://eur-lex.europa.eu/legal-content/EN/TXT/?uri=celex:52020DC0380
Council Directive 92/43/EEC of 21 May 1992 on the conservation of natural habitats and of wild fauna and flora	https://environment.ec.europa.eu/topics/nature-and-biodiversity/habitats-directive_en
Recommendation No. 16 (1989) of the standing committee on areas of special conservation interest of the Convention on the Conservation of European Wildlife and Natural Habitats (Bern Convention)	https://search.coe.int/bern-convention/Pages/result_details.aspx?ObjectId=09 00001680746c25

C. Methodology references

Title of the reference document	Link
Guidelines for Using the IUCN Red List Categories and Criteria, Version 14	https://www.iucnredlist.org/resources/redlistguidelines
Guidelines for Application of IUCN Red List Criteria at Regional and National Levels, Version 4	https://portals.iucn.org/library/sites/library/files/documents/RL-2012-002.pdf

D. Data and statistics needed to compile the indicator

ID	Data item	FDES topic
243	Number of threatened species of fungi	1.2.2: Ecosystems and biodiversity
244	Overall number of species of mammals documented in country	1.2.2: Ecosystems and biodiversity

ID	Data item	FDES topic
245	Overall number of species of birds documented in country	1.2.2: Ecosystems and biodiversity
246	Overall number of species of fish documented in country	1.2.2: Ecosystems and biodiversity
247	Overall number of species of reptiles documented in country	1.2.2: Ecosystems and biodiversity
248	Overall number of species of amphibians documented in country	1.2.2: Ecosystems and biodiversity
249	Overall number of species of invertebrates documented in country	1.2.2: Ecosystems and biodiversity
250	Overall number of species of vascular plants documented in country	1.2.2: Ecosystems and biodiversity
251	Overall number of species of mosses documented in country	1.2.2: Ecosystems and biodiversity
252	Overall number of species of lichens documented in country	1.2.2: Ecosystems and biodiversity
253	Overall number of species of fungi documented in country	1.2.2: Ecosystems and biodiversity
258	Number of threatened species of algae	1.2.2: Ecosystems and biodiversity
259	Overall number of species of algae documented in country	1.2.2: Ecosystems and biodiversity

E.   International databases containing this indicator

Title of the reference document	Link
n/a	n/a

VIII.   Indicator D-3.1 Forest area as a proportion of total land area (SDG 15.1.1)

A.   General

Parameter	Description
Indicator theme (Indicator Guidelines version 2009)	D: Biodiversity
Component (FDES)	1: Environmental conditions and quality
Sub-component (FDES)	1.2: Land cover, ecosystems and biodiversity
Indicator topic (FDES)	1.2.3: Forests
ID and name in previous indicator guidelines	D3: Forests and other wooded land
First publication	22/9/2021

Parameter	Description
Latest update	17/7/2023
Indicator definition	The indicator measures the percentage of the forests in the total country area
Unit of measure	%
Coverage	Forests
Spatial aggregation	National territory
Reference period	End of each calendar year or nearest date within that calendar year
Update frequency	Annual
Purpose	The indicator provides a measure of the state of forests and other wooded lands in a country and shows trends in its uses and its protection.
Policy context	Forests are among the most diverse and widespread ecosystems on earth. They have strong intrinsic values, provide multiple ecosystem services (provision of timber and other products, recreation, regulatory ecosystem services related to soil and water) to human societies, and thereby support sustainable development and human wellbeing on Earth. They also enable nature-based solutions to a wide range of challenges to Society (e. g. carbon sequestration, flood protection). Overexploitation, fragmentation, environmental degradation and conversion into other types of land use threaten many forest resources.
	This indicator is relevant to SDG target 15.1 ("By 2020, ensure the conservation, restoration and sustainable use of terrestrial and inland freshwater ecosystems and their services, in particular forests, wetlands, mountains and drylands, in line with obligations under international agreements")
Link with SDG indicators	15.1.1 Forest area as a proportion of total land area
Methodology for indicator calculation	Share of forests in country area (%) = (total forest area in thousands of hectares or km2 / the total area of the country in thousands of hectares or km2) x 100%.
	Data on forest area are sourced from national reporting, e. g. as summarized in the FAO Global Forest Resources Assessment.
Comments	-

B.   Policy references

Title of the reference document	Link
Transforming our world: the 2030 Agenda for Sustainable Development	https://sdgs.un.org/2030agenda

United Nations Convention on Biological Diversity (CBD)	https://www.cbd.int/
United Nations Convention on Biological Biodiversity: Post-2020 Global Biodiversity Framework	https://www.cbd.int/doc/c/409e/19ae/369752b245f 05e88f760aeb3/wg2020-05-l-02-en.pdf
Communication from the Commission to the European Parliament, the Council, the Economic and Social Committee and the Committee of the Regions: Our life insurance, our natural capital: an EU biodiversity strategy to 2020	https://www.eea.europa.eu/policy-documents/eu-2020-biodiversity-strategy
Communication from the Commission to the European Parliament, the Council, the European Economic and Social Committee and the Committee of the Regions New EU Forest Strategy for 2030	https://eur-lex.europa.eu/legal-content/EN/TXT/?uri=CELEX:52021DC0572

C. Methodology references

Title of the reference document	Link
Metadata of SDG indicator 15.1.1: Forest area as a proportion of total land area	https://unstats.un.org/sdgs/metadata/files/Metadata-15-01-01.pdf

D. Data and statistics needed to compile the indicator

ID	Data item	FDES topic
230	Forest area	1.2.3: Forests
265	Total land area	1.1.3: Geological and geographical information

E. International databases containing this indicator

Name of the database	Link
SDG Indicators Database	https://unstats.un.org/sdgs/dataportal/database

IX. Indicator D-3.8 Forest fires (area burnt by forest fires)

A. General

Parameter	Description
Indicator theme (Indicator Guidelines version 2009)	D: Biodiversity
Component (FDES)	1: Environmental conditions and quality
Sub-component (FDES)	1.2: Land cover, ecosystems and biodiversity
Indicator topic (FDES)	1.2.3: Forests
ID and name in previous indicator guidelines	D3: Forests and other wooded land

Parameter	Description
First publication	4/10/2021
Latest update	17/7/2023
Indicator definition	The indicator measures the area burnt by forest fires in each country, per year.
Unit of measure	Hectares
Coverage	Area burnt by forest fires
Spatial aggregation	National territory
Reference period	End of each calendar year or nearest date within that calendar year
Update frequency	Annual
Purpose	This indicator shows trends in the area affected by forest fires. Forest fires have recently affected regions in northern Eurasia not typically prone to fires, as well as the Mediterranean region, often related to droughts and heatwaves. Because of climate change, more areas within the UNECE region are likely to become exposed to significant and increasing fire risks in the future. The indicator allows to verify and follow such trends.
Policy context	Forests are among the most diverse and widespread ecosystems on earth. They have strong intrinsic values, provide multiple ecosystem services (provision of timber and other products, recreation, regulatory ecosystem services related to soil and water) to human societies, and thereby support sustainable development and human wellbeing on Earth. They also enable nature-based solutions to a wide range of challenges to Society (e. g. carbon sequestration, flood protection).
	Forest fires are an important pressure and risk to forests and other wooded lands, besides overexploitation, fragmentation, environmental degradation and conversion into other types of land use.
	This indicator is relevant to SDG target 15.1 ("By 2020, ensure the conservation, restoration and sustainable use of terrestrial and inland freshwater ecosystems and their services, in particular forests, wetlands, mountains and drylands, in line with obligations under international agreements").
Link with SDG indicators	15.1.1 Forest area as a proportion of total land area; Indirectly related
	15.2.1 Progress towards sustainable forest management; Indirectly related
Methodology for indicator calculation	Burnt area is documented in hectares (ha) based on national reporting or the European Forest Fire Information System supported by ground surveys or remote sensing data.
Comments	-

B. Policy references

Title of the reference document	Link
United Nations Convention on Biological Diversity (CBD)	https://www.cbd.int/
United Nations Convention on Biological Biodiversity: Post-2020 Global Biodiversity Framework	https://www.cbd.int/doc/c/409e/19ae/369752b245f05e88f760aeb3/wg2020-05-l-02-en.pdf
Communication from the Commission to the European Parliament, the Council, the European Economic and Social Committee and the Committee of the Regions. EU Biodiversity Strategy for 2030. Bringing nature back into our lives.	https://eur-lex.europa.eu/legal-content/EN/TXT/?uri=celex:52020DC0380
Communication from the Commission to the European Parliament, the Council, the European Economic and Social Committee and the Committee of the Regions New EU Forest Strategy for 2030.	https://eur-lex.europa.eu/legal-content/EN/TXT/?uri=CELEX:52021DC0572

C. Methodology references

Title of the reference document	Link
The European Fire Database - Technical specifications and data submission	https://effis-gwis-cms.s3.eu-west-1.amazonaws.com/effis/reports-and-publications/effis-related-publications/eudb_tech_spec_final_2register.pdf

D. Data and statistics needed to compile the indicator

ID	Data item	FDES topic
232	Burnt forest area	2.3.2: Use of forest land

E. International databases containing this indicator

Name of the database	Link
The European Forest Fire Information System	https://effis.jrc.ec.europa.eu/

X. Indicator A-2.8 PM10: Annual mean level of PM10 in cities (population weighted) (SDG indicator 11.6.2)

A. General

Parameter	Description
Indicator theme (Indicator Guidelines version 2009)	A: Air pollution and ozone depletion
Component (FDES)	1: Environmental conditions and quality
Sub-component (FDES)	1.3: Environmental quality
Indicator topic (FDES)	1.3.1: Air quality
ID and name in previous indicator guidelines	A2: Ambient air quality in urban areas
First publication	09/08/2022
Latest update	18/07/2023
Indicator definition	Population-weighted annual average PM10 concentration for urban population in a country
Unit of measure	µg/m3
Coverage	PM10 concentration in main cities
Spatial aggregation	National, calculated from selected cities
Reference period	Calendar year
Update frequency	Annual
Purpose	Air pollution consists of many pollutants, among other particulate matter. These particles are able to penetrate deeply into the respiratory tract and therefore constitute a risk for health by increasing mortality from respiratory infections and diseases, lung cancer, and selected cardiovascular diseases. The indicator contributes to measuring achievement of SDG target 11.6: By 2030, reduce the adverse per capita environmental impact of cities, including by paying special attention to air quality and municipal and other waste management.

Parameter	Description
Policy context	SDG target 11.6: By 2030, reduce the adverse per capita environmental impact of cities, including by paying special attention to air quality and municipal and other waste management. Air pollution is the leading environmental risk factor globally.
	WHO estimates show that around 7 million deaths, mainly from noncommunicable diseases, are attributable to the joint effects of ambient and household air pollution. Similar global assessments of ambient air pollution alone suggest between 4 million and 9 million deaths annually and hundreds of millions of lost years of healthy life, with the greatest attributable disease burden seen in low- and middle-income countries. To date, strong evidence shows causal relationships between PM2.5 air pollution exposure and all-cause mortality, as well as acute lower respiratory infections, chronic obstructive pulmonary disease, heart disease, lung cancer and stroke. A growing body of evidence also suggests causal relationships for type II diabetes and impacts on neonatal mortality from low birth weight and short gestation. Air pollution exposure may increase the incidence of and mortality from a larger number of diseases than those currently considered, such as Alzheimer's and other neurological diseases. The burden of disease attributable to air pollution is now estimated to be competing with other major global health risks such as unhealthy diet and tobacco smoking, and was in the top five out of 87 risk factors in the global assessment. See WHO global air quality guidelines 2021.
Link with SDG indicators	11.6.2 Annual mean levels of fine particulate matter (e.g. PM2.5 and PM10) in cities (population weighted)
Methodology for indicator calculation	The annual urban mean concentration of PM10 is estimated with improved modelling using data integration from satellite remote sensing, population estimates, topography and ground measurements (WHO, 2016; Shaddick et al, 2016). Countries which have air quality monitoring networks in place in urban areas can use the annual mean concentrations from the ground measurements and the corresponding number of inhabitants to derive the population-weighted exposure to particulate matter in cities.
Comments	-

B. Policy references

Title of the reference document	Link
Transforming our world: the 2030 Agenda for Sustainable Development	https://sdgs.un.org/2030agenda

Title of the reference document	Link
1979 ECE Convention on Long--range Transboundary Air Pollution (CLRTAP)	https://www.unece.org/environmental-policy/conventions/envlrtapwelcome/the-air-convention-and-its-protocols/the-convention-and-its-achievements.html
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	https://eur-lex.europa.eu/legal-content/en/ALL/?uri=CELEX:32008L0050

C. Methodology references

Title of the reference document	Link
Metadata of SDG indicator 11.6.2: Annual mean levels of fine particulate matter (e.g. PM2.5 and PM10) in cities (population weighted)	https://unstats.un.org/sdgs/metadata/
Data Integration Model for Air Quality: A Hierarchical Approach to the Global Estimation of Exposures to Ambient Air Pollution	https://doi.org/10.1111/rssc.12227

D. Data and statistics needed to compile the indicator

ID	Data item	FDES topic
3	Ambient air quality - PM10: Annual average concentration	1.3.1: Air quality
272	Ambient air quality: Number of inhabitants corresponding to the monitoring station	1.3.1: Air quality

E. International databases containing this indicator

Name of the database	Link
WHO Ambient air Quality Database Application	https://whoairquality.shinyapps.io/AmbientAirQualityDatabase/

XI. Indicator A-2.9 PM2.5: Annual mean concentration in cities

A. General

Parameter	Description
Indicator theme (Indicator Guidelines version 2009)	A: Air pollution and ozone depletion
Component (FDES)	1: Environmental conditions and quality
Sub-component (FDES)	1.3: Environmental quality

Parameter	Description
Indicator topic (FDES)	1.3.1: Air quality
ID and name in previous indicator guidelines	A2: Ambient air quality in urban areas
First publication	18/07/2023
Latest update	-
Indicator definition	Annual mean concentration of particulate matter 2.5 micrometers or less in diameter
Unit of measure	µg/m3
Coverage	PM2.5 concentration in main cities
Spatial aggregation	Individual monitoring stations
Reference period	Calendar year
Update frequency	Annual
Purpose	The indicator provides a measure of the state of the environment in terms of air quality and the impact of air pollution on the population and on vegetation and ecosystems.
	The indicator helps to identify whether measures taken to reduce particulate matter concentrations in densely populated areas have been successful in the long-term and to measure distance from the national or WHO air quality target.
Policy context	Air pollution is the leading environmental risk factor globally. WHO estimates show that around 7 million deaths, mainly from noncommunicable diseases, are attributable to the joint effects of ambient and household air pollution. Similar global assessments of ambient air pollution alone suggest between 4 million and 9 million deaths annually and hundreds of millions of lost years of healthy life, with the greatest attributable disease burden seen in low- and middle-income countries. To date, strong evidence shows causal relationships between PM2.5 air pollution exposure and all cause mortality, as well as acute lower respiratory infections, chronic obstructive pulmonary disease, heart disease, lung cancer and stroke. A growing body of evidence also suggests causal relationships for type II diabetes and impacts on neonatal mortality from low birth weight and short gestation. Air pollution exposure may increase the incidence of and mortality from a larger number of diseases than those currently considered, such as Alzheimer's and other neurological diseases. The burden of disease attributable to air pollution is now estimated to be competing with other major global health risks such as unhealthy diet and tobacco smoking, and was in the top five out of 87 risk factors in the global assessment.
	Air quality standard of EU Directive 2008/50/EC: Annual average concentration: 20 µg/m3;
	WHO global air quality guidelines 2021: Average annual concentration: 5 µg/m3
Link with SDG indicators	11.6.2 Annual mean levels of fine particulate matter (e.g. PM2.5 and PM10) in cities (population weighted); Related, but not identical!
Methodology for indicator calculation	The rules for averaging monitoring data are laid down in the WHO Air Quality Guidelines (2021).
Comments	-

B. Policy references

Title of the reference document	Link
Transforming our world: the 2030 Agenda for Sustainable Development	https://sdgs.un.org/2030agenda
1979 ECE Convention on Long--range Transboundary Air Pollution (CLRTAP)	https://www.unece.org/environmental-policy/conventions/envlrtapwelcome/the-air-convention-and-its-protocols/the-convention-and-its-achievements.html
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	https://eur-lex.europa.eu/legal-content/en/ALL/?uri=CELEX:32008L0050

C. Methodology references

Title of the reference document	Link
WHO global air quality guidelines: particulate matter (PM2.5 and PM10), ozone, nitrogen dioxide, sulfur dioxide and carbon monoxide	https://apps.who.int/iris/handle/10665/345329
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	https://eur-lex.europa.eu/legal-content/en/ALL/?uri=CELEX:32008L0050
Protecting health through ambient air quality management: a resource package for the WHO European Region	https://www.who.int/europe/publications/i/item/WHO-EURO-2023-6898-46664-67857

D. Data and statistics needed to compile the indicator

ID	Data item	FDES topic
268	Ambient air quality - PM2.5: Annual average concentration	1.3.1: Air quality

E. International databases containing this indicator

Name of the database	Link
WHO Ambient air Quality Database Application	https://whoairquality.shinyapps.io/AmbientAirQualityDatabase/

XII. Indicator A-2.11 SO2: Annual mean concentration in cities

A. General

Parameter	Description
Indicator theme (Indicator Guidelines version 2009)	A: Air pollution and ozone depletion
Component (FDES)	1: Environmental conditions and quality
Sub-component (FDES)	1.3: Environmental quality
Indicator topic (FDES)	1.3.1: Air quality
ID and name in previous indicator guidelines	A2: Ambient air quality in urban areas
First publication	24/07/2023
Latest update	-
Indicator definition	Annual mean concentration of sulfur dioxide
Unit of measure	$\mu g/m^3$
Coverage	SO_2 concentration in main cities
Spatial aggregation	Individual monitoring stations
Reference period	Calendar year
Update frequency	Annual
Purpose	The indicator provides a measure of the state of the environment in terms of air quality and the impact of air pollution on the population and on vegetation and ecosystems.
	The indicator helps to identify whether measures taken to reduce sulfur dioxide concentrations in densely populated areas have been successful in the long-term.
Policy context	Sulfur dioxide is derived from the combustion of sulfur-containing fossil fuels and is a major air pollutant in many parts of the world. Oxidation of sulfur dioxide, especially at the surface of particles in the presence of metallic catalysts, leads to the formation of sulfurous and sulfuric acids. Neutralization, by ammonia, leads to the production of bisulfates and sulfates. There is a causal relationship between short-term sulfur dioxide concentrations and respiratory effects.
	Air quality standards of EU Directive 2008/50/EC: 1 hour average concentration: 350 $\mu g/m^3$; 24 hours average concentration 125 $\mu g/m^3$ (revision to 50 $\mu g/m^3$ is proposed)
	WHO global air quality guidelines 2021: Daily mean 40 $\mu g/m^3$
Link with SDG indicators	n/a
Methodology for indicator calculation	The rules for averaging monitoring data are laid down in the WHO Air Quality Guidelines (2021).

Parameter	Description
Comments	-

B. Policy references

Title of the reference document	Link
1979 ECE Convention on Long--range Transboundary Air Pollution (CLRTAP)	https://www.unece.org/environmental-policy/conventions/envlrtapwelcome/the-air-convention-and-its-protocols/the-convention-and-its-achievements.html
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	https://eur-lex.europa.eu/legal-content/en/ALL/?uri=CELEX:32008L0050

C. Methodology references

Title of the reference document	Link
WHO global air quality guidelines: particulate matter (PM2.5 and PM10), ozone, nitrogen dioxide, sulfur dioxide and carbon monoxide	https://apps.who.int/iris/handle/10665/345329
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	https://eur-lex.europa.eu/legal-content/en/ALL/?uri=CELEX:32008L0050
Protecting health through ambient air quality management: a resource package for the WHO European Region	https://www.who.int/europe/publications/i/item/WHO-EURO-2023-6898-46664-67857

D. Data and statistics needed to compile the indicator

ID	Data item	FDES topic
8	Ambient air quality – SO2: Annual average concentration	1.3.1: Air quality

E. International databases containing this indicator

Name of the database	Link
n/a	n/a

XIII. Indicator A-2.12 NO2: Annual mean concentration in cities

A. General

Parameter	Description
Indicator theme (Indicator Guidelines version 2009)	A: Air pollution and ozone depletion
Component (FDES)	1: Environmental conditions and quality
Sub-component (FDES)	1.3: Environmental quality
Indicator topic (FDES)	1.3.1: Air quality
ID and name in previous indicator guidelines	A2: Ambient air quality in urban areas
First publication	24/07/2023
Latest update	-
Indicator definition	Annual mean concentration of nitrogen dioxide
Unit of measure	$\mu g/m^3$
Coverage	NO_2 concentration in main cities
Spatial aggregation	Individual monitoring stations
Reference period	Calendar year
Update frequency	Annual
Purpose	The indicator provides a measure of the state of the environment in terms of air quality and the impact of air pollution on the population and on vegetation and ecosystems.
	The indicator helps to identify whether measures taken to reduce nitrogen dioxide concentrations in densely populated areas have been successful in the long-term.

Parameter	Description
Policy context	Nitrogen dioxide is an important atmospheric trace gas not only because of its health effects but also because: (a) it absorbs visible solar radiation and contributes to impaired atmospheric visibility; (b) it absorbs visible radiation and has a potentially direct role in global climate change; (c) it is, along with nitric oxide, a chief regulator of the oxidizing capacity of the free troposphere by controlling the build-up and fate of radical species, including hydroxyl radicals; and (d) it plays a critical role in determining ozone concentrations in the troposphere because the photolysis of nitrogen dioxide is the only key initiator of the photochemical formation of ozone, whether in polluted or in non-polluted atmospheres. Nitrogen dioxide is subject to extensive further atmospheric transformations that lead to the formation of strong oxidants that participate in the conversion of nitrogen dioxide to nitric acid and sulfur dioxide to sulfuric acid and subsequent conversions to their ammonium neutralization salts. Thus, through the photochemical reaction sequence initiated by solar-radiation-induced activation of nitrogen dioxide, the newly generated pollutants are an important source of organic, nitrate and sulfate particles currently measured as PM10 or PM2.5. For these reasons, nitrogen dioxide is a key precursor of a range of secondary pollutants whose effects on human health are well-documented.
	Air quality standard of EU Directive 2008/50/EC: Annual average concentration: 40 μg/m^3
	WHO global air quality guidelines 2021: Annual AQG level 10 μg/m^3
Link with SDG indicators	n/a
Methodology for indicator calculation	The rules for averaging monitoring data are laid down in the WHO Air Quality Guidelines (2021).
Comments	-

B. Policy references

Title of the reference document	Link
1979 ECE Convention on Long--range Transboundary Air Pollution (CLRTAP)	https://www.unece.org/environmental-policy/conventions/envlrtapwelcome/the-air-convention-and-its-protocols/the-convention-and-its-achievements.html
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	https://eur-lex.europa.eu/legal-content/en/ALL/?uri=CELEX:32008L0050

C. Methodology references

Title of the reference document	Link
WHO global air quality guidelines: particulate matter (PM2.5 and PM10), ozone, nitrogen dioxide, sulfur dioxide and carbon monoxide	https://apps.who.int/iris/handle/10665/345329
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	https://eur-lex.europa.eu/legal-content/en/ALL/?uri=CELEX:32008L0050
Protecting health through ambient air quality management: a resource package for the WHO European Region	https://www.who.int/europe/publications/i/item/WHO-EURO-2023-6898-46664-67857

D. Data and statistics needed to compile the indicator

ID	Data item	FDES topic
13	Ambient air quality – NO2: Annual average concentration	1.3.1: Air quality

E. International databases containing this indicator

Name of the database	Link
WHO Ambient air Quality Database Application	https://whoairquality.shinyapps.io/AmbientAirQualityDatabase/

XIV. Indicator C-17.2 NO2: Proportion of bodies of water with good ambient water quality (SDG indicator 6.3.2)

A. General

Parameter	Description
Indicator theme (Indicator Guidelines version 2009)	C: Water
Component (FDES)	1: Environmental conditions and quality
Sub-component (FDES)	1.3: Environmental quality
Indicator topic (FDES)	1.3.2: Fresh water quality
ID and name in previous indicator guidelines	N/A
First publication	24/7/2021
Latest update	-

Parameter	Description
Indicator definition	The indicator is defined as the proportion of water bodies in the country that have good ambient water quality. Ambient water quality refers to natural, untreated water in rivers, lakes and groundwaters and represents a combination of natural influences together with the impacts of all anthropogenic activities.
Unit of measure	%
Coverage	All freshwater bodies of a country (rivers, lakes groundwater). Disaggregation by types of water bodies recommended.
Spatial aggregation	National. Disaggregation by river basins recommended.
Reference period	Calendar year
Update frequency	Every 3 years starting 2017
Purpose	The indicators measures change of ambient water quality over time.
Policy context	SDG target 6.3: By 2030, improve water quality by reducing pollution, eliminating dumping and minimizing release of hazardous chemicals and materials, halving the proportion of untreated wastewater and substantially increasing recycling and safe reuse globally.

Good ambient water quality is essential for protecting aquatic ecosystems and the services they provide, including: the preservation of biodiversity; the protection of human health during recreational use and through the provision of drinking water; the support of human nutrition through the provision of fish and water for irrigation; the enabling of a variety of economic activities; and the strengthening of the resilience of people against water-related disasters. Good ambient water quality is therefore closely linked to the achievement of many other Sustainable Development Goals.

EU Water Framework Directive 2000/60/EC: Setting out rules to halt deterioration in the status of EU water bodies and achieve good status for Europe's rivers, lakes and groundwater. |
Link with SDG indicators	6.3.2 Proportion of bodies of water with good ambient water quality
Methodology for indicator calculation	The indicator is computed as the proportion of the number of water bodies classified as having good quality (i.e. with at least 80 % compliance) to the total number of assessed water bodies, expressed as a percentage.
Comments	-

B. Policy references

Title of the reference document	Link
Transforming our world: the 2030 Agenda for Sustainable Development	https://sdgs.un.org/2030agenda
Directive 2000/60/EC of the European Parliament and of the Council establishing a framework for the Community action in the field of water policy	https://environment.ec.europa.eu/topics/water/water-framework-directive_en

C. Methodology references

Title of the reference document	Link
Metadata of SDG indicator 6.3.1: Proportion of bodies of water with good ambient water quality	https://unstats.un.org/sdgs/metadata/

D. Data and statistics needed to compile the indicator

ID	Data item	FDES topic
273	Water quality status of rivers	1.3.2: Fresh water quality
274	Water quality status of lakes	1.3.2: Fresh water quality
275	Water quality status of groundwater aquifers	1.3.2: Fresh water quality

E. International databases containing this indicator

Name of the database	Link
SDG Indicators Database	https://unstats.un.org/sdgs/dataportal/database