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## Economic Commission for Europe

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

**Twenty-first session**
Geneva, 17 and 18 October 2024
Item 4 of the provisional agenda
**Ongoing developments with relevance for the work of the Joint Task Force**

# Draft selection of environmental indicators for the eighth pan-European environmental assessment

### Note by the secretariat and members of the Joint Task Force on Environmental Statistics and Indicators

*Summary*

At the Ninth Environment for Europe Ministerial Conference (Nicosia, 5–7 October 2022), ministers acknowledged the importance of regular, indicator-based environmental assessments, and confirmed their commitment to keeping the pan-European region under regular review in support of sustainable development and the transition to a circular, green and sustainable economy.

The mandate and terms of reference of the United Nations Economic Commission for Europe Working Group on Environmental Monitoring and Assessment identify one of the Working Group's objectives as being to support the development of regular pan-European environmental assessments to, in turn, support policy with scientific evidence. The Working Group, at its twenty-sixth session (Geneva, 18–19 April 2024), welcomed the concept of the eighth pan-European assessment and confirmed its support for the selection of indicators and the provision of national data for selected indicators. The Joint Task Force on Environmental Statistics and Indicators supports the Working Group, and specifically its target countries, with methodological challenges related to the environmental indicators used for assessment.

The present document provides for discussion a draft selection of proposed indicators for an eighth pan-European environmental assessment.



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# I. Introduction

1. The series of environmental assessments of the pan-European region provide up-to-date and policy-relevant information on the interactions between the environment and society. The assessments have been a consistent feature of the Environment for Europe process from 1995 to 2022. The 2009 reform of the Environment for Europe process identified the pan-European assessment as one of the three substantive documents to be prepared for each ministerial conference, together with up to two theme-specific reports.[1]

2. Following the Seventh Environment for Europe Ministerial Conference (Astana, 21–23 September 2011), responsibility for the drafting of the assessment shifted from the European Environment Agency to the United Nations Economic Commission for Europe (ECE) and the United Nations Environment Programme (UNEP). The two organizations published the two most recent assessments, the sixth[2] and seventh assessments,[3] in 2016 and 2022, respectively.

3. At the Ninth Environment for Europe Ministerial Conference (Nicosia, 5–7 October 2022), ministers acknowledged the importance of regular, indicator-based environmental assessments, and confirmed their commitment to keeping the pan-European region under regular review in support of sustainable development and the transition to a circular, green and sustainable economy. They also took note of the key findings of the seventh pan-European assessment. Furthermore, they commended the general establishment of the Shared Environmental Information System across the region to support a regular process of environmental assessment.[4]

4. The mandate and terms of reference of the ECE Working Group on Environmental Monitoring and Assessment for the period 2024–2028 identify one of the Working Group's objectives as being to support the development of regular pan-European environmental assessments to, in turn, support policy with scientific evidence.[5] The Working Group, at its twenty-sixth session (Geneva, 18–19 April 2024), welcomed the concept of the eighth pan-European assessment and confirmed its support for the selection of indicators, the provision of national data for selected indicators and in assessing the extent to which Earth observations could be used to generate indicator values. The Joint Task Force on Environmental Statistics and Indicators supports the Working Group, and specifically its target countries, with methodological challenges related to the environmental indicators used for assessment.

5. The present document provides a draft selection of proposed indicators for an eighth pan-European environmental assessment, to be discussed by the Joint Task Force. The draft selection does not yet include indicators on the specific themes of the anticipated Tenth Environment for Europe Ministerial Conference since they have not yet been decided. The selected indicators are based on those used for the seventh pan-European assessment, complemented by indicators of the ECE Guidelines for the Application of Environmental Indicators – 2023 Edition and of other relevant assessments and processes.

[1] ECE/CEP/S/2009/1, paras. 11 (b) (iii) and 12 (a) and (d).

[2] United Nations Economic Commission for Europe (ECE)/United Nations Environment Programme (UNEP), *Global Environment Outlook (GEO-6) Assessment for the Pan-European Region* (Nairobi, UNEP, 2016).

[3] *Europe's Environment: The Seventh Pan-European Environmental Assessment* (United Nations publication, Sales No. E.22.II.E.15).

[4] ECE/NICOSIA.CONF/2022/2.Add.1, paras. 16 and 19.

[5] ECE/CEP/AC.10/2023/2/Add.1, para. 9 (b).

6. Should the Committee on Environmental Policy decide on alternative options for the eighth assessment, adjustments to the selected indicators may need to be considered by the Joint Task Force, the Working Group and, subsequently, the Committee.

# II. Eighth pan-European environmental assessment

7. While the themes for the next Ministerial Conference have yet to be identified, there is a need for agreement on a way forward for the eighth pan-European environmental assessment, as the actual preparation of the assessment, including collection of data on the selected indicators for all countries across the region, may take a considerable period of time.

8. The proposed outline for a light, indicator-based and thematic assessment, as discussed and supported by the Working Group on Environmental Monitoring and Assessment at its twenty-sixth session, together with a proposed draft selection of environmental indicators, are set out below.

# III. Proposed selection of environmental indicators

9. The indicators listed in table 1 might be considered in the development of the next pan-European environmental assessment. Chapters shown in italics imply additional resource needs beyond those for the previous pan-European assessment.

Table 1
**Proposed indicators for eighth pan-European environmental assessment**

| *Chapter or section of assessment* | *Name of proposed indicator* | *Indicator used in seventh assessment* | *Source of indicator (ECE Guidelines, SDGs, other or new)* |
|---|---|---|---|
| Front matter (foreword, preface, acknowledgements and abbreviations and acronyms) | - | | |
| Summary for policymakers | Summary of indicator selection | | |
| **Chapter I: Setting the scene** | | | |
| (i) Regular assessment of the state of the environment | **Regular national state-of-the-environment reporting** | Yes | Other |
| (ii) State of knowledge | **Ready online availability and accessibility of data flows on a national platform** (data flows with reply “Yes”)<br>(percentage) | Yes | Other |

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| (iii) Environmental policies in the region | | | |
| **Chapter II: Regional context and developments as drivers of environmental change** | | | |
| | **Proportion of the population living in urban areas** | Yes | |
| | **Proportion of the population living within 10 km of the coast**<br>(percentage) | Yes | |
| | **Domestic material consumption, domestic material consumption per capita, and domestic material consumption per GDP**<br>(tons) | Yes (first part of indicator) | ECE indicator I-1.5 (component “environmental resources and their use”), SDG indicator 12.2.2 |
| | **Material footprint, material footprint per capita, and material footprint per GDP**<br>(tons) | Yes (first part of indicator) | ECE indicator I-1.4 (component “environmental resources and their use”), SDG indicator 12.2.1, EEA indicator |
| | **Ecological footprint** | Yes | Other |
| | **Percentage change in one-person households** | Yes | Other |
| | **Energy sources, net of imports and exports**<br>(proportion by source, and total in petajoules) | Yes | Note: ECE indicator G-2.1 Total primary energy supply (topic “production, trade and consumption of energy”) |
| | **$CO_2$ emissions from fuel combustion within the national territory**<br>(tons, disaggregated by fossil and non-fossil fuels) | Yes (fossil fuel $CO_2$ emissions) | ECE indicator B-3.11 (topic “emissions of greenhouse gases (GHGs)”) |

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| | **GHG emission intensity of production activities** | **No** | ECE indicator B-3.13 (topic “emissions of greenhouse gases (GHGs)) |
| | **Motorway length**<br>(km) | Yes | ECE indicator H-5.1 (component “human settlements and environmental health”) |
| | **Motor vehicle movements on national territory by vehicle-km** | Yes | ECE indicator H-5.2 (component “human settlements and environmental health”) |
| | **Share of railway transport demand in total passenger transport** | Yes (railway passenger traffic) | ECE indicator H-1.5 (component “human settlements and environmental health”) |
| | **Growth of domestic and international arrivals**<br>(percentage) | Yes | Other |
| **Chapter III: Environmental state and trends** | | | |
| (i) Atmospheric air and the ozone layer | | | |
| | **Emissions of $SO_x$ per capita** | Yes (Emission trends for $SO_2$, kg per annum per capita) | ECE indicator A-1.1 Emissions of $SO_x$ per capita (topic “emissions of greenhouse gases (GHGs)”), EEA refers to $SO_x$ |
| | **Emission trends for $NO_x$, kg per annum per capita** | Yes | ECE indicator A-1.4 Emissions of NOx per capita (topic “emissions of greenhouse gases (GHGs)”), EEA indicator |
| | **Emission trends for $PM_{2.5}$, kg per annum per capita** | Yes | ECE indicator A-1.21 Total emissions of $PM_{2.5}$ (topic “emissions |

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| | | | of other substances to air"), EEA indicator |
| | **Concentrations of air polluting substances ($SO_2$, $NO_x$, VOC, $PM_{2.5}$)** | Yes | ECE indicators A-2.11, A-2.12, A-2.9 (Annual mean concentrations in cities), (topic air quality), EEA indicators |
| | **Concentrations of fine particulate matter ($PM_{2.5}$) µg/$m^3$** | Yes | ECE indicator A-2.9 $PM_{2.5}$: Annual mean concentration in cities, EEA indicator |
| | **Consumption of hydrochlorofluorocarbons, ozone-depleting potential, g per capita** | Yes | ECE indicator A-3.1 Total consumption of ozone-depleting substances (ODS) (topic "consumption of ozone depleting substances (ODS)"), EEA indicator |
| (ii) Climate change and greenhouse gas emissions | | | |
| | **Total greenhouse gas emissions (without land use, land-use change and forestry)** (tons of $CO_2$ equivalent) | Yes | ECE indicator B-3.4 Total GHG emissions by sector) (topic "emissions of greenhouse gases (GHGs)"), EEA indicator |
| | **Greenhouse gas emissions (without land use, land-use change and forestry) per capita** (tons of $CO_2$ equivalent) | Yes | ECE indicator B-3.1 Total GHG emissions per capita (topic "emissions of greenhouse gases (GHGs)") |
| | **Renewable energy share in total energy consumption** (percentage) | Yes | ECE G-4.1 Renewable energy share in the total primary energy supply (topic |

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| | | | “production, trade and consumption of energy”), EEA indicator |
| | **Proportion of local governments that adopt and implement local disaster risk reduction strategies in line with national disaster risk reduction strategies** | Yes | SDG indicator 13.1.3 |
| | **Estimated proportion of population covered by local disaster risk reduction strategies**<br>(percentage) | Yes | Other |
| (iii) Fresh water | | | |
| | **Proportion of population using safely managed drinking water services**<br>(percentage) | Yes | ECE indicator C-6.2 (topic “access to selected basic services”), SDG indicator 6.1.1 |
| | **Proportion of population using safely managed sanitation services**<br>(percentage) | Yes | ECE indicator C-14.3 (topic “access to selected basic services”), SDG indicator 6.2.1 |
| | **Population connected to wastewater treatment**<br>(percentage) | Yes | ECE indicator C-14.2 Percentage of total population connected to wastewater treatment facilities (topic “access to selected basic services”) |
| | **Proportion of bodies of water with good ambient water quality**<br>(percentage) | Yes | ECE indicator C-17.2 (topic “freshwater quality”), SDG indicator 6.3.2 |
| | **Proportion of transboundary basin area with an operational arrangement for water cooperation** | Yes | ECE indicator C-17.1 (topic “participation in multilateral environmental |

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| | (percentage) | | agreements and environmental conventions"), SDG indicator 6.5.2 (with ECE as co-custodian) |
| (iv) Coastal waters, marine ecosystems and seas | | | |
| | **Number of items on beach per 100 m of shoreline and plastic composition** (percentage of beach litter) | Yes | ECE indicator C-18.1 Number of items on beach per 100 m of shoreline (topic "marine water quality") |
| | **Evolution in median beach litter numbers** (number per 100 m of beach) | Yes | See above |
| | **Proportion of fish stocks within biologically sustainable levels** (percentage) | Yes | ECE indicator D-5.2 (topic "aquatic resources"), SDG indicator 14.4.1 |
| | **Average marine acidity (pH) measured at agreed suite of representative sampling stations** | Yes | ECE indicator C-18.2 (topic "marine water quality"), SDG indicator 14.3.1 |
| | **Global annual average of surface ocean pH** (pH units) | Yes | Other |
| | **Average sea surface temperature anomaly** (°C) | Yes | ECE indicator C-18.3 Average sea surface temperature anomaly (topic "marine water quality") |
| | **Marine protected area coverage** (percentage) | Yes | ECE indicator D-1.3 Coverage of protected areas in relation to marine areas, SDG indicator 14.5.1 |
| (v) Biodiversity and ecosystems | | | |

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| | **Share of total protected areas** (categories of the International Union for the Conservation of Nature (IUCN)) **in the country area**<br>(percentage) | Yes (total area under protection and share of country area) | ECE indicator D-1.1 (topic "ecosystems and biodiversity") |
| | **Proportion of terrestrial and marine areas protected**<br>(percentage) | Yes | ECE indicators – see above |
| | **Share of natural forest of total forest area** and<br>**Share of forest area designated for protection of soil, water and ecosystem services of total forest area**<br>(percentage) | Yes (share of primary and planted forest and share of forest area designated for soil and water protection or biodiversity conservation) | **ECE indicators D-3.3 and D-3.6** (topic "use of forest lands") |
| | **Total land uptake**<br>(percentage of total land area) | Yes | ECE indicator E-1.2 (topic "land use") |
| (vi) Land and soil | | | |
| | **Proportion of area with improving or degrading soil organic carbon content**<br>(percentage) | Yes | ECE indicator E-3.1 (topic "soil resources") |
| | **Proportion of land that is degraded over total land area** | Yes | ECE indicator E-2.4 (topic "soil characteristics"), SDG indicator 15.3.1 |
| | **Soil organic carbon content**<br>(g C/kg) | Yes | ECE indicator E-3.2 (topic "soil resources") |
| | **Cropland area**<br>(percentage) | Yes | Other |

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| | **Prevalence of stunting among children aged under 5 years**<br>(percentage) | Yes | Other |
| (vii) Chemicals and waste *(with circular economy)* | | | |
| | **Compliance with multilateral environmental agreements on hazardous waste and other chemicals**<br>(percentage) | Yes | SDG indicator 12.4.1 |
| | **Total waste generation per capita**<br>(kg per capita per year) | Yes | ECE indicator I-1.2 (topic “generation of waste”), EEA indicator |
| | **Hazardous waste generated per capita**<br>(kg per capita) | No (instead used domestic e-waste generation per capita) | ECE indicator I-2.1 includes breakdown of hazardous waste generated by key type of waste (topic “generation of waste”), SDG indicator 12.5.1 |
| | **National recycling rate, tons of material recycled** (broken down by waste stream)<br>(percentage) | Yes (recycling rate of municipal solid waste, including composting and anaerobic digestion) | ECE indicator I-3.2, (topic “management of waste”), SDG 12.5.1 |
| | **Domestic material consumption, domestic material consumption per capita, and domestic material consumption per GDP** | No | ECE indicator I-1.5 (component “environmental resources and their use”), SDG indicator 12.2.2 |
| | **Final waste disposal** | No | Joint ECE/OECD Guidelines for Measuring Circular Economy |

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| *(viii) Noise* | **Number of people exposed to unhealthy noise levels** | No | ECE indicator K-1.9 (topic "exposure to ambient pollution"). EEA uses "Estimated number of people exposed to unhealthy noise levels, based on END thresholds" |
| (ix) Environmental financing and public spending on environmental protection | | | |
| | **Environmental tax revenues as a proportion of GDP**<br>(percentage) | Yes | ECE indicator J-1.2 (topic "environmental regulation and instruments") |
| | **Environmental tax revenue and GDP per capita**<br>(United States dollars) | Yes | See above |
| | **Environmental tax revenue as a proportion of gross domestic product and of total tax revenue**<br>(percentage) | Yes | See above |
| | **National expenditure on environmental protection as percentage of GDP**<br>(percentage) | Yes (Government environmental protection expenditures as proportion of GDP) | ECE indicator J-1.1 (topic "environmental protection and resource management expenditure") |
| | **Amount of fossil-fuel subsidies (production and consumption) per unit of GDP** | Yes (fossil fuel subsidies as proportion of GDP) | ECE indicator J-1.6 (topic "environmental regulation and instruments"), SDG indicator 12.c.1 |
| | **Total fossil fuel subsidies** | Yes | See above |

| | | | |
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| | (United States dollars) | | |
| | **Fossil fuel subsidies and GDP per capita** | Yes | See above |
| | **Value of green euro bonds** | Yes | Other |
| | (United States dollars) | | |
| *(x) Sustainable infrastructure* | | | |
| | **Total GHG emissions in the pan-European region** (without land use, land-use change, and forestry) | Yes (see III (ii) above) | See under “Climate change and greenhouse gas emissions” |
| | (tons of $CO_2$ equivalent) | | |
| | **Score of adoption and implementation of national DRR strategies** in line with the Sendai Framework | Yes (see III (ii) above) | Other |
| | **Number of countries in the pan-European region that have adopted a National Biodiversity Strategy and Action Plans since 2023** | No | Other |
| | **Proportion of land that is degraded over total land area** | Yes (see III (vi) above) | See under “land and soil” |
| | (percentage) | | |
| | **Recovery rate of construction and demolition waste** | No | ECE indicator I-3.3 (topic “management of waste”) |
| | (percentage) | | |
| | **Gender employment gap** | Yes | Other |
| | (percentage) | | |
| | **Sectors in which countries usually perform cost–benefit analysis** | **No** | Other |

| | | | |
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| | **Percentage of population using safely managed drinking water services** | Yes (see III (iii) above) | See under “fresh water” and ECE indicator C-6.3 |
| | **Percentage of population using safely managed sanitation services by location** | Yes (see III (iii) above) | See under “fresh water” and ECE indicator C-14.4 |
| | **Percentage of population with access to electricity by location** | **No** | ECE indicator G-5.1 (topic “access to selected basic services”) |
| | **Proportion of population covered by at least 2G, 3G or 4G mobile telephone network** | Yes | Other |
| | **Score and rank on the Corruption Perceptions Index** | Yes | Other |
| | **Contribution to the international $100 billion commitment on climate-related expenditure** | No | Other |
| *(xi) Green economy* | To be determined | | |
| **Chapter IV: Themes of the Tenth Environment for Europe Ministerial Conference** | To be determined | | |
| **Chapter V: Strengthening environmental governance** | **Membership of selected regional and global multilateral environmental agreements, countries that are parties**<br>(percentage) | Yes | Other |
| | **Status of the main national environmental policy authority in each country**<br>(percentage) | Yes | Other |

| | | | |
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| | **Countries with national legislation on environmental impact assessment and strategic environmental assessment in place**<br>(percentage) | Yes | Other |
| | **Number of companies publishing sustainability reports** | Yes | ECE indicator K-1.2 (topic "environmental information"), SDG indicator 12.6.1 |
| | **Number of countries with legislation and regulations on mandatory corporate sustainability reporting** | Yes | Other |
| | **Proportion of countries with systems to track and make public allocations for gender equality and women's empowerment** | **No** | SDG indicator 5.c.1 |
| | **Legal frameworks are in place to promote, enforce and monitor equality and non-discrimination on the basis of sex** | No | SDG indicator 5.1.1 |
| | **Education for sustainable development criteria met** | Yes | Other |
| | **Proportion of students in lower secondary education showing adequate understanding of issues relating to global citizenship and sustainability, by sex**<br>(percentage) | Yes | ECE indicator K-1.3 (topic environmental education) |
| **Chapter VI: The way forward** | Not applicable | | |
| **Back matter (glossary)** | Not applicable | | |

*Abbreviations*: $CO_2$, carbon dioxide; DRR, disaster risk reduction; EEA, European Environment Agency; END, Environmental Noise Directive; GDP, gross domestic product; GHG, greenhouse gas; $NO_x$, nitrogen oxides; OECD, Organisation for Economic Co-operation and Development; $PM_{2.5}$, fine

particulate matter; SDG, Sustainable Development Goal; $SO_2$, sulfur dioxide; $SO_x$, sulfur oxides; VOC, volatile organic compound.

## IV. Process and timetable for the finalization of the indicator selection and production of indicators

10. The above-listed preliminary indicators represent a first draft selection. The Joint Task Force is invited to discuss and agree on necessary changes to that list (e.g., deletion of indicators, addition of indicators from the revised ECE Guidelines or from other indicator frameworks, as appropriate). Changes may also be needed should there be insufficient data available for specific indicators, or should the Committee on Environmental Policy decide on additional or fewer chapters and on the conference themes. Any such changes can be discussed at the 2025 Joint Task Force session.

11. To make use of already existing information and data to produce a light, indicator-based assessment to the degree possible, greater use might be made of Earth observations in producing specific indicators. A list of indicators and possible Earth observation sources could be developed. The Joint Task Force is invited to discuss which indicators could be derived with the help of Earth observation. Furthermore, for some of the indicators, state and trends for specific areas, international organizations and bodies under multilateral environmental agreements will be consulted where feasible, for instance for selected indicators on air quality, climate change, water and biodiversity.

12. ECE member States will be invited to produce the selected indicators with priority and to submit data on needed time series to the ECE secretariat for the development of the eighth pan-European environmental assessment, which will serve as key substantive input to the next Environment for Europe Ministerial Conference.

13. The secretariat, in collaboration with international and regional organizations, will explore the possibility of capacity development and technical assistance to support indicator production by countries.

14. The process of indicator selection and production will be aligned with the overall development process and timetable for the eighth pan-European environmental assessment. The table below shows a provisional timetable for the assessment until the expected date of the tenth Ministerial Conference, in 2027, if the intersessional period of five years is to be maintained. The table also includes information on the indicator selection and production process.

Table 2
**Possible timetable for eighth pan-European environmental assessment and information on indicator selection and production**

| *Date* | *Event* | *Actions* |
|---|---|---|
| October 2024 | 21st session of Joint Task Force on Environmental Statistics and Indicators | **Advice on suitable environmental indicators** based on the previous assessment and the *Guidelines for the Application of Environmental Indicators – 2023 Edition*<br><br>**Determination of whether some indicators could be derived from Earth observations** |

| *Date* | *Event* | *Actions* |
|---|---|---|
| | | **Closing of gaps related to regular production of preliminary selected indicators by countries from October 2024 onwards** |
| November 2024 | 29th session of Committee on Environmental Policy | Agreement on concept for eighth assessment and on its funding |
| | | Possible expressions of interest from international organizations |
| Spring 2025 | 27th session of Working Group on Environmental Monitoring and Assessment | Agreement on detailed design of assessment |
| Mid-2025 | | Drafting of terms of reference on consultants and institutional contractors |
| Autumn 2025 | 22nd session of Joint Task Force | **Agreement on suitable indicators for all relevant chapters, except for Conference themes** |
| Autumn 2025 | 30th session of Committee | Agreement on themes for next Ministerial Conference |
| | | Resolution of any funding shortage, if appropriate |
| | | **Agreement on indicators for Conference themes** |
| Late 2025–autumn 2026 | - | **Closure of gaps in indicator production as needed** |
| | | Preparation of draft assessment |
| Autumn 2026 | 23rd session of Joint Task Force | Consultation on draft assessment |
| Autumn 2026 | 31st session of Committee | Consultation on draft assessment |
| Late 2026/early 2027 | Special session of Committee | Consideration on draft assessment and its possible use in drafting ministerial declaration |
| Early-mid 2027 | - | Design and layout of assessment, and design, layout and printing of summary for policymakers |
| Mid/autumn 2027 | 10th Environment for Europe Ministerial Conference | Consideration of eighth pan-European environmental assessment |

## V. Next steps and questions for consideration

15. Based on the proposed indicators presented above, the Joint Task Force might consider the following next steps:

(a) Discussing and agreeing in general on the proposed list of indicators;

(b) Discussing further whether, to what extent and how it may be appropriate to use Earth observations to generate indicator values;

(c) Discussing whether sufficient data are available and whether all indicators can be produced by all member States;

(d) Discussing capacity development needs;

(e) Agreeing on indicators for a possible chapter on green economy and the Conference themes, once determined.