

# INTRODUCTION TO THE GROUP WORK ON CLIMATE CHANGE STATISTICS AND INDICATORS

## Session Two: Climate Change Statistics

Seventh Meeting of the Expert Group on Environment Statistics

11-12 November 2020



# Format of the Group Work

- There are five areas for the Global Set of Climate Change Indicators and Statistics, organized according to the IPCC framework:
  1. Drivers
  2. Impacts
  3. Vulnerability
  4. Mitigation
  5. Adaptation
- We will break into five groups, one addressing each area.
- Each break out group will have a chair and a rapporteur.



# Global Set of Climate Change Indicators and Statistics

| Topic   | Indicators | Statistics (FDES Statistic) | Potential aggregations and scales | Category of Measurement | Paris Agreement Articles   | Katowice package   | Sendai Framework                                 | Tier (UNSD)                                      |   |
|---|------------|-----------------------------|-----------------------------------|-------------------------|--|--|--|--|---|
| <b>DRIVERS</b>  |            |                             |                                   |                         |  |  |  |  |   |
| <b>Total greenhouse gas (GHG) emissions</b>   |            |                             |                                   |                         | 13.7a  | Decision 18/CMA.1, chapter II  |  |  |   |
| <b>Change of GHG from base to latest reported year according to territorial principle (IPCC reporting tables)</b> |            |                             |                                   |                         |  |  |  |  |   |
| <b>Total greenhouse gas emissions per year (SDG 13.2.2, suggested by Suriname)</b>                                |            |                             |                                   |                         |  |  |  | 2  |   |
| <b>Total emissions of direct greenhouse gases (GHGs, excluding LULUCF) (FDES 3.1)</b>                             |            |                             |                                   |                         | By types of gas (CO <sub>2</sub> , CH <sub>4</sub> , N <sub>2</sub> O, HFC, SF <sub>6</sub> , PFC, NF <sub>3</sub> ) | Mass   | 13.7a  | Decision 18/CMA.1, chapter II, para. 47-49       | 1 |
| <b>Total emissions of indirect greenhouse gases (GHGs) (FDES 3.1.1.b.)</b>  |            |                             |                                   |                         | By types of gas (NO <sub>x</sub> , SO <sub>x</sub> , NM-VOCs, CO)  | Mass   | 13.7a  | Decision 18/CMA.1, chapter II, para. 47-49       | 1 |
| <b>Total emissions from LULUCF</b>  |            |                             |                                   |                         |  |  |  |  |   |
| <b>Emissions of GHG from International Bunker (Aviation and Waterborn navigation) (Suriname)</b>                  |            |                             |                                   |                         |  |  |  | 1  |   |
| <b>Total greenhouse gas emissions from the national economy (UN-ECE 09a, excluding indirect GHGs)</b>             |            |                             |                                   |                         | By ISIC economic activity and households   |  |  |  |   |
| <b>Direct GHG emissions according to residence principle (Hungary)</b>  |            |                             |                                   |                         | By types of gas  | Mass   |  | 1  |   |
| <b>Indirect GHG emissions according to residence principle (Hungary)</b>  |            |                             |                                   |                         | By types of gas  | Mass   |  | 1  |   |
| <b>Atmospheric concentration of greenhouse gases</b>  |            |                             |                                   |                         |  |  |  |  |   |
| <b>[to be determined]</b>   |            |                             |                                   |                         | Global concentration of greenhouse gases [should it be in drivers or impacts?]                                       | Global, by types of gas (CO <sub>2</sub> , CH <sub>4</sub> , N <sub>2</sub> O) | Concentration                                    |  | 1 |
| <b>Energy production and supply</b>   |            |                             |                                   |                         |  |  |  |  |   |
| <b>Primary energy production from fossil fuels per capita</b>   |            |                             |                                   |                         |  | 4.8; 4.13; 13.7b   | Decision 18/CMA.1, chapter III; Decision 4/CMA.1 |  |   |
| <b>Total primary energy production from fossil fuels</b>  |            |                             |                                   |                         | By components of production (solid, liquid and gas)  | Energy unit  | 4.8; 4.13; 13.7b                                 | Decision 18/CMA.1, chapter III; Decision 4/CMA.1 | 1 |
| <b>Population</b>   |            |                             |                                   |                         |  |  |  |  |   |
| <b>Energy supply from fossil fuels per capita</b>   |            |                             |                                   |                         |  |  |  |  |   |
| <b>Total energy supply from fossil fuels</b>  |            |                             |                                   |                         | By components of total energy supply   | Energy unit  | 4.8; 4.13; 13.7b                                 | Decision 18/CMA.1, chapter III; Decision 4/CMA.1 | 1 |
| <b>Population</b>   |            |                             |                                   |                         |  |  |  |  |   |
| <b>Energy consumption</b>   |            |                             |                                   |                         |  |  |  |  |   |
| <b>[to be determined]</b>   |            |                             |                                   |                         |  | 4.8; 4.13; 13.7b   | Decision 18/CMA.1, chapter III; Decision 4/CMA.1 |  |   |
| <b>Final energy consumption (FDES 2.2.2.c)</b>  |            |                             |                                   |                         | By components of final consumption, according to   | Energy unit  | 4.8; 4.13; 13.7b                                 | Decision 18/CMA.1, chapter III; Decision 4/CMA.1 | 1 |
| <b>Energy consumption by household/capita</b>   |            |                             |                                   |                         |  |  |  |  |   |
| <b>Energy consumption (FDES 2.2.2.c)</b>  |            |                             |                                   |                         | By households, ISIC economic activity, tourists  | Energy unit, Mass, Volume  | 4.8; 4.13; 13.7b                                 | Decision 18/CMA.1, chapter III; Decision 4/CMA.1 | 1 |
| <b>Households</b>   |            |                             |                                   |                         |  |  |  |  |   |
| <b>Energy intensity measured in terms of primary energy and GDP (SDG 7.3.1)</b>                                   |            |                             |                                   |                         |  |  |  |  |   |
| <b>Total energy supply (FDES 2.2.2.b)</b>   |            |                             |                                   |                         | By energy product  | Energy unit, Mass, Volume  | 4.8; 4.13; 13.7b                                 | Decision 18/CMA.1, chapter III; Decision 4/CMA.1 | 1 |
| <b>GDP</b>  |            |                             |                                   |                         |  |  |  |  |   |
| <b>Electricity</b>  |            |                             |                                   |                         |  |  |  |  |   |
| <b>[to be determined]</b>   |            |                             |                                   |                         |  | 4.8; 4.13; 13.7b   | Decision 18/CMA.1, chapter III; Decision 4/CMA.1 |  |   |
| <b>Electricity supply</b>   |            |                             |                                   |                         |  | Energy unit  | 4.8; 4.13; 13.7b                                 | Decision 18/CMA.1, chapter III; Decision 4/CMA.1 | 1 |
| <b>Electricity consumption</b>  |            |                             |                                   |                         | By sector  | Energy unit  | 4.8; 4.13; 13.7b                                 | Decision 18/CMA.1, chapter III; Decision 4/CMA.1 | 1 |
| <b>Production of electricity (from fossil fuels)</b>  |            |                             |                                   |                         | By types of fuel   | Energy unit  | 4.8; 4.13; 13.7b                                 | Decision 18/CMA.1, chapter III; Decision 4/CMA.1 | 1 |
| <b>Fossil fuels</b>   |            |                             |                                   |                         |  |  |  |  |   |
| <b>[to be determined]</b>   |            |                             |                                   |                         |  | 4.8; 4.13; 13.7b   | Decision 18/CMA.1, chapter III; Decision 4/CMA.1 |  |   |
| <b>Fossil fuels extraction</b>  |            |                             |                                   |                         | By types of fuel   | Energy unit  | 4.8; 4.13; 13.7b                                 | Decision 18/CMA.1, chapter III; Decision 4/CMA.1 | 1 |
| <b>Fossil fuels imports</b>   |            |                             |                                   |                         | By types of fuel   | Energy unit  | 4.8; 4.13; 13.7b                                 | Decision 18/CMA.1, chapter III; Decision 4/CMA.1 | 1 |
| <b>Fossil fuels exports</b>   |            |                             |                                   |                         | By types of fuel   | Energy unit  | 4.8; 4.13; 13.7b                                 | Decision 18/CMA.1, chapter III; Decision 4/CMA.1 | 1 |



# Example of a metadata sheet

## 10. Adaptation: Proportion of municipal waste treated [Tier 1]

|   | Indicator   | Statistic 1   | Statistic 2   |
|---|---|---|---|
| <b>Codes and titles</b>   | <b>Proportion of municipal waste treated</b>  | <b>Total amount of municipal waste collected (3.3.2.a.1)</b>  | <b>Municipal waste managed in the country (3.3.2.a.2)</b> |
| <b>Area and topic</b>   | Adaptation, waste management  |   |   |
| <b>Themes</b>   | Waste   |   |   |
| <b>Correspondences</b><br>Paris articles<br>Katowice Package<br><br>FDES<br>SDG<br>Sendai Framework | 7; 13.8   | FDES 3.3.2.a.1  | FDES 3.3.2.a.2  |
| <b>Tier</b>   | 1   | 1   | 1   |
| <b>Definitions</b>  |   | Municipal waste, collected by or on behalf of municipalities, by public or private enterprises, includes waste originating from: households, commerce and trade, small businesses, office buildings and institutions. | The amount of waste treated (measured by weight).         |
| <b>Relevance</b>  | <ul style="list-style-type: none"> <li>Waste management</li> <li>Data reporting to UNSD</li> </ul>            |   |   |
| <b>Update frequency</b>   | Annual  |   |   |
| <b>Category of measurement</b>  | Percent   | Volume  | Volume  |
| <b>Data collection methods</b>  |   | Statistical surveys   | Statistical surveys                                       |
| <b>National data sources</b>  | Municipal authorities, waste collection operators   |   |   |
| <b>Computation/compilation methods</b>  | Total amount of municipal waste collected divided by Municipal waste managed in the country multiplied by 100 | amount of municipal waste collected   | amount of municipal waste treated                         |
| <b>Reference to examples of international statistics</b>  | See right.  | UNSD Environmental Indicators (Waste)   | UNSD Environmental Indicators (Waste)                     |
| <b>Type of statistics</b>   |   | Country   | Country   |
| <b>Potential aggregations and scales</b>  | By types of treatment and disposal (waste incineration, recycling, utilization, and landfill)                 | By region   | By types of treatment and disposal                        |
| <b>Methodological Guidance</b>  | BSES <a href="#">methodology sheet</a>  |   |   |



## In each area we aim to

- Address the completeness of the indicators and statistics list.
- Review and validate indicators and statistics.
- Fill the gaps ([to be determined]), and topics that need further work.
- Discuss the “Tier (UNSD)” of the indicators and statistics.
- Investigate the metadata examples: several specific questions will be discussed in detail tomorrow.



# Areas of work

- **Tier (UNSD)**
  - Tier 1: Methodology exists, national data are available.
  - Tier 2: Methodology exists, data may not be available, but they are important to the Paris Agreement/FDES/SDG/Sendai Framework.
  - Tier 3: Methodology needs further work and data are not available.
  - For example, SDG 7.3.1 “Energy intensity measured in terms of primary energy and GDP” has SDG Tier 1, but UNSD Tier 2.
- There are three colours of the indicators/statistics:
  - Black denotes they were included in the Pilot Survey.
  - **Blue** denotes they are proposed by experts during the Pilot Survey.
  - **Red** denotes they are proposed by UNSD after the Pilot Survey.



# Questions to be asked during the Group Work

- UNSD incorporated the feedback from countries' and organizations' experts during the Pilot Survey to create the current list and metadata sheets.
- There are still questions to be answered.
- Questions for the indicator list:
  - Can we fill the gaps (missing indicators) in each area?
  - Do you agree with the new suggestions of the indicators and statistics by experts and UNSD?
  - Do you agree with the tiers of indicators and statistics, proposed in column "Tier (UNSD)"?
  - Can we provide further references from the global frameworks and agreements such as: SDG, FDES, Paris Agreement/Katowice, Sendai Framework to the indicators and statistics?



# Questions to be asked during the Group Work

| Paris Agreement Articles | Katowice package                                | Sendai Framework | Tier (UNSD) | Comments of the Group Work |
|--------------------------|---|------------------|-------------|----------------------------|
| 7.1; 13.8                | Decision 18/CMA.1, chapter IV; Decision 9/CMA.1 |                  |             |                            |
| 7.1; 13.8                | Decision 18/CMA.1, chapter IV; Decision 9/CN    |                  | 1           |                            |
|                          |   |                  |             |                            |
|                          |   |                  |             |                            |
|                          |   |                  |             |                            |
|                          |   |                  | 1           |                            |
|                          |   |                  |             |                            |
| 7.1; 13.8                | Decision 18/CMA.1, chapter IV; Decision 9/CN    |                  | 1           |                            |
|                          |   |                  |             |                            |
| 7.1; 13.8                | Decision 18/CMA.1, chapter IV; Decision 9/CMA.1 |                  |             |                            |
|                          |   |                  |             |                            |
|                          |   |                  |             |                            |
| 7.1; 13.8                | Decision 18/CMA.1, chapter IV; Decision 9/CN    |                  | 3           |                            |
|                          |   |                  |             |                            |
| 7.1; 13.8                | Decision 18/CMA.1, chapter IV; Decision 9/CN    |                  | 3           |                            |
|                          |   |                  |             |                            |
| 7.1; 13.8                | Decision 18/CMA.1, chapter IV; Decision 9/CMA.1 |                  |             |                            |
| 7.1; 13.8                | Decision 18/CMA.1, chapter IV; Decision 9/CN    |                  | 3           |                            |
|                          |   |                  |             |                            |
|                          |   |                  |             |                            |

- A template with a comment column is provided to chairs and rapporteurs.
- General comments are also welcomed.





# Metadata questions to be asked during the Group Work

- For each area, there are two metadata sheets as examples.
- Some (e.g. SDG Tier 1 indicators) have available and strong metadata, while other indicators (e.g. Tier 2 and 3 indicators) need further work.
- Questions for the metadata sheets:
  - Is the metadata structure and contents adequate?
  - Is there any field you would like to add to the metadata sheet?
  - Can you complete the missing fields on the metadata sheets?



**Please review the** introductory document, indicator list, and metadata examples.

**See you tomorrow!**

