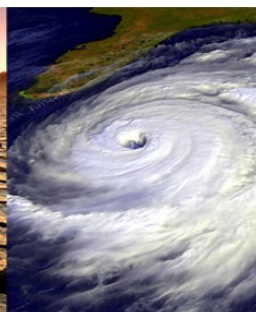


# Updates on Global Work in Environment and Climate Change Statistics



*Prepared by the United Nations Statistics Division for the Nineteenth session of the Joint Task Force on Environmental Statistics and Indicators*

*Geneva, hybrid mode, 3-4 November 2022*

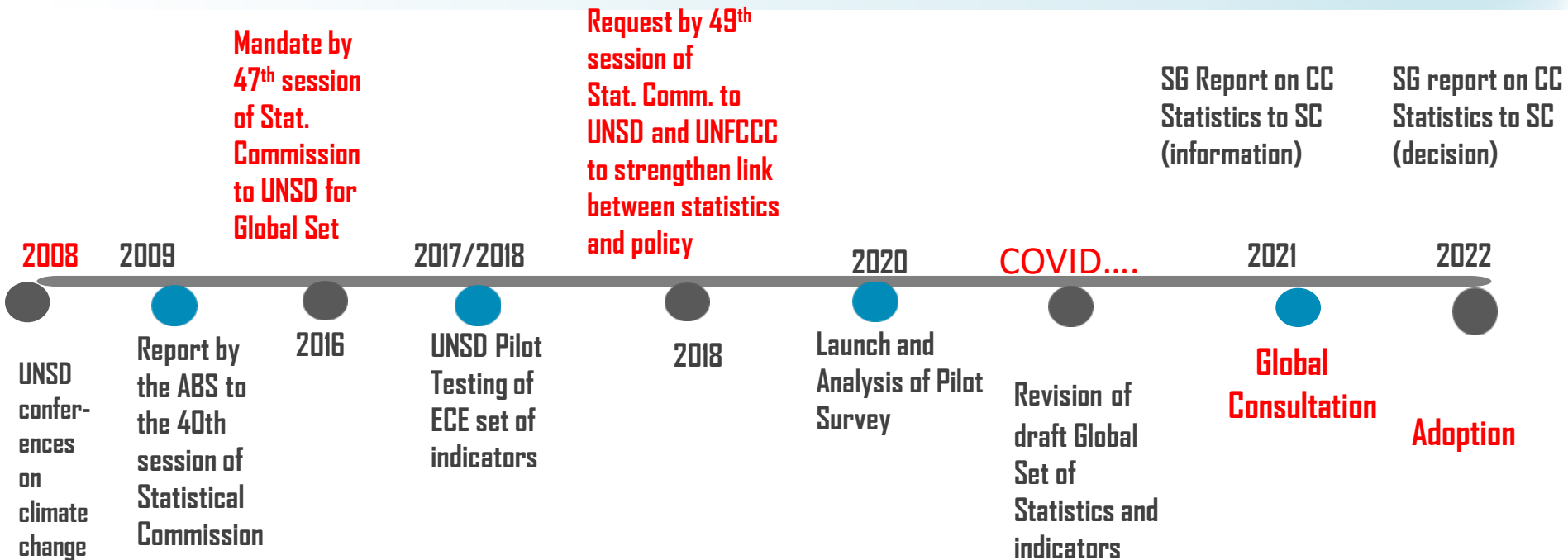


# Outline

1. Work process and adoption of the Global Set
2. International coordination and collaboration
3. Capacity development
4. Methodology development
5. Data collection



# More than a decade long process: 2008 – present



## Decisions of the Statistical Commission:

**Decision 47/112 (2016)**, UNSD requested to develop a global set of climate change statistics and indicators, applicable to countries at various stages of development:

<http://unstats.un.org/unsd/statcom/47th-session/documents/Report-on-the-47th-session-of-the-statistical-commission-E.pdf>

**Decision: 49/113 (2018)**, UNSD and UNFCCC to strengthen the link between statistics and policy

<https://unstats.un.org/unsd/statcom/49th-session/documents/Report-on-the-49th-session-E.pdf>

**Decision 53/116 (2022)**, the Global Set was adopted at the 53<sup>rd</sup> session of the Statistical Commission:

<https://unstats.un.org/unsd/statcom/53rd-session/documents/2022-41-FinalReport-E.pdf>



# Process and approach

## Draft Set of Indicators and Statistics

(bottom-up approach reviewing 130 countries,

- Regional representation
- approx. 7,500 individual indicators/statistics; analysed;
- most commonly repeated indicators identified.

## Pilot survey (2020)

42 countries and 30 international/regional organizations responded

## Global consultation (2021)

86 countries (68 on part 1 and 75 on part 2) and 26 organizations responded

**Pivotal  
In bringing  
together NSO  
and Climate  
authorities**

## Adoption of the Global Set (2022)

(5 areas, 34 topics, 158 indicators and 190 statistics)

53<sup>rd</sup> Statistical Commission adopted Global Set as the Framework for Climate Change Statistics and Indicators

## Implementation guidelines and climate-ESSAT

(in progress)

## Expert Group on Environment Statistics (EGES)

Bilateral consultations with specialized agencies on thematic areas

Ongoing consultations with countries to obtain inputs/feedback on process/outputs



# International coordination and collaboration



# International collaboration

- UNSD is a member of the UNECE Task Force on the Role of NSOs in Achieving National Climate Objectives
- UNSD presented on the “Global Set of Climate Change Statistics and Indicators”, and “Progress and challenges in measuring climate change vulnerability and adaptation” at an Expert Forum for producers and users of Climate Change-related statistics
- UNSD has shared details from country responses to the Global Consultation on the draft Global Set conducted in 2021. These have served as very useful inputs to further analysis on climate change statistics, for example in the ECE region
- ECE and some of its member states actively participate in the Expert Group on Environment Statistics hosted by UNSD

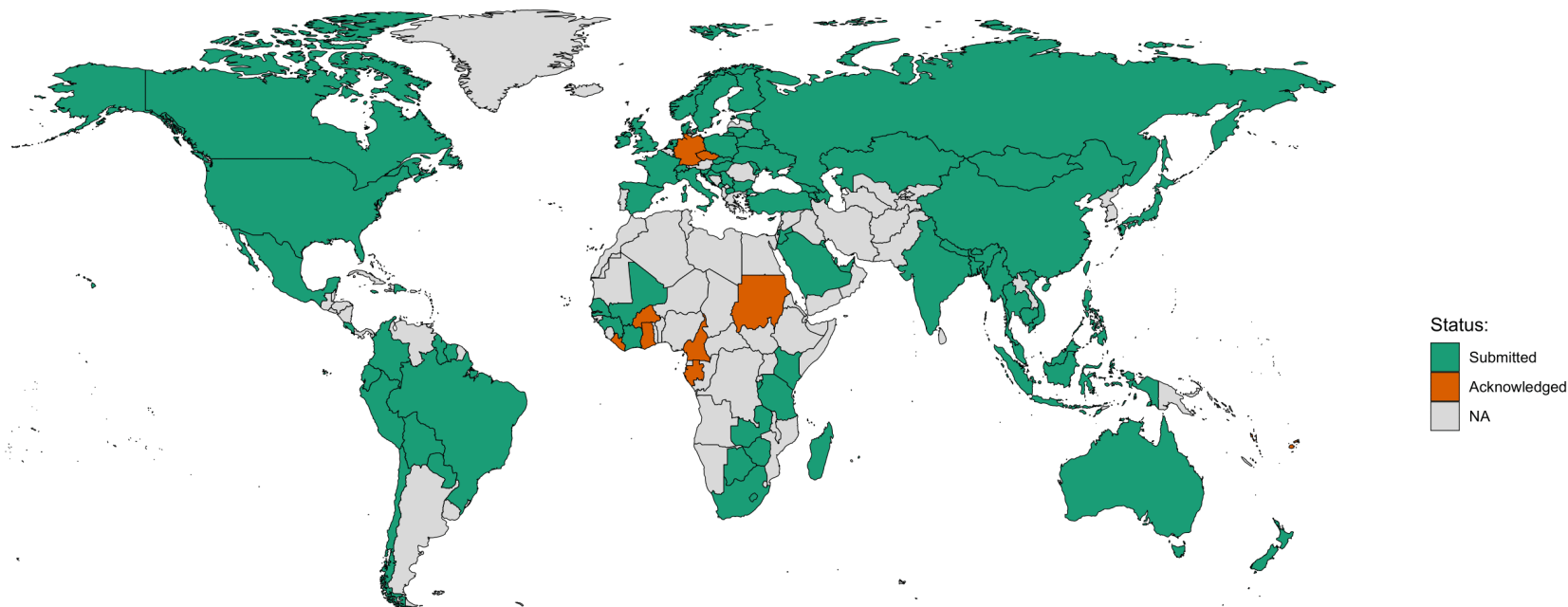


# Capacity development



# Growing engagement of countries

Global Consultation (May- Sept 2021) – 86 countries (68 on part 1 and 75 part 2) and 26 organizations



- The engagement is wider than that, e.g. 14 member states **acknowledged**.
- UNSD funded consultancies helped 2 more countries to do the assessment, another 9 countries to improve their earlier assessments in Africa
- Ongoing regional initiatives are also strengthening climate change statistics in countries

"Acknowledged" means that the national statistical offices of the countries (to whom we sent out the invitations to participate) communicated with us regarding the Global Consultation after we sent out our invitation, but that they did not submit a response.





# Implementation support

1. Following the adoption of the Global Set, UNSD has focused on completing and promoting a set of implementation support tools, including:
  - Climate Change Statistics Self-Assessment Tool (CISAT) which was drafted and currently tested in a number of pilot countries in Africa, South America and the Caribbean regions
  - Implementation guidelines, initially drafted before the adoption of the Global Set, now being revised and improved, and were discussed at the EGES meeting
  - Training materials and presentations
  - Continued capacity development activities using the Framework for the Development of Environment Statistics (FDES) as a structure around which countries may compile Environment Statistics Compendia.



# Access and implementation support for the Global Set

- The Global Set is introduced and briefly described in the [Report of the Secretary-General on Climate Change Statistics to the Statistical Commission \(E/CN.3/2022/17\)](#) available in the six UN languages: [https://unstats.un.org/unsd/envstats/climatechange\\_docs\\_conf.cshtml](https://unstats.un.org/unsd/envstats/climatechange_docs_conf.cshtml)
- The full description of the Global Set and its metadata is included in the Background document to the Report of the Secretary-General on Climate Change Statistics, entitled [Global Set and metadata](#).
- Implementation support materials including a self-assessment tool and e-learning materials will be disseminated via UNSD website: <https://unstats.un.org/unsd/envstats/climatechange.cshtml>
- In addition, if implementation advice and support are required (including the indicators and statistics in a spreadsheet form – Excel file) please contact UNSD at: [envstats@un.org](mailto:envstats@un.org)



# Implementation steps

## Conduct a self-assessment

NSOs in collaboration with climate reporting authorities prioritize the nationally relevant indicators and statistics

Using tools developed e.g. Climate ESSAT (in progress)

## Establish/expand/strengthen committee/working group

with relevant stakeholders

Promotes strengthening of relationship between NSOs and national climate reporting authorities

## Define and prioritize gaps in data and methods

## Collect data and compile statistics and indicators

- Conduct specialised surveys on Climate Change Statistics e.g. Nepal
- Add questions/Options /section/ module on environment/climate change to PHC questionnaire e.g. Grenada, Tanzania 2020 round.
- <https://unstats.un.org/unsd/envstats/>

## Reporting

Contribute to national policy demands and international reporting requirements

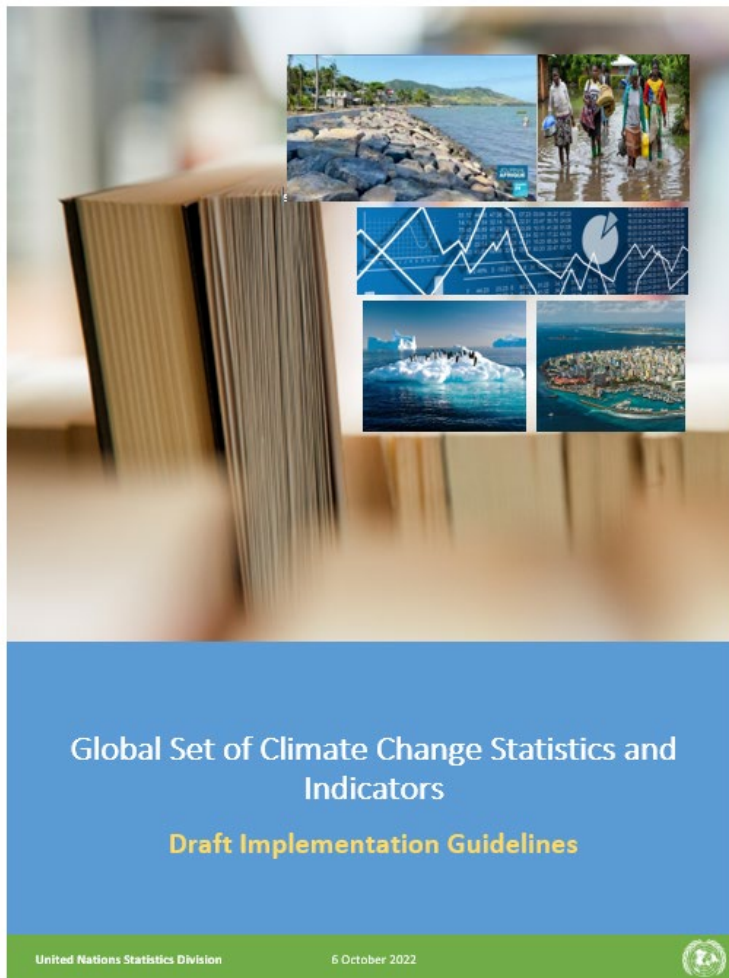
## Disseminate

Disseminate national climate change statistics and indicators as a public good



Jamaica and Tanzania - first 2 NSOs in the world to published Climate Change statistics reports.

# Draft Implementation Guidelines (under development)



## Contents

Acknowledgments

List of Abbreviations

### 1. Introduction

1.1. Background

1.2. Rationale for the Guidelines

1.3. Aims and objectives

1.4. How to use these guidelines

### 2. Understanding Climate Change

### 3. The Global Set of Climate Change Statistics and Indicators

### 4. Role of NSOs, National Focal Points and key stakeholders

### 5. Assessment and implementation of the Global Set

5.1 Assessment of available and needed resources - conduct a self-assessment which will prioritize t

5.2 Institutional and Organizational Dimensions – mobilize resources

5.3 Multi-disciplinary approach - Establish a committee/working group with relevant stakeholders

5.4 Training and capacity building at national level

#### 5.5 National Institutional Arrangements

5.5.1 Institution with a legal mandate for the production of statistics on climate change

5.5.2 Stakeholders

#### 5.6 Production of climate change statistics

5.6.1 Data sources

5.6.2 Map sources of available indicators/statistics and assess them in terms of quality and utility

5.6.3 Define and prioritize gaps in data and methods

5.6.4 Database building

5.6.5 Data Exchange Protocols

#### 5.7 Dissemination of national climate change statistics and indicators

5.7.1 Publication guidelines

5.8 Evaluating contribution to national policy demands and international reporting requirements

# Draft Self-Assessment Tool

(based on the Global Consultation, under development)

- **Assessment guidance:** short introduction and guidance for completing the self-assessment;
- **Part I: Institutional Dimension of Climate Change Statistics and Indicators:** aims at collecting general information on the institutional dimensions of climate change statistics;
- **Part II: Assessment of Climate Change Statistics and Indicators:** each individual indicator and statistic can be assessed in terms of relevance, methodological soundness and data availability.

Part II template:

Global Set (adopted in March 2022)							Global Climate Policy Reference		Statistical Reference				Focal Institutions and data sources	
Area	Topic	Number	Indicator	Statistic	Tier	Themes	Paris Agreement	PAWP-Katowice Climate Package	Method (frameworks, standards, guidelines)	Global	Regional	[possible] National data sources	National focal institution	
										FDES Reference	SDG Reference	Sendai Framework Reference	UN-ECE Reference	
													Examples: Ministry of Environment; Ministry of Energy; etc.	
<b>DRIVERS</b>														
	<b>Total greenhouse gas emissions</b>													
1	Total greenhouse gas emissions per year				1	GHG emissions	13.7a	Decision 18/CMA.1, chap	IPCC; SDG; UN-ECE		13.2.2 Total greenhouse gas emissions per year	[Similar to] UN-ECE 9b: T	Environment Agency/National climate change i	
2	Total emissions of indirect greenhouse gases			Total emissions of direct greenhouse gases (excluding LULUCF)	1	GHG emissions	13.7a	Decision 18/CMA.1, chap	IPCC; FDES	[Similar to] FDES 3.1.1.a Total emissions of direct greenhouse gases (GHGs), by gas			Environment Agency/National climate change i	
3	Greenhouse gas emissions from land use, land use change and forestry			Equivalent to the indicator	1	GHG emissions	13.7a	Decision 18/CMA.1, chap	IPCC; FDES	[Similar to] FDES 3.1.1.b Total emissions of indirect greenhouse gases (GHGs), by gas			Environment Agency/National climate change i	
4	Total greenhouse gas emissions from the national economy			Equivalent to the indicator	1	GHG emissions	13.7a	Decision 18/CMA.1, chap	IPCC; FDES; UN-ECE	[Similar to] FDES 3.1.1.a Total emissions of direct greenhouse gases	[Similar to] UN-ECE 11: G		Environment Agency/National climate change i	
5	Greenhouse gas emissions per capita				2	GHG emissions			SEEA-CF; UN-ECE		UN-ECE 09a: Total greenh		NSO	
6	Greenhouse gas emissions in gross fixed capital formation of direct investment			Total emissions of direct greenhouse gases (excluding LULUCF)	1	GHG emissions	13.7a	Decision 18/CMA.1, chap	IPCC; FDES	[Similar to] FDES 3.1.1.a Total emissions of direct greenhouse gases (GHGs), by gas			Environment Agency/National climate change i	
7	Greenhouse gas emissions in value added of foreign controlled multinational enterprises				3	GHG emissions			SEEA-CF				NSOs and Central Banks	
					3	GHG emissions			SEEA-CF				NSOs and Central Banks	

# Draft Self-Assessment Tool: Part II template

Self-Assessment																																				
Relevance					Methodological Soundness (tools, technology, etc.)										Data / statistic / indicator Characteristics																					
Relevance/priority for climate change - related policies			Requirements or user requests for collection / reporting on this Statistic / Indicator												Data / statistic / indicator availability					Primary Institution(s) collecting this Statistic / Indicator			Main Reasons why Statistic / Indicator is not available or not updated					Future Plans								
Yes/No	Reference/ Link	Relevance of Statistic / Indicator at the National Level	Priority for National Data Collection (High /Medium /Low/Not a Priority)	Sub-national	National	Regional	International	Yes/No/Partially	Reference/ Link	Main reason why methodological soundness	Type of Data Source	Category of Measurement	Unit of Measurement	Potential Aggregations and Scales	Classifications or groupings	Yes/Partially/No	Reference/ Link	Data Type	Similarity of Statistic / Indicator at the national level	Periodicity (Annual/Monthly/Daily/ Hourly/Other (specify))	Earliest Year Available	Latest Year Available	Format of Statistic / Indicator (Publication/Excel/Database/Webiste/Individual records/Other (specify))	NSO	Ministry of Environment or equivalent institution	Other (specify):	Resource constraints	Methodological/Technical difficulty in data collection	Insufficient quality	Inaccessibility	Lack of institutional set-up / coordination	Other (specify):				
Meets relevance to national climate related policies	Examples: Law/Strategy/Regulation etc.	High/Medium (Low/Not Relevant/Not Applicable)	High (H) Medium (M) Low (L) Not a Priority (NP)	Examples: Municipal/Local Province strategies, regulations, etc.	Examples: Insurance, tourism, forestry, forest production, industry, National Development	Examples: CARICOM, COMESA, ECOWAS, ECLAC, ESCAP, EFTA, EPA, ESCWA	Examples: UNFCCC, Sendai Frameworks, SDG, CBD, etc.	do you use the methodology suggested in the metadata?	Examples: Household survey, national Forest Inventory, etc.	100 historical surveys (e.g. censuses or sample surveys)	Broad categories suggested in metadata, (e.g. volume, mass, height)	Examples: m3, tonne, mm	2, spatial Aggregations (administrative (e.g. national/sub-national/sector))	Relevant classifications (e.g. IUCN ecosystem type, land use or zoning) (by age, by sex)	Means official either from national or international source	Statistical Yearbook or International Forestry source	produced by countries (3, country-adjusted data (CA), estimated data (E), global monitoring data (G), modelled data (M), ...)	Identical Similar Not Available	•Annual (A) •Monthly (M) •Daily (D) •Hourly (H) •Other (specify)	•Publication or report (P) •Excel files (E) •Database (D) •Webiste (W) •Individual records not readily available (I) •Other (specify)					Ministry of economy, energy, private sector etc.	financial and/or staff resource constraints	Measurement or non-existent metadata - does not allow for the assessment of the quality and comparability of the data set(s).									

## Instructions for Part II

The Self-Assessment Tool lists all the 158 indicators and 190 statistics included in the Global Set, followed by main Global Climate Policy References, Statistical References and Self-Assessment Questions structured in separate blocks in an Excel spreadsheet.

The first three blocks, i.e. the Global Set, the Global Climate Policy References and Statistical References, present the information and references also contained in the metadata (<https://unstats.un.org/unsd/statcom/53rd-session/documents/BG-3m-Globalsetandmetadata-E.pdf>) therefore these are not meant for users to fill in. The users should fill in the cells in the block called Self-Assessment. The following definitions apply:

### Global Set

**[column B] Area:** A schematic framework developed by the IPCC summarises the complexity of climate change as a sequence of events: drivers, impacts, vulnerability, mitigation and adaptation. These events are applied as five top-level areas in the Global Set. Each indicator is assigned to one of the five IPCC areas as a primary belonging, while some indicators were also assigned as applicable in one or more additional areas.

**[column C] Topic:** As in the FDES (p. 3), the statistical topics represent the quantifiable aspects of the areas taking into account the types and sources of the statistics needed to describe them.

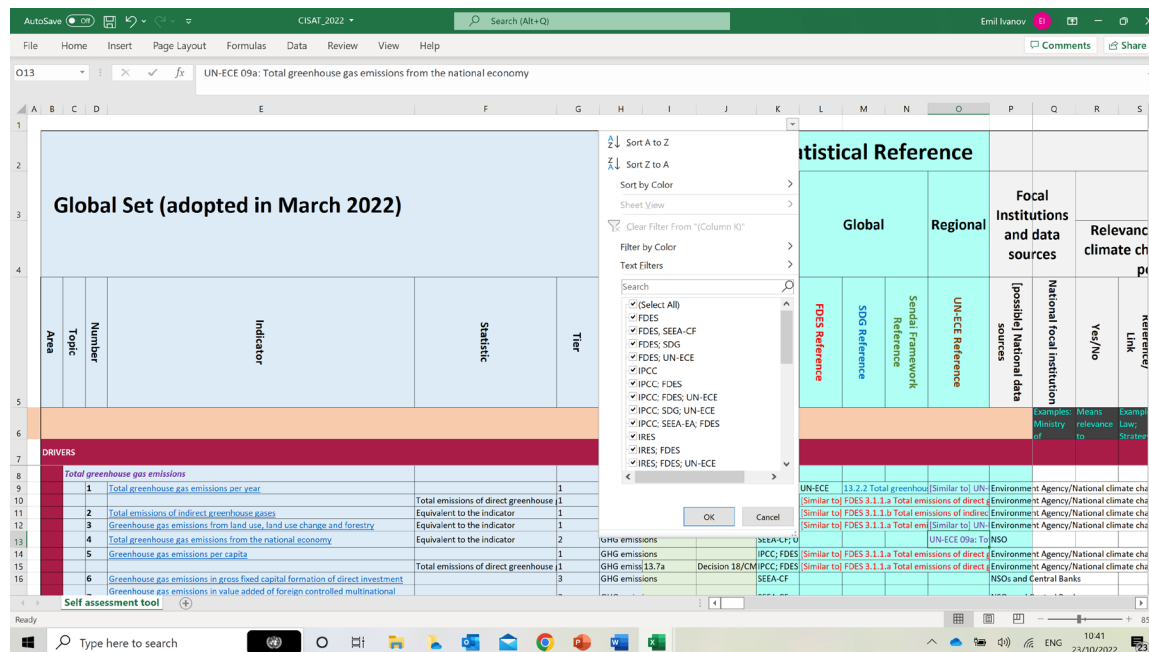
**[column D] Number:** Each indicator is numbered from 1 to 158.

**[column E] Indicator:** As in the FDES (p. 7), environmental indicators are used to synthesize and present



# Balancing continued improvement and continued application of the implementation support materials

- Consistency and transferability between FDES ESSAT and the Global Set CISAT
- Mapped correspondences of indicators in the Global Set with SDG, Sendai Framework and CES indicators, FDES statistics
- Mapped changes between the draft and final Global Set (excel file on our website: <https://unstats.un.org/unsd/envstats/climatechange.cshtml>)



Draft Global Set					Final Global Set				
Area	Draft Topic	Draft Ind number	Draft Indicators	Draft Statistics	Topic	Indicator	Statistic	Explanation	
					6	Greenhouse gas emissions in gross fixed capital formation of direct investment		new indicator (EGES)	
					7	Greenhouse gas emissions in value added of foreign controlled multinational enterprises		new indicator (EGES)	
							GHG emissions in output of foreign-controlled multination	new statistic (EGES)	
							GHG emissions in exports of foreign-controlled multination	new statistic (EGES)	
					8	Carbon footprint	Equivalent to the indicator	new indicator (EGES)	
	Atmospheric concentration of greenhouse gases				Atmospheric concentration of greenhouse gases				
	3		Global concentration of greenhouse gases		9	Global concentration of greenhouse gases	Equivalent to the indicator		
	Energy production and supply				Energy production, supply and consumption				
	4		Total primary energy production from fossil fuels		10	Total primary energy production from fossil fuels		modified - topics combined	
	5		Total energy supply from fossil fuels		11	Total energy supply from fossil fuels	Total energy production	new statistic (UNSD)	
	9		Share of fossil fuels in total primary energy supply (UN-ECE 2b)		12	Share of fossil fuels in total energy supply	Total energy supply	new statistic (UNSD)	
			Primary energy supply from fossil fuels				Total energy supply from fossil fuels	modified statistic	
			Total primary energy supply				Total energy supply	modified statistic	

# Relevant examples and resources

- **Reports and compendia on:**
  - environment statistics:  
<https://unstats.un.org/unsd/envstats/fdescompendia.cshtml> and
  - climate change statistics:  
[https://unstats.un.org/unsd/envstats/climatechange\\_reports.cshtml](https://unstats.un.org/unsd/envstats/climatechange_reports.cshtml)
- **Outcomes of the Global Consultation**, responses and feedback were received from 86 States and areas and 26 agencies (see annex I in the [Report of the Secretary-General on Climate Change Statistics to the Statistical Commission](#) (E/CN.3/2022/17)). Detailed summaries and geographical analysis are presented in the background document entitled "[Global Consultation on the Global Set](#)".
- Other relevant resources are comprehensively reviewed in the above background report
- **UNFCCC Operationalization of the Enhanced Transparency Framework:**  
<https://unfccc.int/enhanced-transparency-framework>





# Data collection



# UNSD/UNEP Questionnaire on Environment Statistics

- **Now in its 11<sup>th</sup> collection cycle (2022)**
- Countries present have provided data to this Questionnaire (water and waste sections) many times
- Emphasis from Expert Group on Environment Statistics was to utilize data for many purposes:
  - Sustainable Development Goal indicators
  - Global Set of Climate Change Statistics and Indicators
  - Framework for the Development of Environment Statistics
  - System of Environmental-Economic Accounting (Central Framework, Water Accounts, Waste Accounts)



# Concluding remarks

Our main effort is currently focused on developing strong implementation support recommendations, among which – clarifying the mechanisms of how to enable NSOs to fulfill their legal mandate in the area of climate change statistics while supporting the ongoing reporting to UNFCCC by the national focal points.

We already see evidence (from the Global Consultation and other Fora) from various countries that showcase good practices, with units, staff, national programmes and publications dedicated to climate change statistics which demonstrates progress in this novel statistical area.

Beyond the continuous engagement with UNFCCC, UNSD is also seeking ways to improve international coordination of implementation efforts via consultations and collaboration with various agencies, including UNEP, UNDRR, FAO, OECD, Paris21, Regional Commissions, regional organizations such as COMESA, CARICOM and the Pacific Community.

Work encouraging countries to implement the Framework for the Development of Environment Statistics, and to provide data to the UNSD/UNEP Questionnaire on Environment Statistics continues.



# Thank you for your attention!

For more information please contact the Environment Statistics Section  
at the United Nations Statistics Division:

E-mail: [envstats@un.org](mailto:envstats@un.org)

Website: <https://unstats.un.org/unsd/envstats/>

Climate Change Statistics Website

<https://unstats.un.org/unsd/envstats/climatechange.cshtml>

and

[https://unstats.un.org/unsd/envstats/ClimateChange\\_StatAndInd\\_global.cshtml](https://unstats.un.org/unsd/envstats/ClimateChange_StatAndInd_global.cshtml)

