

Supporting tools for the development of the Global Set on Climate Change Statistics and Indicators at the national level

Session 5: Climate Change Statistics: Overview of international statistical frameworks and guidelines

National Workshop on Strengthening the Measure of Progress in Disaster Risk Reduction in Sub-Saharan Africa through the Sendai Framework Monitoring Process and Enhanced Disaster Loss Data

Supporting tools

Global Set of Climate Change Statistics and Indicators

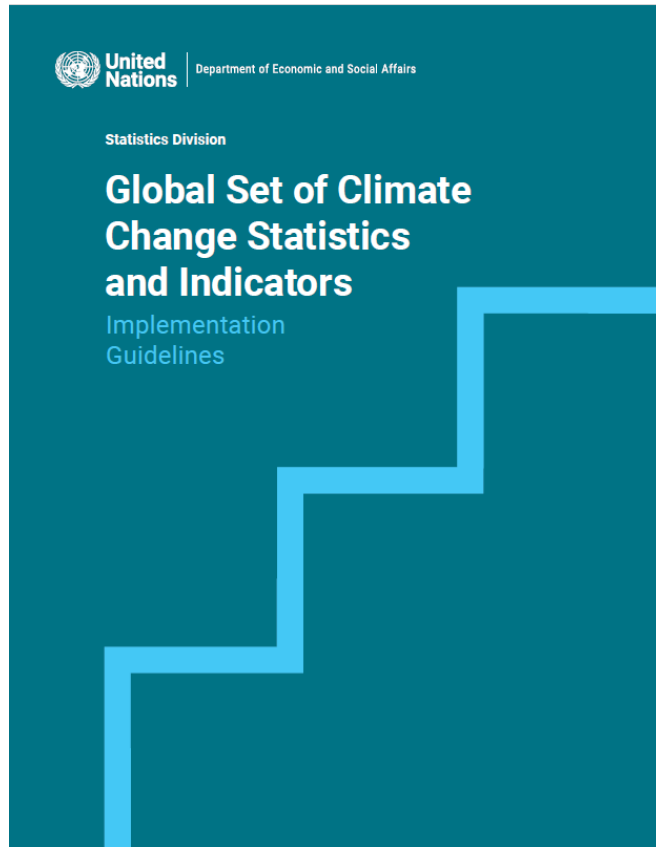
To support countries in their work with the Global Set of Climate Change Statistics and Indicators, UNSD, in collaboration with partners from UN Member States and international organizations, developed:

- [Implementation Guidelines](#)
- [Climate Change Statistics and Indicators Self-Assessment Tool \(CISAT\)](#)

**All documents are published on the UNSD Environment Statistics page: Climate Change Statistics [here](#)*

Implementation Guidelines

Global Set of Climate Change Statistics and Indicators



The Guidelines aid in the development of a national programme for the regular production of climate change statistics and indicators

The Guidelines focus on institutional aspects designed:

- To enable the relevant stakeholders to engage in active participation and contribution;
- To identify statistics and indicators relevant to national circumstances;
- To undertake the stepwise collection of data; and
- To prepare recommendations for regular publications and data dissemination

Contents

Implementation Guidelines

- I. Introduction
- II. Understanding climate change
- III. Global Set of Climate Change Statistics and Indicators
- IV. Developing a national programme of climate change statistics
- V. Production of climate change statistics

Include boxes describing the experience of Armenia, Mauritius, Finland, Türkiye, Mexico, Suriname, Tanzania, the United Kingdom, and Nepal

Chapter 4: Developing a national programme of climate change statistics

Implementation Guidelines

The main purpose of developing a national programme of climate change statistics is to ensure that the high-quality, transparent and sustained production of such statistics is set in place.

4.1. Role of national statistical offices, national focal points and key stakeholders

4.2. Assessment and implementation of the Global Set

- It is recommended that national statistical offices, in close collaboration with the United Nations Framework Convention on Climate Change (UNFCCC) national focal points, organize and initiate the assessment of available and needed resources using CISAT

Stakeholder engagement

in a national climate change statistics programme

National statistical office and UNFCCC-NFP

At the national level:

Committee and, if established, technical, thematic and/or interinstitutional working groups on environment and climate change statistics

At the regional and global levels:

Expert Groups, forums and others

Relevant ministries and agencies

Academic and research organizations

Private sector

...

International experts

Chapter 5: Production of climate change statistics

Implementation Guidelines

5.1. Measurement, reporting and verification system and transparency framework

5.2. Data sources for climate change statistics

Mapping and assessing sources of available statistics and indicators; Defining and prioritizing gaps in data and methods; Establishing data-collection processes; Database building; Data exchange protocols

5.3. Dissemination of national climate change statistics and indicators

Publication guidelines

5.4. Evaluating contribution to national policy demands and international reporting requirements

Climate Change Statistics and Indicators Self-Assessment Tool (CISAT)

General Information

The CISAT gives UN Member States an opportunity to undertake a thorough and detailed assessment of the statistics and indicators in the Global Set, which will allow the country to prioritize the nationally relevant indicators and statistics.

- ❖ Introduction
- ❖ Part I: Institutional Dimensions of Climate Change Statistics and Indicators
- ❖ Part II: Statistics and Indicators Assessment

Part I: Institutional Dimensions of Climate Change Stat. and Indicators

CISAT

Part I of CISAT focuses on the overall institutional and organizational structure of national statistics in the country and on specific information regarding climate change statistics:

- A. Identification of institutions
- B. National policies/strategies
- C. Mandate and organization of climate change statistics
- D. Production and reporting of climate change statistics
- E. Inter-institutional collaboration
- F. Technical assistance and training
- G. The way forward in climate change statistics

Climate Change Statistics and Indicators Self-Assessment Tool
(CISAT)
Part I: Institutional Dimensions of Climate Change Statistics and Indicators

B. National policies/strategies

B1. Are there national policies or strategies related to climate change in place?
 Yes (list policy or strategy and list responsible institution)
 No

B2. Is there a national statistical plan/programme/strategy in place (e.g., National Strategy for the Development of Statistics (NSDS))?
(if there are more than one, list)
 Yes (specify responsible institution)

Name of plan/programme/strategy	
Period	
Responsible institution	
Website	

No [Skip to question B3](#)

B3. Is climate change statistics included in the national statistical plan/programme/strategy?
 Yes
 No
Comments:

B4. Is there a national climate change statistics plan/programme/strategy in place?
 Yes (specify responsible institution)

Name of plan/programme/strategy	
Period	
Responsible institution	
Website	

No

Prepared by the
Country: _____

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Part II: Statistics and Indicators Assessment

CISAT

Part II of the CISAT is based on the Global Set and its metadata and consists of three files:

Instructions for Part II (Word file)

Metadata (Word file)

List of indicators and statistics (Excel file)

Instructions

The Global Set of Climate Change Statistics and Indicators was recommended as the framework for change statistics and indicators to be used by countries when preparing their own sets. It is designed to provide enough flexibility to be adapted to individual countries' climate change concerns, priorities and national circumstances. A country's national circumstances may lead to the possible exclusion of some indicators (see 1.1.1 below). The national circumstances may also lead to the possible exclusion of some indicators (see 1.1.1 below).

Global Set

Part II of the CISAT is based on the Global Set of Climate Change Statistics and Indicators. The main Global Climate Policy References are listed in the table below. The Global Set is divided into separate sections in a table below.

Area [column B]: A sequence of areas are applied as five top areas as a primary belonging areas.

Topic [column C]: As a topic into account the indicators.

Number [column D]: The indicator [column E] is a complex environment forms such as rates, indicators serve to reporting requirements.

Statistic [column F]: The structure, synthesizes statistics serve three purposes:

- (i) to provide information to initiate climate change action;
- (ii) to provide information to monitor climate change progress;
- (iii) to provide information to assess climate change impact and the need for action.

GLOBAL SET (ADOPTED in MARCH 2022)				GLOBAL CLIMATE POLICY REFERENCES		STATISTICAL REFERENCES				1 Relevance									
Indicator	Statistic	Topic	Number	Paris Agreement article	PAWPR/Indicator	Global	Regional	Focal Institutions and data sources	1.1 Relevance/priority for climate change-related policies	1.2 Requirements or use requests for this indicator/statistic	1.2.5 Specification								
						FDIS reference	SDG reference	Sendai Framework reference	UN-ECE reference	National Data Sources	National focal institution	1.1.1 Relevance of indicator/statistic at the national level	1.1.2 Reference/link	1.1.3 Priority for national data collection	1.2.1 Sub-national	1.2.2 National	1.2.3 Regional	1.2.4 International	
DRIVERS																			
Total greenhouse gas emissions																			
1	Total greenhouse gas emissions per year	Total emissions of direct greenhouse gas emissions	1	GHG emissions	13.7a	Decision 1	IPCC, SDG, UN-ECE	13.2.2 Total greenhouse gas emissions	(Similar to)	Environment Agency/National climate change reporting authorities									
2	Total emissions of indirect greenhouse gas emissions	Equivalent to the indicator	1	GHG emissions	13.7a	Decision 1	IPCC, FDES	(Similar to) FDES 3.1.1.a Total emissions of greenhouse gases	(Similar to)	Environment Agency/National climate change reporting authorities									
3	Greenhouse gas emissions from land use change and forestry	Equivalent to the indicator	1	GHG emissions	13.7a	Decision 1	IPCC, FDES, UN-ECE	(Similar to) FDES 3.1.1.b Total emissions of greenhouse gases	(Similar to)	Environment Agency/National climate change reporting authorities									
4	Total greenhouse gas emissions from agriculture, forestry and other land use	Equivalent to the indicator	2	GHG emissions			SEEA-CF, UN-ECE		UN-ECE D9a	NSO									
5	Greenhouse gas emissions per capita	Total emissions of direct greenhouse gas emissions	1	GHG emissions			IPCC, FDES	(Similar to) FDES 3.1.1.a Total emissions of greenhouse gases	(Similar to)	Environment Agency/National climate change reporting authorities									
6	Greenhouse gas emissions in gross fixed capital formation of direct investment	GHG emissions	3	GHG emissions			SEEA-CF			NSOs and Central Banks									
7	Greenhouse gas emissions in value added of foreign controlled multinational corporations	GHG emissions	3	GHG emissions			SEEA-CF			NSOs and Central Banks									
8	Carbon footprint	GHG emissions in output of foreign-controlled multinational corporations	3	GHG emissions			SEEA-CF			NSOs and Central Banks									
9	Global concentration of greenhouse gases	Equivalent to the indicator	2	GHG concentration			FDES	FDES 1.3.1.b Global atmospheric concentrations of greenhouse gases											
Energy production, supply and consumption																			
10	Total primary energy production from fossil fuels	Total energy production	1	Energy	4.8, 4.13, 13	Decision 1	IPCC, FDES			Ministry of Energy									
11	Total energy supply from fossil fuels	Total energy supply	1	Energy	4.8, 4.13, 13	Decision 1	IPCC, FDES	(Similar to) FDES 2.2.2.a 1 Production of energy	(Similar to)	Ministry of Energy									

1. Total greenhouse gas emissions per year

Field	Description
	Total greenhouse gas emissions per year
	Total emissions of direct greenhouse gases (excluding LULUCF)
	Total greenhouse gas emissions
	GHG emissions
	13.7a
	Decision 18/CMA.1, chapter II, para. 47-49
	Decision 18/CMA.1, chapter II, para. 47-49
	3.1.1.a [similar to]
	1
	Greenhouse gases (GHG) are those gaseous constituents of the atmosphere, both natural and anthropogenic, that absorb and emit radiation at specific wavelengths within the spectrum of thermal infrared radiation emitted by the Earth's surface, the atmosphere itself, and by clouds, and which contribute to the greenhouse effect. [IPCC AR5 WG1, p. 550, https://www.ipcc.ch/sr15/chapter/glossary/]
	Direct GHG emissions are those directly emitted into the atmosphere by a source. It includes CO ₂ , CH ₄ , N ₂ O, HFC, PFC, NF ₃ from agriculture, energy, industry waste, excluding LULUCF. GHG inventories under the UNFCCC cover estimation and reporting of anthropogenic GHG emissions and removals occurring on 'managed land'. Emissions resulting from fires in unmanaged forests would be considered as 'anthropogenic' if after burning the land use is changed, for example to pasture, and the land is accordingly re-categorized as 'managed'. [FDES BSES 1.3.1 and 3.1.1, p.8, https://unstats.un.org/unsd/envstats/fdes/MS1.3.1_GHG_Emissions.pdf]
	Drivers of climate change: Greenhouse gases cause the greenhouse gas effect which leads to global warming, as a result of the greenhouse effect. Greenhouse gases capture the long-wave (infrared) energy capture by the GHGs in the atmosphere and its downward re-emitting which causes warming at the lower atmosphere and land/ocean surface. [IPCC, https://www.ipcc.ch/site/assets/uploads/2018/02/ar4_chapter9-1.pdf]
	Annual anthropogenic GHG emissions have increased by about 10 Gt CO ₂ -eq between 2000 and 2010. This increase is due to the energy (47%), industry (30%), transport (11%) and building (3%) sectors. [IPCC AR5 SYR, Past and future drivers of climate change, 1.2.2 Human activities affecting emission drivers, https://www.ipcc.ch/site/assets/uploads/2018/02/SYR_AR5_FINAL_full.pdf]

Part II: Structure of the Excel table

CISAT

- Global Set (columns B - H) – *for information*
- Global Climate Policy References (columns I - J) – *for information*
- Statistical References (columns K - O) – *for information*
- **Self-Assessment** (P - BB) – *to fill in*
 0. Focal Institutions and data sources (P - Q)
 1. Relevance (R - Y)
 - 1.1 Relevance/priority for climate change-related policies

In this context, relevance refers to the importance of the indicator and its statistics for national climate change concerns or policy considerations.
 - 1.2 Requirements or user requests for this indicator/statistic

The level of requirement for collection/reporting on this indicator and its statistics should be identified using the drop-down menu and inserting an X as appropriate.

Part II: Structure of the Excel table (continuation)

CISAT

2. Data/statistic/indicator characteristics (Z - AS)

2.1 Data characteristics and availability

Are national data available and suitable for compiling the proposed statistic/indicator?

2.2 Institution(s) collecting data on this statistic/indicator

This sub-section specifies the institution responsible for collecting, processing and storing the data for the statistic/indicator (e.g., meteorological institution for weather data).

2.3 Format and characteristics of statistic/indicator

The compilation of climate change statistics and indicators may take place at the institutions collecting the respective data or may be done by other institutions.

2.4 Institution(s) compiling this statistic/indicator

This sub-section specifies the institution responsible for compiling, disseminating and reporting of the statistic/indicator.

2.5 Main reasons why the statistic/indicator is not available or not updated

An indication of the main reasons why the statistic/indicator is not available or not updated should be provided using the drop-down menu and inserting an X as appropriate.

Part II: Structure of the Excel table (continuation)

CISAT

3. Methodological soundness (AT – BA)

3.1 International comparability

Comparability entails use of common concepts, definitions and methods in production of climate change statistics and indicators across countries. It is an important dimension of quality and if data/statistics/indicators are not comparable, they lose a lot of their utility and relevance.

3.2 Methodology characteristics

Methods and standards agreed internationally, regionally and nationally are used with regard to definitions, units, variables and classifications.

4. Future plans (BB)

This section may be used to provide comments on plans to improve the statistic/indicator in the future, e.g., via new data collection, improvement of existing methodologies, etc.

Structure: Topics

Global Set of Climate Change Statistics and Indicators

DRIVERS	IMPACTS	VULNERABILITY	MITIGATION	ADAPTATION
<ul style="list-style-type: none"> -Total greenhouse gas emissions -Atmospheric concentration of greenhouse gases -Energy production, supply and consumption -Fossil fuels -Population -Transport -Land and agriculture 	<ul style="list-style-type: none"> -Agricultural production affected by climate change -Areas affected by climate change -Freshwater resources -Hazardous events and disasters -Climate change and human health -Climate change evidence -Soil condition -Distribution and status of species -Distribution and status of ecosystems -Production and consumption of materials -Climate change impacts on transport and critical infrastructure -Climate change impacts on tourism 	<ul style="list-style-type: none"> -Water security, food security and agriculture -Vulnerable species, ecosystems and their services -Buildings and infrastructure vulnerable to climate change -Vulnerable population -Area of country vulnerable to climate change 	<ul style="list-style-type: none"> -Renewable energy -Climate change mitigation policies, strategies and plans -Climate change mitigation technology and practice 	<ul style="list-style-type: none"> -Climate change adaptation policies, strategies and plans -Risk management, disaster forecasting and early warning systems -Public awareness of and education on climate change -Area-based adaptation to climate change -Climate change monitoring -Water management -Waste management

Structure: Indicators and Statistics

Global Set of Climate Change Statistics and Indicators

158 indicators

- serve to support developing and monitoring of national climate policies and international reporting requirements, in particular those under the Paris Agreement

190 statistics

- provide less complex options for countries with less developed statistical systems to initiate climate monitoring through official statistics
- provide statistics needed to compile the indicators (for Tier 1 and 2)
- provide inputs to further define and develop the Tier 3 indicators

Thank you



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