

Overview of the Global Set

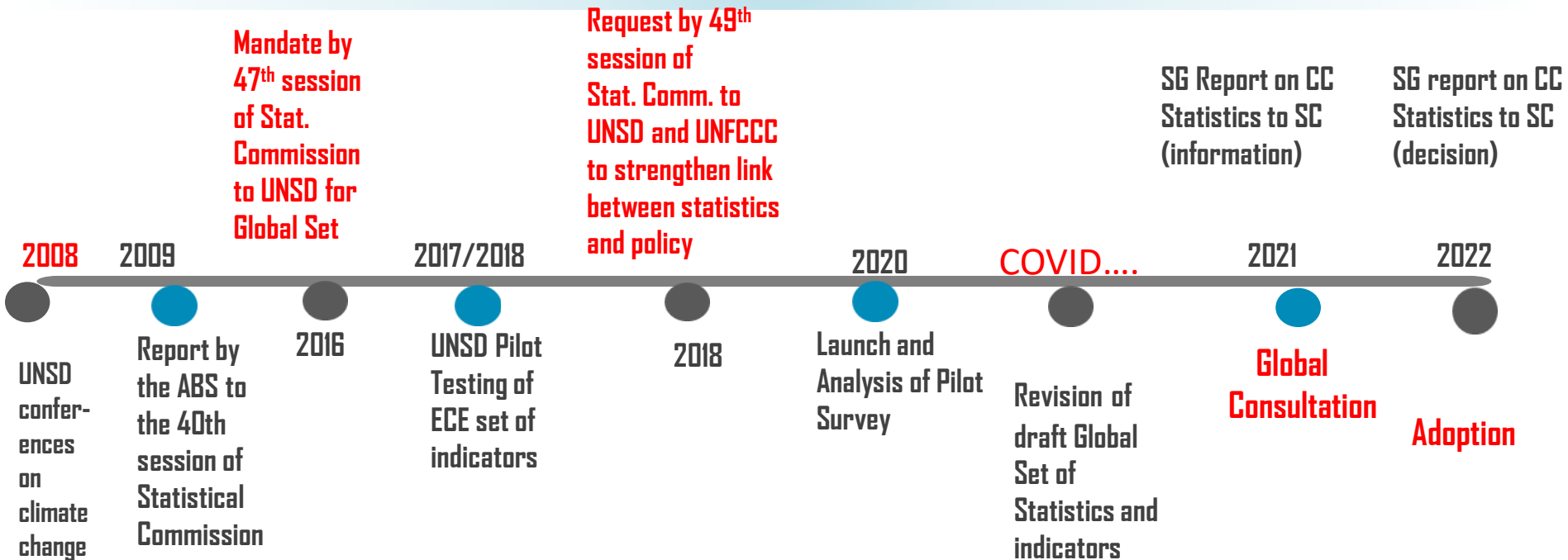


The adoption of the Global Set of Climate Change Statistics and Indicators by the 53rd session of the Statistical Commission in March 2022 was highlighted in the Report of the Secretary-General on the Work of the Organization in 2022.

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



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>

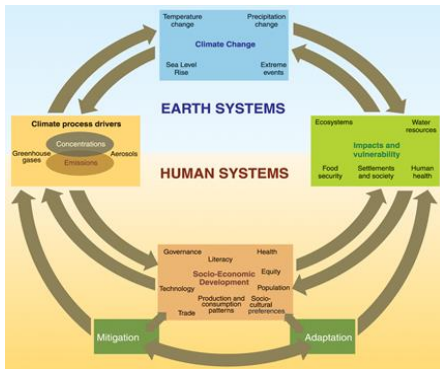
Decision 53/116 (2022), the Global Set was adopted at the 53rd session of the Statistical Commission:

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



Methodological foundation

- Given that there was no underlying framework linking the reporting requirements stemming from the Paris Agreement and the necessary statistics or indicators to support climate policy action, UNSD worked closely with UNFCCC to develop such a framework explicitly for climate change.
- The Global Set is structured according to the IPCC framework and FDES, with a tiering system as in the FDES and the SDG indicators.

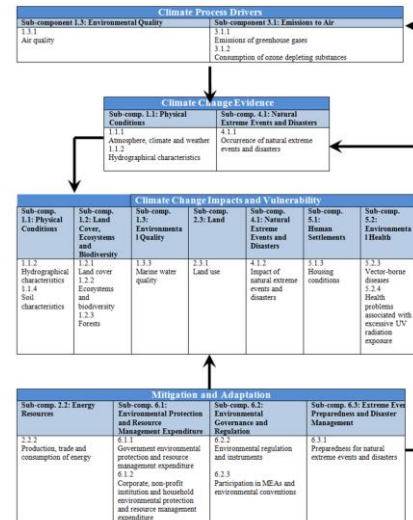


IPCC, 2007, Fourth Assessment Report



Framework for the Development of Environment Statistics (FDES 2013)

Relevant chapters of the Manual of the BSES
https://unstats.un.org/unsd/envstats/fdes/manual_bses.cshml



FDES cross-cutting application (Chapter 5) links climate change and environment statistics based on the IPCC Framework



Goal 13

SENDAI FRAMEWORK
 FOR DISASTER RISK REDUCTION 2015-2030



Statistical references

The main statistical references including the internationally accepted frameworks, standards and guidelines, are presented in abbreviated form in the last column (entitled Method):

- **IPCC:** the Intergovernmental Panel on Climate Change 2006 guidelines;
- **FDES:** the Framework for the Development of Environment Statistics and its Manual on the Basic Set of Environment Statistics (BSES);
- **SDG:** Sustainable Development Goal indicators metadata;
- **Sendai:** Sendai Framework for Disaster Risk Reduction 2015-2030;
- **UN-ECE:** the Conference of European Statisticians set of core climate change-related indicators metadata;
- **IRES:** the International Recommendations for Energy Statistics
- **SEEA-CF:** the System of Environmental-Economic Accounting Central Framework;
- **SEEA-EA:** the System of Environmental-Economic Accounting-Ecosystem Accounting.

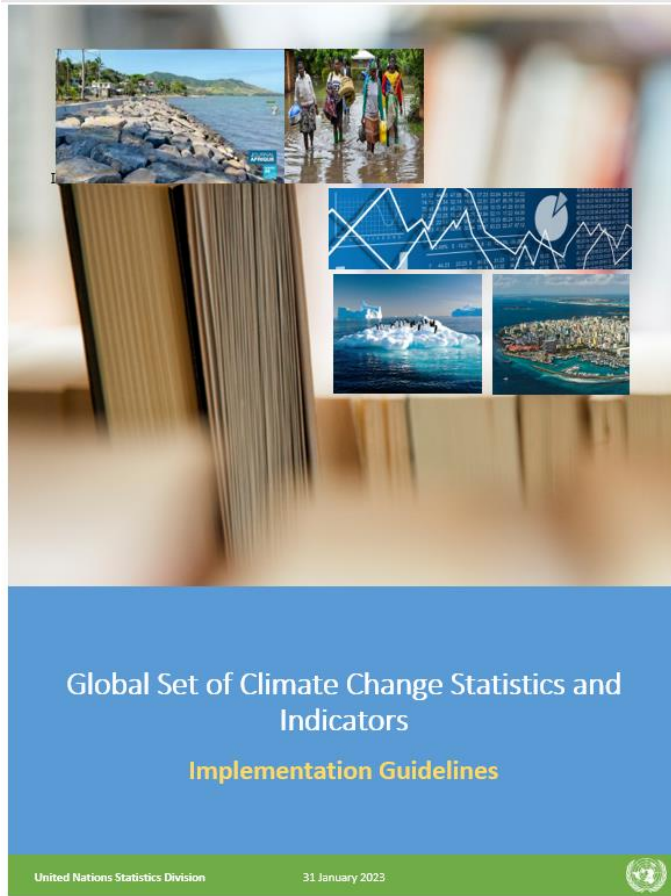


Access and implementation support for the Global Set

- The Global Set in its most detailed form, including the metadata, is presented in the [Climate Change Statistics and Indicators Self-Assessment Tool \(CISAT\) Part II](#).
- The full description of the Global Set and its metadata is also included in the Background document to the Report of the Secretary-General, entitled [Global Set and metadata](#).
- 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
- Implementation support materials including a self-assessment tool and e-learning materials are disseminated via UNSD website: <https://unstats.un.org/unsd/envstats/climatechange.cshtml>
- In addition, if implementation advice and support are required, please contact UNSD at: envstats@un.org



Implementation Guidelines (1)



https://unstats.un.org/unsd/envstats/Climate%20Change/Implementation_Guidelines.pdf

Table of contents

Acknowledgments.....	ii
List of abbreviations.....	iv
Table of contents.....	vi
List of boxes.....	viii
List of figures.....	viii
1. Introduction.....	1
1.1. Background.....	3
1.2. Rationale for the Guidelines.....	6
1.3. Aims and objectives.....	9
1.4. How to use the Guidelines.....	10
2. Understanding climate change.....	11
3. The Global Set of Climate Change Statistics and Indicators.....	14
4. Developing a national programme of climate change statistics.....	24
4.1 Role of NSOs, UNFCCC-NFPs and key stakeholders.....	24
4.1.1 Role of NSOs.....	24
4.1.2 Role of UNFCCC-NFPs.....	25
4.1.3 Role of other key stakeholders.....	26
4.1.4 Collaboration between NSO, UNFCCC-NFP and key stakeholders.....	26
4.2 Assessment and implementation of the Global Set.....	30
4.2.1 Assessment of available and needed resources.....	30
4.2.2 National action plan.....	35
4.2.3 High-level buy-in.....	36
4.2.4 National institutional arrangements.....	39
4.2.4.1 Define institution with a legal mandate for production of climate change statistics.....	39
4.2.4.2 Engage key stakeholders.....	41
4.2.5 Capacity building at national level.....	42
4.2.6 Multi-disciplinary approach.....	43
5. Production of climate change statistics.....	45
5.1 MRV/Transparency system.....	45
5.2 Data sources for climate change statistics.....	49
5.2.1 Map and assess sources of available statistics and indicators.....	52
5.2.1.1 Quality assurance.....	52
5.2.1.2 Generic Statistical Business Process Model.....	56
5.2.2 Define and prioritize gaps in data and methods.....	56
5.2.3 Establish data collection processes.....	57
5.2.4 Database building.....	59
5.2.5 Data exchange protocols.....	59
5.3 Dissemination of national climate change statistics and indicators.....	60
5.3.1 Publication guidelines.....	61
5.4 Evaluating contribution to national policy demands and international reporting requirements.....	61
References.....	63
Annexes.....	69
Annex 1: Contents of a national action plan on climate change statistics.....	69
Annex 2: Global Set of Climate Change Statistics and Indicators.....	71

Implementation Guidelines (2)

Self-assessment for building a National action plan on climate change statistics

The self-assessment will produce the needed understanding of what are the available resources (human and technical), available data, data gaps and what is (still) needed to support national climate policies and activities. Prioritisation of the needed data-related activities should be done taking into account the suitability of data collection methods including costs and reliability

Steps	Activities	Year 1				Year 2				Year 3			
		Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4
1	Establish/strengthen relationship between NSO and UNFCCC-NFP												
2	Engage stakeholders and complete the self-assessment using the CISAT												
3	Establish a committee, inter-institutional working group or task force or expand an existing one												
4	Define an institution with a legal mandate												
5	Establish collaboration/communication channels between stakeholders and make institutional arrangements												
	Designate national thematic experts												
	Develop ToRs/MoUs												
6	Engage high-level support for TWG - data collection/formation of unit / mobilizing resources												
	Conduct institutional review and skills capacity assessment												
	Develop project proposals/applications												
7	Strengthen human resources												
	Provide training and capacity building												
	Designate desk officers/core team												
	Hire staff/consultants												
8	Improve technical resources												
	Improve IT infrastructure (software and hardware)												
9	Develop a national programme/national action plan on climate statistics												
	Develop national set of climate indicators (consistent/complementary with NDCs/NAPs/NCs) and metadata												
	Map the data sources and assess data quality												
	Define gaps and prioritize work on methods and data collection												
	Develop data collection methods (such as climate change surveys)												
	Integrate the programme/plan into NSDS and national climate policies												
10	Undertake data collection/database building												
	Establish data exchange protocols												
	Compile statistics/indicators												
	Prepare analysis of key findings and draft a report												
	Organize a validation workshop/TWG and stakeholders												
11	Prepare contributions to national policies and the reports for UNFCCC												
12	Disseminate statistics and indicators												
13	Conduct user surveys												
14	Evaluate and define priorities for future improvements												



CISAT Package (1)

- **Introduction:** 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: Statistics and Indicators Assessment:** each individual indicator and statistic can be assessed in terms of relevance, methodological soundness and data availability.
- **Metadata sheets** in a Word file are linked to each indicator and statistic in the Excel file (Part II) via hyperlinks.

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

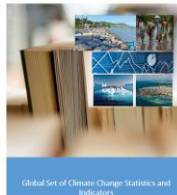
Introduction



Climate Change Statistics and Indicators Self-Assessment Tool

(CISAT)

Part I: Institutional Dimensions of Climate Change Statistics and Indicators



Global Set of Climate Change Statistics and Indicators

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

Part II: Statistics and Indicators Assessment



Climate Change Statistics and Indicators Self-Assessment Tool

(CISAT)

Metadata



Global Set of Climate Change Statistics and Indicators



Prepared by the United Nations Statistics Division
Version 5.0

(Issued with the Recommendations on Key Indicators of the Secretary-General on Climate Change Statistics (E/CN.C/2012/2))
Economic and Social Survey of Asia and the Pacific, 2013
Asunción, Uruguay, 21-23 April 2013
© United Nations Statistics Division, 2013

Introduction

This Climate Change Statistics and Indicators Self-Assessment Tool (CISAT) gives United Nations member States an opportunity to undertake a thorough and detailed assessment of the statistics and indicators in the *Global Set of Climate Change Statistics and Indicators* (Global Set). The United Nations Statistical Commission, at its fifty-third session in 2012, endorsed the Global Set of Climate Change Statistics and Indicators as the framework for climate change statistics and indicators to be used by countries when preparing their own sets. Similar to the Basic Set of Environment Statistics in the Framework for the Development of Environment Statistics (BES), the Global Set is comprehensive, but not exhaustive, and designed to support countries according to their individual needs, concerns, priorities and resources.

The Global Set serves as the statistical framework for monitoring and reporting climate action with suitable indicators to serve as a guidance for countries to prepare their own sets. It covers the policy areas of the IPCC, drivers, impacts, vulnerability, mitigation and adaptation which are broken down into 34 topics. In each area, the most important indicators to describe the topics are listed, thus providing guidance to countries developing national climate change statistics programmes in a comprehensive and balanced manner. Also included are statistics for which diverse methodologies are identified in this way for the Global Set contains 158 indicators and 300 statistics. The purpose of this structure is to ensure balanced coverage of indicators and statistics, and to provide direction to policy (e.g., in drivers, mitigation, adaptation, etc.). In addition, the structure is designed to help countries to select and prioritize the statistics and indicators most relevant to their national context.

The list of indicators and statistics included in the Global Set, as well as the Metadata are best accessed from the end of this report. They can be downloaded and used for countries in the Annexes of the Report of the

Contents

A. Identification of institutions	2
B. National policies/strategies	3
C. Mandate and organization of climate change statistics	4
D. Production and reporting of climate change statistics	5
E. Inter-institutional collaboration	7
F. Technical assistance and training	8
G. The way forward in climate change statistics	9
General Comments	10

GLOBAL SET (ADOPTED IN MARCH 2012)	GLOBAL SET (ADOPTED IN MARCH 2012)	GLOBAL SET (ADOPTED IN MARCH 2012)	GLOBAL SET (ADOPTED IN MARCH 2012)	GLOBAL SET (ADOPTED IN MARCH 2012)	GLOBAL SET (ADOPTED IN MARCH 2012)	GLOBAL SET (ADOPTED IN MARCH 2012)	GLOBAL SET (ADOPTED IN MARCH 2012)	GLOBAL SET (ADOPTED IN MARCH 2012)	GLOBAL SET (ADOPTED IN MARCH 2012)	KEY ASSESSMENT	
										RELEVANCE	DATA AVAILABILITY

Contents

Introduction	8
1. Total greenhouse gas emissions per year	13
2. Total emissions of natural greenhouse gases	15
3. Greenhouse gas emissions from land use, land use change and forestry	17
4. Total greenhouse gas emissions from the national economy	19
5. Greenhouse gas emissions per capita	21
6. Greenhouse gas emissions to gross fixed capital formation of direct investment	23
7. Greenhouse gas emissions to value added of foreign-controlled multinationals enterprises	25
8. Carbon footprint	27
9. Global concentration of greenhouse gases	29
10. Total primary energy production from fossil fuels	31
11. Total energy supply from fossil fuels	33
12. Share of fossil fuels in total energy supply	35
13. Total energy consumption per capita	37
14. Energy intensity measured in terms of primary energy and gross domestic product	39
15. Fossil fuel dependency	41
16. Amount of fossil fuel subsidies (production and consumption) per unit of gross domestic product	43
17. Population growth	45
18. Urban population as a proportion of total population	47
19. Number of fossil-fueled vehicles per capita	49
20. Intensity of fossil fuel use per capita	51
21. Intensity of use of forest resources	53
22. Deforested area as a proportion of total forest area	55
23. Ratio of area of organic soils drained for agriculture to total area of organic soils	57
24. Livestock units per agricultural area	59
25. Use of nitrogen fertilizers per hectare of total agricultural area (cropland and pastures)	61
26. Growth in fish up value	63
27. Direct agricultural loss attributed to disasters	65
28. Crop loss due to climate extremes	67
29. Impact of climate change on livestock productivity	69
30. Growing degree days	71
31. Forest area as a proportion of total land area	73



CISAT Package (2)

GLOBAL SET (ADOPTED in MARCH 2022)						GLOBAL CLIMATE POLICY REFERENCES		STATISTICAL REFERENCES						
Area	Topic	Number	Indicator	Statistic	Tier	Theme	Paris Agreement article	PAWP-Katowice	Method (frameworks, standards, guidelines)	Global			Regional	
										FDES reference	SDG reference	Sendai Framework reference	UN-ECE reference	
DRIVERS														
<i>Total greenhouse gas emissions</i>														
	1		Total greenhouse gas emissions per year											
4. Total greenhouse gas emissions from the national economy														
	2		Total emissions of indirect greenhouse gases											
	3		Greenhouse gas emissions from land use, land use change and forestry											
	4		Total greenhouse gas emissions from the national economy											
	5		Greenhouse gas emissions per capita											

Field	Description
Indicator	Total greenhouse gas emissions from the national economy
Statistics	Equivalent to the indicator
Area	Drivers
Topic	Total greenhouse gas emissions
Themes	GHG emissions
Paris Agreement article	
PAWP-Katowice	
FDES	
SDG	
Sendai Framework	
Tier	2
Definition	The indicator measures total greenhouse gas (GHG) emissions from all residents of a national economy. Residents can be persons, groups of persons in the form of households, and legal or social entities, such as corporations, non-profit institutions, or government units. Residents belong to the national economy where they have their centre of predominant economic interest. [UN-ECE metadata, indicator 9a, https://statswiki.unece.org/pages/viewpage.action?pageId=285216611&preview=/285216611/285216683/CCCI_09a_25_092020.pdf]
Relevance	GHG emission accounts are needed to better understand who emits, what they emit, and for which purposes. Extensive analyses of emissions are needed to find the most cost-effective methods to reduce them. Air emission accounts and their derived indicators can be used to model and investigate, for example, potential efficiency gains and macro-economic links. [UN-ECE metadata, indicator 9a, https://statswiki.unece.org/pages/viewpage.action?pageId=285216611&preview=/285216611/285216683/CCCI_09a_25_092020.pdf]
National data sources	NSO
Type of data source	Inventory
Update frequency	Annual
Category of measurement	Mass
Computation/compilation methods	Total GHG emissions by economic activity according to ISIC/NACE are aggregated to a total for the national economy. The economic activities include production and consumption activities.
International primary data reference	Eurostat database; OECD database
International primary data reference, description	Eurostat database for air emission accounts; OECD database for air emission accounts
International primary data reference, URL	https://appsso.eurostat.ec.europa.eu/nui/show.do?dataset=env_ac_ainah_r2&lang=en https://stats.oecd.org/Index.aspx?DataSetCode=AEA

Part II: Statistics and Indicators Assessment

- English Instructions for Part II
- English Global Set of Climate Change Statistics and Indicators *
- English Metadata *

* Each indicator in the Excel file is linked with its metadata in the Word file via hyperlink downloaded and saved in the same folder for this feature to work; also the name