

Global Set of Climate Change Statistics and Indicators



Seventh Meeting of the Expert Group on Environment Statistics
New York, 10-19 November 2020 (virtual)

Session 2: Climate Change Statistics and Indicators

United Nations Statistics Division

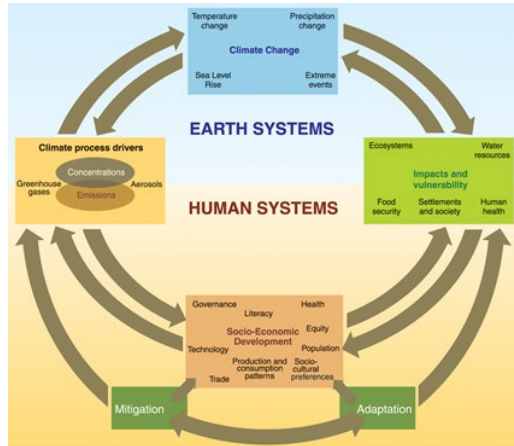


Outline

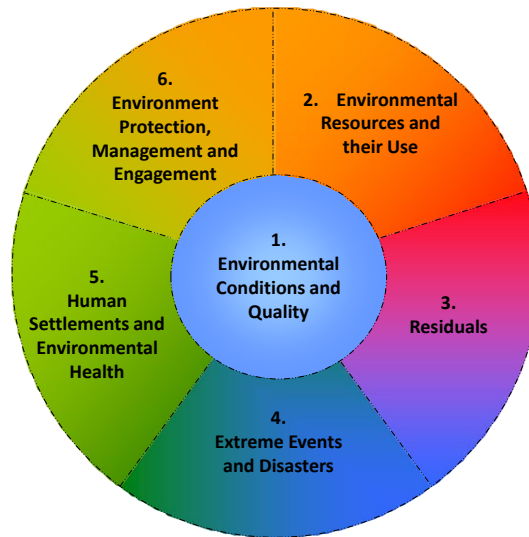
- Environment statistics (FDES 2013) and climate change statistics (IPCC)
- Statistical Commission (47th session) - relationship between FDES and climate change statistics
- Environment statistics as a basis for climate change statistics
- Statistical Commission (49th session) – linking climate change statistics and policy; and countries to contribute to Pilot Survey and Global Consultation
- UNSD: Globalizing climate change statistics and indicators
- Pilot Survey and impact of pandemic
- Consultations on the development of the Global Set
- UNSD: next steps
- UNSD: specific collaboration with UNFCCC
- Regional/national work on climate change statistics – examples
- Environment statistics and climate change statistics and the role of NSOs
- Lessons from environment statistics



FDES 2013 & climate change statistics



IPCC, 2007, Fourth Assessment Report (drivers, evidence, impacts & vulnerability, mitigation and adaptation)



Framework for the Development of Environment Statistics (FDES 2013)

- FDES cross-cutting application (Chapter 5) links climate change and environment statistics based on IPCC Framework (4th report in 2007)
- Integrating official statistics for climate change monitoring

Climate Process Drivers	
Sub-component 1.3: Environmental Quality	Sub-component 3.1: Emissions to Air
1.3.1 Air quality	3.1.1 Emissions of greenhouse gases 3.1.2 Consumption of ozone depleting substances

Climate Change Evidence	
Sub-comp. 1.1: Physical Conditions	Sub-comp. 4.1: Natural Extreme Events and Disasters
1.1.1 Atmosphere, climate and weather 1.1.2 Hydrographical characteristics	4.1.1 Occurrence of natural extreme events and disasters

Climate Change Impacts and Vulnerability						
Sub-comp. 1.1: Physical Conditions	Sub-comp. 1.2: Land Cover, Ecosystems and Biodiversity	Sub-comp. 1.3: Environmental Quality	Sub-comp. 2.3: Land	Sub-comp. 4.1: Natural Extreme Events and Disasters	Sub-comp. 5.1: Human Settlements	Sub-comp. 5.2: Environmental Health
1.1.2 Hydrographical characteristics 1.1.4 Soil characteristics	1.2.1 Land cover 1.2.2 Ecosystems and biodiversity 1.2.3 Forests	1.3.3 Marine water quality	2.3.1 Land use	4.1.2 Impact of natural extreme events and disasters	5.1.3 Housing conditions	5.2.3 Vector-borne diseases 5.2.4 Health problems associated with excessive UV radiation exposure

Mitigation and Adaptation			
Sub-comp. 2.2: Energy Resources	Sub-comp. 6.1: Environmental Protection and Resource Management Expenditure	Sub-comp. 6.2: Environmental Governance and Regulation	Sub-comp. 6.3: Extreme Event Preparedness and Disaster Management
2.2.2 Production, trade and consumption of energy	6.1.1 Government environmental protection and resource management expenditure 6.1.2 Corporate, non-profit institution and household environmental protection and resource management expenditure	6.2.2 Environmental regulation and instruments 6.2.3 Participation in MEAs and environmental conventions	6.3.1 Preparedness for natural extreme events and disasters



Report of the Secretary-General on Climate Change Statistics to the 47th session of the Statistical Commission in 2016

UNSD, in collaboration with UN-ECE, prepared the Report of the Secretary-General on Climate Change Statistics to the 47th session of the Statistical Commission (E/CN.3/2016/15) (New York, 8-10 March 2016).

http://unstats.un.org/unsd/environment/climatechange_docs_conf.html

Decision 47/112:

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

Main decisions:

For countries: Use the FDES 2013 to guide the development of climate change statistics and indicators given the close interrelationship between environment statistics and climate change statistics.

For UNSD: Review and consider UN-ECE set of climate change-related statistics and indicators as a basis for developing a global set of climate change statistics and indicators, applicable to countries at various stages of development.



Environment statistics as a basis for climate change statistics

Environment statistics – similar to climate change statistics:

- Synthesize data originating from various types of sources, e.g. surveys or monitoring systems.
- Involve large number of institutions or stakeholders - need collaboration.
- Overwhelming volume of data across various institutions – challenging to translate into official statistics.
- Environmental/climate change-related questions in censuses/surveys and/or develop specialized environmental/climate change surveys
- Different users need environment statistics at different levels of aggregation and depths of information. They may need cross-cutting environment statistics data sets, for instance regarding climate change.



Report of the Secretary-General on Climate Change Statistics to the 49th session of the Statistical Commission in 2018

UNSD, in collaboration with UN-ECE and UNFCCC, prepared the Report of the Secretary-General on Climate Change Statistics to the 49th session of the Statistical Commission (E/CN.3/2018/14) (New York, 6-9 March 2018).

<https://unstats.un.org/unsd/statcom/49th-session/documents/2018-14-ClimateChange-E.pdf>

Decision: 49/113

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

Main decisions

For countries: (i) Participate in the Pilot Survey on Climate Change-related Statistics and Indicators currently being undertaken by UNSD, as well as in the planned Global Consultation on Climate Change Statistics and Indicators; (ii) Enhance collaboration between NSOs and national authorities responsible for reporting climate change related information to UNFCCC Secretariat;

For UNSD and UNFCCC: Strengthen the link between statistics and policy, for example, by: (i) undertaking joint initiatives in the development of climate change statistics and indicators; (ii) encouraging joint capacity building efforts and trainings with other partners, and **exploring ways to encourage NSOs to be more involved in the preparation of data submissions to the UNFCCC secretariat, for supporting the implementation of the Paris Agreement.**



UNSD: Globalizing climate change statistics and indicators

Mandate by Statistical Commission

SG Report on Climate Change Statistics to Statistical Commission

2017/2018

2020

COVID

2021

2016

UNSD Pilot Testing of UN-ECE set of indicators

2018

Launch and Analysis of Pilot Survey

Revision of draft set of indicators

Global Consultation

To strengthen link between statistics and policy, UNSD is engaging closely with UNFCCC to develop global set of climate change indicators.

- Joint report to the 49th session of the Stat. Commission
- Joint Side Events at Statistical Commission meetings
- UNFCCC participation in the Expert Group on Environment Statistics
- UNSD participation in a Side Event at the High-Level Political Forum in July 2019 organized by UNFCCC, UNSD, UNDRR, FAO, WMO)
- UNFCCC participation in UNSD organized regional workshops on environment (including climate change statistics) statistics [e.g. Arab region in 2018, CARICOM region in 2019]
- UNSD participation in the UNFCCC stakeholders' dialogues on building the Enhanced Transparency Framework (May and October 2020)



UNSD: Globalizing climate change statistics and indicators

Objective:

develop a global set of climate change indicators, tailored for all countries, while ensuring that the needs of countries with less developed statistical systems are taken into account.

UNSD has:

- carried out a systematic review of climate change statistics and indicators from 130 countries with representative regional coverage,
- analysed more than 7,500 individual climate change statistics and indicators, and
- has identified a draft set of the most commonly repeated indicators (approx. 133 currently) thereby promoting a bottom-up approach to their selection.

The draft set of climate change statistics and indicators has been organized according to the five areas of the IPCC framework: **drivers, impacts, vulnerability, mitigation and adaptation**, to promote linkage to both science and policy.



UNSD: Globalizing climate change statistics and indicators

References to international agreements and frameworks:

- relevant articles of the Paris Agreement and the Katowice Package are mentioned for each indicator thereby clearly demonstrating the link between statistics and policy.
- SDGs, FDES and Sendai Framework, as well as UN-ECE set of indicators, have been considered to promote consistency and harmonize the wording of the indicators to the extent possible.

Criteria for selection of indicators:

- Consistency with existing thematic indicator sets and guidance, namely from UNFCCC/IPCC, FAO, SDGs, UNDRR, UNCCD, UNCBD, as well as with the FDES statistics, has been promoted.
- Complementarity with existing regional climate change indicators, e.g. EEA, UN-ECE, and Eurostat, where applicable, as well as other relevant initiatives.
- Indicators for which metadata can be developed.
- Balanced coverage of the five IPCC areas (drivers, impacts, vulnerability, adaptation and mitigation).



UNSD: Globalizing climate change statistics and indicators

The [Expert Group on Environment Statistics](#) (EGES) has been contributing to work on the draft set through review of iterative versions and discussions at Expert Group meetings.

At its [sixth meeting](#) in May 2019, it was agreed that UNSD share the draft set with interested experts of the EGES, before conducting the current Pilot Survey. This expert review was completed in January 2020 based on feedback from six countries (Jamaica, Luxembourg, Suriname, Tanzania, The Netherlands and Zimbabwe) and four international and regional organizations (UNFCCC, FAO, ECLAC, EEA).

The Pilot Survey covered selected countries and international/regional organizations that have participated through different processes such as EGES, regional or national workshops. The Global Consultation will take place in 2021 and will involve all countries.

The final number of statistics and indicators will be decided after Pilot Survey and Global Consultation but set of indicators will be comprehensive and applicable to all countries.



Pilot Survey and impact of pandemic

The Pilot Survey was launched on 23 February 2020 to test and assess the relevance, soundness and measurability of the proposed indicators in two ways:

- (1) by inviting the national statistical offices (NSOs) and/or ministries of environment from 42 countries to assess their preparedness to compile the suggested indicators in collaboration with relevant partners according to their national priorities as well as the development stage of the country;
- (2) in addition, 30 international/regional organizations were invited to assess the indicators from a thematic and methodological point of view to ensure that the selected indicators are relevant, correctly named, and supported by definitions, references and data.

Initially, given the importance of climate change monitoring and the interest it has generated among partners, responses and feedback arrived quickly from several organizations and countries.

However, the COVID-19 pandemic has delayed the process, especially in developing countries.



Pilot Survey and impact of pandemic (cont.)

- A special follow-up process with the countries (and organizations) who could not respond on time was initiated to better understand what the main impediments were given the impacts of the COVID-19 pandemic.
- For the countries, UNSD enquired whether:
 - they could work remotely,
 - they could examine the proposed indicators internally,
 - the relevant partner institutions were identified and contacted, since many of the indicators require data and information from agencies and departments outside the scope of existing official statistics,
 - feedback was obtained.
- In light of the time needs and alternative means for these consultations at national level, countries were asked to indicate how long it would take to complete the Pilot Survey.



Consultations on the development of the Global Set

- UNSD reached out to the countries that responded and reviewed the information provided seeking clarification and additional supporting information as necessary.
- Bilateral consultations have also been taking place with selected organizations on specific thematic areas (such as UNFCCC) and this will continue once additional responses have been received and enough analysis of the various themes (such as biodiversity, disasters, etc.) has taken place and deemed useful for more in-depth discussion.
- While further responses were awaited from, in particular from the developing countries, UNSD set up a small group of (developing) countries that were faced with the most challenges due to the pandemic as well as with the completion of the survey in general, along with the Chair of the EGES, to examine in detail the structure of the draft Global Set and provide inputs towards a product for the planned Global Consultation in 2021. The group:
 - held several virtual meetings during from May to September and discussed a structure linking the proposed indicators and underlying basic statistics, accompanied by short metadata, which should satisfy the needs of both developed and developing countries.
 - provided feedback to UNSD to better understand the needs of the least developed and developing countries in particular and the way NSOs interact with their national counterparts.
 - provided suggestions to UNSD on how to organize and review the feedback received to date. The processes of revising the structure of the draft set is ongoing and a revised version has been prepared for discussion at this virtual seventh meeting of the EGES.



Pilot Survey - results

The results of the Pilot Survey will be presented in detail in the next part of the session under “Towards the Global Set of Climate Change Statistics and Indicators”.



UNSD: next steps

- Finalize analysis of Pilot Survey on Climate Change Indicators (Aug-Oct 2020)
- Discuss results of Pilot Survey and draft list with Expert Group on Environment Statistics (10-19 November 2020) (UNFCCC, IPCC, GCF attending)
- Prepare for Global Consultation on Climate Change Indicators (early 2021) – *Global Consultation delayed due to pandemic to give enough time for dialogue and consultations, and promote understanding and ownership of the indicators.*
- Develop an inventory of related work on climate change statistics being carried out by partner organizations.
- Report of the Secretary-General on Climate Change Statistics (information report) (in collaboration with UNFCCC/ECE) for submission to the 52nd session of the Statistical Commission (2-5 March 2021). The report will contain, inter alia,:
 - an update of the work on the Global Set of Climate Change Statistics and Indicators, and what has been undertaken to strengthen the policy and statistics cooperation on climate change at international level.
 - a description of the current work of UNFCCC on, inter alia, the reporting processes under the ETF of the Paris Agreement.
- **It is planned for the Global Set (list and metadata) to be submitted to the 53rd session of the Statistical Commission in 2022 for adoption.**



UNSD: specific collaboration with UNFCCC

- Organize capacity development (reg'l/nat'l) activities in environment statistics and climate change statistics to encourage the two areas to develop in parallel.
- Continue collaboration with UNFCCC to encourage and mainstream the climate change policy and statistics interface, e.g., participation in UNFCCC stakeholder dialogues on building the Enhanced Transparency Framework (May/Oct 2020).
- Develop, with UNFCCC, a set of guidelines/ guidance for promoting cooperation between NSOs and institutions reporting climate change info. at national level.
- Strengthen collaboration with UNFCCC to address the particular challenges in selecting indicators/statistics in the areas of adaptation and vulnerability.
- Discuss UNFCCC processes of developing templates/guidance for reporting of comparable statistics, in particular in the areas of adaptation, impacts and mitigation that are reported to UNFCCC in narrative form.
- Align the work of UNSD on the Global Set of Climate Change Statistics and Indicators with the key activities of UNFCCC regarding monitoring and reporting to provide synergies and harmonization, as well as to promote the linkage between policy and statistics.
- Organize a Joint Side Event at the COP 26 in 2021 to showcase global activities in the area of climate change monitoring and reporting.



Regional/national work on climate change statistics - examples

- **Regional**
 - Current UN-ECE set includes 44 indicators relevant to the region and complementary to the global set
 - ECLAC – programme on climate change and disaster statistics
 - Caribbean Community (CARICOM) – Climate Change Statistics (2020)
 - ESCWA – Climate change-related statistics in the Arab region (2017)
- **National**
 - Jamaica – Climate Change Statistics Report (2016)
 - Tanzania – National Climate Change Statistics Report (2020)
 - Nepal – Climate Change Impact Survey (2016)
 - Slovenia – Statistical Day 2020: Climate Crisis – Hot Data
 - Grenada – Inter-agency Committee for Environment and Climate Change Statistics



Environment statistics and climate change statistics and the role of NSOs

Environment statistics – similar to climate change statistics:

- Synthesize data originating from various types of sources.
- Involve large number of institutions or stakeholders and need collaboration.
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- Different users need environment statistics at different levels of aggregation and depths of information.

Role of National Statistical Offices (NSOs):

- Typically, NSOs have a relatively smaller role in the production of environmental information.
- NSOs can contribute or coordinate environment statistics and climate change statistics based on their mandates to produce official statistics and their role in coordinating the national statistical system.
- Official statistics have a key role in informing the public. NSOs can contribute by improving information quality and its dissemination.
- NSOs have stronger capacity to deal with multi-disciplinary and comprehensive information flows than specialized institutions.



Lessons from environment statistics

When developing climate change statistics, as for env. stats., important to have:

- Working group at national level – could cover both env & cc statistics.
- Tool on climate change statistics, similar to ESSAT (Parts 1 and 2), to assess data availability, relevance, priority of statistics.
- National action plan or strategy – both environment statistics and climate change statistics can be covered or separate plans.
- National sets of environment statistics and climate change statistics – based on FDES-Basic Set of E.S. and Global Set of Climate Change Indicators.
- Environmental/climate change-related questions in censuses/surveys and/or develop specialized environmental/climate change surveys.
- Dedicated unit/section in the NSO for environment statistics. Some NSOs have established environment and climate change statistics units.



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

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

Climate Change Statistics Website

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

