

# Session 5: Current work in climate change statistics and indicators

## Global set of climate change statistics and indicators



National Workshop on Environment Statistics and Climate Change Statistics

St. George's, Grenada, 12-14 November 2019

United Nations Statistics Division

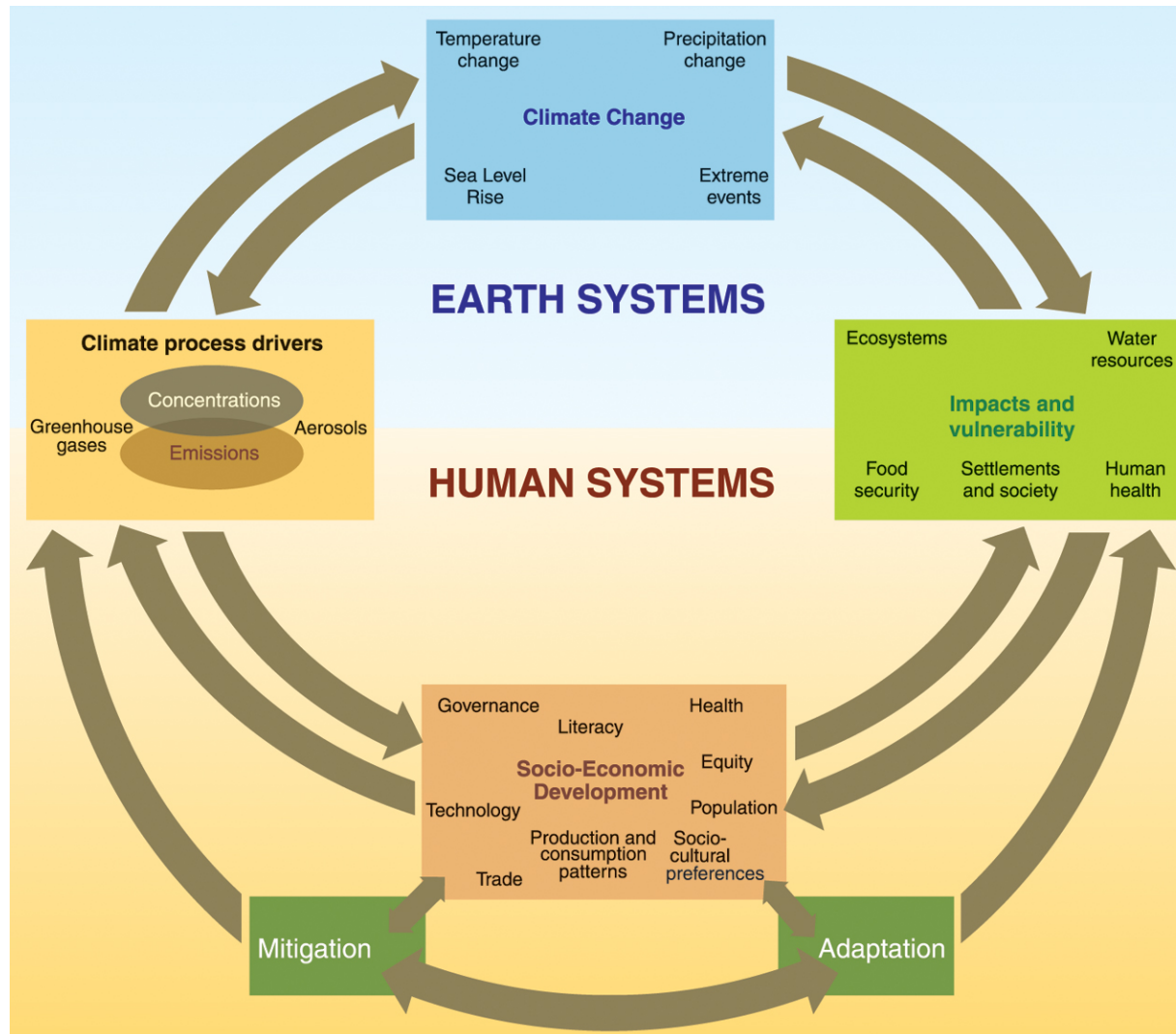


## UNSD past activities

- At the Statistical Commission in 2009 a programme review on climate change and official statistics carried out by the Australian Bureau of Statistics was presented.
  - Specify how official statistics may be used for climate change measurement and analysis
  - Identify recommendations and actions to mainstream the climate change aspect in official statistics
- UNSD Conferences on climate change and official statistics
  - Oslo, 14-16 April 2008  
([http://unstats.un.org/unsd/climate\\_change/default.htm](http://unstats.un.org/unsd/climate_change/default.htm))
  - Seoul, 11-12 December 2008  
([http://unstats.un.org/unsd/climate\\_change/Korea/default.htm](http://unstats.un.org/unsd/climate_change/Korea/default.htm))
- No follow-up to the programme review was asked by the Statistical Commission in 2009.



# IPCC Framework



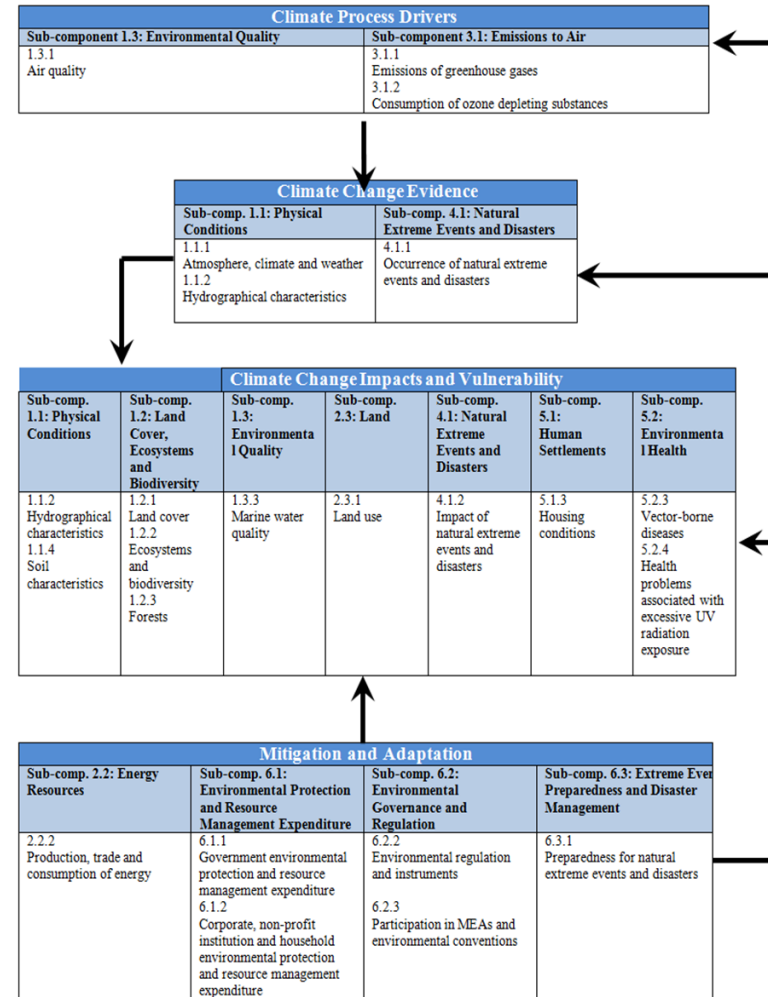
IPCC, 2007, Fourth Assessment Report



# FDES & climate change statistics



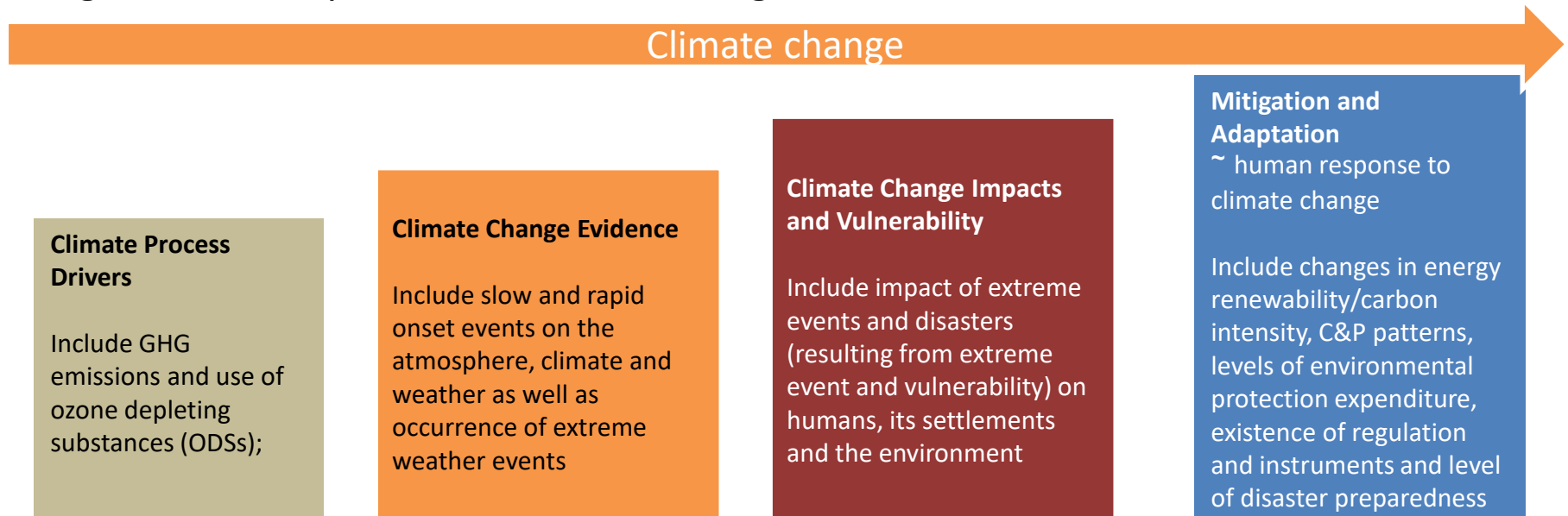
- FDES cross-cutting application (Chapter 5) links climate change and environment statistics based on IPCC Framework (4<sup>th</sup> report in 2007)
- Integrating official statistics for climate change monitoring



# IPCC sequence of climate change

The IPCC Framework (4<sup>th</sup> report in 2007) was the basis upon which the stages of the sequence of climate change were constructed to substantiate the application of the FDES to climate change statistics.

The FDES application to climate change statistics identifies the components, topics and individual statistics that are needed to inform about each of the stages of the sequence of climate change:



# State of statistics and guidance

- **Climate process drivers** - statistics relatively more available.
  - Greenhouse gas (GHG) emissions transform into global concentrations.
- **Climate change evidence** - statistics relatively more available.
  - Temperature and precipitation are available over long periods of time.
- **Climate change impacts and vulnerability** - some statistics are produced on impacts but more are needed. For vulnerability, need to develop methodologies and capacity.
  - Emerging data needs: Extreme climate-related meteorological events and natural disasters increase in frequency and intensity.
- **Mitigation and adaptation** statistics are less often produced and more difficult to capture statistically.
  - Insufficient resources for measurement and lack of guidance.
  - Adaptation statistics, while may be produced for particular sectors, need to be linked to climate change statistics.



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

UNSD, in collaboration with UN-ECE, prepared the Report of the Secretary-General on Climate Change Statistics to the 47<sup>th</sup> 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](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:**

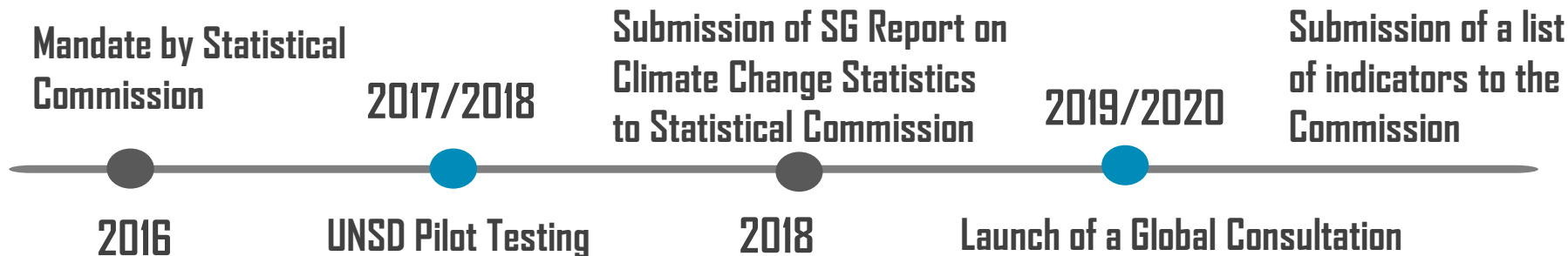
For countries: Use the FDES 2013 to guide the development of climate change statistics and indicators given the close interrelationship between environment statistics and climate change statistics.

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





# UNSD: Globalizing climate change statistics and indicators



The UN-ECE set of indicators was endorsed by the Conference of European Statisticians plenary session in June 2017 as an initial list.

## UNSD:

- has pilot tested the UN-ECE set of indicators with countries and analyzed the responses to assess its applicability for developing countries, in particular to consider areas of concern such as adaptation/vulnerability.
- has discussed the set of indicators in various fora, including the Expert Group on Environment Statistics (EGES), and regional and national capacity building workshops.

EGES website: [https://unstats.un.org/unsd/envstats/fdes/fdes\\_eges.cshtml](https://unstats.un.org/unsd/envstats/fdes/fdes_eges.cshtml)

United Nations Statistics Division





# UNSD Pilot Survey on Climate Change-related Statistics and Indicators - summary

- The UN-ECE set includes 39 indicators, grouped into five areas:  
Drivers – Emissions – Impacts – Mitigation – Adaptation
- **12** countries (11 developing and 1 developed), most of which are part of Expert Group on Environment Statistics (EGES), responded to Pilot Survey.
- The Pilot Survey contained 13 questions for the 39 indicators that were identical to those used by UN-ECE.
- UNSD has summarized responses to:
  - Question 1: Is this indicator available in your country? [Yes/No]*
  - Question 9: [If not] Which are the main problems in developing this indicator?*
  - Question 4.1: Is this indicator compiled by the NSO? [Yes/No]*



# Observations from the Pilot Survey and the EGES

- Methodological issues/Need clear definitions.
- Lack of technical capacity; constraint of human/financial resources.
- No policy framework.
- Specialized surveys needed/Lack of resources to conduct specialized surveys/Low survey response rates/Data quality issues.
- Lack of dedicated inter-institutional working group at national level focusing on climate change statistics.
- Some NSOs are highly involved in indicator compilation; others not.
- Several indicators not applicable/relevant (e.g., proportion of pop. living in dwellings with air conditioners or air conditioning), not available, not top priority, not significantly important, or too complex.
- Need to adjust indicators to reflect attribution and to include new sub-areas (such as oceans) or indicators which may be pertinent to developing countries, and to expand on areas such as adaptation which are of particular relevance to developing countries.
- Reporting methodologies, procedures and guidelines under negotiation at the UNFCCC.



# Pilot Survey – key points

Demonstrated the need to develop:

- New or additional indicators to reflect situation in developing countries.
- Process on how to identify/modify the indicators based on:
  - existing global processes (e.g., incorporating indicators identified in adaptation and mitigation plans being submitted to UNFCCC).
  - regional and national policies, priorities and processes.
- Systematic process for a full consultation at national level to involve all stakeholders.



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

UNSD, in collaboration with UN-ECE and UNFCCC, prepared the Report of the Secretary-General on Climate Change Statistics to the 49<sup>th</sup> 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 national statistical offices (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 (current activities/plans)

## UNSD:

- presented the SG's Report on Climate Change Statistics to the 49<sup>th</sup> session of the Statistical Commission (6-9 March 2018).
- has reviewed the UN-ECE and the IPCC/FDES frameworks and identified links to the Paris Agreement.
- is reviewing the UN-ECE list of indicators and consulting other lists (international organizations (UNFCCC, WMO, FAO), regional institutions (UNECE, ESCWA, ECLAC, OECD), research (IPCC) national agencies (US EPA, New Zealand EPA), national reports (National Adaptation Plans, National Communications) and NGOs (Climate Reality, World Resources Institute) with a view to developing a suitable list prior to the Global Consultation.
- is developing a work plan based on the list of planned activities contained in the SG's Report to the 49<sup>th</sup> session of the Stat. Commission.
- is planning to develop an inventory of related work on climate change statistics by partner organizations.
- is planning to conduct a Pilot Survey and Global Consultation in 2020, in preparation for Report of the Secretary-General to the Commission



# UNSD: Globalizing climate change statistics and indicators (current activities/plans)

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

Some examples are:

- Joint report to the 49<sup>th</sup> session of the Stat. Commission
- Joint Side Events at Statistical Commission meetings
- UNFCCC participates 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]



## 6<sup>th</sup> EGES meeting (2019) – key points on climate change

- Session three included several presentations and working group discussions on climate change statistics. Several international organisations, regional commissions of the United Nations and a country presented on their respective work in climate change statistics. This included recent developments of the Conference of the Parties (COP) 24 which focuses on the key relevance of national statistics for the Enhanced Transparency Framework of the Paris Agreement as well as UNSD's work towards the global set of climate change statistics and indicators.
- Small groups were invited to provide comment on a draft set of common climate change indicators compiled by UNSD. Suggestions were made to modify wording, to provide a tiering of indicators, and for additional metadata for indicators.

More details can be found in the meeting report available at <https://unstats.un.org/unsd/environment/FDES/EGES6/Final%20report.pdf>.





# Towards the global set of climate change indicators

(consulted sources to date)

## International and Regional Sources

- IPCC Reports
- WMO
- ESCWA
- FAO
- FDES
- SDG Indicators
- SEEA
- ECE
- EEA
- Other Academic/NGO institutions or frameworks

## National Sources (130 to date)

- State of environment reports
- UNFCCC National Communications
- National Adaptation Plans (NAPs)
- National environmental protection agencies
- Intended National Determined Contributions (INDCs)
- National Statistics Offices (NSOs)
- Ministry websites
  - Ministries of Environment
  - Ministries of Natural Resources
  - Ministries of Sustainable Development
  - Ministries of Energy
  - Bureaus of Meteorology



# Towards the global set of climate change indicators

(consulted 130 national sources to date)



# Towards the global set of climate change indicators

- In the growing list of climate change indicators, there are approximately 7,500 indicators related to Drivers, Impacts, Mitigation, Adaptation, and Vulnerability. Many of which are repeated across different countries and organizations.
- Indicators come from documents which published by national bodies, such as the M. of Environment or National Statistical Offices, which contain country-relevant information, at least one national source has been taken from 130 countries. Besides, international and regional sources such as SDG indicators, FDES, IPCC reports, the Sendai Framework and UN-ECE have been taken into account to identify other key indicators.
- Currently, most country-specific indicators come from State of Environment reports or UNFCCC National Communications. Data from ministries of energy, meteorology and natural resources has also been considered.
- The lack of availability of indicators in the list does not mean countries do not report them, rather they were not explicitly reported in the national source which was accessed.
- UNSD is identifying a list of the most commonly repeated indicators thereby promoting a bottom-up approach to the selection of indicators.



# Some observations in developing the global set

- There is always the issue of which area an indicator should fall in – is it adaptation or impact or vulnerability. It can also depend on the angle from which one looks at the issue.
- How many indicators is always a question? Should the global set be selective or comprehensive? UNSD, from the experience of developing the Basic Set of Environment Statistics in the FDES, think the set of climate change statistics should be comprehensive and be seen as a menu from which a country, looking to start developing this topic, can find suitable statistics or indicators to draw on.
- There can be regional variations due to different concerns/priorities, availability of resources etc., and for the national level it is a similar situation. What would be important is to have a core set at the global level that most countries can relate to and that are simple to measure and then have additional indicators (through a tiering approach [1-3]) which could also be suitable for more specific regional and/or national application.
- Should the focus be on statistics or indicators? Using indicators can disguise the actual amount of information required. For example, there are several SDG indicators, for which so many underlying statistics would be required for their compilation. Example on waste (SDG 11.6.1) one needs 17 statistics to compile this single indicator.



# Further work on the global set of climate change indicators

- UNSD is working with other partners, including UNFCCC, and the Expert Group on Environment Statistics to determine the most suitable time to send out a list of indicators for the Pilot Survey and the Global Consultation.
- Review/compile metadata for the common indicators (maybe just Tier 1) to promote international applicability and harmonization.
- Continue to engage with UNFCCC and other partners to strengthen the link between statistics and policy, e.g., by: (i) undertaking joint initiatives in the development of climate change statistics and indicators; and (ii) encouraging joint capacity building efforts and training (e.g., UNFCCC is participating in the current workshop).
- Ensure linkage of the work on the global set of indicators to:
  - the Adaptation Programme of UNFCCC (Article 7 - Paris Agreement);
  - the Global Stocktake of the Paris Agreement (Article 14); and
  - the Transparency Framework of the Paris Agreement (Article 13), given that the implementation guidance is expected to shed more light on the data reporting requirements of the Paris Agreement.



# Thank you for your attention!

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

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

