

Climate change statistics at the global level



National Workshop on Environment Statistics in
Namibia
Windhoek, 3-5 December 2019

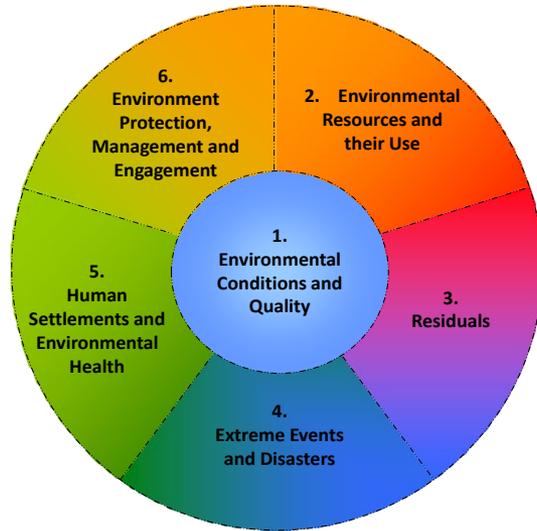


UNSD past activities

- UNSD organized two conferences on climate change and official statistics
 - Oslo, 14-16 April 2008
(http://unstats.un.org/unsd/climate_change/default.htm)
 - Seoul, 11-12 December 2008
(http://unstats.un.org/unsd/climate_change/Korea/default.htm)
- A review on climate change in official statistics by the Australian Bureau of Statistics was presented at the Statistical Commission in 2009.
 - 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
- No follow-up for some years



FDES & climate change statistics



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

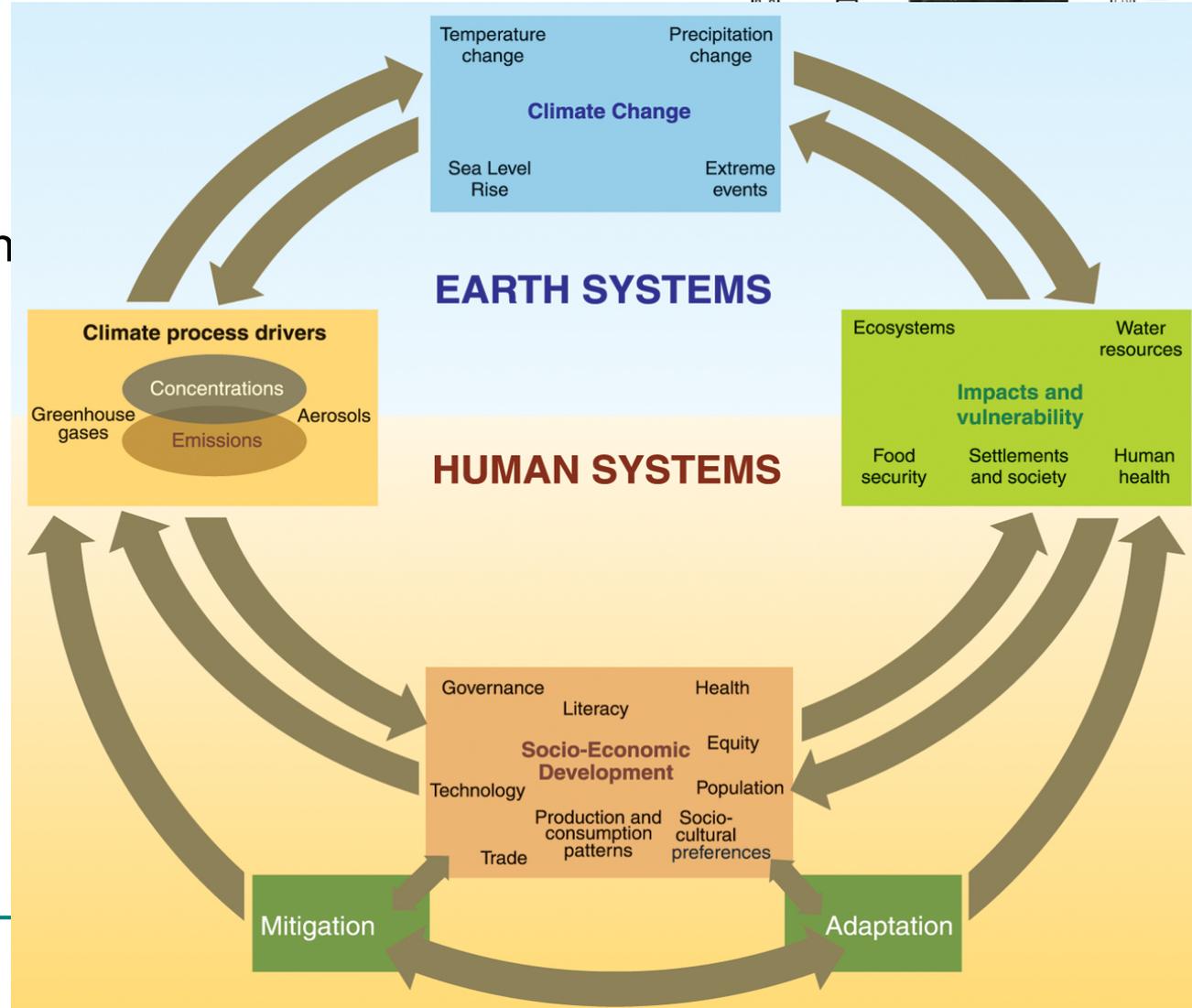
Mitigation and Adaptation			
Sub-comp. 2.2: Energy Resources	Sub-comp. 6.1: Environmental Protection and Resource Management Expenditure	Sub-comp. 6.2: Environmental Governance and Regulation	Sub-comp. 6.3: Extreme Event Preparedness and Disaster Management
2.2.2 Production, trade and consumption of 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

- 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 change statistics: where are we now?



- Demand is greater than supply, particularly for **environmental** aspects, particularly in developing countries
- Guidance exists but on some areas
- IPCC framework



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 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 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 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.

Some observations from the survey:

- 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)



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 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>

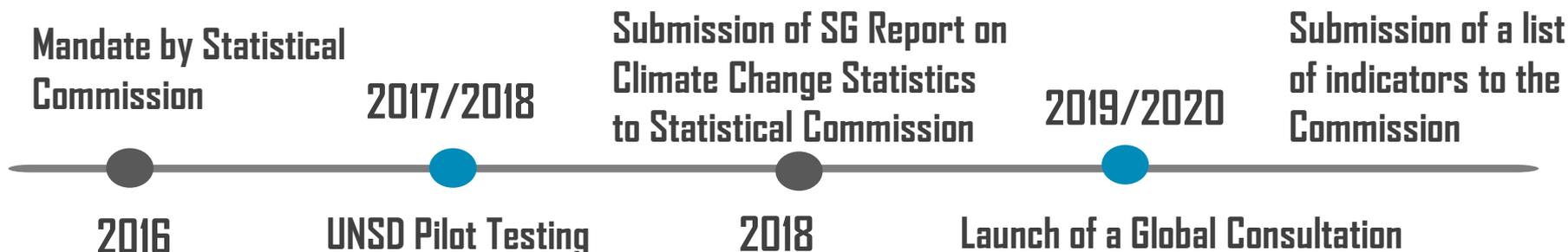
Main decisions

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 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



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.



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

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 49th 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]



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 (from 130 countries 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

(consulted sources to date)

Processing steps:

- The documents of the above sources were compiled.
- Key word search was conducted in the documents using predefined set of key words, for example:
 - Natural disasters, threatened species, forest area, emissions.
- Next, key words were grouped into common indicators and consolidated.
- Indicators were assigned to one (or more) of the five climate change areas (drivers, impacts, adaptation, mitigation or vulnerability).
- Counts of source indicators were automatically extracted so that each indicator can be assessed in terms of how many countries mentioned it and in how many sources.



Towards the global set of climate change indicators

- In the growing list of climate change indicators, there are approximately 7,500 instances sourced from countries, grouped into five areas (Drivers, Impacts, Mitigation, Adaptation, and Vulnerability) consisting of around 180 indicators. Many of which are repeated across different countries and organizations.
- Indicators come from reports of M. of Env/NSOs, 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 and ECE have been taken into account to identify other key indicators.
- Most country-specific indicators come from State of Environment reports or UNFCCC National Communications/National Adaptation Plans. Data from ministries of energy, meteorology and natural resources also been considered.
- UNSD is identifying a list of the most commonly repeated indicators according to the five areas of IPCC framework promoting a bottom-up approach to the selection of indicators and will continue this compilation from more countries.
- After improvement of the indicator names, correspondence to SDGs, FDES, Paris agreement and Sendai statistics were mapped



Further work on the global set of climate change indicators (contd)

- Develop and conduct a **Pilot Survey** to test the draft Global Set of Climate Change Statistics and Indicators (January 2020)
- Analyze results of Pilot Survey to develop survey for the **Global Consultation** (early 2020)
- Conduct Global Consultation with all Member States in 2020 and **report to the Statistical Commission in 2021**.
- The purpose of the Global Consultation, including that it is not intended to collect data, will be clearly explained to countries. It will also be stated in the Global Consultation that it is an indicator framework to assess primarily the relevance, methodological soundness and availability of indicators to derive a Global Set of Climate Change Statistics and Indicators, and **not an additional reporting burden**. The accompanying letter will include an introduction on why a set of climate change indicators is needed, i.e., that it has been requested from countries under the mandate of the Statistical Commission.
- A work plan outlining all the steps and activities will be developed by UNSD in collaboration with the Expert Group.





Questions and comments?



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Thank you for your attention!

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