Climate Change-related Statistics

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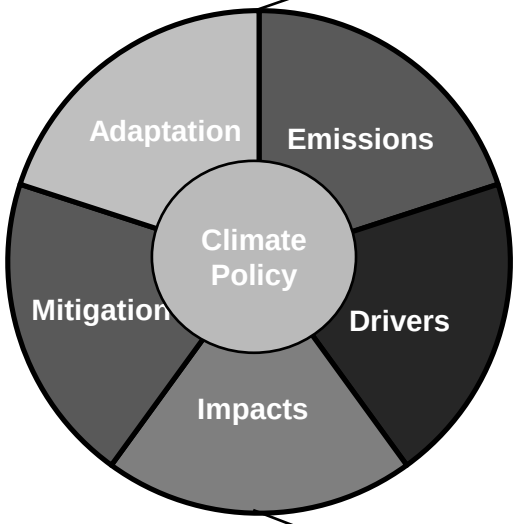
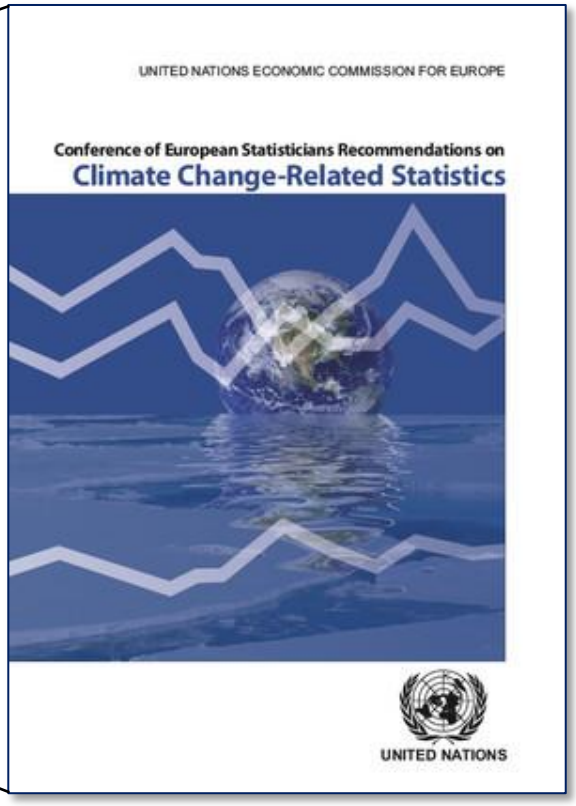
UNECE reacts to data needs of global policies

- **SDGs and SDG13**
  Take urgent action to combat climate change and its impacts
- **COP21 – Paris Climate Agreement**
  The Paris Climate Agreement with increasing data needs
- **Sendai Framework**
  For Disaster Risk Reduction 2015-2030

CES Recommendations on climate change-related statistics

The scope





Practical steps to

- Inform emission inventories – COP21
- Inform analysis of climate change
- Improve the readiness to produce these data

Climate work strands at UNECE

www.unece.org/stats/climate.html

1. Steering Group (Norway):

- Supports countries in developing these statistics with:
  - A template for national road maps & tool to prioritize actions
  - A narrative on the value of official statistics for climate policies
- Organizes **Expert Forums** for data users and producers, next planned for 3-5 October 2017

2. Set of indicators (Italy):

- Just developed set of key indicators!
- Pilot testing in countries starting

3. Extreme events and disasters (Italy):

- A Task Force defining the role of statistical offices and data needs in disaster risk reduction

Set of core climate change-related indicators and statistics

Task Force

- Established in 2014 under the auspices of the Bureau of the Conference of European Statisticians
- Completed its work in December 2016 with its final report. E-consultation of the report has just been finished
- Report presented to CES Plenary in June 2017 for approval.
- Follow-up work has been identified

Members:

- Italy (chair), Canada, Kyrgyzstan, Luxembourg, Mexico, Netherlands, Philippines, Romania, Russian Federation, Turkey
- EEA, FAO, OECD, Eurostat, UNEP, UNFCCC, UNFPA, UNSD

Set of core climate change-related indicators and statistics

Main objective of the work:

- Define an internationally comparable set of key climate change-related statistics and indicators that can be derived from SEEA (to the extent possible) and other sources.

Task Force aimed with a set of about 40 indicators to

a) Paint the picture of the most relevant climate change-related issues;

b) Address most relevant current policy questions;

c) Help to meet upcoming information needs.

Set of core climate change-related indicators and statistics

Methodology

1. Identification of most relevant policy questions (140) and related indicators (205)
2. Grouping the policy questions under the so-called “umbrella questions” (39)
3. Ranking the set of umbrella questions by relevance
4. Selection of a preliminary set of core indicators related to policy questions with higher ranking. Criteria:
   - Relevance
   - Soundness (applied as far as possible)
   - Measurability (applied as far as possible)
5. Allocating the indicators to the 5 main areas and sub/areas, filling gaps as far as possible
6. Several rounds of consultations with expert communities
7. Survey on data availability

Set of core climate change-related indicators and statistics

Sub-areas	Areas				
	Drivers	Emissions	Impacts	Mitigation	Adaptation
National total	4	3			
Production	3	2			
Consumption	1	2			
Physical conditions			2		
Land, land cover, ecosystems and biodiversity			3	0	0
Extreme events and disasters			4		0
Water resources			1		1
Human settlements and environmental health			2	0	1
Agriculture, forestry and fishery			1	0	2
Expenditures				1	1
Energy resources				1	
Environmental governance and regulation				4	0
Total	**8**	**7**	**13**	**6**	**5**

Set of core climate change-related indicators and statistics

Area: Drivers	No.	Indicator	Tier
National total	1	Total primary energy supply (TPES)	I
	2	Share of fossil fuels in total primary energy supply (TPES)	I
	3	Losses of land covered by (semi-) natural vegetation	III
	4	Total support for fossil fuels / GDP	II
Production	5	Total energy intensity of production activities	II
	6	CO2 intensity of energy for the economy	II
	7	Emission intensity of agricultural commodities	II
Consumption	8	Energy consumption by households / capita	I

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Area: Emissions	No.	Indicator	Tier
National total	9	Total GHG emissions	I
	10	CO2 emissions from fuel combustion	I
	11	GHG emissions from land use	I
Production	12	Total GHG emissions of production activities	I
	13	GHG emission intensity of production activities	I
Consumption	14	Direct GHG emissions from households	I
	15	Carbon footprint	III

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Area: Impacts	No.	Indicator	Tier
Physical conditions	16	Annual average surface temperature	I
	17	Percentage of land area suffering from unusual wet or dry conditions (Standard Precipitation Index)	I
Water resources	18	Level of water stress: freshwater withdrawal as a proportion of available freshwater resources	I
Land, land cover, ecosystems and biodiversity	19	Cumulative number of alien species	III
	20	Carbon stock in soil	III
	21	Proportion of land that is degraded over total land area	III

Set of core climate change-related indicators and statistics

Area: Impacts	No.	Indicator	Tier
Extreme events and disasters	22	Number of deaths and missing persons attributed to hydro-meteorological disasters, per 100,000 population	III
	23	Occurrence of extreme weather events	II
	24	Direct economic loss attributed to hydro-meteorological disasters in relation to GDP	III
	25	Number of people whose destroyed dwellings were attributed to hydro-meteorological disasters	III
Human settlements, environmental health	26	Distribution of cases of vector-borne diseases	I
	27	Heat-related mortality	II
Agriculture, forestry and fishery	28	Direct agricultural loss attributed to hydro-meteorological disasters	III

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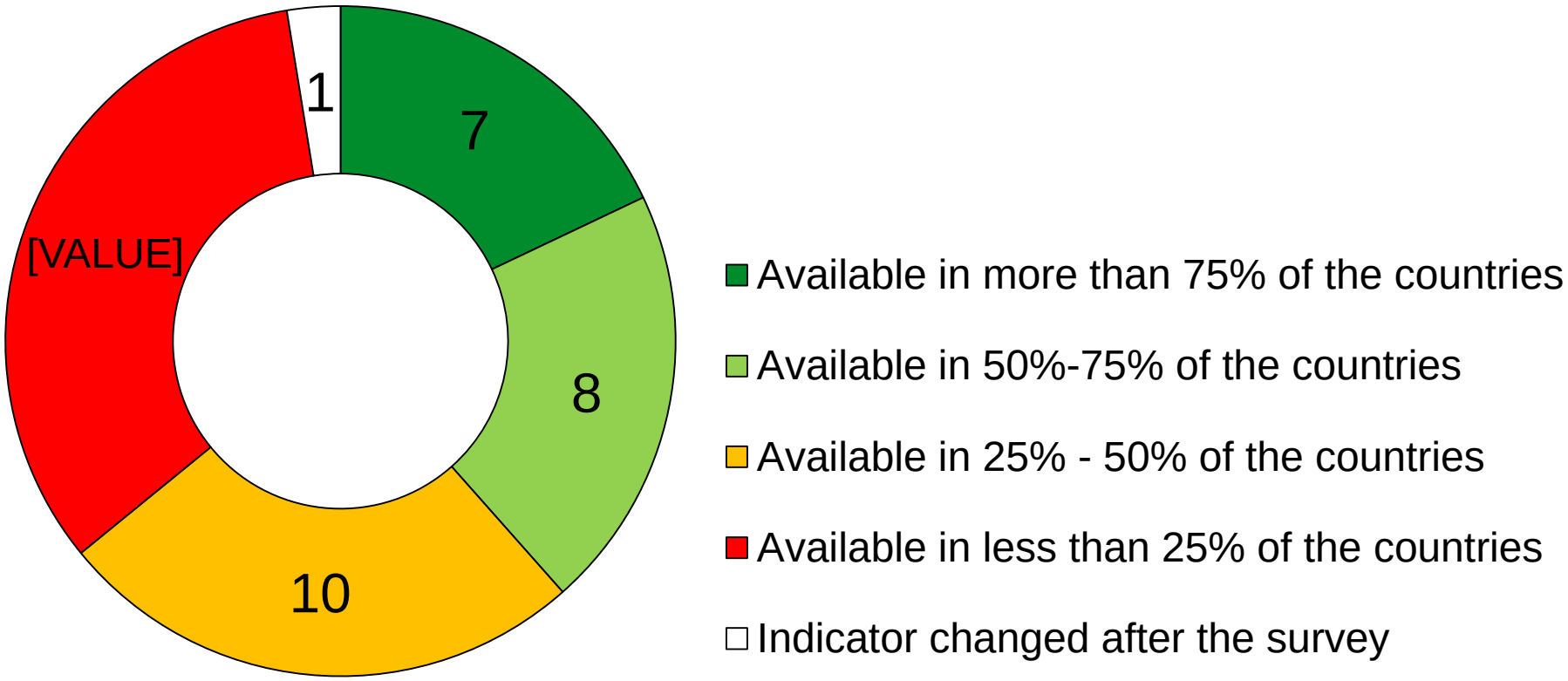
Area: Mitigation	No	Indicator	Tier
Energy resources	29	Renewable energy share in the total final energy consumption	I
Expenditures	30	Share of climate change mitigation expenditure relative to GDP	III
Environmental governance and regulation	31	Share of energy and transport related taxes as percentage of total taxes and social contributions	I
	32	Total climate change related subsidies and similar transfers / GDP	III
	33	Average carbon price	I
	34	Mobilized amount of USD per year starting in 2020 accountable towards the USD 100 billion commitment	III

Set of core climate change-related indicators and statistics

Area: Adaptation	No.	Indicator	Tier
Expenditures	35	Share of government adaptation expenditure to GDP	III
Water resources	36	Change in water use efficiency over time	III
Human settlements and environmental health	37	Proportion of population living in dwellings with air conditioners or air conditioning	III
Agriculture, forestry and fishery	38	Progress towards sustainable forest management	III
	39	Proportion of agricultural area under productive and sustainable agriculture	III

Set of core climate change-related indicators and statistics

Main results of survey on data availability (41 replies)



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Main results of survey on data availability (41 replies)

- About half of the indicators were reported by countries which produce it as fully mature.
- Indicators on drivers and emissions are well available, but indicators on impacts, mitigation and adaptation need more work.
- For many of these indicators (in particular in the areas impact, mitigation and adaptation), the compilation methodology is not considered fully mature: international organizations have a role to play in this domain.
- For a vast majority of indicators mentioned as available, NSO is not the producer of these indicators: the compilation of climate change-related indicators requires effective cooperation between NSO and other agencies.

Set of core climate change-related indicators and statistics

Summary of results:

- A set of 39 indicators with definitions and sources
- A well aligned set of indicators:
  - Over 50% can be produced from SEEA
  - 75% are linked with the Framework for Development of Environment Statistics
  - 25% are SDG indicators
  - 10% are Sendai indicators
- Covers the scope of climate change-related statistics:
  - Drivers: 8 indicators
  - Emissions: 7 indicators
  - Impacts: 13 indicators
  - Mitigation: 6 indicators
  - Adaptation: 5 indicators
- The set has been sent out for electronic consultation, to be sent for endorsement in June 2017

The UN Statistical Commission 2016 requested UNSD to review and consider the work of the UNECE Task Force as a basis for developing a global set of climate change statistics and indicators

Set of core climate change-related indicators and statistics

Follow-up work

Pilot testing, to

- Assess the usefulness of the chosen indicators, and carry out further refinements where necessary;
- Revise and complete the proposed calculation methods;
- Explore available data sources;
- Identify capacity building needs.

Further work on indicators

- Identification of appropriate indicators for certain sub-areas of “mitigation” and “adaptation”;
- Revision of the set of proposed adaptation indicators (as soon as better adaptation indicators are available);
- Identification of operational and contextual indicators;
- Identification of appropriate methodologies for tier III indicators;
- If necessary, minor revisions of the presentation of the set of indicators according to areas and sub-areas.

Upcoming Event: Expert Forum on Climate Change-related Statistics

Expert Forum on 3-5 October 2017

- Advance collaborative work of producers and users of climate information
- 2016: 78 participants - 32 countries and 24 organizations or NGOs

Sessions in 2017, tentatively consisting of:

- Climate-related data on agriculture, forestry and land use
- Implementing the set of climate change indicators
- Measurement of disasters and extreme events
- Road maps and success stories – developing official statistics for climate change analysis