

UN environment
United Nations
Environment Programme

UNECE

Climate change-related statistics and indicators

Introduction: Climate change, SEIS and indicators.

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Joint Task Force on Environmental Statistics and Indicators, 2-3 October 2017

Overview on important activities at UNECE and UN Environment related to Climate Change-related Statistics and Indicators

UNECE:

- **CES Recommendations on climate change-related statistics**
- **Initial set of core climate change-related statistics**
- **Recommendations on measuring extreme events and disasters**

UN Environment

- **IPCC Assessment Reports**
- **Emissions Gap Report**
- **1 Gigaton Report**
- **Adaptation Gap Report**
- **Etc.**



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



PARIS2015
UN Climate Change Conference
COP21-CMP11

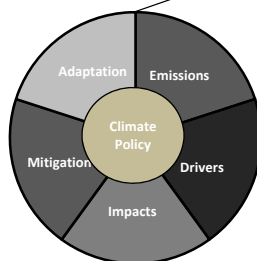


UN World Conference on
Disaster Risk Reduction
2015 Sendai, Japan



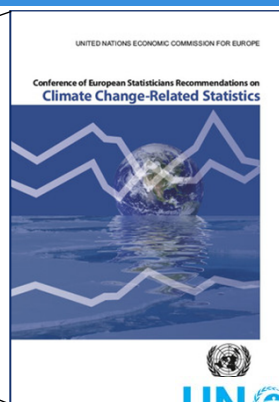
CES Recommendations on climate change-related statistics

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

2. Set of indicators (Italy):

- Set of core CC-related indicators painting the big picture of main CC-related phenomena

3. Extreme events and disasters (Italy):

- Defining the role of statistical offices and data needs in measuring extreme events and disasters



Initial 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 was approved by the CES Plenary in June 2017
- Follow-up work has been identified and will be presented at the Expert Forum on Climate Change-related Statistics

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

- Paint the picture of the most relevant climate change-related issues;
- Address most relevant current policy questions;
- Help to meet upcoming information needs.



Initial 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

Initial set of core climate change-related indicators and statistics - DRIVERS

Area: Drivers	No.	Indicator	Tier	Link with SEIS indicator
National total	1	Total primary energy supply (TPES)	I	G2. Total primary energy supply
	2	Share of fossil fuels in total primary energy supply (TPES)	I	G2. Total primary energy supply
	3	Losses of land covered by (semi-) natural vegetation	III	(E1. Land uptake)
	4	Total support for fossil fuels / GDP	II	-
Production	5	Total energy intensity of production activities	II	G3. Energy intensity
	6	CO2 intensity of energy for the economy	II	B3. Greenhouse gas emissions
	7	Emission intensity of agricultural commodities	II	-
Consumption	8	Energy consumption by households / capita	I	G1. Final energy consumption

Initial set of core climate change-related indicators and statistics - EMISSIONS

Area: Emissions	No.	Indicator	Tier	Link with SEIS indicator
National total	9	Total GHG emissions	I	B3. Greenhouse gas emissions
	10	CO2 emissions from fuel combustion	I	B3. Greenhouse gas emissions
	11	GHG emissions from land use	I	B3. Greenhouse gas emissions
Production	12	Total GHG emissions of production activities	I	B3. Greenhouse gas emissions
	13	GHG emission intensity of production activities	I	B3. Greenhouse gas emissions
Consumption	14	Direct GHG emissions from households	I	B3. Greenhouse gas emissions
	15	Carbon footprint	III	-

Initial set of core climate change-related indicators and statistics - IMPACTS

Area: Impacts	No.	Indicator	Tier	Link with SEIS indicator
Physical conditions	16	Annual average surface temperature	I	B1. Air temperature
	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	C2. Freshwater abstraction
Land, land cover, ecosystems and biodiversity	19	Cumulative number of alien species	III	D6. Invasive alien species (placeholder)
	20	Carbon stock in soil	III	
	21	Proportion of land that is degraded over total land area	III	(E2. Area affected by soil erosion)



Initial set of core climate change-related indicators and statistics - IMPACTS

Area: Impacts	No.	Indicator	Tier	Link with SEIS indicator
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	-



Initial set of core climate change-related indicators and statistics - MITIGATION

Area: Mitigation	No	Indicator	Tier	Link with SEIS indicator
Energy resources	29	Renewable energy share in the total final energy consumption	I	G4. Renewable energy consumption
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	-



Initial set of core climate change-related indicators and statistics - ADAPTATION

Area: Adaptation	No.	Indicator	Tier	Link with SEIS indicator
Expenditures	35	Share of government adaptation expenditure to GDP	III	-
Water resources	36	Change in water use efficiency over time	III	C3. Total water use
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	D3. Forests and other wooded land
	39	Proportion of agricultural area under productive and sustainable agriculture	III	-



Conclusions

- ❑ SEIS and the [UNECE Guidelines for the application of Environmental Indicators](#) provide an important basis for measuring the main climate change-related phenomena
- ❑ Of great relevance for climate change information are the following indicator sets:
 - B1. Air temperature
 - B3. Greenhouse gas emissions
 - C2. Freshwater abstraction
 - C3. Total water use
 - D3. Forests and other wooded land
 - D6. Invasive alien species (placeholder)
 - G1. Final energy consumption
 - G2. Total primary energy supply
 - G3. Energy intensity
 - G4. Renewable energy consumption
- ❑ Methodological developments in the CC-related indicator set are ongoing. It is suggested to review the existing SEIS indicators regarding their fitness for purpose afterwards.



Presentations in this Session

- ❑ Current and upcoming information needs for climate change-related policies (Livia Hollins, UNFCCC)
- ❑ Water management and Climate Change Adaptation in Central Asia: Why are sound statistics and indicators so important? (Ivan Belikov, SIC ICWC)
- ❑ Country examples:
 - Albania (Rozana Bineri)
 - FYROM (Katerina Nikolovska)
- ❑ Towards a set of climate change indicators (Reena Shah, UNSD)
- ❑ Overview on FAO's work on environment-related and climate change-related statistics (Francesco Tubiello, FAO)
- ❑ How can the work of the JTF contribute to better climate change-related statistics and indicators (open discussion)?

