Climate Change
Statistics and Indicators: Global Set

Eighth Meeting of the Expert Group on Environment Statistics
New York, 12-21 October 2021 (virtual)

Session 1: Climate Change Statistics and Indicators: Group work - Drivers

United Nations Statistics Division

Outline

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Mitigation
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Drivers indicators in the Global Set

	Indicator	Code	Preliminary Tier	Themes
1	Total greenhouse gas emissions per year (SDG 13.2.2)	1020	1	GHG emissions
2	Total greenhouse gas emissions from the national economy (UN-ECE 09a, excluding indirect GHGs)	1030	2	GHG emissions
3	Global concentration of greenhouse gases	1040	2	GHG concentration
4	Total primary energy production from fossil fuels	1050	1	Energy
5	Total energy supply from fossil fuels	1060	1	Energy
6	Energy consumption by households and enterprises	1070	1	Energy
7	Energy intensity measured in terms of primary energy and GDP (SDG 7.3.1)	1080	2	Energy
8	Use of fossil fuels	1090	3	Fossil fuels
9	Share of fossil fuels in total primary energy supply (UN-ECE 2b)	1100	2	Fossil fuels
10	Amount of fossil-fuel subsidies per unit of GDP (production and consumption) (SDG 12.c.1)	1110	2	Fossil fuels
11	Population growth	1120	1	Population
12	Urban population (% of total population)	1130	2	Population
13	Number of (fossil-driven) vehicles per capita	1140	2	Transport
14	Intensity of use of forest resources	1150	2	Forests
15	Deforested area as a proportion of total forest area	1160	1	Forests
16	Ratio of drained/degraded organic soils out of total area of organic soils	1170	2	Agriculture
17	Livestock number per agricultural area	1180	1	Agriculture
18	Use of nitrogen fertilizers per hectare of total agricultural area (cropland and pastures)	1190	1	Agriculture
19	Built-up area growth	1200	2	Urban areas

Criteria for selecting new indicators

UNSD received suggestions for new indicators from 5 countries and 3 international agencies.

These were screened according to the following criteria:
1) link to one of the five climate change areas
2) suitability for national policy-making and monitoring purposes
3) fit into the area/topics structure in a balanced manner
4) possible to develop into the indicator/statistic/metadata structure

Proposed new indicators

			Yes/no
Statistic	CO_2 emission per capita	Country	
Indicator	**Rate of decrease for the final energy consumption per unit of GDP**	Country	
Indicator	**Proportion of non-fossil fuel energy consumption to final energy consumption**	Country	
Statistic	Footprint types: carbon footprint	Country [publications]	
Statistic	Cumulative CO_2 emissions, per capita since 1860	Country	
Indicator	**Electricity consumption**	Country	
Indicator	**CO_2 emissions in Gross Fixed Capital Formation of Direct Investment**	IMF [full metadata]	
Indicator	**CO_2 emissions in value added of Foreign Controlled Multinational Enterprises [full metadata]**	IMF [full metadata]	
Indicator	**Consumption and production of substitutes of Ozone depleting substances (ODS)**	UNEP	

Drivers: proposed modifications (1)

	Global set	Proposed changes	
Indicator 1	Total greenhouse gas emissions per year (SDG 13.2.2)	Country: Meta for indicator 1 does not mention that, e.g., international transport and biomass are excluded, whereas they are included in indicator 2.	
Indicator 9	Share of fossil fuels in total primary energy supply (UN-ECE 2b)	UNSD: Total Energy Supply (indicators 5 and 7) is the same thing as Total Primary Energy Supply (indicator 9). The latter is an outdated form. Definition should be the same or come from the same source. OECD: TPES alone is not useful, better in % of GDP or per capita	

Drivers: proposed modifications (2)

	Global set	Proposed changes	
Indicator 13	Number of (fossil-driven) vehicles per capita	Country: "Availability of personal passenger cars per 1000 population" is used. Country: As the initial data for calculating the indicator, the information of the Ministry of Internal Affairs on the number of registered vehicles running on the fossil can be used, calculated according to the data of section 3 "**The number of motor vehicles, trailers and semi-trailers registered**" of Form No. 1-BDD "Information on state of road safety "as the difference between the total number of registered vehicles (excluding trailers and semi-trailers) and the number of registered vehicles with the ability to use electric motors. Country: Would be good to distinguish between emissions for freight and passenger transport - emissions per vehicle km traveled. Country: VMT (vehicle miles traveled) and estimates on fuel economy would be more useful. Normalization to per capita is unnecessary.	
	Statistics 1141: Number of vehicles (FDES 5.1.5.c)	Country: Both total registrations **and new registrations** should be monitored. Country: Total vehicle registrations for several census years.	

Drivers: proposed modifications (3)

Global set	Proposed changes	
Statistic 1201: Extent of urban sprawl (FDES 5.1.5.a)	Country: add the two statistics: **Land Area & Built Area** available from the Land Use and Land Cover Maps. Country: The extent of urban sprawl is based on analysis of Built-Up Area Growth against the Urban Growth Boundary data. Country: National statistics include the total urban area land use categories, not only the two types that are specified in the UN metadata. Relevant in our national context: Areas with suburbanization. Not relevant in our national context: Areas with peripherization.	

Mitigation indicators in the Global Set

91	Renewable energy share in the total final energy consumption (SDG 7.2.1)	4010	2
92	Production of renewable energy from total energy production	4020	2
93	Proportion of population with primary reliance on clean fuels and technology (SDG 7.1.2)	4030	2
94	Low carbon development strategies and plans	4101	3
95	Reforming or phasing-out government support for fossil fuels, by fuel type and by type of support	4120	2
96	Share of climate change mitigation expenditure in relation to GDP (UN-ECE 30)	4130	3
97	Share of energy and transport related taxes as percentage of total taxes and social contributions (UN-ECE 31)	4140	2
98	Amounts provided and mobilized in United States dollars per year in relation to the continued existing collective mobilization goal of the $100 billion commitment through to 2025 (SDG 13.a.1)	4150	2
99	Average trading carbon price (UN-ECE 33)	4160	2
100	Climate change mitigation technology	4200	3
101	GHG intensity of production activities (including transport) (UN-ECE 13)	4210	2
102	GHG removals (Carbon sequestration)	4220	2
103	Increase in forest area	4230	1
104	Progress towards GHG emissions reduction target	4240	3

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Proposed new indicators

			Yes/No
Indicator	**Rate of decrease for the CO2 emission per unit of GDP**	country	
Statistic (within indicator 99)	Reduction in greenhouse gas emissions from companies in ETS	country	
Indicator	**Trade in low carbon technology products**	IMF [full metadata]	

Proposed modifications (1)

	Global set	Proposed changes	
Indicator 95	Reforming or phasing-out government support for fossil fuels, by fuel type and by type of support	Add the following text. • Reforming or phasing-out government support for inefficient fossil fuel subsidies, by fuel type and by type of support Reason: • While we understand the importance of this indicator in general terms, the situation differs from country to country, and it is still important to maintain all fuels and technological approaches in a realistic process of energy transition. From this perspective, it is difficult to agree with an argument that would eliminate all support for fossil fuels.	

Proposed modifications (2)

	Global set	**Proposed changes**	
Statistic 4151 under Indicator 98	External funding for climate change mitigation	• **Official Development Assistance** for climate change mitigation and adaptation • Sources of private/public funds to be distinguished? Would it be useful to peg this to the 100Bn commitment?	
Statistic 4201 under Indicator 100	Number of hybrid and electric driven vehicles	• Both total registrations and new registrations should be monitored • another more relevant indicator that we as a driver for climate change is **number of driven kilometres by type** of fuel technology	
Indicator 101	GHG intensity of production activities (including transport) (UN-ECE 13)	Greenhouse gas intensity of the economy (kg CO2 equivalent per euro of GDP)	

Proposed modifications (3)

	Global set	Proposed changes	
Statistic 1162 under Indicator 103 (Increase in forest area)	Forest area (FDES 1.2.3.1.a)	**FAO**-There should be an extra indicator for growing stock per hectare for monitoring restoration activities	
Indicator 104	Progress towards GHG emissions reduction target	• Tracking progress towards UNFCCC/Paris targets is highly sensitive and should be left to the UNFCCC reporting under that agreement. In addition, developing countries can choose the format and coverage of their NDCs, so it would not be possible to standarize a metric in any meaningful way. **UNFCCC** - Progress reflected in the BURs BTRs towards	

Proposed modifications (4)

	Global set	Proposed changes	
Statistics under Indicator 104		**IMF**: [Statistics: **Nationally Determined Contributions (NDCs) Targets**] - There are different targets that are estimated, conditional targets, unconditional targets, average targets etc. This should be clarified. [Definition: blank] - We should use the definition on the IMF Climate Change Indicators Dashboard (CID). The national GHG emissions mitigation targets have been calculated by the IMF based on the IMF's interpretation of each country's Nationally Determined Contributions (NDC) – these are the commitments made by each country to reduce their national emissions, in accordance with the Paris Climate Agreement. [Category of measurement: description]: This should be "mass". [International secondary data references: IMF]-Is this the correct designation? According to the guide the definition indicates re-dissemination (reproduced below). According to the CID what the IMF does is some modeling/assumptions…. "The national mitigation targets have been calculated by the IMF based on the IMF's interpretation of each country's Nationally Determined Contributions (NDC) – these are the commitments made by each country to reduce their national emissions, in accordance with the Paris Climate Agreement" • International secondary data references: lists international organizations which disseminate the data sourced from the primary data reference.	

Tier 3

Indicator 94	Low carbon development strategies and plans	34 countries (54%) assessed "yes" for Relevance Six countries stated they have methodology.	

Optional (on metadata)

- Rationale

- Limitations

- Interpretation

- Compilation formulae

- More dissagregation

- Tier revision

Optional (on list)

- Linkages among the indicators

- How to handle indicators which belong to more than one area

    Share of climate change mitigation expenditure in relation to GDP (UN-ECE 30)

    Share of government adaptation expenditure in relation to GDP (UN-ECE 35)

- Repeated statistics:

    - E.g.: precipitation, sea level rise, land cover, land use, forest area

- Social and economic statistics: GDP and population

Thank you for your attention!

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

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Climate Change Statistics Website
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and
https://unstats.un.org/unsd/envstats/ClimateChange_StatAndInd_global.cshtml