

# Results of the Pilot Survey



**Seventh Meeting of the Expert Group on Environment Statistics  
New York, 10-19 November 2020 (virtual)**

Session 2: Climate Change Statistics and Indicators

United Nations Statistics Division



# Outline

- Pilot Survey - objective
- Pilot Survey - responses
- Pilot Survey - observations
- Pilot Survey - conclusions
- Work done to use responses



## Pilot Survey objective

The Pilot Survey was launched on 23 February 2020 to test and assess the relevance, soundness and measurability of the proposed indicators in two ways:

- (1) by inviting the national statistical offices (NSOs) and/or ministries of environment from 42 countries to assess their preparedness to compile the suggested indicators in collaboration with relevant partners according to their national priorities as well as the development stage of the country;
- (2) in addition, 30 international/regional organizations were invited to assess the indicators from a thematic and methodological point of view to ensure that the selected indicators are relevant, correctly named, and supported by definitions, references and data.

Initially, given the importance of climate change monitoring and the interest it has generated among partners, responses and feedback arrived quickly from several organizations and countries.

However, the COVID-19 pandemic has delayed the process, especially in developing countries.



## Pilot Survey responses

- 13 key international/regional organizations responded with thematic validation on most of the proposed indicators and statistics.
- 17 countries responded including:
  - 7 developed countries, out of which 3 (who could consult stakeholders prior to lock-down) assessed all the proposed indicators.
  - 10 developing countries, of which one assessed all indicators, 7 partially, while another 2 only provided references to data available at the NSO.
- Another 12 developing countries (including 4 least developed and 4 Small Island Developing States) initiated the survey but could not complete it to date.
- The main difficulty was to collect responses from national experts and partners who the NSO could not meet during lock-down and where remote, virtual exchanges of data and information could not be done due to lack of resources and capacity.
- Another difficulty was to address indicators which were outside the national statistical system (about a third of the proposed indicators). Those indicators require further work including desk research and consultations with experts to develop proper definitions and calculation methods in the next period.



## Pilot Survey responses

### Agencies

1. UNFCCC
2. UN-ECE
3. IPCC
4. WCMC
5. UNEP
6. Eurostat
7. WFP
8. UNU
9. IUCN
10. WMO
11. FAO-Water
12. UNDRR
13. WHO

### Countries

1. Sweden
2. Netherlands
3. Hungary
4. Slovenia
5. UAE
6. Brazil
7. Suriname
8. Russia
9. Mauritius
10. Palestine
11. Tanzania
12. Luxembourg
13. Finland
14. Estonia
15. Philippines
16. Grenada
17. Saint Lucia



## Consultations on the development of the Global Set

- UNSD reached out to the countries that responded and reviewed the information provided seeking clarification and additional supporting information as necessary.
- Bilateral consultations have also been taking place with selected organizations on specific thematic areas (such as UNFCCC) and this will continue once additional responses have been received and enough analysis of the various themes (such as biodiversity, disasters, etc.) has taken place and deemed useful for more in-depth discussion.
- While further responses were awaited from, in particular from the developing countries, UNSD set up a small group of (developing) countries that were faced with the most challenges due to the pandemic as well as with the completion of the survey in general, along with the Chair of the EGES, to examine in detail the structure of the draft Global Set and provide inputs towards a product for the planned Global Consultation in 2021. The group:
  - held several virtual meetings during from May to September and discussed a structure linking the proposed indicators and underlying basic statistics, accompanied by short metadata, which should satisfy the needs of both developed and developing countries.
  - provided feedback to UNSD to better understand the needs of the least developed and developing countries in particular and the way NSOs interact with their national counterparts.
  - provided suggestions to UNSD on how to organize and review the feedback received to date. The processes of revising the structure of the draft set is ongoing and a revised version will be prepared for discussion at the virtual seventh meeting of the EGES planned for November 2020.



## Pilot Survey responses – general comments – by agencies

- Need to follow up policy/future agreements closely – e.g. Doha amendment
- Relevance and clear link to climate change is not always obvious
- Include more specific categories of measurement and disaggregation
- Improve topic names (some contain mixed themes)
- Vulnerability is more an analytical area than statistical area
- Some indicators are not in the right area, or fit in more than one area
- Some redundancies or closely related indicators and statistics are in the list  
(consider separating into headline/core indicators)



## Pilot Survey responses – general comments – by countries

- The Survey needs a long time to review, because of very wide scope, many items are outside the scope of official statistics
- Some indicators require complex studies/modelling
- Some indicators have different (more specific) national definitions
- Need to include more specific categories of measurement and disaggregation
- Include the variables needed to compute each indicator (try to simplify composite indicators)





## Pilot Survey responses – 68 new indicators/statistics suggested, few to be deleted

Country/Agency	Number of new indicators proposed
Suriname	2 (on GHGs)
Brazil	16 (various topics)
Luxembourg	11 (various topics)
Hungary	2 (GHG according to residence principle)
Netherlands	1 (Living Planet Index)
Russia	Added sub-indicators
UNEP	20 (various topics)
IPCC	3 (within AFOLU)
WCMC	3 (land, biodiversity)
WMO	8 (all in climate change evidence)
WHO	2 (air pollution, climate finance)

Will be reviewed in the break-up groups tomorrow



## Pilot Survey responses – individual indicators/statistics assessed (1)

All indicator-specific comments by the 30 respondents were introduced in a spreadsheet.

		Netherlands	Russia	Slovenia	Sweden	Luxembourg	WCMC	Eurostat	UNFCCC	UN-ECE	Brasil	Estonia	Palestine	Hungary	IUCN	Suriname	Grenada	Tanzania	St. Lucia	
A1. Topic	B1. Indicator/statistic	K1.	K1.	K1.	K1.	K1.	K1.	K1.	K1.	K1.	K1.	K1.	K1.	K1.	K1.	K1.	K1.	K1.	K1.	K1.
DRIVERS																				
VULNERABILITY																				
90	Food security																			
91	Prevalence of undernouri		Yes	NO		n					Y	no		yes		Yes	yes	Yes	yes	
92	Vulnerability of food reso			YES		n					Y	yes		yes		Yes	no	Yes	yes	

Relevance	Yes	No	Blank	
Netherlands		43	0	91
Russia		60	6	68
Slovenia		113	10	11
Luxembourg		71	54	9
Eurostat		8	0	126
UNFCCC		6	0	128
UN-ECE		13	3	118
Brazil		125	8	1
Estonia		85	31	18
Palestine		10	1	123
Hungary		123	10	1
IUCN		2	0	132
Suriname		119	9	6
Grenada		124	10	0
Tanzania		112	20	2
St. Lucia		121	13	0

Relevance assessed by 16 respondents.

Examples will be reviewed in the break-up groups tomorrow



## Pilot Survey responses – individual indicators/statistics assessed (2)

Soundness assessed by 14 respondents

Soundness	Yes	No	Blank
Netherlands	43	0	91
Russia	60	6	68
Slovenia	52	17	65
Sweden	27	8	99
Luxembourg	48	23	63
Eurostat	3	0	131
UNFCCC	6	0	128
Estonia	35	2	97
Palestine	10	1	123
Hungary	50	70	14
IUCN	2	0	132
Suriname	67	61	6
Tanzania	81	48	5
St. Lucia	60	23	51

Examples will be reviewed in the break-up groups tomorrow



## Pilot Survey responses – individual indicators/statistics assessed (3)

**Measurability** assessed by 11 respondents.

Measurability	Yes	No	Blank
Netherlands	42	0	92
Russia	66	0	68
Slovenia	62	7	65
Luxembourg	37	33	64
Estonia	87	45	2
Palestine	9	1	124
Hungary	61	59	14
IUCN	2	0	132
Suriname	60	68	6
Tanzania	74	55	5
St. Lucia	48	30	56

Examples will be reviewed in the break-up groups tomorrow



## Pilot Survey responses – individual indicators/statistics assessed (4)

Tiers assessed by 11 respondents.

Tiers	Tier 1	Tier 2	Tier 3	Blank
Netherlands	43	1	0	90
Russia	55	6	3	70
Slovenia	49	15	6	64
Luxembourg	38	11	22	63
Eurostat	1	1	0	132
UN-ECE	0	0	6	128
Palestine	6	0	0	128
Hungary	44	26	50	14
Suriname	44	36	48	6
Tanzania	62	25	25	22
St. Lucia	28	12	13	81

Examples will be reviewed in the break-up groups tomorrow



## Pilot Survey – specific observations and work to-date

- Most of the proposed indicators are applicable, although some need further methodological work.
- Several new indicators were suggested – reviewed and included in the list, most of them may be already included in either the inputs or classifications columns (as disaggregations) and it possible that these were overlooked by respondents.

### e. Adaptation

- i. Add new topic 'Quality of life' (Brazil), indicators:
  1. 'Actions to combat undernourishment'; - addressed in vulnerability 'Prevalence of undernourishment'
  2. 'Access of health programmes' - addressed in vulnerability 'Coverage of essential public health services'
- ii. In Topic row 147:
  1. Add 'nature-based protection from storms' (WCMC) included in adaptation in the new structure
  2. Add 'number of green buildings (Brazil) included in adaptation | 'Proportion of building adapted for climate change' in the new structure

- For several indicators the relevance to climate change was not clear – metadata are being prepared which will make this more evident.
- Neutral wording should be introduced: change rather than increase or decrease

MITIGATION	Increase in forest area		FDES-BSES	By types of fore	Area
MITIGATION		Forest area			
MITIGATION		Progress towards GHG emissions reduction target			Description



## Pilot Survey - specific observations and work to-date

- The links to IPCC and to the ECE core set of indicators were appreciated.
- Several of the originally proposed indicators were considered to be overlapping – **redundancies will be removed.**

A1. Topic	Indicators	Statistics	C1. Definition reference	E1. Potential aggregations	F1. Category of Measure
IMPACTS	Loss of quality of water bodies	Water turbidity	FDES BSES	By water body;	Concentration
IMPACTS		Water pH (1.3.2.f.1)	FDES BSES	By water body	Level
IMPACTS		Water salinity (1.3.2.f.2)	FDES BSES	By water body	Concentration
IMPACTS		BOD of water resources (1.3.2.b.1) (delete- UNEP)	FDES BSES	By water body	Concentration
IMPACTS		COD of water resources (1.3.2.b.2) (delete- UNEP)		By water body	Concentration
IMPACTS	Change in the average marine acidity (pH) measured at agreed suite of r	Average marine acidity (pH) measured at agreed suite of rep	SDG 14.3.1	Global indicato	Level
IMPACTS	Proportion of population using safely managed drinking water services	Drinking water quality	SDG 6.1.1 metadata		
VULNERABILITY	Proportion of population using safely managed drinking water services		SDG 6.1.1	By type (rural, t	Percent
VULNERABILITY		Population using safely managed drinking water services			
VULNERABILITY		Population			

- There is a need to reduce the number of indicators – **entire structure is being re-organized; overlapping indicators are being addressed; tiering system will assist in prioritization.**
- There is a need to clarify between indicators and statistics – **they have now been separated to promote transparency and ensure that indicators are clear and measurable, as well as outline the underlying statistics/data that are needed to produce them, thereby clearly identifying the data gaps.**
- There is a need to simplify some of the indicators as some were considered too complex – **they are being re-examined.**



## Pilot Survey - specific observations and work to-date

- References to SEEA were encouraged where applicable - **several ECE indicators include such references, and references in metadata will be provided as appropriate.**
- Need stronger reference to SDG 13 indicators – **the newly established SDG indicators for Goal 13 have now been included.**
- Time allocation not enough due to COVID – **extensions were provided, follow up was carried out, bilateral discussions were conducted. Hence, the decision to delay the Global Consultation was taken.**
- Data availability was a concern for some indicators, especially in adaptation – **references to data availability, produced both at international and national levels, are being reviewed.**
- Many indicators were outside of NSO/NSS – **additional efforts to compile metadata and enough time for the Global Consultation for stakeholder discussions.**
- Allocation of indicators was not always clear, e.g. impacts or adaptation – **further analysis and metadata are being developed.**





## Pilot Survey - conclusions

- The main conclusion is that the development of the Global Set of Climate Change Statistics and Indicators, despite the global pandemic, is of utmost importance for countries and organizations.
- It is also clear that most of the proposed indicators are applicable, although some need further methodological work.
- Despite the applicability of the indicators and the interest that the developing countries have clearly demonstrated towards this work, these countries, in particular, face enormous resource challenges and should be offered adequate support, with extended time and guidance to be able to embark on such comprehensive and interdisciplinary statistical work.
- The Global Set should be promoted by NSOs and national reporting authorities to facilitate the communication of comprehensive coverage of statistics and indicators to multiple stakeholders, especially those with narrow specialization, both in the context of national consultations and further work on international level.



# Global set structure

Indicators and statistics side-by-side, main metadata details

A1. Topic	Indicators	Statistics	C1. Definition reference	E1. Potential aggregations	F1. Category of Measurement	G1. Data reference	H1. Data type	I1. Paris Agreement	I2. Katowice package	I2. SDG	I3. FDES	I4. Sendai Framework	J. Tier (UNSD)
<b>IMPACTS</b>	<b>Freshwater resources</b>							7; 13.8	Decision 18/CMA.1, chapter IV;	2.6.1			
<b>IMPACTS</b>		Renewable freshwater resources per capita	FDES-BSES manual (water	Volume	UNSD Environm	C		7; 13.8			1.1.1.b. 1. Annual average (Tier 1		1
<b>IMPACTS</b>		Precipitation (1.1.1.b/2.6.1.a)											
<b>IMPACTS</b>		Variation in rainfall volume (Brazil)											
<b>IMPACTS</b>		Evapotranspiration (2.6.1.6.1)											
<b>IMPACTS</b>		Inflow (2.6.1.b.2)											
<b>IMPACTS</b>		Population											
<b>IMPACTS</b>		freshwater extent (UNEP)											
<b>IMPACTS</b>		groundwater extent (UNEP)											
<b>IMPACTS</b>	<b>Freshwater abstraction, supply and use</b>							7; 13.8	Decision 18/CMA.1, chapter IV;	2.6.2			
<b>IMPACTS</b>		Freshwater abstracted as proportion of renewable freshwater resou	FDES-BSES manual (water	Percent	UNSD Environm	C		7; 13.8		6.4.2 Level of water stress: freshwater withdrawal as a			1
<b>IMPACTS</b>		Freshwater abstracted											
<b>IMPACTS</b>		Renewable freshwater resources											
<b>ADAPTATI</b>	<b>Water management and treatment</b>				Volume			7; 13.8					
<b>ADAPTATION</b>		Proportion of wastewater treated	FDES (pg 6	By types of treat	Percent	UNSD Environm	C	7; 13.8		6.3.1 Proportion of wastewater safely treated (Tier 2)			2
<b>ADAPTATION</b>		Total wastewater generated (3.2.1.a)		By ISIC economic activity									
<b>ADAPTATION</b>		Wastewater treated (3.2.2.b)		By types of plants									
<b>ADAPTATION</b>		Water use per capita	FDES BSES	By ISIC econom	Volume	UNSD Environm	C	7; 13.8	Decision 18/CMA.1, chapter IV;	6.4.1 Change in water use efficiency over time (Tier 2)			2
<b>ADAPTATION</b>		Total freshwater available for use						7; 13.8	Decision 18/CMA.1, chapter IV; Decision 9/CMA.1				
		Population			Number								



## Global set: metadata example

	Indicator	Statistic 1	Statistic 2	Statistic 3
<b>Codes and titles:</b>	<a href="#">41. Renewable freshwater resources per capita</a>	<a href="#">41.1 Precipitation</a>	<a href="#">41.2 Evapotranspiration</a>	<a href="#">41.3 Inflows</a>
<b>Area, topic</b>	Impacts, Freshwater resources			
<b>Themes</b>	Water			
<b>Correspondences</b> SDGs FDES Paris Agreement articles Katowice Package decisions Sendai	Related to SDG 6.4.2  Paris agreement articles 7; 13.8 Decision 18/CMA.1, chapter IV; Decision 9/CMA.1	FDES 1.1.1.b/2.6.1.a Paris agreement articles 7; 13.8	FDES 2.6.1.b.1 Paris agreement articles 7; 13.8	FDES 2.6.1.b.2 Paris agreement articles 7; 13.8
<b>Tier</b>	1	1	1	1
<b>Definitions</b>	Renewable water resources are replenished by precipitation and are represented by the annual flow of surface water and groundwater. (BSES manual)	The volume of water that flows from the atmosphere to inland water resources via rain, snow, sleet, hail, dew, mist, etc., per year. (BSES manual)	The volume of water that enters the atmosphere by vaporization of water into a gas through evaporation from land and water surfaces and transpiration from plants, per year. (BSES manual)	The volume of surface water and groundwater that moves into a territory from other territories, during a year. (BSES manual)
<b>Relevance</b>	<ul style="list-style-type: none"> <li>Water resources management</li> <li>International data collection (UNSD/UNEP, Eurostat/OECD, AQUASTAT, SDG)</li> </ul>			
<b>Update frequency</b>	annual	annual	annual	annual
<b>Category of Measurement</b>	Percent	Volume	Volume	Volume
<b>Data collection methods</b>	Monitoring systems	Monitoring systems	Monitoring systems	Monitoring systems
<b>Data sources</b>	hydro meteorological institutions			
<b>Computation/compilation methods</b>	Precipitation plus inflows minus evapotranspiration divided over population number	Interpolation of point measurements over a geographic area (SEEA water pg71). GIS modelling of precipitation.	Residual of precipitation less surface and sub-surface run-off (SEEA water pg71).	sum of inflows from other territories
<b>Reference to examples of statistics / Type of statistics</b>	UNSD Environmental Indicators (Inland water resources) / Country	UNSD Environmental Indicators (Inland water resources) / Country	UNSD Environmental Indicators (Inland water resources) / Country	UNSD Environmental Indicators (Inland water resources) / Country
<b>Potential aggregations and scales</b>	National; Sub-national; By territory of origin and destination			
<b>Methodological Guidance</b>	<a href="#">UNSD/UNEP Questionnaire on Environment Statistics (Water)</a> ; <a href="#">Manual on the Basic Set of Environment Statistics (BSES) (Water Resources)</a> ; <a href="#">International Recommendations for Water Statistics</a> ; <a href="#">Compilation Guidelines for Water Accounts and Statistics</a>			



## Thank you for your attention!

For more information please contact the Environment Statistics Section  
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Climate Change Statistics Website

<https://unstats.un.org/unsd/envstats/climatechange.cshhtml>

