



UNSD/UNEP Questionnaire on Environment Statistics – value of country data for informing policy questions; collaboration in water statistics

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United Nations Statistics Division (UNSD)

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Statistics

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Outline

- 1. The value of country data for informing policy questions**
- 2. Collaboration in water statistics**



UNSD/UNEP Questionnaire on Environment Statistics



- Since 1999, UNSD has collected waste data 10 times biennially, from about 170 UN member states. Mandated by UNSC 28th session (1995); reinforced at 34th session (2003).
- Questionnaire are sent to National Statistical Offices and Ministries of Environment.
- Questionnaires are not sent to Eurostat and OECD members and candidate members. 170+ member states in previous years; about 165 member states in the 2020 collection cycle
- Response rate typically hovers around 50% (2018: 52%; 2020: approaching 50%).
- No imputation, no estimation.
- Direct outputs are: the UNSD Environmental Indicator Tables, Country Snapshots, and Country Files.



UNSD/UNEP Questionnaire on Environment Statistics: disseminated outputs



- **UNSD environmental indicators:** <https://unstats.un.org/unsd/envstats/qindicators> Time series, or most recently available data for selected variables provided by countries. Disseminated after completion of collection cycle.
- **Country files:** https://unstats.un.org/unsd/envstats/country_files Individual country data on water and waste. Disseminated periodically during collection cycle. E.g. all nine countries here who provided data to UNSD for the 2020 Questionnaire all have their data in the public domain here.
- **Country snapshots:** <https://unstats.un.org/unsd/envstats/snapshots/> Individual country data spanning many environmental themes.
- **Tailored queries:** Per solicitation from key users.





UNSD/UNEP Questionnaire on Environment Statistics

Water



United Nations Statistics Division (UNSD) and United Nations Environment Programme
QUESTIONNAIRE 2020 ON ENVIRONMENT STATISTICS

Section: WATER

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- W1: Renewable freshwater resources
- W2: Freshwater abstraction and use
- W3: Water supply industry (ISIC 36)
- W4: Wastewater generation and treatment
- W5: Population connected to wastewater treatment



How can data collected via this Questionnaire inform key policy questions?

- Indicator 6.3.1 (Tier II): Proportion of domestic and industrial wastewater safely treated
 - Custodian agencies: WHO, UN-HABITAT, UNSD
 - Metadata [\[link\]](#)
- Indicator 6.4.1 (Tier I): Change in water-use efficiency over time
 - Custodian agencies: FAO. Partners: UNEP, IUCN, UNSD, OECD, Eurostat
 - Metadata [\[link\]](#)
- Indicator 6.4.2 (Tier I): Level of water stress: freshwater withdrawal as a proportion of available freshwater resources
 - Custodian agencies: FAO. Partners: UNEP, IUCN, UNSD, OECD, Eurostat
 - Metadata [\[link\]](#)



SDG indicator 6.3.1; or Indicator 134 of the draft Global Set of Climate Change Statistics and Indicators:

What proportion of domestic wastewater is safely treated?

- 86 countries have provided data on one of these four variables since they were first collected in 2013.
- But only nine countries provided data for all four variables needed to answer the policy question.
- All countries' data were validated with UNSD. Often the country is encouraged to clarify data with key partner source within country.

Table W4: Wastewater Generation and Treatment

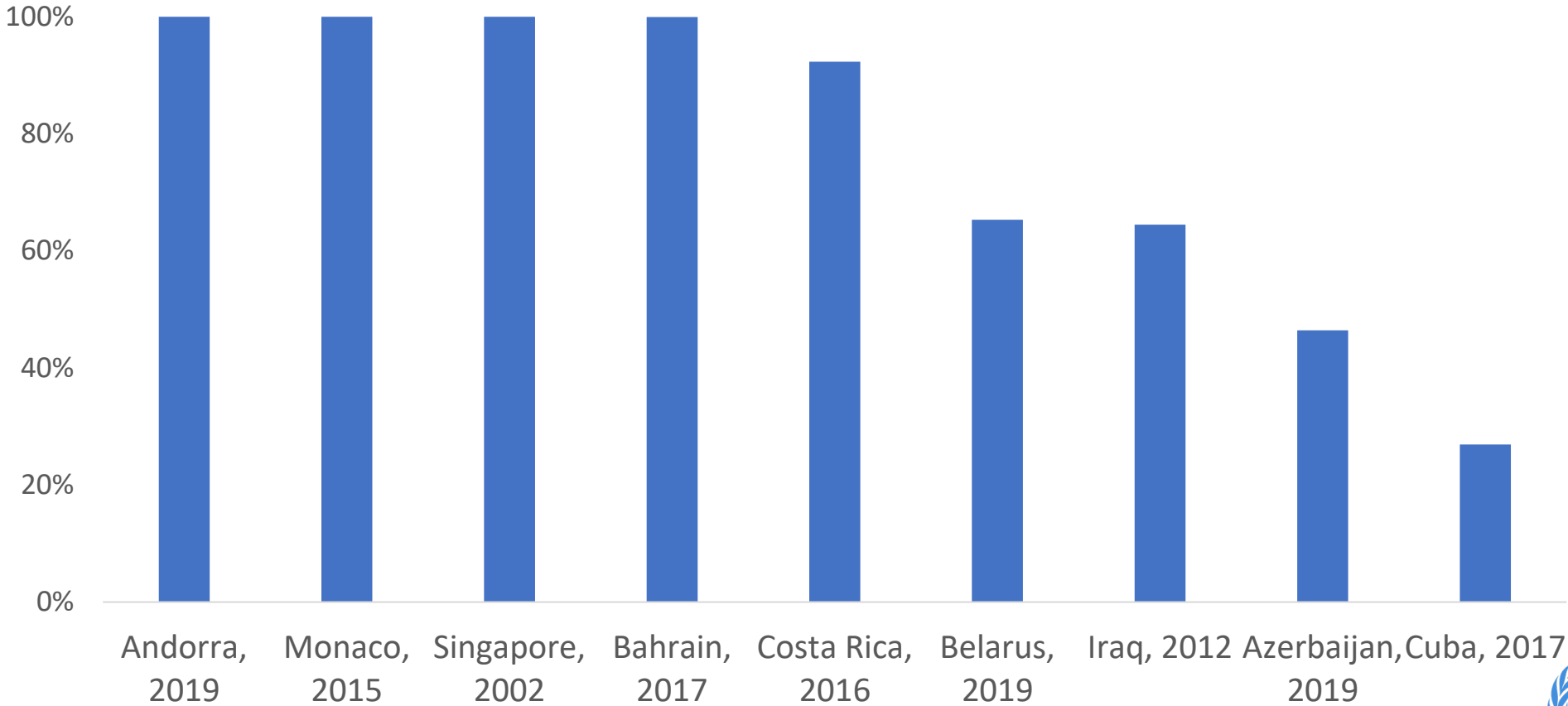
Line	Category	Unit	2018
1	Total wastewater generated		
2	by:		
3	Agriculture, forestry and fishing (ISIC 01-03)		
4	Mining and quarrying (ISIC 05-09)		
5	Manufacturing (ISIC 10-33)		
6	Electricity, gas, steam and air conditioning supply		
7	of which by:		
8	Electric power generation, transmission and distribution (ISIC 351)		
9	Construction (ISIC 41-43)		
10	Other economic activities		
11	Households		
12	Wastewater treated in urban wastewater treatment plants	1000 m ³ /d	
13	of which:		
14	Primary treatment		
15	Secondary treatment		
16	Tertiary treatment		
17	Wastewater treated in other treatment plants		
18	of which:		
19	Primary treatment		
20	Secondary treatment		
21	Tertiary treatment		
22	Wastewater treated in independent treatment facilities		
23	Non-treated wastewater		
24	Sewage sludge production (dry matter)	1000 t	



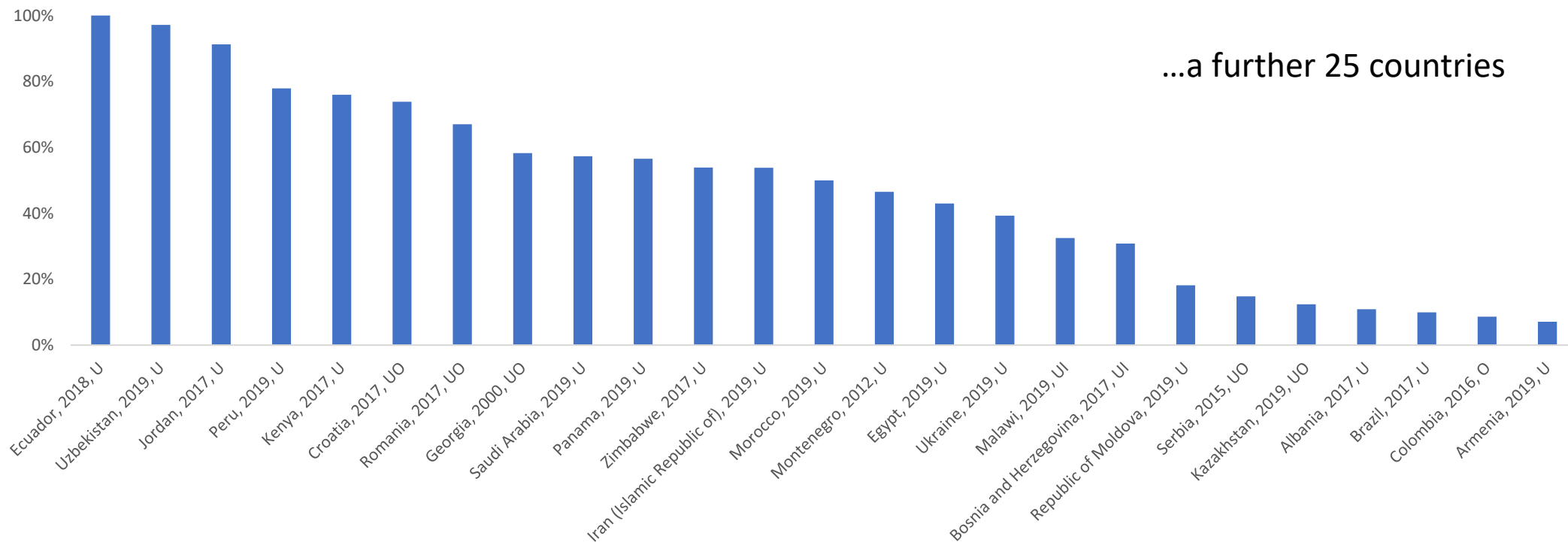
How can data collected via this Questionnaire inform key policy questions? What proportion of domestic wastewater is safely treated?



Nine countries...



How can data collected via this Questionnaire inform key policy questions? What proportion of domestic wastewater is safely treated?



O = refers to Wastewater treated in other wastewater treatment plants upon total wastewater generation
 UO = refers to Wastewater treated in urban wastewater treatment plants upon total wastewater generation
 U = refers to Wastewater treated in urban and other wastewater treatment plants upon total wastewater generation
 UI = refers to Wastewater treated in urban wastewater treatment plants and independent wastewater treatment facilities upon total wastewater generation

Detailed definitions of terms used: https://unstats.un.org/unsd/envstats/Questionnaires/2020/q2020_Water_English.pdf

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How can data collected via this Questionnaire inform key policy questions?

- Prior to 2013, data for SDG indicator 6.3.1 and Draft Global Set indicator 134 was not collected via the Questionnaire
- All data shown were provided by countries to the Questionnaire
- A delicate balance between prioritizing SUPPLY of statistics and DEMAND of mandates, policy makers, researchers, etc.
- Every time we wish to refine or disaggregate to a finer level, we tend to reduce data availability
- Often, due to demand, new variables are added. The Questionnaire strives to be relevant and to meet demand... however, experience shows when collecting new variables, the wastewater example shows it can take years to build up a dataset fit for purpose/demand.

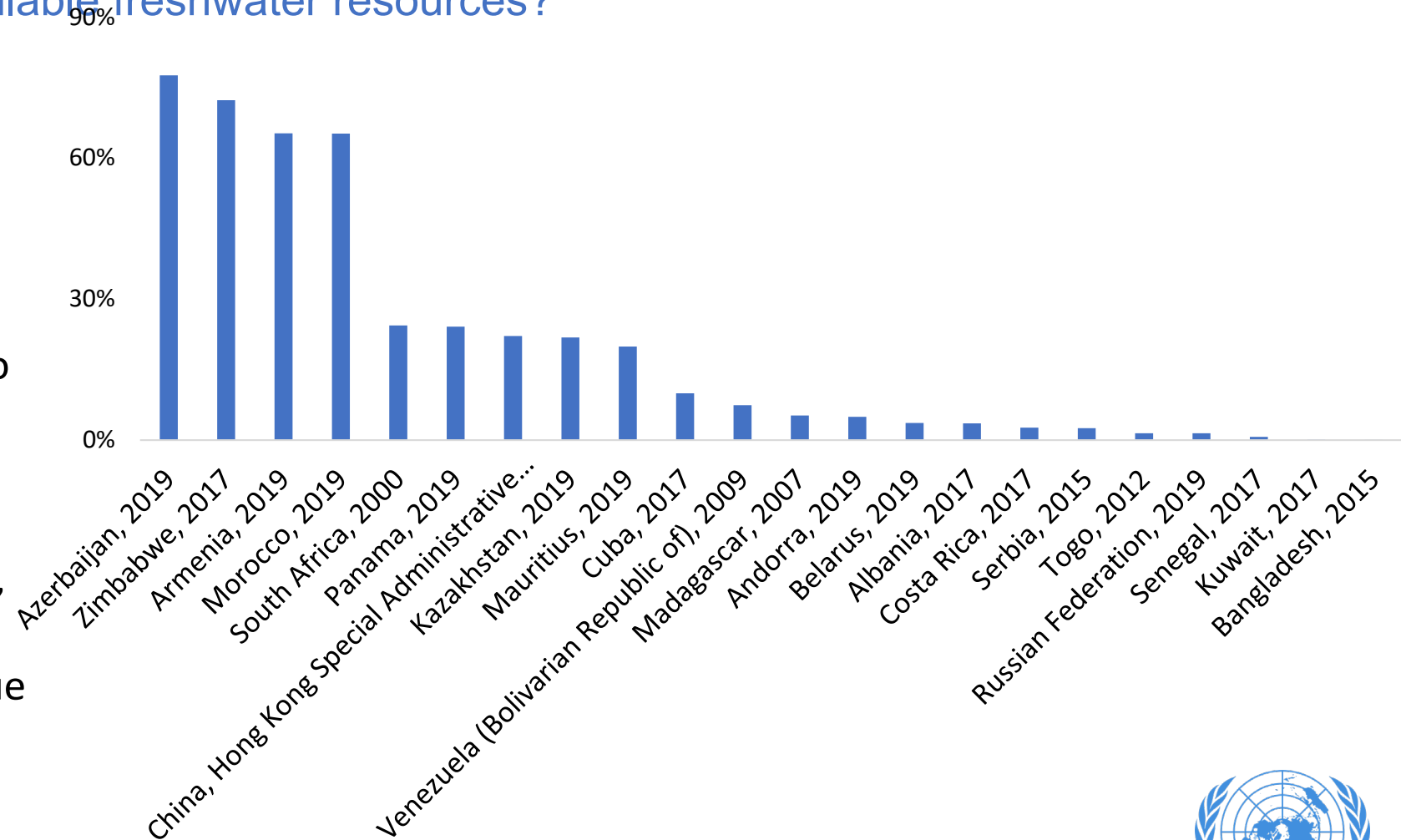
Table W6: Wastewater Treatment Facilities

Line	Category	Unit
URBAN WASTEWATER TREATMENT		
Primary wastewater treatment		
1	Number of plants	Number
2	Design capacity (Volume)	1000 m ³ /d
3	Design capacity (BOD)	1000 kg O ₂ /d
4	Actual occupation (Volume)	1000 m ³ /d
5	Actual occupation (BOD)	1000 kg O ₂ /d
Secondary wastewater treatment		
6	Number of plants	Number
7	Design capacity (Volume)	1000 m ³ /d
8	Design capacity (BOD)	1000 kg O ₂ /d
9	Actual occupation (Volume)	1000 m ³ /d
10	Actual occupation (BOD)	1000 kg O ₂ /d
Tertiary wastewater treatment		
11	Number of plants	Number
12	Design capacity (Volume)	1000 m ³ /d
13	Design capacity (BOD)	1000 kg O ₂ /d
14	Actual occupation (Volume)	1000 m ³ /d
15	Actual occupation (BOD)	1000 kg O ₂ /d
INDEPENDENT WASTEWATER TREATMENT		
16	Number of plants	Number
17	Design capacity (Volume)	1000 m ³ /d
18	Design capacity (BOD)	1000 kg O ₂ /d
19	Actual occupation (Volume)	1000 m ³ /d
20	Actual occupation (BOD)	1000 kg O ₂ /d
OTHER WASTEWATER TREATMENT		
Primary wastewater treatment		
21	Number of plants	Number



SDG indicator 6.4.2 and Draft Global Set of Climate Change Statistics and Indicators (ind. 28: Freshwater abstracted as proportion of renewable freshwater resources): What is the freshwater withdrawal as a proportion of available freshwater resources?

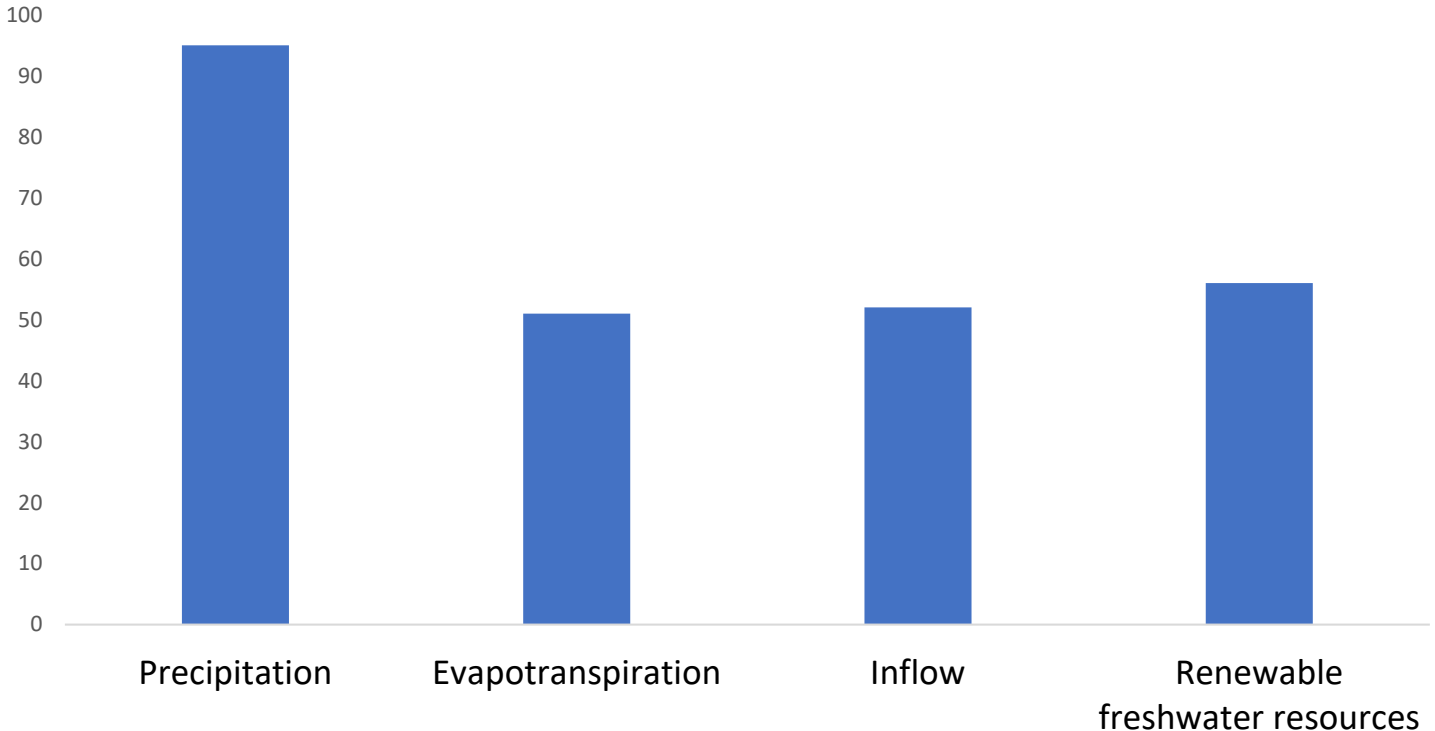
- A proportion using two variables sourced from the Questionnaire: [Gross freshwater abstracted]/[Renewable freshwater resources]
- 100 countries have provided data to one of these two variables to the UNSD/UNEP Questionnaire (since 1999).
- 22 countries data can be presented, albeit still as “latest year available” rather than a lengthy time series due to sporadicity of data



Draft Global Set of Climate Change Statistics and Indicators (ind. 27: Renewable freshwater resources per capita): How much precipitation, evapotranspiration and inflow is there per capita?

- NB Renewable freshwater resources = Internal flow* + Inflow. *Internal flow = Precipitation - evapotranspiration
- Counts of countries who have provided data to these Questionnaire variables since 1999 - Precipitation: 95 out of about 165; Evapotranspiration 51 out of about 165.
- Converting to per capita is of course a straightforward next step.
- Data are rich enough that time series on each variable are published by UNSD (ref: <https://unstats.un.org/unsd/envstats/qindicators>) even though

those time series remain sporadic in parts



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Draft Climate Change Statistics and Indicators 47: Total rainfall anomaly; 48: Precipitation record; and 49: Standardized precipitation index

- The “Precipitation” variable is among the best responded to by countries to the Questionnaire.
- It’s collected on an annual basis and also as a long-term annual average.
- Such an indicator tests the strength of the institution to document data, maintain long time series for measuring climate change.
- Long-term defined as, “at least 30 consecutive years”.

Table W1: Renewable Freshwater Resources					
Line	Category	Unit	Long term annual average	1990	2019
1	Precipitation	mio m ³ /y			
2	Actual evapotranspiration	mio m ³ /y			
3	Internal flow (=1-2)	mio m ³ /y			
4	Inflow of surface and groundwaters from neighbouring countries	mio m ³ /y			
5	Renewable freshwater resources (=3+4)	mio m ³ /y			



Observations on water data available via the UNSD/UNEP Questionnaire on Environment Statistics

- The situation has gradually improved since the 1995 UN Statistical Commission mandate, and it's been a collaborative effort spanning institutions at international level, and many, many country NSOs, Ministries of Environment and other stakeholders at federal, state/provincial and local government levels.
- UNSD maintaining open relationships with key stakeholders (countries, international organisations, etc.) is vital to continued improvement.
- Data remains spotty for many variables collected whether they be demanded by key mandates (SDG indicators, draft Global Set of Climate Change Statistics and Indicators, Framework for the Development of Environment Statistics(FDES)) or not.
- Maintaining **relevance** is key, hence considerations to edit variables per demand (e.g. concerning wastewater treatment for SDG 6.3.1.).
- UNSD remains cognizant of respondent burden upon countries. Supply v Demand is considered when modifying content. For every variable added (typically per demand), it is often a gradual process taking several years for countries to supply data, and for credible, comparable time series to be built.



Collaboration in water statistics

- Due to reduced international travel, UNSD makes effort to collaborate virtually
- Country consultation on UNSD/UNEP Questionnaire on Environment Statistics: Video call where UNSD made itself available for any questions or concerns countries who had not yet responded to the Questionnaire may have. About 15 countries attended together with key user stakeholders (World Health Organization, UN-HABITAT).
- Bilateral calls between a country NSO and UNSD on technical issues pertaining to the UNSD/UNEP Questionnaire on Environment Statistics (bound by language constraints)
- At international level, regular teleconferences continue among UNSD, OECD, Eurostat, FAO, UN-HABITAT and WHO.
- As data improves, more citations from key users are expected, both in terms of data collected and the methodology advocated within the Questionnaire.
- United Nations, UN Water, UN-HABITAT, World Health Organization: **Progress on Wastewater Treatment – 2021 Update** [Progress on Wastewater Treatment – 2021 Update | UN-Water \(unwater.org\)](#)





Grateful to countries for their contributions (all data referenced in this presentation are country-owned and sourced from the Questionnaire) and for continued supply of data for this Questionnaire which demonstrates abilities of countries and their readiness to be able to own data required for SDG indicators, Global Set, FDES, etc.

Thank You!

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