

Statistical Commission
Fifty-sixth session
4–7 March 2025
Item 4 (b) of the provisional agenda
**Items for decision: Environment and climate change
statistics**

Background document
Available in English only

**BACKGROUND DOCUMENT TO THE REPORT OF
THE SECRETARY-GENERAL ON ENVIRONMENT
AND CLIMATE CHANGE STATISTICS
(E/CN.3/2025/25)**

Prepared by the United Nations Statistics Division (UNSD)

7 February 2025

Introduction

The present background document complements the Report of the Secretary-General on Environment Statistics to the United Nations Statistical Commission at its fifty-sixth session, 4 - 7 March 2025 in New York.¹ The relevant paragraphs in the Report of the Secretary-General that refer to this background document are paragraphs 19 to 23 within section C: Data collection, dissemination and use.

The purpose of the present background document is to: (i) demonstrate why there is demand for the data being provided by countries for policy purposes such as the Sustainable Development Goals; (ii) introduce the history of the long-standing data collection which the Statistics Division has led regarding water and waste statistics; (iii) to give a description of each of the tables used for data collection; (iv) to demonstrate to what degree existing data may answer policy questions; (v) to examine how water and waste data may be aggregated from two international questionnaires; and (vi) share how the Statistics Division's capacity development efforts help boost countries responses to the UNSD/UNEP Questionnaire on Environment Statistics.

Contents

Introduction.....	2
1.1: Demand for the data being provided by countries for policy purposes such as the Sustainable Development Goals	3
1.2: The history of the long-standing data collection which the Statistics Division has led regarding water and waste statistics: how did we get here?	6
1.3: A closer look at the tables used to collect data via the Questionnaire	8
1.4: To what degree may existing data answer key policy questions?	11
1.5: What insights may be drawn by juxtaposing data countries provide to the UNSD/UNEP Questionnaire on Environment Statistics, and data countries provide to the Joint OECD/Eurostat Questionnaire on the State of the Environment?	13
1.6: What is the Statistics Division doing to liaise with countries and provide capacity development support for countries' provision of data to the Questionnaire?	15
Annex I: Count of responses by variable and year to the UNSD/UNEP Questionnaire on Environment Statistics	16

¹ E/CN.3/2025/25 (https://unstats.un.org/UNSDWebsite/statcom/session_56/documents/2025-25-EnvironmentStats-E.pdf) Item 4(b) of the provisional agenda of the fifty-sixth session of the United Nations Statistical Commission.

Waste section.....	16
Water section	20

1.1: Demand for the data being provided by countries for policy purposes such as the Sustainable Development Goals

1. Countries' and areas' (hereafter, countries) provision of data to the UNSD/UNEP Questionnaire on Environment Statistics (hereafter, the Questionnaire) has long been valued by a number of stakeholders and contributed to widespread research. First conducted in 1999 following the mandates of the UN Statistical Commission (28th session, 1995², with a reinforced mandate at the 34th session in 2003³), the Questionnaire has provided country-owned data on water and waste.⁴ Due to its 26-year continuation, a database housed by UNSD now serves as a resource with archived data and time series often dating back to the 1990s. After 26 years of sustained efforts by member states and the Statistics Division, trends, patterns, and anomalies in data sets are now detectable, and mean better insights and more accurate conclusions can be drawn for policy makers.

2. While various issues and policy demands have evolved over time into which country-owned data can provide insight, the content of the variables within the Questionnaire has also evolved to meet such demands. In prior years, the Questionnaire served as an input into several indicators of the Millennium Development Goals in the 2000-2015 period. During the era of the 2030 Agenda for Sustainable Development (essentially beginning in 2015), the Questionnaire and its associated data have received increased interest from several international organisations, each of whom have a (co-)custodian responsibility for SDG indicators. These include the United Nations Environment Programme (UNEP); UN-HABITAT; the Food and Agriculture Organization of the United Nations (FAO); the United Nations Institute for Training and Research (UNITAR); and the World Health Organization (WHO). Themes into which data collected via the Questionnaire provide valuable insight continue to be sought after. These include:

- i) Volumes of renewable freshwater resources available;
- ii) Volumes of freshwater abstracted from the natural environment (by economic industries and households);

² https://unstats.un.org/UNSDWebsite/statcom/session_28/documents/statcom-1995-28th-report-E.pdf (para. 77)

³ https://unstats.un.org/UNSDWebsite/statcom/session_34/documents/statcom-2003-34th-report-E.pdf (Chapter IV, para. 2)

⁴ In earlier cycles of data collection, data were also collected on air and land, but once overlap was identified, collection of data on these two themes was discontinued, per consultation with the Statistical Commission.

- iii) Volumes of wastewater generated and safely treated, by primary, secondary and tertiary treatment levels;
- iv) Proportions of population connected to wastewater treatment;
- v) Amount of waste generated by source economic industries and households;
- vi) Stocks, flows and treatment of hazardous waste;
- vii) Management and treatment of municipal waste (at both member state and city level);
- viii) Composition of municipal waste;
- ix) Generation and collection of e-waste; and
- x) Generation of food waste.

3. Data concerning the aforementioned themes are often directly fed into SDG indicator compilation as shown in Table 1 below.

Table 1: SDG indicators towards which data collected via the UNSD/UNEP Questionnaire on Environment Statistics are contributing⁵

SDG indicator	Tier	Custodian Agency(ies)	Partner Agency(ies)
6.3.1 Proportion of wastewater safely treated	I/II depending on type	WHO, UN-HABITAT, UNSD	UNEP, OECD, Eurostat
6.4.1 Change in water-use efficiency over time	I	FAO	UNEP, IUCN, UNSD, OECD, Eurostat
6.4.2 Level of water stress: freshwater withdrawal as a proportion of available freshwater resources	I	FAO	UNEP, IUCN, UNSD, OECD, Eurostat
11.6.1 Proportion of urban solid waste regularly collected and with adequate final discharge out of total urban solid waste generated, by cities	I	UN-HABITAT, UNSD	UNEP

⁵ Interagency Expert Group – Sustainable Development Goals: Tier Classification for Global SDG indicators.
<https://unstats.un.org/sdgs/iaeg-sdgs/tier-classification/>

SDG indicator	Tier	Custodian Agency(ies)	Partner Agency(ies)
12.3.1(b) Food waste index	II	UNEP	
12.4.2 Hazardous waste generated per capita and proportion of hazardous waste treated, by type of treatment	II	UNSD, UNEP	OECD, Eurostat, UNITAR
12.5.1 National recycling rate, tons of material recycled	II	UNSD, UNEP	OECD, Eurostat, UNITAR

4. In recent years, circular economy policy analysis has drawn more and more attention toward the Questionnaire. In particular, data concerning composition of municipal waste (table R4 of the Questionnaire) and wastewater (table W4 of the Questionnaire) which have the ability to inform policy decisions are gaining the attention of the research community. Furthermore, data concerning the treatment of wastewater and hazardous and municipal waste, and especially whether or not treatment methods are sustainable, are also feeding into circular economy, sustainable development analysis and policy formulation.

5. Continual demand for data sourced from UN member states and provided directly into the Questionnaire has been increasingly cited in publications by international organisations pertaining to a variety of specialised themes such as food waste⁶, e-waste⁷, wastewater^{8, 9} and waste in general^{10,11}. These publications cite the Questionnaire and often individual UN member states, and in most cases, draw close relation between the data provided by UN member states and policy frameworks such as the Sustainable Development Goals, circular economy, etc.

⁶ <https://www.unep.org/resources/publication/food-waste-index-report-2024>

⁷ <https://ewastemonitor.info/the-global-e-waste-monitor-2024/>

⁸ https://www.unwater.org/sites/default/files/2024-08/who_2024_methodological_note_for_631_domestic_wastewater_treatment.pdf

⁹ https://www.unwater.org/sites/default/files/2024-08/SDG6_Indicator_Report_631_Progress-on-Wastewater-Treatment_2024_EN_0.pdf

¹⁰ <https://www.unep.org/ietc/news/story/new-report-global-waste-management-outlook-2024>

¹¹ <https://desapublications.un.org/publications/waste-crisis-accelerating-national-local-policy-action-evidence-based-strategies>

1.2: The history of the long-standing data collection which the Statistics Division has led regarding water and waste statistics: how did we get here?

6. The Questionnaire is the Statistics Division's instrument of the regular biennial data collection on water and waste. The Questionnaire serves as a key and official data source for many different purposes, including Sustainable Development Goal (SDG) indicator compilation, circular economy policy analysis, and water and waste accounts. 11 data collection rounds have now been completed, making the current (2024) collection round, which is collecting data from 163 countries, the twelfth one. While data are still being provided by countries to the Statistics Division for the 2024 collection round, periodic dissemination (public release of individual country files) is planned for the first half of 2025. Final and comprehensive dissemination of all country-owned data is planned for the second half of 2025 (contingent upon follow-up and communications between the Statistics Division and countries).

7. Response rates fall well short of 100% in every data collection round but have much improved over the course of the 11 completed collection rounds. They climbed above 50% in the 2016 and 2018 collection rounds, however, fell to 45% in the 2020 (COVID-affected) collection round. For the 2022 collection round, the response rate climbed back up to 50%.

8. Data are made publicly available on an ad hoc or as soon as possible basis as individual Country Files¹², and at a biennial frequency as Indicator Tables¹³ and Country Snapshots¹⁴ on the Statistics Division's website. The fact that so much data collected via the Questionnaire is now made public contrasts to humbler beginnings where, for instance, limited and broken time series hardly allowed for data dissemination and subsequent critical analysis. This gradual process of allowing for more and more data to be made public is a credit to the contributions of countries to provide data, and their collaboration with the Statistics Division, and other key stakeholders to continue to develop and devote resources to the advancement of environment statistics, especially water and waste statistics.

¹² United Nations Statistics Division, Country Files from the UNSD/UNEP data collection on environment statistics (available at: https://unstats.un.org/unsd/envstats/country_files).

¹³ United Nations Statistics Division, Indicator Tables from the UNSD/UNEP data collection on environment statistics (available at: <https://unstats.un.org/unsd/envstats/qindicators>).

¹⁴ United Nations Statistics Division, Country Snapshots with data sourced from the UNSD/UNEP data collection on environment statistics (available at: <https://unstats.un.org/unsd/envstats/snapshots/>).

9. In line with the biennial frequency, the current (twelfth) data collection round commenced in 2024. As is the case for any collection round, careful consideration was made regarding possible refinement of the variables in the Questionnaire while bearing in mind the need to balance policy and related demands with supply capacity of data and statistics concerning water and waste from countries. In order to be in a position to carefully consider any such possible refinement, the Statistics Division is in continual communication with key stakeholders such as international agencies and countries. The Expert Group on Environment and Climate Change Statistics¹⁵ (a group which has met 11 times annually since 2014) serves as a global and regionally representative forum for such communication with interested stakeholders, and is planned to meet again in the fourth quarter of 2025 for the twelfth time.

10. When considering the thematic scope of what is collected via the Questionnaire, those environment statistics already collected by other United Nations agencies and other international organizations are excluded. The Questionnaire gives opportunity to respondents (typically a country's National Statistical Offices (NSO) or Ministry of Environment, but mostly and increasingly, the NSO) to take ownership of certain SDG indicator compilation and reporting aggregated to the national level.

11. For the current round (the 2024 collection cycle), a table on food waste generated is added to the Questionnaire, chiefly to collect country-owned data pertaining to food waste and to inform for SDG indicator 12.3.1(b): Food waste index.¹⁶ This addition was made after close consultation with UNEP who is the custodian agency for SDG indicator 12.3.1(b).

12. When considering scope on a geographical basis, per a long-standing agreement between the Organisation for Economic Cooperation and Development (OECD), Statistical Office of the European Union (EUROSTAT) and the Statistics Division, the countries covered by the Joint OECD/EUROSTAT Questionnaire on the State of the Environment (hereafter, the Joint Questionnaire) are not covered in the UNSD/UNEP Questionnaire on Environment Statistics (again and to be sure, hereafter, the Questionnaire). Such a decision is taken to avoid duplication, minimize reporting burden of countries, and to minimize validation burden of international organisations. Both data collection processes are well coordinated and the questionnaires are fully compatible using identical definitions and classifications. The Questionnaire is sent to all non-OECD/Eurostat countries¹⁷, covering two sections for statistics

¹⁵ United Nations Statistics Division, Expert Group on Environment and Climate Change Statistics, available at: https://unstats.un.org/unsd/envstats/fdes/fdes_eges.cshtml.

¹⁶ <https://unstats.un.org/sdgs/metadata/files/Metadata-12-03-01B.pdf>

¹⁷ To be factual, the UNSD/UNEP Questionnaire is also not sent to candidate and potential candidate European Union countries.

on waste and water. Between 1999 and 2024, many countries have become members of OECD or the European Union or become candidate or potential candidate countries of the European Union. Whenever such a progression occurs, the country has moved out of scope of the Questionnaire and into scope of the Joint Questionnaire. This is the main explanation for change in the number of countries to whom the Questionnaire was sent in each collection round, especially the decrease to 163 countries in 2022 as illustrated in Table 2 below. It further explains challenges that the Questionnaire faces in terms of maintaining response rates as high as possible from countries, since it tends to be countries with more advanced statistical systems moving into the scope of the Joint Questionnaire. Countries worldwide which tend to be hardest to reach and have a less developed capacity for the provision of official statistics, in most cases, fall within scope of the Questionnaire.

Table 2: Summary of responses for all collection rounds: 1999-2022

Year that UNSD/UNEP Questionnaire was sent:	1999	2001	2004	2006	2008	2010	2013	2016	2018	2020	2022
Total responses	51	62	68	80	84	84	81	89	86	74	81
Response rate (percentage)	30	35	43	49	49	49	47	51	52	45	50
Countries that received the questionnaire	168	177	158	163	171	172	173	173	165	164	163

1.3: A closer look at the tables used to collect data via the Questionnaire

13. The Questionnaire's two sections on waste and water consist of seven and five data collection tables respectively. The Questionnaire itself pre-dates certain policy agendas such as the 2030 Agenda for Sustainable Development, but is used to provide key inputs into such policies. Further, although the Questionnaire dates back to 1999, many variables are relevant for informing on waste and water accounts and any further interest on the interaction between economy and environment which the System of National Accounts may demand for, since the Questionnaire applies the International Standard Industrial Classification of All Economic Activities (ISIC), Rev. 4¹⁸ closely.

14. For the Questionnaire's waste section, the tables are:

Table R1: Generation of Waste by Source

Table R2: Management of Hazardous Waste

¹⁸ United Nations Statistics Division, International Standard Industrial Classification of All Economic Activities (ISIC), Rev. 4, available at: https://unstats.un.org/unsd/publication/seriesm/seriesm_4rev4e.pdf.

Table R3: Management of Municipal Waste
 Table R4: Composition of Municipal Waste
 Table R5: Management of Municipal Waste – City Data
 Table R6: Electronic Waste Generation and Collection
 Table R7: Food Waste Generation

15. Table R1 allows for measurement of waste generated by various industries within the ISIC, and households. Given that ISIC is applied to this table, data collected can be considered for application to waste accounts. The variable, “Total waste generation” (the summation of waste generated by all industries and households) serves as a denominator for SDG indicators 12.4.2 (a) Hazardous waste generated per capita; and (b) Proportion of hazardous waste treated, by type of treatment (hereafter, SDG indicator 12.4.2)¹⁹; and 12.5.1: National recycling rate, tons of material recycled (hereafter, SDG indicator 12.5.1)²⁰.

16. Table R2 collects many variables pertinent to hazardous waste (e.g. hazardous waste generated, hazardous waste treated (e.g. recycled, incinerated (with or without energy recovery), landfilled), etc. Seven of the variables in Table R2 directly correspond to SDG indicator 12.4.2.

17. Ten variables collected via Table R3 serve as inputs for measurement of SDG indicator 12.4.2. These include municipal waste generated, municipal waste collected, municipal waste managed, treatment methods of municipal waste (e.g. recycling, composting, incineration (with or without energy recovery), landfill (whether or not controlled)).

18. Table R4 collects data on composition of municipal waste. Variables collected include paper, paperboard; textiles; plastics; glass; metals; other inorganic material; organic material; and food and garden waste. Such a table can provide great insight into analysis of movement of materials, especially bearing in mind the demands for circular policy analysis. Potential for country data from Table R4 to feed into circular policy analysis is explored further in section 1.4 of this paper.

¹⁹ United Nations Statistics Division, SDG indicator metadata, indicator 12.4.2 (a): Hazardous waste generated per capita; and (b) Proportion of hazardous waste treated, by type of treatment. Available at: <https://unstats.un.org/sdgs/metadata/files/Metadata-12-04-02.pdf>.

²⁰ United Nations Statistics Division, SDG indicator metadata, indicator 12.5.1: National recycling rate, tons of material recycled. Available at: <https://unstats.un.org/sdgs/metadata/files/Metadata-12-05-01.pdf>.

19. Table R5 collects municipal waste data at city level which serve as an input into SDG indicator 11.6.1: Proportion of municipal solid waste collected and managed in controlled facilities out of total municipal waste generated, by cities.²¹

20. Table R6 was only added in the 2018 data collection cycle via demand from key users. Two variables, namely, electronic waste generated and electronic waste collected, are both now used for SDG indicator 12.4.2.

21. Table R7 is added for the first time in the 2024 data collection cycle. It includes eight variables concerning food waste generated, and food waste (edible parts) generated. ISIC breakdowns are applied. Response rates will be monitored closely throughout the 2024 collection round. Data received from countries are expected to directly feed into analysis concerning SDG indicator 12.3.1(b), and to this end, the Statistics Division continues a close collaboration with UNEP.

22. For the Questionnaire's Water section, the tables are:

Table W1: Renewable Freshwater Resources

Table W2: Freshwater Abstraction and Use

Table W3: Water Supply Industry (ISIC 36)

Table W4: Wastewater Generation and Treatment

Table W5: Population Connected to Wastewater Treatment

23. Tables W1 through W4 all contain variables that provide inputs that inform for the compilation of water accounts. Within Table W1, for example, variables such as precipitation, actual evapotranspiration, inflow, etc. measure flows of water made available by the environment to the economy. Within Tables W2 and W3, ISIC is rigorously applied to measure abstraction, use and supply of volumes of water that are key building blocks to a water account, measuring flows of water between environment and economy, broken down by various ISIC industries, typically to the two-digit level. Table W4, which measures volumes of wastewater, also applies ISIC and helps trace economy's discharge of wastewater (by treatment level) to the environment. Table W4's focus upon treatment of wastewater means its content is further useful for circular economy analysis.

24. Aside from the purposes mentioned above, Tables W1, W2 and W3 also serve as a source for SDG indicators for which the Statistics Division is a partner agency. This is the

²¹ United Nations Statistics Division, SDG indicator metadata, indicator 11.6.1: Proportion of municipal solid waste collected and managed in controlled facilities out of total municipal waste generated, by cities, available at: <https://unstats.un.org/sdgs/metadata/files/Metadata-11-06-01.pdf>.

case for SDG indicator 6.4.1: Change in water-use efficiency over time; and 6.4.2: Level of water stress: freshwater withdrawal as a proportion of available freshwater resources.

25. Table W4 also is invaluable for measurement of SDG indicator 6.3.1: Proportion of domestic and industrial wastewater flows safely treated (hereafter, SDG indicator 6.3.1).²² Variables such as total wastewater generated, wastewater treated in urban/other wastewater treatment plants, and wastewater treated in independent treatment facilities are all invaluable in this regard. At a finer level of analysis, this table's collection of wastewater to various levels of treatment (primary, secondary or tertiary) also provides input into compilation of SDG indicator 6.3.1.

26. Table W5 captures data which originally took into consideration the Millennium Development Goal policy agenda, but which now are also relevant for analysis relating to SDG indicator 6.3.1.

1.4: To what degree may existing data answer key policy questions?

27. Especially in recent years, interest in circular economy policy analysis has been raised with the Statistics Division by a number of stakeholders at international level, and from UN member states. Such conversations have drawn attention to table R4 of the Questionnaire (composition of municipal waste). Whenever such a policy question arises, it invites inspection of existing data sets, which have been collected for over 25 years, on the composition of municipal waste from within the database housed by the Statistics Division. Is the existing provision of data adequate to give policy makers insight into issues concerning municipal waste and how to address them? Do existing data sets offer insight into what likely compositions of municipal waste might be in countries where data may be lacking? Can trends, patterns and anomalies be observed at regional levels? Following herewith is a synopsis of an inspection of variables relevant to composition of municipal waste.

28. Approximately 102 UN member states have reported some data on the composition of municipal waste to the Questionnaire since its enactment. If the criterion of most recent year of data availability is 2015 is added (2015 selected as this is the beginning of the Sustainable Development Goal era), this number reduces to 52 (e.g. 50 countries only have data for the year 2014 and prior). From the year 2015 and onward, response counts for all

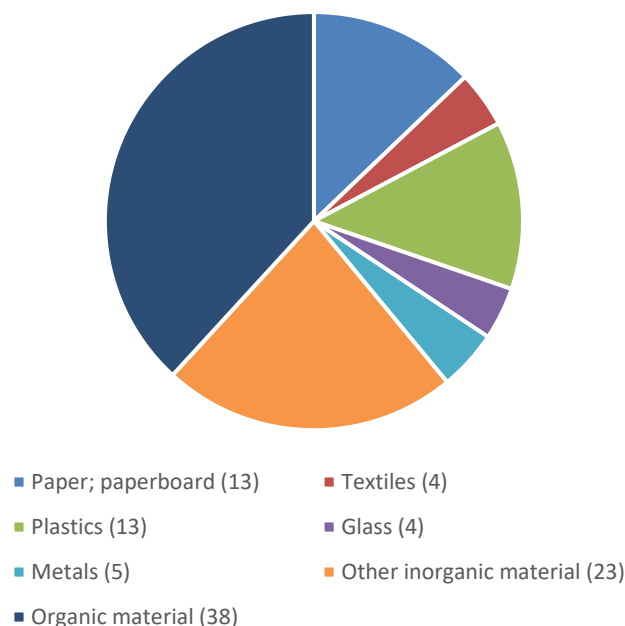
²² United Nations Statistics Division, SDG indicator metadata, indicator 6.3.1: Proportion of domestic and industrial wastewater flows safely treated, available at: <https://unstats.un.org/sdgs/metadata/files/Metadata-06-03-01.pdf>.

composition breakdowns (paper, paperboard; textiles; plastics; glass; metals; other inorganic material; and organic material) are quite similar, ranging from between 110 (textiles) and 136 (paper; paperboard). The percentage breakdown of organic waste which is either food or garden waste (a sub-division of organic waste) is notably lower with a response count of 55.

29. It is natural to then wonder how many countries may have data for all seven variables, for at least one given year, since 2015. There are 47 such countries, which is to say that almost one-third of countries which reply to the Questionnaire are in a position to be able to provide comprehensive official statistics on composition of municipal waste, albeit, not necessarily on a consistent, annual basis. This gives an indication of data availability for the investigation of circular economy analysis based upon waste management. These 47 countries may be in a strong position to determine where to expend resources for recycling facilities, or whether to prioritise composting, or incineration with energy recovery, all based upon the composition of municipal waste. Also, the greater the number of countries who are in this position adds stronger argument to the notion that one country's data could, at minimum, assist in data validation for the same phenomenon of another neighbouring or similar country. Moreover, there may even be potential that such data could feed into research, analysis and any possible estimation of what another country's composition of municipal waste might actually be.

30. A basic guide of what percentage values the composition of municipal waste actually are, purely based upon member states' responses to the Questionnaire, is shown in the following figure.

Figure 1: Percentage contributions to composition of municipal waste (simple mean; all countries with reported data to the Questionnaire, years 2015-2021).



1.5: What insights may be drawn by juxtaposing data countries provide to the UNSD/UNEP Questionnaire on Environment Statistics, and data countries provide to the Joint OECD/Eurostat Questionnaire on the State of the Environment?

31. As mentioned in paragraph 12 of this paper, since the geographical scope of the UNSD/UNEP Questionnaire on Environment Statistics (again, the Questionnaire), and the Joint OECD/EUROSTAT Questionnaire on the State of the Environment (the Joint Questionnaire) are mutually exclusive, and further, since many variables collected by both questionnaires are the same, it opens opportunity for a comparison of data sets. Following herewith is an analysis of selected variables for which both questionnaires have a significant volume of responses to allow for comparison and analysis. One limiting factor in undertaking such a task is response rates to the Questionnaire. If only these response rates could be boosted, the value of undertaking an analysis such as this would yield greater value yet. Especially bearing in mind the System of National Accounts 2025 review, and its close emphasis on the interaction between economy and environment^{23, 24}, it seems particularly

²³ https://unstats.un.org/UNSDWebsite/statcom/session_56/documents/2025-2-NationalAccounts-E.pdf

²⁴ https://unstats.un.org/UNSDWebsite/statcom/session_56/side-events/Introducing-the-System-of-National-Accounts-2025/Introducing_2025_SNA_Policy_Relevance.pdf

timely to be scrutinising the value and potential for further widespread use of data on environment statistics. In future years, perhaps environment statistics will be even more valued than ever by those whose first and foremost focus is upon economic statistics.

32. The Questionnaire's variable, "Fresh surface water abstracted" is contrasted to the Joint Questionnaire's variable, "Total gross abstraction (fresh surface water)" per observable data on the Eurostat database.²⁵ This is a contrast between responses to the Questionnaire and those countries in the European Union who respond to the Joint Questionnaire. For the year 2021 (the most recent year for which both Questionnaires make data available), the Questionnaire has 26 (out of 163) responses, and the Joint Questionnaire, 19 (out of 27 European Union possible responses). If the data for OECD countries outside of the European Union are considered (sourced from the OECD's dissemination portal²⁶), data are available for 3 out of 16 countries for, "Freshwater abstractions (fresh surface water)" for the year 2021. The same contrast between the Questionnaire's "Gross freshwater abstracted" and the Joint Questionnaire's, "Total gross abstraction – fresh surface and groundwater" shows relatively similar results (28 out of 163 responses in 2021 for the Questionnaire, and 19 out of 27 responses for the Joint Questionnaire). For OECD countries outside of the European Union, data are available for 5 out of 16 countries for, "Freshwater - abstractions".

33. With respect to selected variables in waste, the story is different. Per comparison of waste data publicly available on the Eurostat database, for many variables, for instance, waste generated by the manufacturing industry, and other industries, the European Union has a response rate of 100% (i.e. 27 out of 27 states provide data). The EU Waste Framework Directive²⁷ is believed to be incredibly supportive in boosting response rates for waste in the EU. On the other hand, for the comparable variable in the Questionnaire ("Waste generated by the Manufacturing industry (ISIC10-33), 17 (of a possible 163) country responses are available. For those OECD countries not member to the EU, data for, for instance, "Waste – Waste by Sector: generation, recovery and recycling (Total – all activities)", data availability is not comprehensive for all countries, as per the OECD data portal.²⁸

34. Taking into consideration one particular variable which has rather high responses and is highly sought after by policy makers concerning waste, "Municipal waste generated", can shed light on a scenario where the aggregated effort of the Questionnaire and the Joint Questionnaire may be at a more advanced point in approaching a quasi-global coverage than

²⁵ <https://ec.europa.eu/eurostat/data/database> Environment > Water > Water statistics on national level (env_nwat).

²⁶ <https://www.oecd.org/en/data.html> > Freshwater abstractions

²⁷ https://environment.ec.europa.eu/topics/waste-and-recycling/waste-framework-directive_en

²⁸ <https://www.oecd.org/en/data.html> > Waste - selected waste streams

most other variables. Eurostat has imputed a value of 237,501 thousand tonnes of municipal waste generated by its 27 EU countries for the year 2021 (with country data publicly available for 26 out of 27 countries).²⁹ In the same year, for those OECD countries not member to the EU, data are available for 11 out of 16 countries. From the Questionnaire, data are available for the same year from 17 out of 163 countries (if “municipal waste collected” were to be used as a proxy, the number increases to 30 out of 163 countries). In this example which is of a variable known to receive relatively high response rates to international data collections, country-owned data are available for 53 countries (or for 66 countries if the constraint of “generated” is relaxed, and “municipal waste collected” is applied for those countries replying to the Questionnaire.

35. Since the scopes of the data collections of the Questionnaire and Joint Questionnaire complement one another and have absolutely no overlap, it may be tempting to consider a quasi-global estimation of various phenomena concerning water and waste. However, since response rates remain far from comprehensive for so many variables, doing so remains impractical. Currently, alternative sources of information to fill the gap may seem appealing, given the strong demand for data on water and waste for policy-making and other purposes.

1.6: What is the Statistics Division doing to liaise with countries and provide capacity development support for countries’ provision of data to the Questionnaire?

36. While it may appear idealistic to believe that a single capacity development project focused on environmental, waste, or water statistics could immediately address all of a member state's challenges in providing data for the Questionnaire, capacity development remains a priority, as one of the four main pillars of the Statistics Division's work. The Statistics Division has worked closely with the UN Office for Sustainable Development on providing capacity to help improve response rates to the Questionnaire via a workshop held in San Salvador, El Salvador in July, 2024.³⁰ One outcome of the workshop was agreement among the nine member states present to endeavour to offer a response to the 2024 version of the Questionnaire.

²⁹ <https://ec.europa.eu/eurostat/data/database> Environment > Waste > Municipal waste by waste management operations (env_wasmun)

³⁰ <https://unosd.un.org/events/2024-central-american-dialogue-circular-economy>

37. Via the annual Expert Group on Environment and Climate Change Statistics (EG-ECCS)³¹, the Statistics Division always includes a focus on the Questionnaire and issues related to water and waste statistics. This allows for exchange of opinion at a global level on what to prioritise within the Questionnaire. Via such processes and feedback loops, themes such as wastewater, e-waste and food waste have advanced over the years, and helped better inform progress of related Sustainable Development Goal indicators.

38. Following support for the idea expressed at the EG-ECCS in October, 2024, the Statistics Division held a teleconference with about 25 member states present in November 2024, solely with a focus on the Questionnaire. This was essentially a presentation by the Statistics Division of the Questionnaire, highlighting recent changes and developments, with question and answer time given to allow member states to inquire about any issues. Time and resources permitting, a similar teleconference may be offered by the Statistics Division to member states.

Annex I: Count of responses by variable and year to the UNSD/UNEP Questionnaire on Environment Statistics

1. Tables below show count of responses by variable and year. These are counts of the 152 variables that were collected in the 2022 data collection cycle. Most of those same variables were also collected in several previous collection cycles. Counts for figures in the years 2020 and 2021 refer only to data collected via the 2022 data collection cycle.

Waste section

**Table I.1: Count of responses by variable and year (Table R1:
Generation of Waste by Source)**

	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021
Agriculture, forestry and fishing (ISIC 01-03)	17	19	19	17	19	19	16	17	17	17	17	15
Mining and quarrying (ISIC 05-09)	13	14	16	12	18	17	16	17	15	17	14	12
Manufacturing (ISIC 10-33)	21	21	24	22	29	24	22	25	23	24	22	17
Electricity, gas, steam and air conditioning supply (ISIC 35)	12	12	14	10	17	15	15	17	14	15	13	11

³¹ https://unstats.un.org/unsd/envstats/fdes/fdes_eges11.cshtml

	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021
Construction (ISIC 41-43)	21	25	25	23	25	22	19	22	21	21	21	18
Other economic activities excluding ISIC 38	24	26	26	24	30	26	24	24	21	23	21	17
Households	38	43	42	39	43	42	34	38	35	37	29	26
Total waste generation	35	36	36	36	36	34	30	30	27	29	22	21

Table I.2: Counts of responses by variable and year (Table R2: Management of Hazardous Waste)

	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021
Stock of hazardous waste at the beginning of the year	10	12	14	14	14	14	14	15	13	13	8	8
Hazardous waste generated during the year	68	38	71	41	76	41	39	43	40	43	36	27
Hazardous waste imported during the year	25	25	27	27	29	25	22	22	21	26	20	15
Hazardous waste exported during the year	26	27	33	34	35	32	27	30	29	37	29	21
Hazardous waste treated or disposed of during the year	34	29	30	31	33	31	30	33	31	34	28	22
Amounts going to: Recycling	25	24	26	28	30	28	24	26	24	26	22	17
Incineration	26	23	26	25	26	27	23	27	24	25	21	16
of which: with energy recovery	10	6	9	11	12	11	10	12	12	14	11	6
Landfilling	29	28	29	28	31	28	25	28	27	30	25	20
Other, please specify in the footnote	18	15	15	18	19	17	15	17	15	16	11	6
Stock of hazardous waste at the end of the year	15	14	17	15	17	16	16	17	15	16	11	10

Table I.3: Count of responses by variable and year (Table R3: Management of Municipal Waste)

	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021
Total amount of municipal waste generated	12	12	15	14	19	19	20	21	20	23	21	17

	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021
Municipal waste collected from households	30	32	39	37	39	39	31	32	27	32	26	23
Municipal waste collected from other origins	25	25	29	28	28	26	23	23	20	25	19	17
Total amount of municipal waste collected	55	54	62	57	58	58	52	54	46	51	37	30
Municipal waste imported for treatment/disposal	16	14	18	18	19	19	20	19	17	19	15	12
Municipal waste exported for treatment/disposal	17	15	18	17	19	18	19	18	14	17	16	13
Municipal waste managed in the country	37	39	44	43	46	47	43	43	34	38	27	23
<i>Amounts going to:</i> Recycling	31	34	39	34	37	39	29	32	27	30	23	22
Composting	21	24	31	27	28	29	22	22	20	22	16	14
Incineration	28	29	32	31	31	34	24	25	21	22	15	13
<i>of which: with energy recovery</i>	20	20	22	22	22	22	17	17	18	19	11	10
Landfilling	44	44	53	48	50	54	43	45	39	42	33	29
<i>of which: controlled landfilling</i>	33	33	36	36	39	42	33	31	28	31	25	22
Other, please specify in the footnote	15	18	21	21	22	21	18	18	16	17	11	10
Total population served by municipal waste collection	38	40	42	40	40	43	37	38	29	36	22	22
Urban population served by municipal waste collection	23	24	26	26	29	27	27	29	19	25	14	15
Rural population served by municipal waste collection	17	19	19	21	23	22	19	20	13	18	10	11

Table I.4: Count of responses by variable and year (Table R4: Composition of Municipal Waste)

	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021
Paper, paperboard	22	20	22	17	26	26	19	22	19	21	14	15
Textiles	18	16	19	14	20	21	16	17	16	18	11	11

	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021
Plastics	21	19	21	17	26	26	19	21	19	21	14	15
Glass	21	20	22	17	26	26	19	20	19	21	14	15
Metals	22	20	22	18	26	27	19	21	19	21	14	14
Other inorganic material	21	18	21	16	22	25	18	20	17	18	12	12
Organic material	21	17	20	16	24	25	18	21	18	20	13	14
of which: food and garden waste	7	7	6	4	5	10	5	7	5	9	9	10

Table I.5: Count of responses by variable and year (Table R5: Management of Municipal Waste – City Data)

	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021
Total population of the city	109	112	147	128	138	136	99	112	73	83	64	57
Total amount of municipal waste generated	10	8	12	10	23	24	29	32	16	23	21	17
Percentage of city population served by municipal waste collection	58	44	72	57	65	68	38	53	34	43	36	32
Municipal waste collected from households	61	68	86	77	92	96	56	64	46	53	49	44
Municipal waste collected from other origins	33	37	53	46	50	51	32	36	30	39	36	34
Total amount of municipal waste collected	81	81	117	93	105	111	69	76	64	76	65	49
Amounts going to: Recycling	26	25	48	40	46	55	24	28	15	23	18	19
Composting	23	19	40	33	42	49	20	19	8	15	11	11
Incineration	21	20	40	33	33	41	18	22	11	16	9	6
of which: with energy recovery	17	14	34	28	28	34	13	13	7	11	5	5
Landfilling	64	61	88	77	87	93	47	51	50	61	53	44
of which: controlled landfilling	44	45	66	60	63	70	38	35	34	42	36	32
Other: please specify in footnote	10	11	30	25	24	29	9	9	6	14	9	6

Table I.6: Count of responses by variable and year (Table R6: E-Waste Electronic Waste Generation and Collection)

	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021
Total e-waste generated	8	8	11	10	11	11	10	12	8	9	6	7
Large equipment generated	4	4	6	5	5	5	6	7	4	4	4	3
Screens, monitors and equipment containing screens generated	2	2	4	3	3	3	3	4	2	2	2	2
Temperature exchange equipment generated	2	2	4	3	3	3	3	4	2	2	2	2
Small e-waste generated	2	2	3	2	2	2	3	3	2	2	2	1
Lamps generated	3	3	3	3	3	3	4	4	3	3	3	2
Small equipment generated	3	3	4	3	3	3	4	4	3	3	3	3
Small IT and telecommunications equipment generated	3	3	5	4	4	4	5	5	4	4	4	3
Total e-waste collected	6	6	8	9	12	12	14	18	12	15	15	11
Large equipment collected	0	0	0	0	0	0	0	4	5	5	5	2
Screens, monitors and equipment containing screens collected	0	0	0	0	0	0	0	4	4	4	4	1
Temperature exchange equipment collected	0	0	0	0	0	0	0	4	5	5	6	3
Small e-waste collected	0	0	0	0	0	0	0	4	5	5	5	1
Lamps collected	0	0	0	0	0	0	0	4	5	6	6	3
Small equipment collected	0	0	0	0	0	0	0	0	0	0	0	1
Small IT and telecommunications equipment collected	0	0	0	0	0	0	0	0	1	1	1	2

Water section

Table I.7: Count of responses by variable and year (Table W1: Renewable Freshwater Resources)

	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021
Precipitation	69	72	72	66	64	67	58	54	46	45	31	25
Actual evapotranspiration	34	35	34	33	33	35	28	28	24	25	17	14
Internal flow	33	35	34	33	34	36	29	28	25	25	19	15

	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021
Inflow of surface and groundwaters from neighbouring countries	34	35	36	33	33	35	24	24	23	23	18	15
Renewable freshwater resources	33	34	34	30	31	32	25	26	23	23	18	15
Outflow of surface and groundwaters to neighbouring countries	20	21	20	20	19	21	14	14	13	13	10	8
<i>Of which:</i> Secured by treaties	12	13	13	14	14	15	10	11	10	10	8	7
Not secured by treaties	10	10	10	11	11	13	9	9	8	8	7	6
Outflow of surface and groundwaters to the sea	11	13	12	13	13	15	11	12	11	11	10	9

Table I.8: Count of responses by variable and year (Table W2: Freshwater Abstraction and Use)

	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021
Fresh surface water abstracted	58	58	62	60	63	62	51	48	40	38	34	26
Fresh groundwater abstracted	55	55	58	57	60	60	51	49	40	39	33	27
Gross freshwater abstracted	64	60	65	60	63	65	56	52	44	43	36	28
Water returned without use	2	2	2	3	3	3	4	4	6	6	8	6
Net freshwater abstracted	11	11	12	13	13	14	15	16	17	17	18	14
<i>of which abstracted by:</i>												
Water supply industry (ISIC 36)	40	38	44	46	46	47	42	44	39	37	32	25
Households	23	22	24	24	27	28	22	20	18	18	17	13
Agriculture, forestry and fishing (ISIC 01-03)	28	27	32	31	32	32	27	29	29	28	24	19
<i>Of which for:</i> <i>Irrigation in agriculture</i>	14	14	14	14	14	16	16	18	16	16	16	13
Mining and quarrying (ISIC 05-09)	9	9	9	9	11	11	13	17	17	16	14	11
Manufacturing (ISIC 10-33)	29	29	33	30	30	31	26	27	25	25	21	16
Electricity, gas, steam and air conditioning supply (ISIC 35)	13	13	14	13	13	15	17	18	17	17	17	13
Construction (ISIC 41-43)	22	23	26	22	23	25	21	22	21	21	20	16

	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021
Other economic activities	6	6	6	6	7	8	9	13	11	11	10	9
Desalinated water	13	13	14	13	16	17	18	22	20	18	16	15
Reused water	32	30	31	31	30	32	21	20	19	19	18	16
Imports of water	27	27	29	27	26	26	16	16	15	15	14	11
Exports of water	28	28	28	26	24	26	17	17	13	13	13	12
Total freshwater available for use	24	24	24	21	18	20	14	15	11	11	11	11
Losses during transport	45	43	44	43	43	44	37	35	30	30	27	22
Total freshwater use	42	41	42	38	38	39	32	31	27	27	25	23
<i>of which used by:</i>												
Households	49	47	49	50	52	50	40	39	35	34	28	22
Agriculture, forestry and fishing (ISIC 01-03)	39	36	39	37	40	38	31	29	27	27	22	17
<i>of which for Irrigation in agriculture</i>	28	28	29	28	28	27	21	21	19	19	19	16
Mining and quarrying (ISIC 05-09)	7	7	7	8	9	10	11	12	14	14	13	10
Manufacturing (ISIC 10-33)	41	41	43	40	42	40	34	32	29	29	24	19
Electricity, gas, steam and air conditioning supply (ISIC 35)	11	11	11	11	13	15	14	15	16	16	15	13
<i>of which for: Electric power generation, transmission and distribution (ISIC 351)</i>	21	23	25	23	24	24	20	19	18	18	16	14
Construction (ISIC 41-43)	5	5	5	5	6	7	7	10	10	10	10	9
Other economic activities	13	13	14	17	20	21	20	22	21	21	19	17

Table I.9: Count of responses by variable and year (Table W3: Water Supply Industry (ISIC 36))

	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021
Gross freshwater supplied by water supply industry (ISIC 36)	58	60	66	60	61	61	53	53	44	41	35	29

	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021
Losses during transport by ISIC 36	47	49	54	49	50	50	40	40	35	32	27	25
Net freshwater supplied by water supply industry (ISIC 36)	54	56	61	55	58	56	46	46	39	37	31	26
<i>of which supplied to:</i>												
Households	49	51	56	52	54	54	46	47	41	40	32	26
Agriculture, forestry and fishing (ISIC 01-03)	21	24	27	27	26	25	21	22	17	18	15	12
Mining and quarrying (ISIC 05-09)	6	8	8	8	8	8	9	11	7	6	7	6
Manufacturing (ISIC 10-33)	25	30	33	31	31	30	27	27	22	21	17	14
Electricity, gas, steam and air conditioning supply (ISIC 35)	6	7	7	8	8	8	8	11	10	9	9	7
<i>of which to:</i> Electric power generation, transmission and distribution (ISIC 351)	16	17	19	19	19	18	16	15	12	11	10	8
Construction (ISIC 41-43)	4	6	6	6	6	6	6	8	6	5	5	5
Other economic activities	12	15	16	19	22	22	22	24	21	20	19	17
Total population supplied by water supply industry (ISIC 36)	44	42	45	39	41	42	35	37	34	33	22	23
Urban population supplied by water supply industry (ISIC 36)	32	26	31	32	32	35	30	31	29	28	21	19
Rural population supplied by water supply industry (ISIC 36)	25	19	24	23	24	27	26	25	23	22	16	15

Table I.10: Count of responses by variable and year (Table W4: Wastewater Generation and Treatment)

	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021
Total wastewater generated	22	23	23	26	28	31	26	26	21	22	16	14
by: Agriculture, forestry and fishing ISIC (01-03)	12	11	12	12	12	15	10	9	8	9	9	8

	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021
Mining and quarrying (ISIC 05-09)	5	5	5	5	5	5	5	6	5	6	6	6
Manufacturing (ISIC 10-33)	11	12	14	14	15	16	11	12	8	9	10	9
Electricity, gas, steam and air conditioning supply (ISIC 35)	6	6	6	5	5	5	5	6	6	7	7	7
<i>of which to:</i> Electric power generation, transmission and distribution (ISIC 351)	10	10	10	10	10	10	7	7	7	7	6	6
Construction (ISIC 41-43)	5	5	6	6	6	6	6	7	5	7	6	6
Other economic activities	5	4	6	7	7	7	8	7	6	8	8	7
Households	14	15	15	15	17	20	15	14	8	12	9	8
Wastewater treated in urban wastewater treatment plants	34	37	38	39	41	45	41	39	34	37	26	21
<i>Of which:</i> Primary treatment	18	19	19	20	21	24	21	19	17	21	15	12
Secondary treatment	21	23	22	23	25	29	25	23	20	25	18	15
Tertiary treatment	16	17	16	17	16	17	14	14	13	17	12	11
Wastewater treated in other treatment plants	10	10	9	7	9	10	11	10	9	10	8	8
<i>Of which:</i> Primary treatment	8	8	6	5	6	6	6	6	5	6	6	6
Secondary treatment	8	8	7	5	6	6	7	6	5	7	6	6
Tertiary treatment	7	7	7	6	6	6	5	5	4	5	5	5
Wastewater treated in independent treatment facilities	9	9	10	10	10	10	9	8	8	8	5	5
Non-treated wastewater	21	23	22	24	25	27	22	22	18	19	12	10
Sewage sludge production (dry matter)	16	16	18	19	21	22	17	17	13	13	9	7

Table I.11: Count of responses by variable and year (Table W5: Population Connected to Wastewater Treatment)

	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021
Population connected to wastewater collecting system	42	41	43	38	41	45	37	38	30	33	21	20

	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021
Population connected to wastewater treatment	33	33	33	31	33	36	32	34	28	29	17	16
<i>of which at least secondary treatment</i>	19	20	18	19	21	23	18	19	17	18	10	9
Population with independent wastewater treatment (e.g., septic tanks)	27	31	29	26	31	31	25	27	22	25	14	16
Population not connected to wastewater treatment	22	24	23	22	28	30	25	26	19	22	12	12