

# SDG indicator 12.5.1: National recycling rate, tonnes of material recycled

Prepared by Environment Statistics Section, UNSD for:  
Interagency and Expert Collaboration to Improve the Production and Dissemination of SDG Indicators from Official National Sources  
Wednesday, 9 June 2021



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

### Section: WASTE

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## شعبة الإحصاءات في الأمم المتحدة (UNSD) و برنامج الأمم المتحدة للبيئة استمارة الإحصاءات البيئية لعام 2020

قسم : النفايات

#### جدول المحتويات

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| الإرشادات       | المقدمة، الخطوات التي ينبغي اتباعها، وصف الجداول |
| التعاريف        | قائمة التعاريف                                   |
| جدول النفايات 1 | إنتاج النفايات حسب المصدر                        |
| جدول النفايات 2 | إدارة النفايات الخطرة                            |
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# Outline

1. Introduction to the United Nations Statistics Division of the United Nations' Department of Economic and Social Affairs (DESA)
2. SDG indicator 12.5.1: National recycling rate, tonnes of material recycled
3. The UNSD/UNEP Questionnaire on Environment Statistics (waste section), and its applicability to SDG indicator 12.5.1
4. Experience collecting all waste data from the Economic and Social Commission of Western Asia (ESCWA) region
5. Other closely related work (SDG indicator 12.4.2 and the Expert Group of Environment Statistics)

# 1. The United Nations Statistics Division

*...committed to the advancement of the global statistical system... compiles and disseminates global statistical information, develops standards and norms for statistical activities, and **supports countries' efforts to strengthen their national statistical systems**. We facilitate the coordination of international statistical activities and support the functioning of the United Nations Statistical Commission as the apex entity of the global statistical system.*

Main functions:

1. Data: collect, process and disseminate statistical information
2. Methodology: standardization of statistical methods, classifications and definitions
3. Capacity Development: technical cooperation programme
4. Coordination: coordination of international statistical programmes and activities

<https://unstats.un.org>

# 2. SDG indicator 12.5.1



- Indicator 12.5.1: National recycling rate, tonnes of material recycled
- Custodian agencies: UN Environment Programme; UN Statistics Division
- Variables from the UNSD/UNEP Questionnaire on Environment Statistics (waste section) feature in this indicator’s methodology (e.g. total amount of municipal waste generated; total amount of municipal waste recycled; municipal waste [imported/exported])

## Method:

Material recycled+Material exported intended for recycling –material imported intended for recycling

Total waste generated

Source: <https://unstats.un.org/sdgs/metadata/files/Metadata-12-05-01.pdf> (last revised February 4, 2021)




شعبة الإحصاءات في الأمم المتحدة (UNSD) و برنامج الأمم المتحدة للبيئة  
استمارة الإحصاءات البيئية لعام 2020

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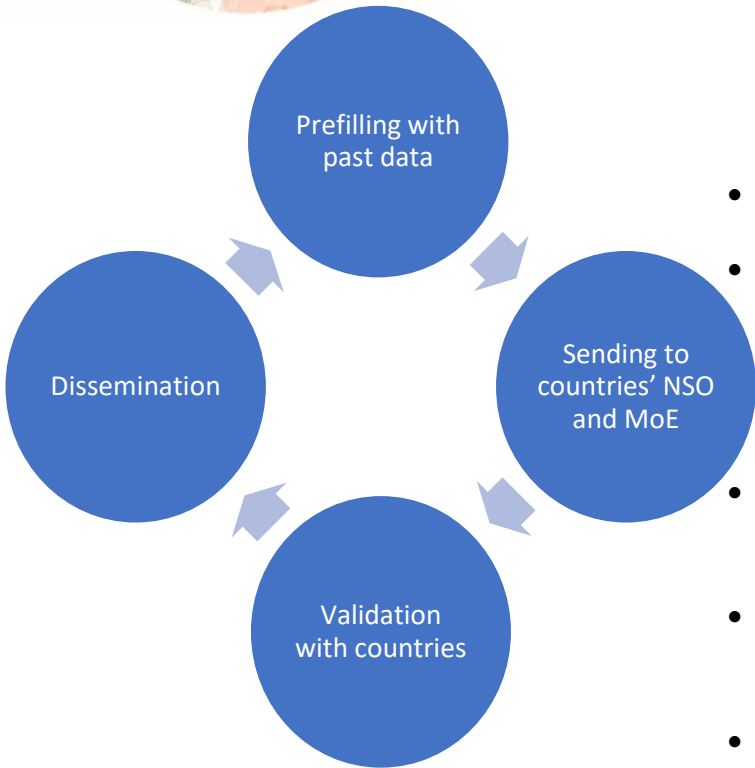
| جدول المحتويات                                   |                 |
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| قائمة التعاريف                                   | التعاريف        |
| إنتاج النفايات حسب المصدر                        | جدول النفايات 1 |
| إدارة النفايات الخطرة                            | جدول النفايات 2 |
| إدارة النفايات البلدية                           | جدول النفايات 3 |
| تركيب النفايات البلدية                           | جدول النفايات 4 |
| إدارة النفايات البلدية - بيانات على مستوى مدينة  | جدول النفايات 5 |
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## 2. SDG indicator 12.5.1



- The UNSD/UNEP Questionnaire on Environment Statistics is the preferred data source. This choice of data source follows extensive peer reviews of methods at expert group meetings at international level. Such as the UN Statistics Division's Expert Group on Environment Statistics, and SDG Waste Indicators Expert Group Meetings hosted by UN Environment Programme and UN HABITAT
- This Questionnaire prioritizes official data reported by countries' National Statistical Offices or Ministries of Environment.
- This Questionnaire has, over time, proven to maintain relevance and to be flexible and open to adding new variables in light of changing demands and mandates (it was used in the Millennium Development Goal era (2000-2015), and has been modified since to reflect SDG demand.

# 3. The UNSD/UNEP Questionnaire 2020 on Environment Statistics



- Between 1999 and 2021, UNSD has collected waste (and water) data 10 times biennially, from 160-170 UN member states.
- Questionnaires are sent to National Statistical Offices and Ministries of Environment of UN member states (but not to Eurostat and OECD members and candidate members).
- Response rate typically hovers around 50%
- The 10th round of Questionnaires were sent in Nov 2020 with a deadline of 31 Jan, 2021. UNSD is currently validating countries' responses. Approximately 55 responses received as of 14 May 2021.
- Country Files are being updated in the public domain on a **quarterly** basis. [https://unstats.un.org/unsd/envstats/country\\_files](https://unstats.un.org/unsd/envstats/country_files)
- No imputation, no estimation made by UNSD. Rather, UNSD validates countries' data.
- Outputs are: the UNSD Environmental Indicator Tables, Country Snapshots, and Country Files. Available at: <https://unstats.un.org/unsd/envstats/index.cshtml>
- Questionnaires are available at: <https://unstats.un.org/unsd/envstats/questionnaire>

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

Section: WASTE

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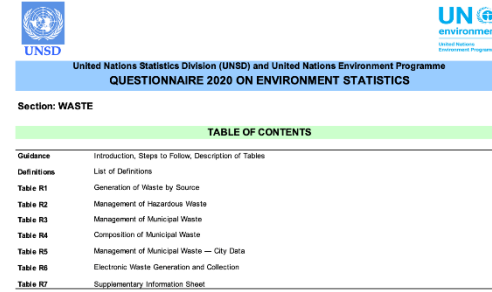

For the 2020 UNSD/UNEP Questionnaire, UNSD has received data from: Bahrain, Egypt, Iraq, Jordan, Oman, Qatar, Saudi Arabia, State of Palestine, the United Arab Emirates. (9 out of 20)



# 3. The UNSD/UNEP Questionnaire 2020 on Environment Statistics

- This Questionnaire's content is **not static**. Recent modifications include:
  - In 2018, there was the addition of a table collecting data on Electronic waste (e-waste) which followed a pilot exercise in collaboration with some 42 UN member states (including some ESCWA member states). This table included just two variables in 2018, but a further 12 (breakdowns of types of e-waste) were added in 2020.
  - In 2018, there was the addition of other variables per SDG demand (e.g. "municipal waste generated").
- SDG-related and other demands continue. Future considerations may include closer analysis of food waste and waste treatment methods. UNSD liaises closely with key stakeholders in this process such as UN Environment Programme, and UN-HABITAT.

**SDG demand turning toward the Questionnaire for modifications demonstrates the relevance and interest in the data provided by countries and collected via this Questionnaire.**



| United Nations Statistics Division (UNSD) and United Nations Environment Programme<br>QUESTIONNAIRE 2020 ON ENVIRONMENT STATISTICS |  |
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# 3. The UNSD/UNEP Questionnaire 2020 on Environment Statistics – waste section

|   | الإرشادات   |
|---|---|
|   | المقدمة، الخطوات التي ينبغي اتباعها، وصف الجداول                |
|   | قائمة التعاريف  |
| <b>R1: Generation of Waste by Source</b>              | جدول النفايات 1 إنتاج النفايات حسب المصدر                       |
| <b>R2: Management of Hazardous Waste</b>              | جدول النفايات 2 إدارة النفايات الخطرة                           |
| <b>R3: Management of Municipal Waste</b>              | جدول النفايات 3 إدارة النفايات البلدية                          |
| <b>R4: Composition of Municipal Waste</b>             | جدول النفايات 4 تركيب النفايات البلدية                          |
| <b>R5: Management of Municipal Waste – City Data</b>  | جدول النفايات 5 إدارة النفايات البلدية - بيانات على مستوى مدينة |
| <b>R6: Electronic waste generation and collection</b> | جدول النفايات 6 إنتاج وجمع النفايات الإلكترونية                 |
| <b>R7: Supplementary information sheet</b>            | جدول النفايات 7 صفحة المعلومات التكميلية                        |



### 3. The UNSD/UNEP Questionnaire 2020 on Environment Statistics – waste section. Denominator for 12.5.1: Total waste generation

**Table R1: Generation of Waste by Source**

| Line | Category  | Unit   |
|------|---|--------|
| 1    | Agriculture, forestry and fishing (ISIC 01-03)                | 1000 t |
| 2    | Mining and quarrying (ISIC 05-09)                             | 1000 t |
| 3    | Manufacturing (ISIC 10-33)                                    | 1000 t |
| 4    | Electricity, gas, steam and air conditioning supply (ISIC 35) | 1000 t |
| 5    | Construction (ISIC 41-43)                                     | 1000 t |
| 6    | Other economic activities excluding ISIC 38                   | 1000 t |
| 7    | Households  | 1000 t |
| 8    | <b>Total waste generation</b><br>(=1+2+3+4+5+6+7)             | 1000 t |

| جدول النفايات 1: إنتاج النفايات حسب المصدر |   |        |
|--|---|--------|
| الخط                                       | الفئة   | الوحدة |
| 1  | النفايات من الزراعة والحراثة و الصيد (ISIC 01-03)       | ألف طن |
| 2  | التعدين واستغلال المحاجر (ISIC 05-09)                   | ألف طن |
| 3  | التصنيع (ISIC 10-33)                                    | ألف طن |
| 4  | إمدادات الكهرباء والغاز والبخار وتكييف الهواء (ISIC 35) | ألف طن |
| 5  | الإشاءات (ISIC 41-43)                                   | ألف طن |
| 6  | الأنشطة الاقتصادية الأخرى باستثناء ISIC 38              | ألف طن |
| 7  | الأسر المنزلية  | ألف طن |
| 8  | <b>مجموع النفايات المنتجة (= 7 + ... + 1)</b>           | ألف طن |

# 3. The UNSD/UNEP Questionnaire 2020 on Environment Statistics – waste section.

Numerator for 12.5.1: Municipal waste recycled + Municipal waste exported for treatment/disposal - Municipal waste imported for treatment/disposal

| Table R3: Management of Municipal Waste |  |        |
|---|--|--------|
| Line                                    | Category   | Unit   |
| 1                                       | Total amount of municipal waste generated        | 1000 t |
| 2                                       | Municipal waste collected from households        | 1000 t |
| 3                                       | Municipal waste collected from other origins     | 1000 t |
| 4                                       | Total amount of municipal waste collected (=2+3) | 1000 t |
| 5                                       | Municipal waste imported for treatment/disposal  | 1000 t |
| 6                                       | Municipal waste exported for treatment/disposal  | 1000 t |
| 7                                       | Municipal waste managed in the country (=4+5-6)  | 1000 t |
| 8                                       | Amounts going to:<br><b>Recycling</b>            | 1000 t |
| 9                                       | Composting                                       | 1000 t |
| 10                                      | Incineration                                     | 1000 t |
| 11                                      | of which: with energy recovery                   | 1000 t |
| 12                                      | Landfilling                                      | 1000 t |
| 13                                      | of which: controlled landfilling                 | 1000 t |
| 14                                      | Other, please specify in the footnote            | 1000 t |

| جدول النفايات 3 إدارة النفايات البلدية |   |      |
|--|---|------|
| الوحدة                                 | الفئة   | الخط |
| ألف طن                                 | مجموع النفايات البلدية المنتجة                          | 1    |
| ألف طن                                 | النفايات البلدية المجمعة من الأسر المعيشية              | 2    |
| ألف طن                                 | النفايات البلدية المجمعة من مصادر أخرى                  | 3    |
| ألف طن                                 | مجموع كمية النفايات البلدية المجمعة (=2+3)              | 4    |
| ألف طن                                 | النفايات البلدية المستوردة للمعالجة/التخلص منها         | 5    |
| ألف طن                                 | النفايات البلدية المصدرة للمعالجة/التخلص منها           | 6    |
| ألف طن                                 | النفايات البلدية المدارة في البلد (=6-5+4)              | 7    |
| ألف طن                                 | الكميات المرجحة: لإعادة التدوير                         | 8    |
| ألف طن                                 | للتحويل إلى سماد  | 9    |
| ألف طن                                 | للحرق   | 10   |
| ألف طن                                 | منها: الكميات المرجحة لاستخلاص الطاقة                   | 11   |
| ألف طن                                 | دفن النفايات  | 12   |
| ألف طن                                 | دفن النفايات بطريقة منظمة                               | 13   |
| ألف طن                                 | النفايات التي تؤوّل إلى مال آخر. يرجى تحديده في الحاشية | 14   |

# 3. The UNSD/UNEP Questionnaire 2020 on Environment Statistics



- Colleagues within UNSD are presently validating country data.
- With respect to indicator 12.5.1-related variables, 6 ESCWA countries were able to provide some data for the four variables of interest to SDG 12.5.1 that appear in the UNSD/UNEP Questionnaire on Environment Statistics:
  - (i) Total Waste Generation; (ii) Municipal waste imported for treatment/disposal; (iii) municipal waste exported for treatment/disposal; (iv) municipal waste recycled
- Of the 275 records available, 47 are for the years 2015-2019.

## Observations:

- Good quality data sourced from well-coordinated responses from countries takes time and is not freely available, but since it is country-owned, it is the most authoritative and preferred source.
- Challenges remain to ensure data collected meet the demand for SDG 12.5.1. e.g. for a country, do we have data for both numerator and denominator for the same year? What do we do when we have the numerator for every year, but perhaps the denominator for only some years?
- Data for 12.5.1 may be difficult to collect (e.g. how can we know if imported or exported waste is intended for recycling? What proxies can or should be used in such cases?)



| قسم : القمامات |                      |
|----------------|----------------------|
| فئة المنتجات   |                      |
| 1              | القمامات المنزلية    |
| 2              | القمامات التجارية    |
| 3              | القمامات الصناعية    |
| 4              | القمامات الزراعية    |
| 5              | القمامات المعدنية    |
| 6              | القمامات البلاستيكية |
| 7              | القمامات الخشبية     |

## 4. Experience collecting all waste data from the ESCWA region

- Per communications with countries, we know it is best if the NSO (or at least, Ministry of Environment) have a communication mechanism with a Waste authority (usually a municipal level waste treatment plant). Many countries offer source citations via footnotes. E.g. Source is Ministry of Climate Change and Environment.
- Whenever there may be limitation in data provided, we work with the country to identify this and state it clearly. For example, see footnotes provided by countries below:
  - “Quantity is waste collected (rather than generated) from all sectors but not waste generated (collection system is very efficient).” << الكمية هي النفايات المجمعة من جميع القطاعات >>  
<<ولكن ليس النفايات المتولدة (نظام الجمع فعال للغاية)>>
  - “Various recovery methods (reprocessing within the processing facility, selling to processing companies, or for the purpose of recycling, other methods of recovery).” << طرق استرجاع >>  
مختلفة (إعادة التصنيع داخل مرفق المعالجة أو بيع لشركات المعالجة أو بغرض إعادة التدوير طرق أخرى في الاسترجاع)
  - “Data provided in cubic metres rather than metric tonnes. No conversion factor is available.

# 5. Other closely related work



- Indicator 12.4.2: Hazardous waste generated per capita and proportion of hazardous waste treated, by type of treatment
- Custodian agencies: UNEP, UNSD
- Variables from the UNSD/UNEP Questionnaire on Environment Statistics (waste section) feature in this indicator’s methodology (e.g. hazardous waste generated; hazardous waste treated or disposed of (by recycling, incineration (with/without energy recovery), landfilling)

Method: 
$$\frac{\text{Hazardous waste treated during the year (tonnes)}}{\text{Hazardous waste generated during the year (tonnes)}}$$

## 5. Other closely related work

- The **Expert Group on Environment Statistics**, which supports the work on environment statistics led by UNSD in (i) standardization of methods; (ii) data collection (such as work on SDG indicator 12.5.1, but also others such as 12.4.2 (hazardous waste), 11.6.1 (municipal waste), and indicators with SDG 6 (water-related)). Next meeting: between 11 and 22 October, 2021 virtually. Participation of ESCWA member states has increased in recent years

[https://unstats.un.org/unsd/envstats/fdes/fdes\\_eges.cshtml](https://unstats.un.org/unsd/envstats/fdes/fdes_eges.cshtml)

- Agenda items in recent years have included a focus on: the **Framework for the Development of Environment Statistics**, climate change statistics, data collection on water and waste (esp. relating to SDG indicators), capacity development

<https://unstats.un.org/unsd/envstats/fdes.cshtml> (Framework for the Development of Environment Statistics available in English and Arabic)

- Waste statistics are also important inputs relating to the **Global Set of Climate Change Statistics and Indicators** [https://unstats.un.org/unsd/envstats/ClimateChange\\_StatAndInd\\_global.cshtml](https://unstats.un.org/unsd/envstats/ClimateChange_StatAndInd_global.cshtml)

شكراً

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