Goal 12

Target number: 12.5

Indicator Number and Name: 12.5.1 National recycling rate, tons of material recycled

Agency: UNSD, UNEP

Has work for the development of this indicator begun? Yes

Who are the entities, including national and international experts, directly involved and consulted in developing the methodology/and or data collection tools?

UNSD - Environment Statistics Section
OECD
Eurostat
UNEP – BRS Secretariat (Secretariat of the Basel, Rotterdam and Stockholm Conventions)

UN Environment convened an Expert Group Meeting in January 2018 in Geneva to consult with a broad range of international experts on waste, including from the entities above, on a number of definitional issues related to this indicator as well as indicators 11.6.1 and 12.5.1, and to present draft methodologies for feedback and discussion. Outcomes and other documents from this Expert Group Meeting can be found at https://environmentlive.unep.org/egm/waste. A second Expert Group Meeting is planned for Q1 2019.

The draft methodology for this indicator was presented by UN Environment to the Fifth Meeting of the Expert Group on Environment Statistics in May 2018 in New York for comments and feedback.

UNSD consults with OECD, Eurostat and the BRS Secretariat on the concepts and definitions, as well as on the structure and content of the respective questionnaires to promote harmonization of data at the international level. [see section data/metadata below]

The UNECE's Task Force on Waste Statistics is also consulted with regard to the methodologies under development for this indicator and 12.4.2 to ensured harmonized language and concepts.

What is the involvement of or how do you plan to involve National Statistical Systems in the development of the methodology?

Data is already being collected for the related statistics contained in the UNSD/UNEP Questionnaire, and methodological guidance for the statistics is being developed in the methodology sheet on waste statistics of the Manual on the Basic Set of Environment Statistics (https://unstats.un.org/unsd/envstats/fdes/manual_bses.cshtml). Selected variables on Waste Electric and Electronic Equipment (WEEE) have been pilot tested by OECD and UNSD, and are now included in the UNSD/UNEP Questionnaire that is sent to National Statistical Offices and Ministries of Environment.

Pilot testing for the draft methodology for the indicators 12.5.1 and 12.4.2 has begun, led by UN Environment, in 3 participating pilot countries, Bosnia and Herzegovina, Costa Rica, and Mauritius, with their respective National Statistical Systems. Pilot testing in Bosnia occurred in May 2018, while Costa Rica and Mauritius are planned for August/September 2018. Further details on the pilot work in Bosnia can be found at https://environmentlive.unep.org/egm/bosnia. The Bosnian NSO's prominent role in the UNECE's Task Force on Waste Statistics contributed positively to the outcome of the pilot testing, and

will promote alignment and harmonization between the draft methodology and the work of the Task Force.

A Data Assessment Tool is under development to assist National Statistical Systems in their compilation of waste-related data relevant to this indicator as well as by highlighting gaps in their current data collection. It is being piloted in Bosnia, Costa Rica and Mauritius alongside the indicator methodologies, as well as in Mexico. The Data Assessment Tool will ultimately be released for NSOs to conduct self-assessments of their waste statistics system.

Please briefly describe the process of developing the methodology for the indicator

It is necessary to continue the methodological development of the indicator in parallel to and in harmony with the work of the UNECE Task Force on Waste Statistics, which aims at solving some of the conceptual issues pertaining to waste statistics, including the definition of recycling, by providing a Conceptual Framework on Waste Statistics by June 2019. UNECE, UN Environment, UNSD, and UNU are collaborating on the development of stronger guidance materials, which also aim to be ready for June 2019.

To produce this indicator, two statistics seem to be required: Total waste recycled and Total waste generation. UNSD, through its UNSD/UNEP Questionnaire on Environment Statistics (waste section), collects data on Total waste generation. The definition of this statistic originates from the OECD/Eurostat Joint Questionnaire. However, for the second statistic, Total waste recycled, no data are currently being collected. Data on waste recycled are collected as part of the treatment of municipal waste and hazardous waste. However, there is an overlap between the two. Moreover, non-hazardous industrial waste is not represented in these two categories.

As a practical solution, it is possible to use the municipal waste recycling rate as a proxy. Even though municipal waste represents only a small part of the total waste, especially in developing countries where municipal waste collection is not available outside of the main cities, there are some advantages to using it. Data are already being collected by UNSD on municipal waste collected, municipal waste managed (municipal waste collected plus imports minus exports), and municipal waste recycled through the UNSD/UNEP Questionnaire on Environment Statistics. The UNSD/UNEP 2018 Questionnaire also includes the amount of municipal waste generated at the country level (Table R3) and at the city level (Table R5). Finally, statistics about the municipal waste recycling rate will help countries to assess whether they need to build new waste treatment facilities.

With the increasing importance of e-waste as a policy priority, a sub-indicator on e-waste is proposed. This sub-indicator will require additional definitional refinement. Two statistics will be required to separate the e-waste stream from the total waste: total e-waste recycled, and total e-waste generation. UNSD, through the UNSD/UNEP 2018 Questionnaire, is starting to collect data on the total e-waste generated and total e-waste collected. Depending on the data availability, UNSD will consider including variables on e-waste treatment and disposal in future data collection. As e-waste recycled is not collected from countries yet, discussions are under way with UNU regarding estimation methods and the use of their global e-waste database which is mostly based on estimated values.

Progress has been made on several definitional issues thanks to the UN Environment Expert Group Meeting described above, such as: the exclusion of mineral and construction/demolition wastes for both numerators and denominators across all waste-related SDG indicators, the inclusion of composting and of biomass used for feed and biofuel into the definition of recycling, the exclusion of incineration with energy recovery from the definition of recycling, and the need for a material flow approach to capture recycling rate in such a way as to provide information on circular economy concepts.

Please indicate new international standards that will need to be proposed and approved by an intergovernmental process (such as UNSC) for this methodology.

No new international standards will need to be approved by intergovernmental processes for this methodology – the methodology already exists; it only requires further work to ensure definitional alignment. Agreement between participating entities will be ensured, in consultation with the Expert Group on Environment Statistics and the UNECE Task Force on Waste Statistics.

When do you expect the methodological work on this indicator to be completed?

July 2019

Are data and metadata already being collected from the National Statistical System for one or more components of this indicator?

Yes

If yes, please describe:

UNSD Environment Statistics Section collects data from official national sources for water and waste statistics through its biennial UNSD/UNEP Questionnaire on Environment Statistics from non-OECD/Eurostat countries. Data for OECD and Eurostat countries are collected through the biennial OECD/Eurostat Questionnaire that is consistent with the UNSD/UNEP Questionnaire, so data are comparable. The terms and definitions used in both the UNSD/UNEP Questionnaire and the OECD/Eurostat Questionnaire are mostly identical with those used by other sources, and where not, bridges or correspondence are developed where possible. For the number of responses to the 2016 round of the UNSD/UNEP Questionnaire reference should be made to Part I of the Background Document to the Report of the Secretary-General on Environment Statistics (E/CN.3/2018/31) (https://unstats.un.org/unsd/statcom/49th-session/documents/BG-Item4k-EnvironmentStatistics-E.pdf). The Background Document also includes in its Annex A the number of responses by variable and year. UNSD is launching the 2018 round of the UNSD/UNEP Questionnaire in September 2018.

Data collection on Waste Electric and Electronic Equipment (WEEE) was piloted in the 2016 UNSD/UNEP Questionnaire and is now included in the UNSD/UNEP 2018 Questionnaire. As part of this data collection, variables on WEEE generation and collection are included. Depending on the data availability, UNSD will consider including variables on e-waste treatment and disposal in future data collection.

The United Nations University's Sustainable Cycles Programme hosts a global database on Waste Electric and Electronic Equipment statistics, which can be consulted for data validation.

Data on recycling of hazardous waste is already collected by BRS Secretariat.

The statistics collected by UNSD through the UNSD/UNEP Questionnaire that can be used to produce this indicator are presented below. The number of responses to the UNSD/UNEP Questionnaire for the year 2015 is in brackets for UNSD. It should be noted that the number of responses to UNSD for those variables have increased between the 2013 and 2016 data collections.

OECD/Eurostat also collects these statistics which are harmonized conceptually with those collected by UNSD therefore promoting internationally comparable data.

UNSD/UNEP Questionnaire Table R1 and R3

If the goal is to have an indicator representing all waste, then so far UNSD is only able to provide data for the total waste generation, but not for the total waste recycled.

- R1.8 Total waste generation (25 to UNSD + 34 to OECD/Eurostat (2014))

Indicator = $\frac{Total\ waste\ recycled}{R1.8}$

If Municipal waste is used as a proxy, UNSD can provide the two underlying statistics for the indicator. However, the response rate to the questionnaire is very low due to the lack of resources and data in the countries. For the denominator, one can use the municipal waste managed or the municipal waste collected. OECD/Eurostat also have data for 2016 for these variables.

- R3.6 Municipal waste managed in the country (29 to UNSD + 36 to OECD/Eurostat)
- R3.7 Municipal waste recycled (29 to UNSD + 35 to OECD/Eurostat)

Indicator = $\frac{R3.7}{R3.6}$

Or

- R3.3 Municipal waste collected (40 to UNSD + 36 to OECD/Eurostat)
- R3.7 Municipal waste recycled (29 to UNSD + 35 to OECD/Eurostat)

Indicator = $\frac{R3.7}{R3.3}$

A sub-indicator is proposed to specifically monitor Waste Electric and Electronic Equipment (WEEE, also known as e-waste), a rapidly growing waste stream of particular concern due to its potential hazardousness and high residual value. Disaggregating total waste generated and total waste recycled to isolate the WEEE waste flow would allow better identification of its potentially significant contribution to the waste stream, and enable targeted policies to better recapture WEEE and promote circular economy concepts including the 6 R's (reduce, re-use, recycle, repair, rethink, refuse) and urban mining.

Sub-indicator = $\frac{Total\ e{-}waste\ recycled}{Total\ e{-}waste\ generated}$

The United Nations University's Sustainable Cycles Programme should be consulted for this sub-indicator, given that they have the largest global database on e-waste flows and quantities and have developed methodologies in this area.

UNSD is starting to collect data on e-waste generated and collected. Depending on the data availability, UNSD will consider including variables on e-waste treatment and disposal in future data collection, which includes e-waste recycled, to provide country data for the numerator of the sub-indicator.

How do you plan to collect the data?

Send questionnaire(s) to country,
Other: OECD, EUROSTAT, BRS. UN Environment is working on modelling proxy indicators which can be considered.

If the indicator involves multiple components from different data sources, please describe how each individual component of the indicator will be collected here.

With what frequency is data expected to be collected?

Data are already being collected every two years. [see section data/metadata]
Data on WEEE is starting to be collected by UNSD through the UNSD/UNEP Questionnaire, however it includes only e-waste generated and collected. Depending on the data availability, UNSD will consider including variables on e-waste treatment and disposal in future data collection. UNU, as the curator of a leading global database on e-waste, will be consulted.
Data on recycling of hazardous waste is collected annually by the BRS Secretariat.

Is there a process of data validation by countries in place or planned for this indicator?

Yes

If yes, please briefly describe:

To promote data quality assurance UNSD carries out extensive data validation procedures that include built-in automated procedures, manual checks and cross-references to national sources of data. Communication is carried out with countries for clarification and validation of data. UNSD does not make any estimation or imputation for missing values so the number of data points provided are actual country data. Only data that are considered accurate or those confirmed by countries during the validation process are included in UNSD's environment statistics database and disseminated on UNSD's website.

If you have any additional comments that you believe would be helpful to IAEG-SDG members in analysing the work plan and methodological development of the indicator, please provide them here:

Data for the underlying statistics for this indicator are already collected from the countries (NSO and Ministry of Environment). Moreover, there is no intention to increase the frequency of the UNSD/UNEP Questionnaire due to lack of resources and data, and the fact that the Questionnaire is aligned to that of OECD/Eurostat, which is also conducted every two years.
UNSD is starting to collect data on WEEE generation and collection. Depending on the data availability, UNSD will consider including variables on e-waste treatment and disposal in future data collection. UNU, however, can provide estimated data on WEEE recycled from their global database until international Questionnaires are updated to include WEEE treatment and disposal.

(as of August 2018)