



Introducing Indicator 11.6.1: Current Metadata and Feedback from Experts Questionnaire

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Contents



- 1. Waste Related SDG Indicators**
- 2. Scope of Monitoring and Terminologies**
- 3. Monitoring Methodology**
- 4. Capacity Development for Baseline Survey and Monitoring**
- 5. Inter-Agency Partnership for Waste Management Related SDG Indicators**



Waste SDG Indicators

Sustainable Cities and SWM



UN-Habitat

Goal 11: Make cities and human settlements inclusive, safe, resilient and sustainable

Targets

11.6 By 2030, reduce the adverse per capita environmental impact of cities, including by paying special attention to air quality and municipal and other waste management.

Indicator

% of urban solid waste regularly collected and with adequate final discharge with regards to the total waste generated by the city

UN-Habitat
& WHO

Goal 6: Ensure availability and sustainable management of water and sanitation for all

Targets

6.3 By 2030, improve water quality by reducing pollution, eliminating dumping and minimizing release of hazardous chemicals and materials, halving the proportion of untreated wastewater and substantially increasing recycling and safe reuse globally environment.

Indicator

Percentage of wastewater safely treated (Definition of 'wastewater' include septage and fecal sludge)

UNEP

Goal 12: Ensure sustainable consumption and production patterns

Targets

12.4 By 2020, achieve the environmentally sound management of chemicals and all wastes throughout their life cycle, in accordance with agreed international frameworks, and significantly reduce their release to air, water and soil in order to minimize their adverse impacts on human health and the environment.

Indicator

Treatment of waste, generation of hazardous waste, hazardous waste management, by type of treatment

12.5 By 2030, substantially reduce waste generation through prevention, reduction, recycling and reuse.

National recycling rate, tons of material recycled



- Whether to include or exclude faecal sludge and sewage sludge in the monitoring scope?
- Should the terminology be consistent with 'municipal solid waste' or 'urban solid waste'?
- Should this indicator monitor only 'municipal solid waste' or 'urban solid waste' including other waste?
- What other waste should be monitored through this indicator?



	<i>Should be excluded</i>	<i>Should be included</i>
Answer	8	3
Reason	<ul style="list-style-type: none"> • <u>Adding these two streams to municipal waste into indicator 11.6.1 is an unnecessary repetition of the information from 6.3.1 and 12.4.2</u>, while obscuring information on the municipal waste stream. • <u>Sewage sludge and faecal sludge use/require different infrastructure to collect from “normal” municipal solid waste, and they pose higher and different health risks than “normal” municipal waste.</u> • There is no clear definition of urban solid waste that has been agreed internationally. • Although faecal sludge and hazardous wastes may be included in urban waste, these items may be difficult to disaggregate from current statistics on urban waste. • In general local government departments responsible (and therefore reporting) figures for municipal solid waste. Hazardous and faecal sludge are different. • It is very important to measure by parts because it would disturb the total results and show you a wrong picture of amount of waste. 	<ul style="list-style-type: none"> • In some countries they are disposed in mixed manner and inseparable • Target 11.6 is very broad in the sense that it actually seeks to reduce the “per capita environmental impact of cities”. In the spirit of target 11.6, we should apply a broader concept of “urban solid waste”



Experts' Feedback



Terminologies in the target and indicator

	<i>Should be 'municipal solid waste' and exclude 'other waste'</i>	<i>Should be 'urban solid waste' and exclude 'other waste'</i>	<i>Should be 'urban solid waste' and include 'other waste'</i>	<i>'Urban solid waste' can include both 'municipal solid waste' and 'other waste'</i>
Answer	5	1	1	3
Reasons	<ul style="list-style-type: none"> The term "municipal waste" is consistent with the exact terminology in the pertinent target (11.6), thus no need for additional explanations in the monitoring and reporting stage. The term "<u>municipal waste</u>" has a well-established definition in solid waste management both literature and practice. It would be always better to use the same terminology between the target and the indicator in order to avoid the confusion. UNSD/UNEP questionnaire is available on municipal waste but not urban waste. The nomenclature should be the one used by UNSD. 	<ul style="list-style-type: none"> Keep definitions as simple as possible. Otherwise reporting will be a complete mess, with incomparable results, and therefore undermine the initiative. 	<ul style="list-style-type: none"> An alternative might be "Proportion of municipal and other solid waste regularly collected and with adequate final discharge out of total municipal and other solid waste generated in cities" 	<ul style="list-style-type: none"> Municipal waste refers to household waste, but in the cities are generated other types of waste, which in the case of Costa Rica are not municipal responsibility, but are handled under the EPR principle. Commercial, Industrial and Hazardous Health Care solid waste are substantial waste streams in urban settings throughout the world cities and therefore needs to be addressed. Sub-indicators for the type of waste with composite indicator that captures municipal and other wastes could work



What other waste should be monitored?

Suggestions from Dr. Ljiljana Rodic-Wiersma

- The indicator should monitor ONLY 'municipal solid waste'
- 'Other waste' should NOT be monitored but could be defined as

Waste that either

requires special treatment such as **hazardous waste from**

- Industrial activities
- Agricultural activities
- Mining
- Health care facilities (hospitals and other)

enables special treatment such as

- Agricultural organic waste
- Construction and demolition waste from construction industry
- End of life vehicles (motor vehicles that have reached the end of their useful lives) and
- WEEE (Waste Electrical and Electronic Equipment)

- However, WEEE should be included in the scope of this indicator monitoring because otherwise it cannot be captured in the other waste categories



Definition of 'adequate final discharge'

- By the current definition, **90% of all treatment & disposal will not be considered as 'adequate final discharge'** therefore we will get the same value in the most of the cities in developing world.
- The definition provided **does not allow for gradual improvement** – it is an exclusive binary system: all or nothing. Developed countries also started from open dumps of hazardous waste that caused serious pollution of local water resources and health effects on local residents. Their progress was gradual and spread over several decades, to arrive at the current state-of-the-art facilities with the necessary engineered controls for environmental protection.
- For example, **if a city brings their open dump to a controlled facility (three Cs – Confine, Compact, Cover), it is big step toward environmental protection, and should be acknowledged** as such by the SDG indicator 11.6.1. How the indicator is defined now, there would be no difference between such a city and a city that just dumps their waste wherever the trucks unload. But their situations are not the same in terms of environmental protection.
- The term should be replaced, as **it has a strong connotation of disposal and not valorization**



Definition of 'adequate final discharge' (cont.)

- The types of treatment/disposal defined by Habitat as “adequate” may differ from the definitions of the UNSD/UNEP. It would be helpful to have further definitions of the terms “sanitary” and “environmentally adequate” mentioned above. The UNSD/UNEP questionnaire does not attempt to assess which facilities are following the management practices of pollution control or labour safety standards. **It may be difficult to assess these types of management practices by facility.**
- The strict standard of ‘adequate final discharge’ can impose extraordinary burden on local government which does not have technical and financial capacity as well as local businesses that cannot afford environmental protection facilities and make them bankrupt. **More gradual approach that can visualise local effort is needed.**
- Official reporting often do not capture the real situation. Verification by third parties would be necessary for monitoring.
- “Discharge” is a term from the field of sewage and wastewater treatment. In SWM, the conventional term for this is: “treatment and disposal”, so: **“Adequate Final Treatment and Disposal”**.



Definition of 'Landfilling'

- This states that landfilling is only of waste that cannot be reduced, recycled, composted or incinerated. This part of the **definition is confusing as it appears to consider intent rather than the waste placed in the landfill** or to define landfill as the negative of other processes.
- In the definition fro "Landfilling" the requirement for "leachate Facility" is subjective and can result in **countries investing their limited finances in inappropriate technologies**. If it is stated that "landfill must have leachate facility" and this is not defined to include the spectrum of options from evaporation pond to RO then it can force investment to the wrong priority.

Definition of 'Total Solid Waste Generation'

- This should not exclude waste quantities taken and recycled before waste collection, but rather include an estimation for this fraction



WASTEAWARE Indicators (Wilson et al, 2015)

Using wasteware indicators as sub-indicators would help visualise gradual improvement of SWM

	Physical component	Indicator name and definition	Extract from guidance notes in User Manual
1	Public health - waste collection	Waste Collection Coverage: % households who have access to a reliable waste collection service	Waste collection coverage represents the access that the population of a city have to a waste collection service , including both formal municipal and informal sector services. A 'collection service' may be 'door to door' or by deposit into a community container. 'Collection' includes collection for recycling as well as for treatment and disposal (so includes e.g. collection of recyclables by itinerant waste buyers). 'Reliable' means regular - frequency will depend on local conditions and on any pre-separation of the waste.
2	Environmental control - disposal	Controlled treatment or disposal: % of the total municipal solid waste destined for treatment or disposal which goes to either a state-of-the-art, engineered or 'controlled' treatment / disposal site	The 'numerator' in this calculation is the total waste that is dealt with in a 'controlled' facility (e.g for land disposal, composting or waste to energy). The 'denominator' is the total solid waste destined for treatment or disposal - that is the total waste generated less waste recycled or reused. Waste being accepted at a facility 'counts' towards this quantitative indicator if the facility has reached at least an intermediate level of control. To use land disposal as an example, and referring to the stepwise improvement of sites, both uncontrolled and semi-controlled sites would fall below the threshold, while controlled, engineered and full sanitary landfills would all count towards this indicator.
3	Resource value - '3Rs' - Reduce, reuse, recycle	Recycling rate: % of total municipal solid waste generated that is recycled. Includes materials recycling and organics valorisation (composting, animal feed, anaerobic digestion).	Includes materials recycling and organics valorisation (composting, animal feed, anaerobic digestion). Includes the contribution from the 'informal' recycling sector as well as formal recycling as part of the solid waste management system. The total quantity collected for recycling should be adjusted downwards to allow for any materials that are subsequently rejected and sent for treatment or disposal.

11.6.1 scope

12.5 scope



- Designing the SDG indicator 11.6.1 to be disaggregated into two sub-indicators would allow visualisation of gradual improvement in solid waste management particularly in developing countries.
- The first two of these sub-indicators could be provided by the Wasteaware benchmark indicators 1 (collection coverage) and 2 (controlled treatment or disposal).
- The Global Waste Management Outlook (2015) used the Wasteaware indicators for 39 cities to point out the huge progress that many developing countries have made in the last 10-15 years in improving collection coverage and controlled disposal rates.
- The Wasteaware user manual provides detailed guidance on definitions used and criteria for judging 'environmental appropriateness'.
- A third sub-indicator will be required, being the the proportion of waste going to controlled treatment or disposal which meets the threshold for 'sustainable and environmentally sound management'.



- Is the current computation methodology reasonable?
- How can we collect data particularly in cities in developing countries?
- How can we validate data?
- What kind of things should be paid attention when collecting data?



Need for local data and validation

- Relying on national information systems do not work and give less information about waste management in cities. **Data collection method could rely on the municipal technical departments and books of municipalities.**
- There should be **regular contact with cities to ensure consistency** of interpretation of the methodology.
- **How cities reached their estimation should be clarified** in the monitoring.
- Initial baseline survey as well as monitoring of the future progress **can be validated by participation of a third party (e.g. local university)**
- To estimate total waste generation, **periodical survey on waste generation per capita** should be conducted through **direct measurement from selected sources at city level. Then the data extrapolated with population** and then the total waste generation is obtained. **Reliable population data is indispensable.**



Monitoring Methodology

- Monitoring sheets proposed do not address the mass-balance and **double counting risks** remain.
- Current **monitoring methodology ignores various applicable technological options by only stating 'leachate system'**. In many cases leachate systems are not even switched on and in arid climate it is not even required. **Environmental enforcement approach does not work.**
- It is necessary to match **different types of socio-economic data to derive estimates. The vast array of local measurements or estimations will be needed to be aggregated for national level data.**

Others

- OECD/EUROSTAT Questionnaire collects data at national level, not at city level. The UNSD has an established **data collection system which collects data for non OECD/EUROSTAT countries on municipal waste collected and treated at city and national level. This platform is usable for SDG data collection.**
- **Use of ICT** for collecting/inputting data would be applicable.



Capacity Development for Monitoring

- What kind of capacity development should be done to whom to ensure the data monitoring that reflects the reality on the ground?
- Is it reasonable to choose representative cities in a country and conduct capacity development together with the national entity (e.g. Ministry of Environment or national statistics office)?



- Baseline survey and data collection for monitoring can be **arranged in collaboration with (local) universities**. There is a clear synergy between academic requirements of universities and data needs for SDGs. Most universities have **“outreach to society” policies, where such collaboration would be seen as beneficial for both sides – universities and local authorities in charge of solid waste management as well as SDG monitoring**.
- Technical assistance such as international training programme on practical baseline survey and monitoring method could be conducted at regional level. (Bilateral donor)
- There could be **a call to different donor institutions/ city networks etc. to share available data** from different cities as well as capacity development.



- SDG indicators related to waste management include 11.6.1 on urban solid waste, 12.3 on food waste, 12.4.2 on hazardous waste and 12.5 on national recycling rate. They all have strong inter-linkages each other. Is it reasonable to have inter-agency partnership for refining metadata and monitoring indicator?



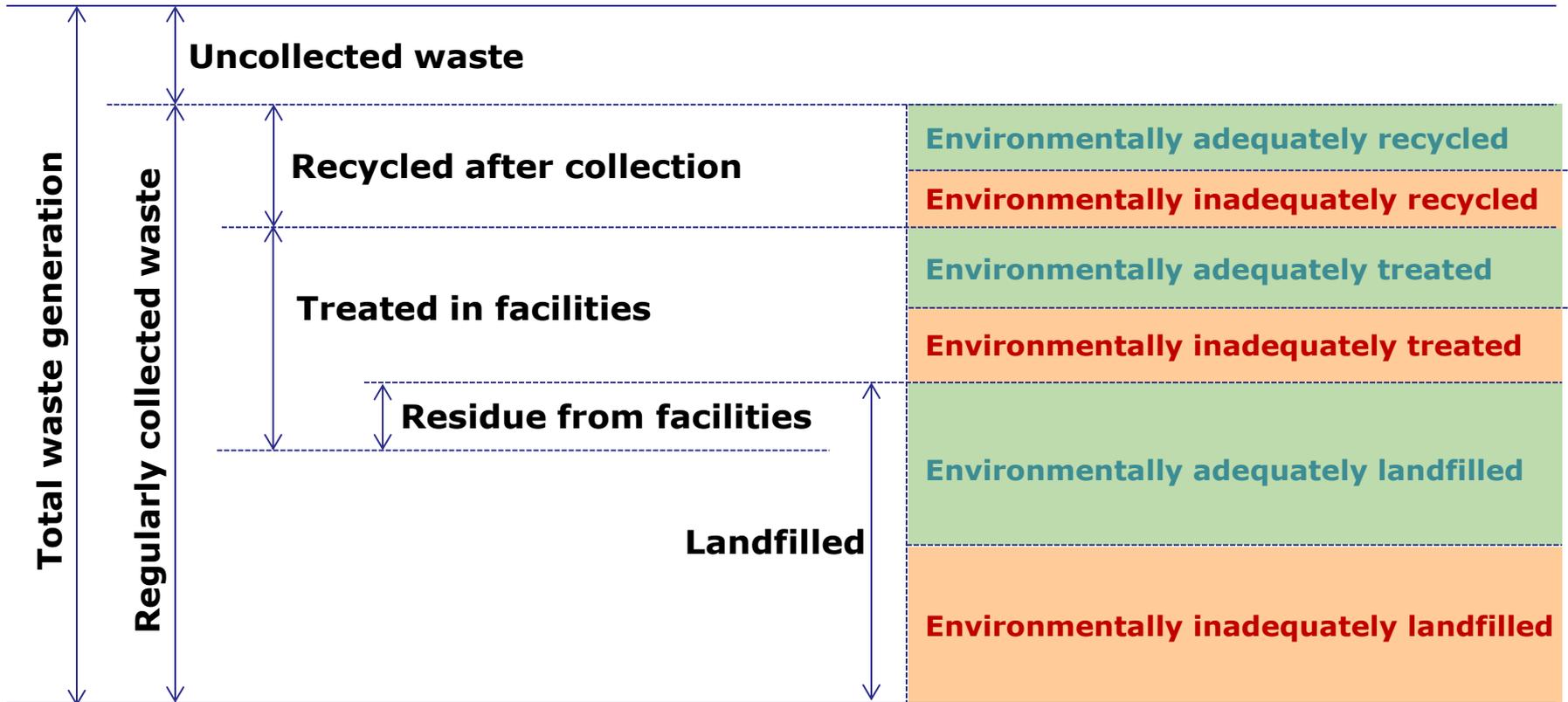
- **12 out of 14 experts** answered that some form of partnership on refinement and monitoring waste SDG indicators is **necessary**.
- However, some pointed out the following:
 - Work on the concepts, definitions and frameworks for waste statistics is ongoing at international level. There is already work ongoing by **UNECE** and **a proposed UNECE Task Force focusing on concepts, definitions and frameworks has been initiated**. Any new interagency mechanism under this indicator would best avoid duplication and utilize resources by **focusing on the issue of the collection of data and its quality assessment; and on capacity development with municipal bodies for provision of data on municipal waste**.
 - We would recommend to add target 14.1 on marine litter reduction to the mentioned indicators
 - It would better to link such a partnership to already existing platforms where cities collaborate, such as UN Habitat City Prosperity Initiative, ICLEI, IPLA,



Today's Discussion Points



1. Which waste should be monitored by this indicator?
2. How can we define 'adequate final discharge (adequate treatment & disposal)'?
3. How can we judge 'environmental adequateness' of all the treatment and disposal facilities?
4. Should the monitoring be done at city level?
5. What kind of capacity development is needed?
6. What kind of things should be the focus of the 'inter-agency partnership on waste SDGs'?



% of urban solid waste regularly collected and with adequate final discharge

$$= \frac{\text{Amount of waste environmentally adequately recycled, treated \& landfilled} - \text{Residue}}{\text{Total waste generation}}$$



Thank you!