

Tool 7 – Summary – Waste Generation and Composition Study

Studies on waste generation and composition are essential for understanding, planning, and monitoring waste management services. Conducting such studies enables the collection of data to inform decisions. The amounts of waste generated and its composition can be measured through a waste audit or estimated via waste surveys. These two methods differ in their goals, precision, and the efforts required to implement them.

Description

A waste generation and composition study involves assessing a representative sample, measuring or estimating the amounts of each fraction of waste of interest. As this study is time-consuming, it is often not adapted for acute emergencies, but rather should be considered in more stabilised humanitarian contexts. For acute emergencies, the Sphere standard value of 0.5 kg/person/day can be used as a first approximation. In contexts with high fluctuation or where populations are on the move, structured waste audits or surveys may not be feasible. In such cases, rough estimates based on short observation periods, rapid field checks of collection points, and proxy indicators (such as food distribution data or market activity) can be used to guide immediate planning until more stable measurements become possible.

There are two ways of conducting a waste generation and composition study: the waste survey and the waste audit.

Waste survey (rapid study)

A waste survey is a simplified assessment to estimate waste generation and composition. It needs less time and fewer resources than a waste audit, but is less precise. It is, however, recommended for a humanitarian setting, as it provides better estimates than using only the Sphere estimate of 0.5 kg/person/day for the rapid deployment of interventions. It is often based on a unique visit to a defined number of waste generators. It relies on self-reported data by the waste generator or direct measurement of the waste amount during the visit using a scale. It is convenient as it allows for direct interaction and communication with waste generators and can also be combined with asking other questions to the waste generators, for example, when evaluating water, sanitation, or hygiene issues, or other solid waste-related information.

Waste survey results, however, only allow for a rough estimation of waste amounts and characteristics. It has limitations for planning or designing waste management services, especially for long-term planning, due to its limited accuracy. For such cases, a waste audit is the preferred option. To perform a waste survey, use **Tool 7.1 Waste Survey**.

Waste audit (detailed study)

A waste audit is an assessment that measures the amount and composition of waste using a representative sampling approach. The daily waste generated is measured over a period of one week. This helps to capture variations during the week. A waste audit is recommended to obtain precise information about the amount and composition, providing a basis for planning, designing, and operating waste management services in the long term. To perform a waste audit, use **Tool 7.2 Waste Audit**.



Resources

Tool 7.1 – Waste Survey

Tool 7.2 – Waste Audit



Additional resources

UN-Habitat, 2021. Waste Wise Cities Tool. [PDF](#)

Wasteaid, 2017. Making Waste Work: A Toolkit – How to measure your waste. [PDF](#)

Eawag – Sandec, 2018. *Municipal Solid Waste Management online course: Conducting a Waste Generation and Characterization Study*. [MOOC video](#).