

Package: solidwastekampala (via r-universe)

October 3, 2026

Title Quantity and Composition of Domestic Solid Waste in Kampala City

Version 1.0.2

Description Domestic solid waste generation and composition data for 103 households in Kampala City, Uganda, collected over a seven-day measurement campaign in three parishes representing different income levels (Bwaise I, low income; Bukoto I, middle income; Ggaba, high income). Includes ten measured waste-category masses, derived per-household metrics, and household socio-economic characteristics. The data accompany the paper ``Quantity and composition of domestic solid waste in Kampala City as influenced by socioeconomic factors" (Katukiza et al. 2026, *Frontiers in Environmental Science*, <[doi:10.3389/fenvs.2026.1889921](https://doi.org/10.3389/fenvs.2026.1889921)>).

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URL <https://github.com/openwashdata/solidwastekampala>,
<https://openwashdata.github.io/solidwastekampala/>

BugReports <https://github.com/openwashdata/solidwastekampala/issues>

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Description

Household-level results of a seven-day domestic solid waste characterisation in three parishes of Kampala City, Uganda (Bwaise I = low income, Bukoto I = middle income, Ggaba = high income). For each of the 103 analyzed households the data record socio-economic characteristics, the measured mass of ten waste categories, and the derived per-household metrics (total, per-day, per-capita, volume, and density).

Usage

solidwastekampala

Format

A tibble with 103 rows and 37 variables

id Package-level unique household identifier (1-103), following the row numbering of the All_data sheet in the raw workbook (Bwaise I, then Bukoto I, then Ggaba).

household_id Household label as recorded on the area sheet (for example Household_7); values repeat across parishes and contain gaps, so id is the unique key.

division Kampala City division the household is located in (Kawempe, Makindye, or Nakawa).

parish Study parish the household is located in (Bwaise I = low income, Bukoto I = middle income, Ggaba = high income area).

zone Administrative zone within the parish where the household is located.

income_level Income level of the household's study area as classified in the study design; ordered factor with levels low < middle < high.

occupants Number of people living in the household during the 7-day waste collection period.

age_head Age of the household head in years; ordered factor with levels 18-35 < 36-60 < >60.

gender_head Gender of the household head (Female or Male).

- education_head** Highest education level of the household head; ordered factor with levels Illiterate < Primary < Secondary < Tertiary.
- profession_head** Profession of the household head (Business, Government employee, Housewife, Private employee, or Retired).
- monthly_income_ugx** Monthly household income band in Uganda shillings (UGX); ordered factor with levels <500,000 < 500,000-1,000,000 < 1,000,000-3,000,000 < >3,000,000.
- respondent** Household member who answered the questionnaire (Household head, Spouse, Son/daughter, or Niece/nephew).
- period_of_stay** How long the household has lived at the premises; ordered factor with levels <1 year < 1-3 years < 3-5 years < >5 years.
- occupancy** Occupancy status of the premises (Occupied by owner or Rented).
- housing_quality** Type of dwelling as a proxy for housing quality (Bungalow, Story building, or Temporary).
- roof_material** Main roof material of the dwelling (Cemented, Iron sheets, Iron sheets/tiles, or Tiles); Bwaise I recorded only the combined Iron sheets/tiles category.
- wall_material** Main wall material of the dwelling (Bricks, Concrete blocks, or Mud/poles).
- floor_material** Main floor material of the dwelling (Cemented, Mud, or Tiles).
- water_access** Main drinking water access of the household (House connection, Stand pipe, or Yard tap).
- sanitation_facility** Whether the household's sanitation facility is shared with other households (Shared facilities or Not shared facilities).
- road_condition** Condition of the access road to the household (Paved or Unpaved).
- waste_food_kg** Mass of food waste generated by the household over the 7-day collection period, in kilograms (ASTM waste category).
- waste_garden_kg** Mass of garden waste generated by the household over the 7-day collection period, in kilograms (ASTM waste category).
- waste_wood_kg** Mass of wood waste generated by the household over the 7-day collection period, in kilograms (ASTM waste category).
- waste_textiles_kg** Mass of textile waste generated by the household over the 7-day collection period, in kilograms (ASTM waste category).
- waste_paper_kg** Mass of paper waste generated by the household over the 7-day collection period, in kilograms (ASTM waste category).
- waste_polythene_kg** Mass of polythene waste generated by the household over the 7-day collection period, in kilograms (ASTM waste category).
- waste_plastics_kg** Mass of plastic waste generated by the household over the 7-day collection period, in kilograms (ASTM waste category).
- waste_glass_kg** Mass of glass waste generated by the household over the 7-day collection period, in kilograms (ASTM waste category).
- waste_metals_kg** Mass of metal waste generated by the household over the 7-day collection period, in kilograms (ASTM waste category); for Ggaba Household_7 the value 2.674 was stored as text in the raw sheet and is excluded from that household's recorded waste_total_kg.

waste_other_kg Mass of waste not covered by the other nine categories, generated by the household over the 7-day collection period, in kilograms (ASTM waste category).

waste_total_kg Total mass of waste generated by the household over the 7-day collection period, in kilograms, as recorded in the raw sheet (SUM of the ten category columns).

waste_per_day_kg Mean daily mass of waste generated by the household, in kilograms per day (waste_total_kg divided by 7).

waste_per_capita_kg Mean daily mass of waste generated per household member, in kilograms per person per day (waste_per_day_kg divided by occupants).

volume_l Volume of the waste generated by the household over the 7-day collection period, in litres.

density_kg_l Bulk density of the generated waste, in kilograms per litre; multiply by 1000 for kg/m³ as reported in the paper.

Source

Data collected by the study team of Katukiza et al. (Makerere University) for the paper "Quantity and composition of domestic solid waste in Kampala City as influenced by socioeconomic factors", *Frontiers in Environmental Science* 14 (2026), doi:10.3389/fenvs.2026.1889921. Raw workbook preserved in data-raw/data_sheets_with_analysis.xlsx.

Examples

```
head(solidwastekampala)
summary(solidwastekampala$waste_per_capita_kg)
table(solidwastekampala$income_level)
```

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* **datasets**

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