Africa

For the Africa region, there are 52 datapoints from 17 countries (Table 15 and Figure 10). The Africa region is split into two subregions, Northern Africa and Sub-Saharan Africa. For Northern Africa, data was identified from three countries with a total of eight datapoints, six of which come from across six different regions in Egypt.

A lack of data for Northern Africa was highlighted in the *Food Waste Index Report 2021*, a situation that has been improved upon. However, all datapoints identified are medium confidence due to being studies of smaller municipal areas and not representative national studies.

For Sub-Saharan Africa, 44 datapoints were identified from 14 countries, 41 of which are household estimates. Seven household food waste estimates were identified in Kenya and five in South Africa. As in the *Food Waste Index Report 2021*, the only household estimate in the Africa region to be judged as high confidence is for Ghana, where over 1,000 households across ten districts had their waste categorized for five weeks (Miezah et al. 2015).

A wide range of estimates exist for household food waste in the Africa region, with seven of the estimates for household food waste in the region being among the highest identified globally (top 10 per cent of datapoints). The UN-Habitat Waste Wise Cities Tool (WaCT) survey in Iramba District, Tanzania (UN-Habitat 2023a) is the highest reported household food waste figure in the dataset at 245 kilograms per capita per year. This datapoint comes from a UN-Habitat study; the WaCT guidance suggests a sample size of 90 households collecting waste for one week. Other studies conducted in Tanzania observed considerably lower waste rates (Table 15). The Iramba District has many households engaged in agriculture, leading them to generate significant post-harvest waste from crops in their municipal waste due to a lack of other recovery activities (UN-Habitat personal communication). A comprehensive, nationally representative study would be needed to understand average generation across the country.

Three of the highest estimates are from a single study in Egypt: Abdallah *et al.* (2020) with the aim of finding the waste generation rates and composition in correlation with key socioeconomic features such as household income, family size, and electricity consumption. The per capita waste generation rates were found to range between 0.63 and 0.82 kg/day, and the waste was composed mostly of food (41–70% collected waste from four different regions, Gharbiya, Asyout, Kafr El-Sheikh, and Qena, which are geographically distributed. The study collected all generated waste from 300 households in the urban centre of each region over the course of eight consecutive days, discarding the first day. Composition analysis was then conducted on around one-quarter of the samples collected from each region. The authors do not provide an explanation as to why the food waste estimates are so high.

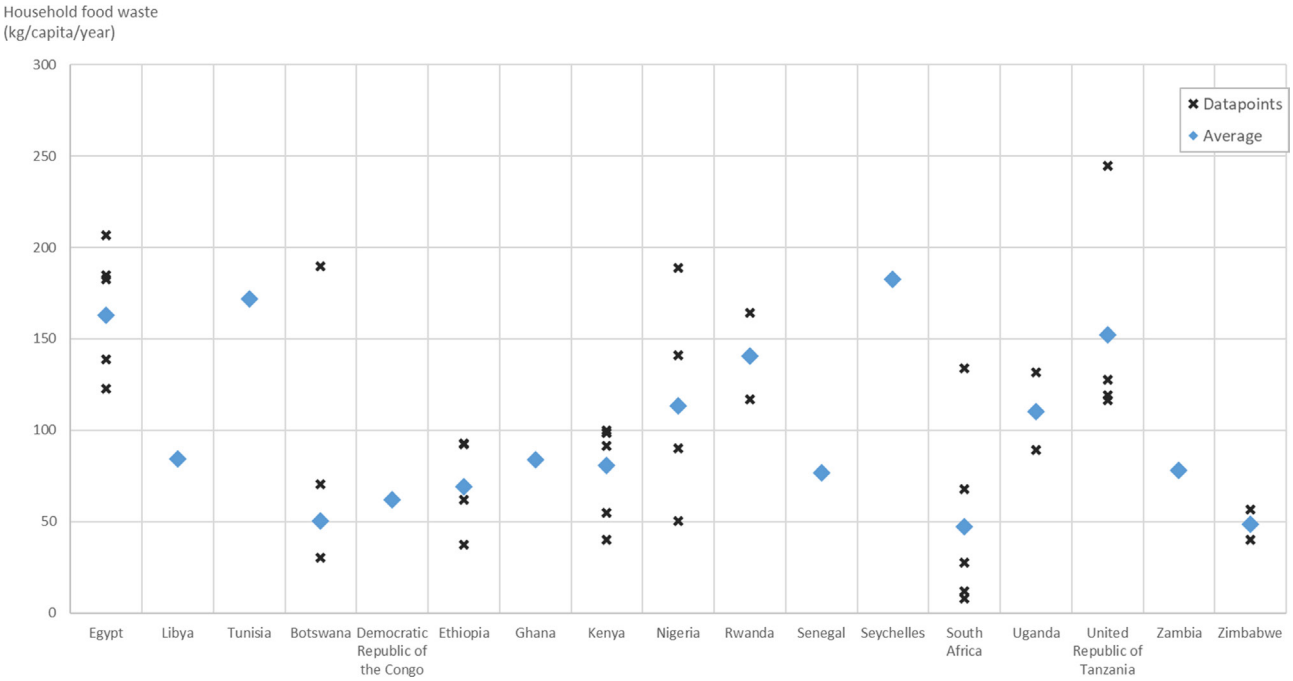
It remains unclear whether these high levels of waste reflect *edible* food being disposed of, or greater generation of inedible parts due to cooking from scratch. More research is needed that disaggregates food waste to better understand the situation in different countries. The higher rates of food waste could also reflect the climate, with a relationship being observed between average temperature and household food waste in a country (see section 2.5).

Two studies were identified exploring non-household food waste; one evaluating household and retail food waste in Zimbabwe (JICA 2013b) and another that looks at retail, food service and household food waste in Kenya (JICA 2010). Both were conducted by the Japan International Cooperation Agency. The latter study was included in the *Food Waste Index Report 2021* auditing waste from 90 food service and retail institutions in Nairobi, whereas the former evaluates retail food waste in Chitungwiza, Zimbabwe. The study collected samples from nine establishments across three different retail types (corner shops, supermarkets, markets) each day for five days to calculate waste generation rates. Composition analysis was then conducted from one sample per establishment type each day for five days.

Table 15: Household food waste datapoints in Africa

COUNTRY	SOURCE	STUDY AREA	FOOD WASTE ESTIMATE (kg/capita/year)
Egypt	(Abdallah et al. 2020)	Gharbiya	182
	(Abdallah et al. 2020)	Asyout	122
	(Abdallah et al. 2020)	Kafr El-Sheikh	185
	(Abdallah et al. 2020)	Qena	207
	(UN-Habitat 2022a)	Alexandria	142
	(UN-Habitat unpublished)	Dakahlia	139
Libya	(Moftah et al. 2016)	Tripoli City	84
Tunisia	(UN-Habitat 2021b)	Sousse	172
Botswana	(Letshwenyo and Kgetseyamore 2020)	Extension 7 Suburb, Palapye	71
	(Dikole and Letshwenyo 2020)	Palapye	30
Democratic Republic of the Congo	(UN-Habitat 2021c)	Bukavu	62
Ethiopia	(Assefa 2017)	Laga Tafo Laga Dadi town, Oromia	92
	(Balilo et al. 2023)	Shone Town	37
	(JICA 2022)	Addis Ababa	93
	(UN-Habitat 2021d)	Addis Ababa	62
	(UN-Habitat 2021e)	Bahir Dar	62
Ghana	(Miezah et al. 2015)	Nationwide	84
Kenya	(JICA 2010)	Nairobi	100
	(Takeuchi 2019)	Nairobi	99
	(UN-Habitat 2023b)	Homa Bay	40
	(UN-Habitat 2020a)	Kiambu County	99
	(UN-Habitat 2020b)	Mombasa County	80
	(UN-Habitat 2019a)	Nairobi City County	91
	(UN-Habitat 2022c)	Taita Taveta County	55
Nigeria	(Orhorhoro, Ebunilo and Sadjere 2017)	Sapele	189
	(Saidu, Musa and Akanbi 2022)	Bida town, Niger State	90
	(Emeka et al. 2021)	Port Harcourt	141
	(Yakubu, Woodard and Aboagye-Nimo 2023)	Jos	50
	(Emeka et al. 2021)	Port Harcourt	141
	(UN-Habitat 2021f)	Lagos	69
Rwanda	(Mucyo 2013)	Kigali	164
	(UN-Habitat 2023c)	Musanze	117
Senegal	(UN-Habitat 2022b)	Dakar	77
Seychelles	(UN-Habitat 2019b)	Victoria	183
South Africa	(Nahman et al. 2012)	Nationwide	27
	(Oelofse, Muswema and Ramukhwatho 2018)	Johannesburg	12
	(Oelofse, Muswema and Ramukhwatho 2018)	Ekurhuleni	8
	(Ramukhwatho 2016)	Tshwane Metropolitan Municipality	134
	(Tsheleza et al. 2022)	Mthatha city	34
	(Nell, Schenck and De Waal 2022)	Stellenbosch Local Municipality	68
Uganda	(UNEP and Uganda Cleaner Production Centre 2021)	Kampala	89
	(UN-Habitat unpublished)	Kampala	131
United Republic of Tanzania	(Oberlin 2013)	Kinondoni Municipality, Dar es Salaam	119
	(Kihila, Wernsted and Kaseva 2021)	Dar es Salaam City	117
	(UN-Habitat 2021g)	Dar es Salaam	128
	(UN-Habitat 2023a)	Iramba District	245
Zambia	(Edema, Sichamba and Ntengwe 2012)	Ndola	78
Zimbabwe	(JICA 2013b)	Chitungwiza	57
	(UN-Habitat 2021h)	Harare	40

Figure 10: Distribution of household datapoints in the Africa region

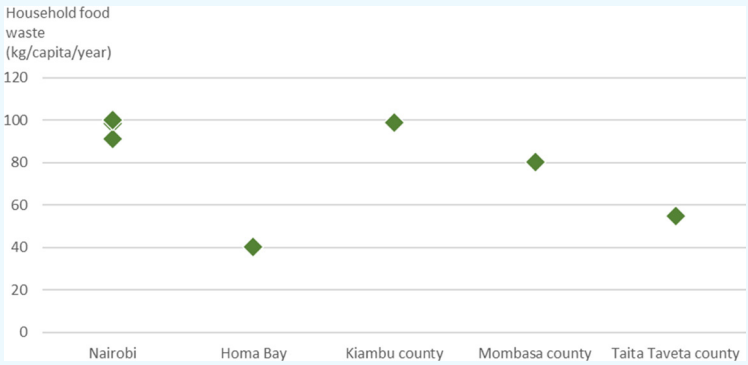


Note: Where multiple datapoints exist, the mean (average) is taken, and where only one datapoint exists, this is treated as the "average."

Box 4: Country profile: Kenya

There are seven datapoints providing estimates for household food waste in Kenya, ranging from 40 kilograms per capita per year to 100 kilograms per capita per year (Figure 11). All of the estimates identified are from subnational studies, categorized as *medium confidence.* Five of the datapoints are from UN-Habitat surveys of the Waste Wise Cities Tool (WaCT) developed by UN-Habitat, a step-by-step guide to assess a city's municipal solid waste management performance through monitoring of SDG indicator 11.6.1. The WaCT guidance suggests a sample size of 90 households (ten households from three survey areas, with three income groups each). There are WaCT estimates for five cities: Homa Bay (UN-Habitat 2023b), Taita Taveta (Voi) (UN-Habitat 2022), Kiambu (UN-Habitat 2020a), Mombasa (UN-Habitat 2020b) and Nairobi (UN-Habitat 2019). In addition, there are two further regional estimates in Nairobi that were included in the Food Waste Index Report 2021 (JICA 2010; Takeuchi 2019).

Figure 11: Summary of household food waste datapoints in Kenya



Although a large number of datapoints are available for Kenya, there is less available evidence in rural areas. Future research should focus on providing a nationwide estimate either via a nationally representative sample or through weighting results to more accurately represent variations within the country.