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Food Waste Measurement Report

Action for Local Food Project – Food waste and Citizen Science

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The Food Waste Diaries – Dec 21 – Mar 22

This document provides the top-line results of food waste measured in the Action for Local Food Project

Context: 20 food waste diaries were received.

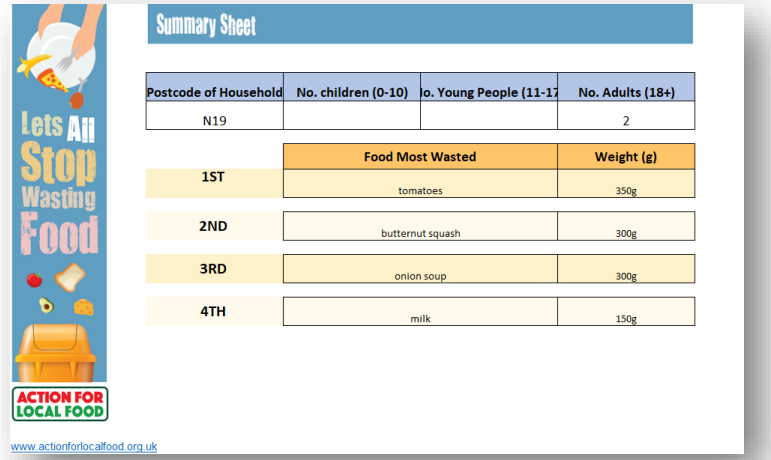
Audience 1 – Octopus Community Network contacts,

Audience 2 – Hard to engage communities on Islington Housing Estates

Audience 3 – Volunteer Gardeners at Demonstrator Sites

Audience 4 – Young people (Diary #11, measurement of school waste)

Audience 5 – Community Hub lunch club (Diary #8, 18 people per week)



Example of a front page of the Food Waste Diary, Household #1

Majority of Diaries were 4 weeks in duration

Diary #16 recorded 1 week

Diary #6 and #20 recorded 3 weeks

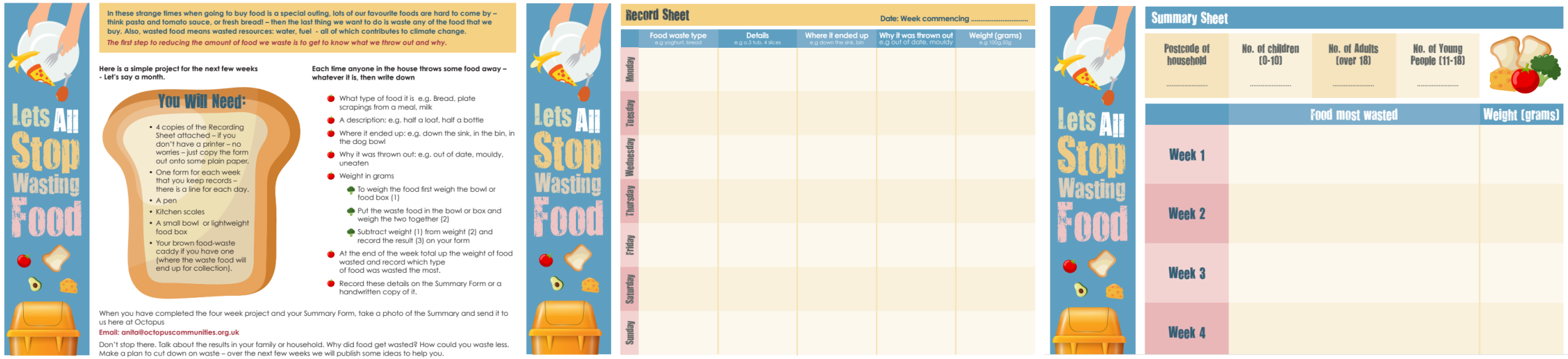
Diary #7 and #15 recorded no food waste in week 4

Most diaries provided weights of individual items (with reasons), 2 Diaries reported aggregate per-day weights.

Methods

Each household weighed their food waste on a scale and recorded into a paper or Microsoft excel spreadsheet.

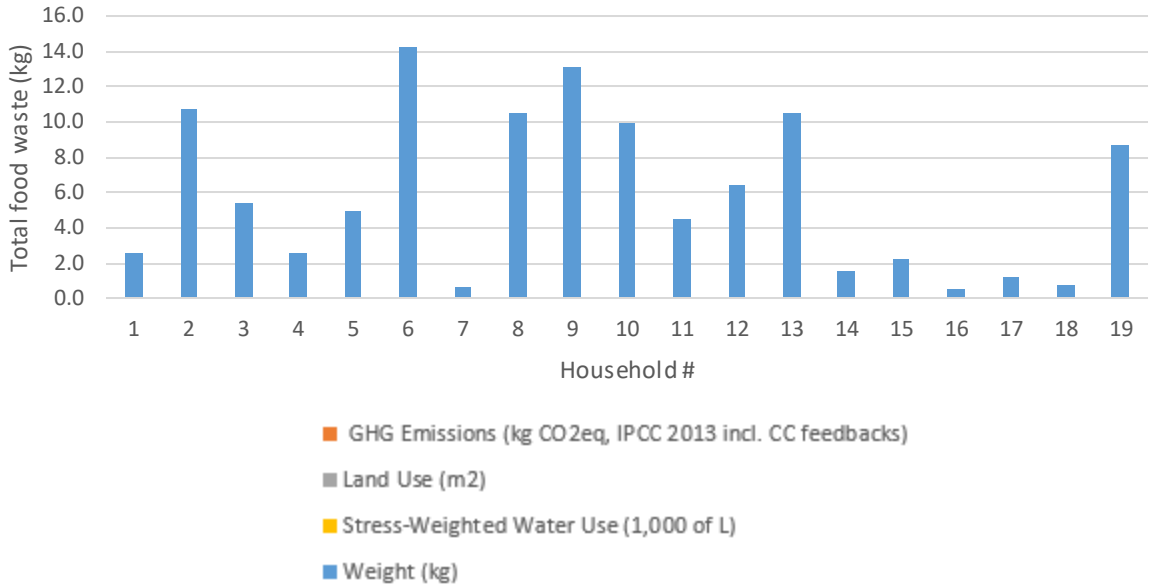
Downloadable from https://www.octopuscommunities.org.uk/news-and-updates-page/food-waste/

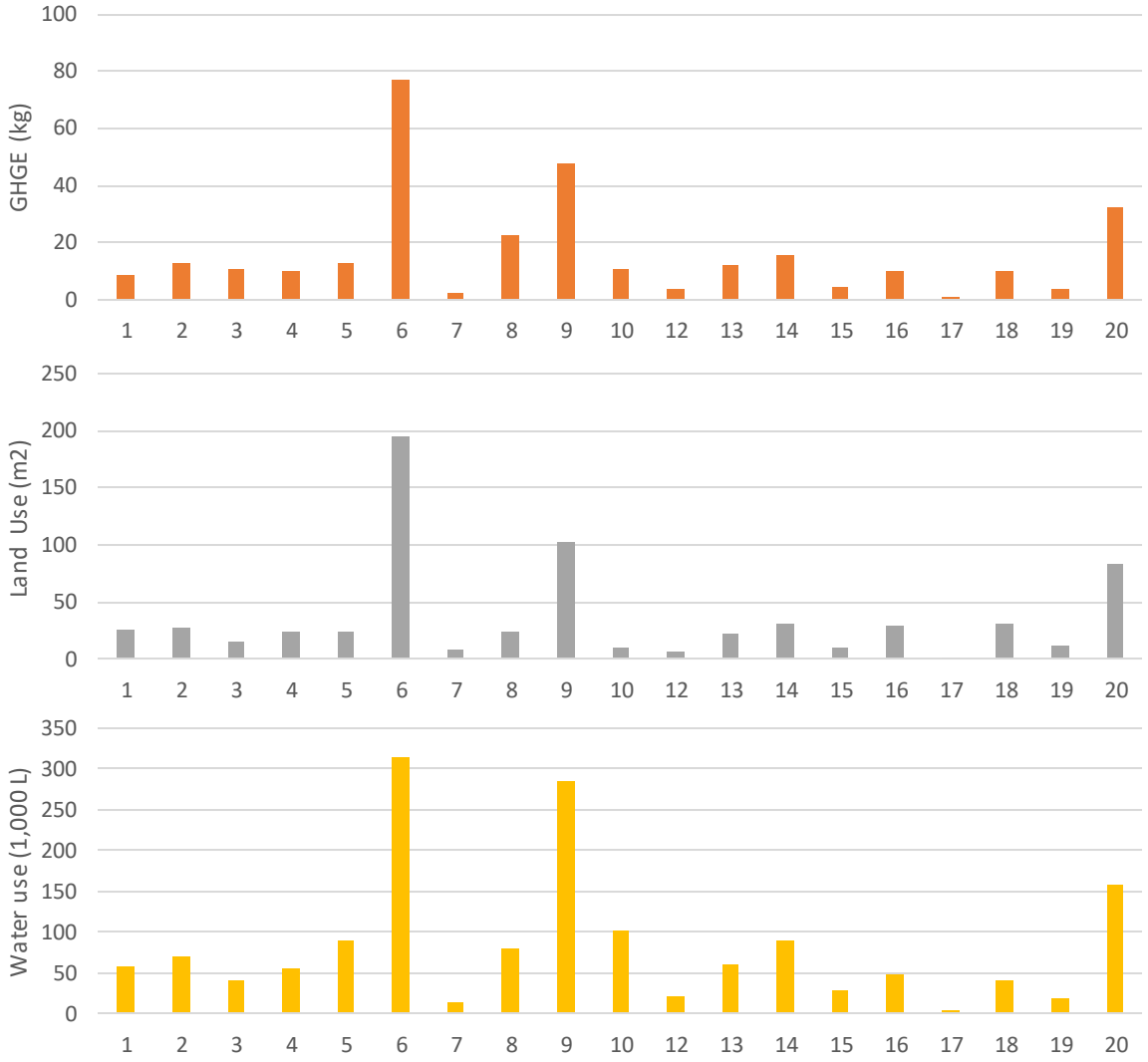


Paper copy of the food waste diary and instructions

Diary's were based off previous Love Food Hate Waste diary's.

The total weight of food waste & environmental impacts



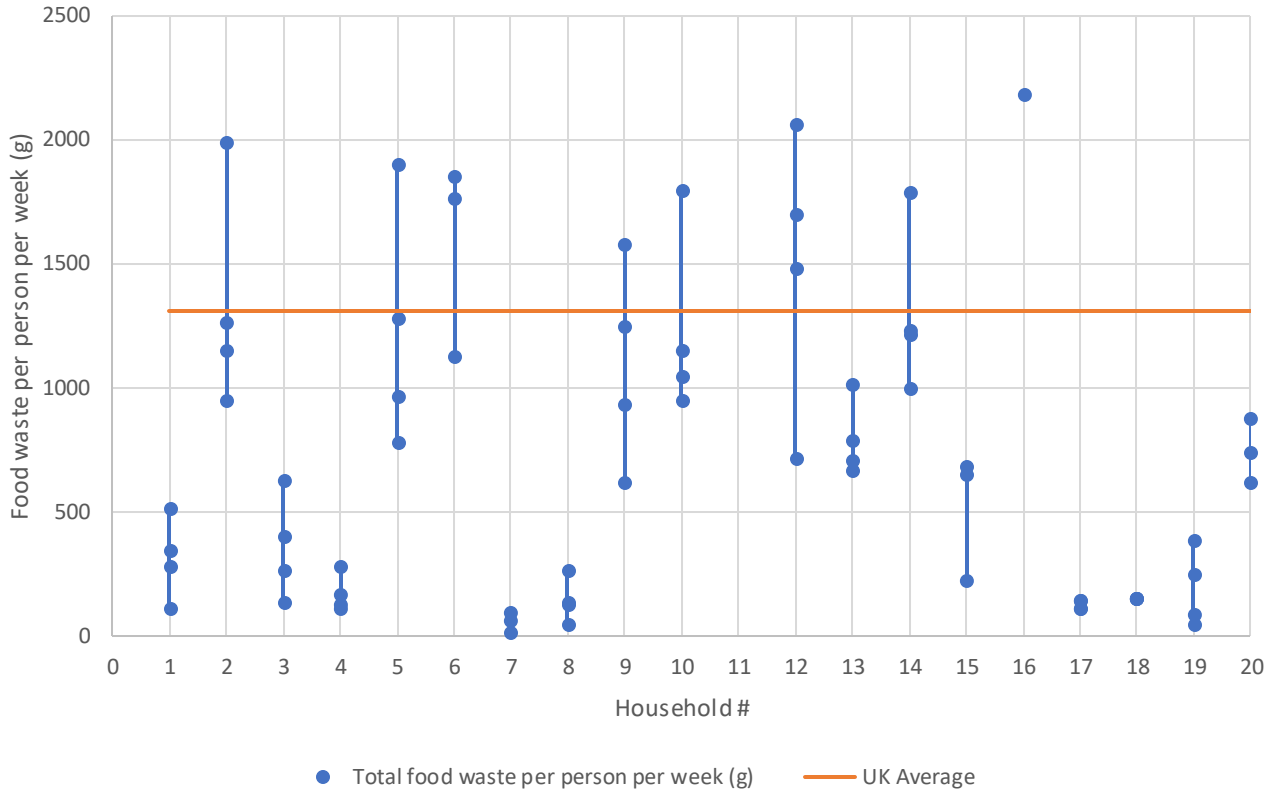


There was a spread of total weights of food waste disposed of across the diaries (0.5kg to 13.1kg). This spread is due to the number of people per household, time of year, and other factors relevant to each diary.

Larger weights thrown out are typically linked larger environmental impacts for each diary (see Diary #6 and #9).

Some households had relatively lower footprints due to wasting low environmental impact foods e.g. less waste of animal products (see Diary #2 and #13) .

84% households reported waste lower than UK Average



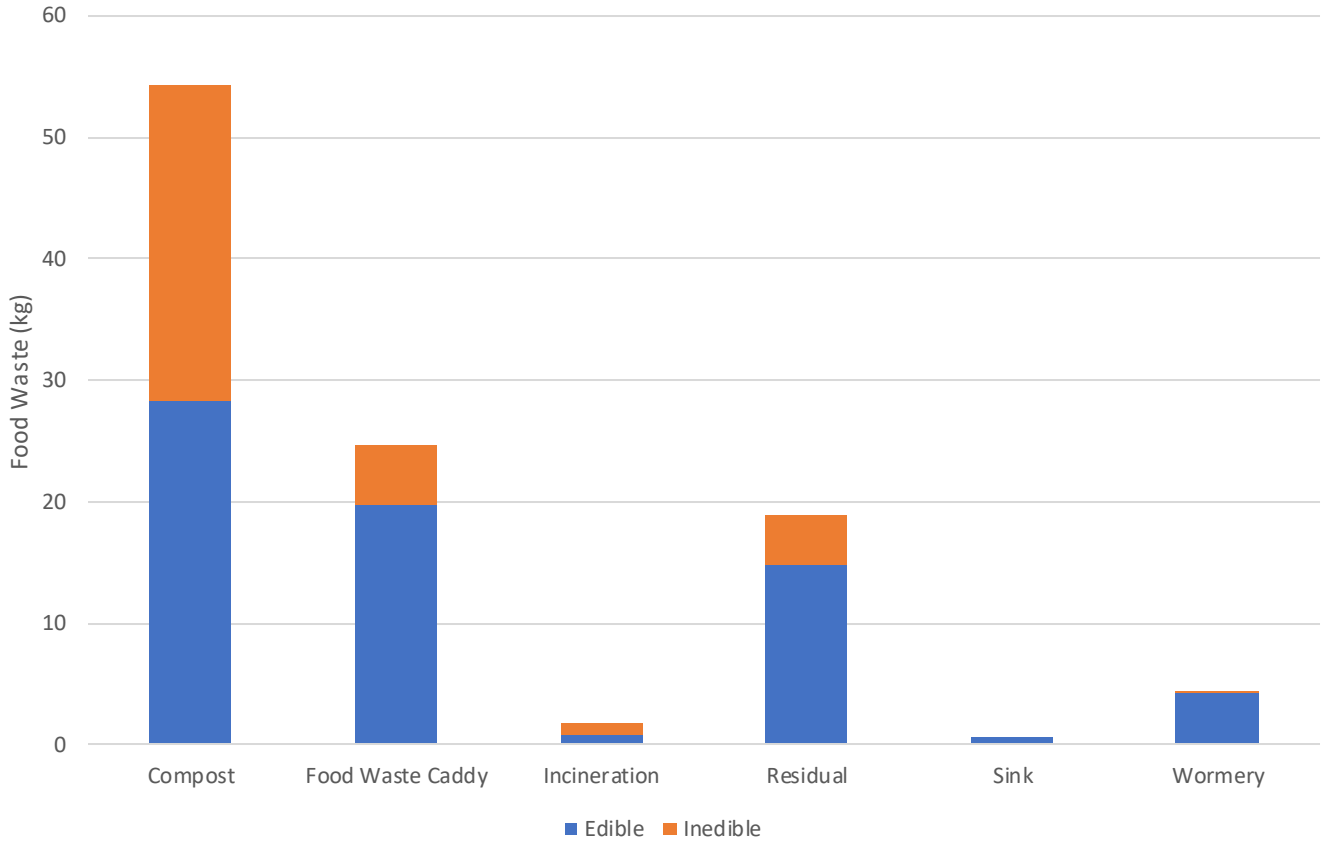
The average UK household wastes 68kg a year per person, or 1.3kg per week per person (WRAP 2021).

84% of the weekly household diaries were under this amount. However, 8 households recorded at least one week with above the UK average waste generation per person.

The measure of ‘per person’ is used to normalise the data due to the number of people in a household typically impacting the amount of food waste generated.

Each blue dot represents a household's total food waste per person per week. The four connected dots show the spread of per person waste per household over the 4 weeks.

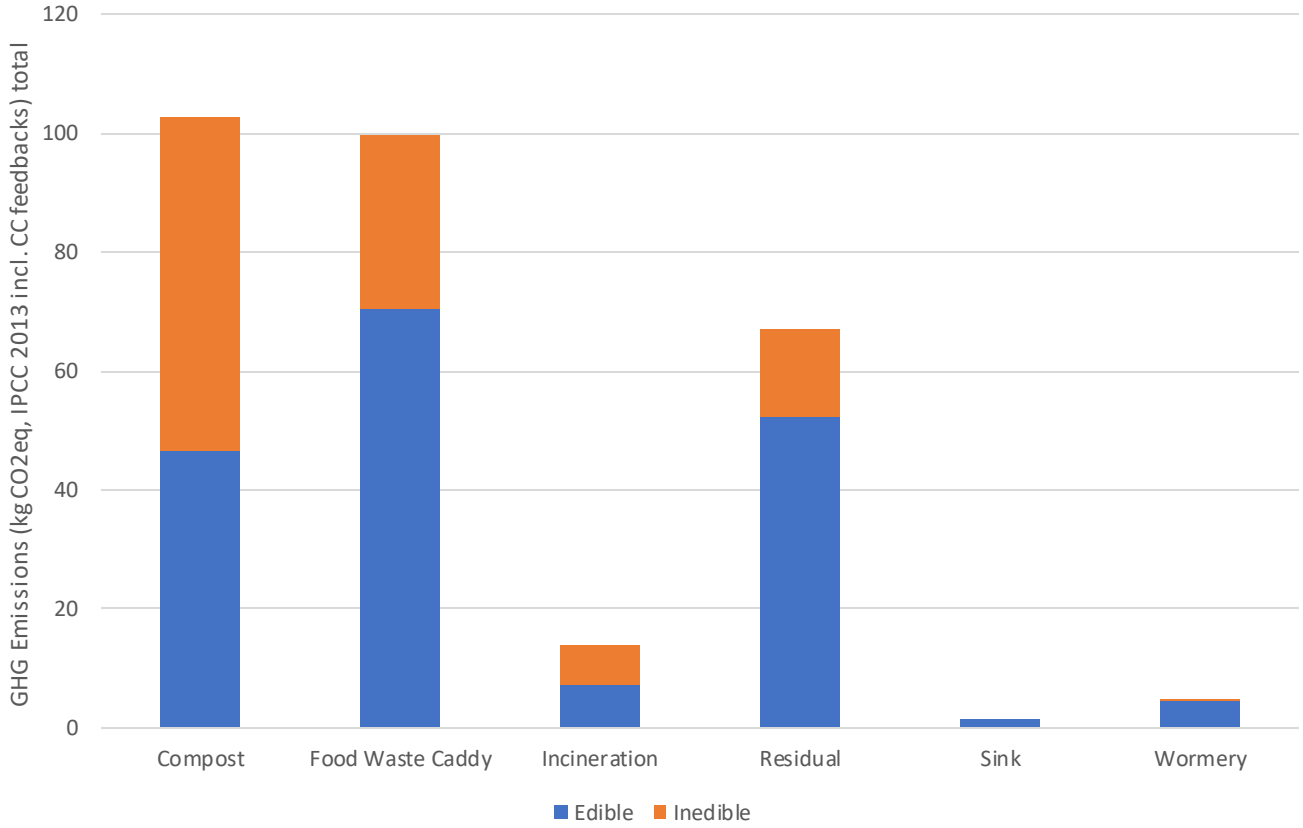
Composting & caddies the main disposal routes.



Composting and food waste caddies were the main disposal routes, taking 71% (79kg) of food waste generated. However 17% (18kg) of food waste was reported to be disposed of in the residual waste bin. Diaries reported that households disposed to wormeries (4%, ~4kg), incineration (2%, ~2kg), and sink (1%, >1kg).

Most of the inedible waste was disposed of to compost (72%) and caddies (13%). 11% of inedible waste was disposed of in the residual bin.

The climate impact per disposal route



Despite having a lower amount of food waste thrown into it, the Residual waste stream had 67kg of GHG emissions embodied in the foods production This is 23% of total GHGE. This is due to the types of food disposed of by each treatment method. The majority of food waste was composted (103kg) and/or disposed of via waste caddy (99kg). Though this does not negate the environmental impact of production, it does ensure the GHGE impacts will be mitigated through future use as compost, rather than being landfilled and converted into methane.

Many reasons and drivers for edible food waste

Three of the big drivers for edible food waste include the food

- Not used in time (35%, 38kg)
- Cooked, prepared, served too much (9%,9.8kg)
- Personal preferences (5%, 6.5kg)

Note that 51% (56kg) of food diary entries have no reason given for disposal or were inedible.

As some diary's were completed over December or January , some seasonal issues may be causal factors.

Mixed waste and peelings stand out in “top 4”

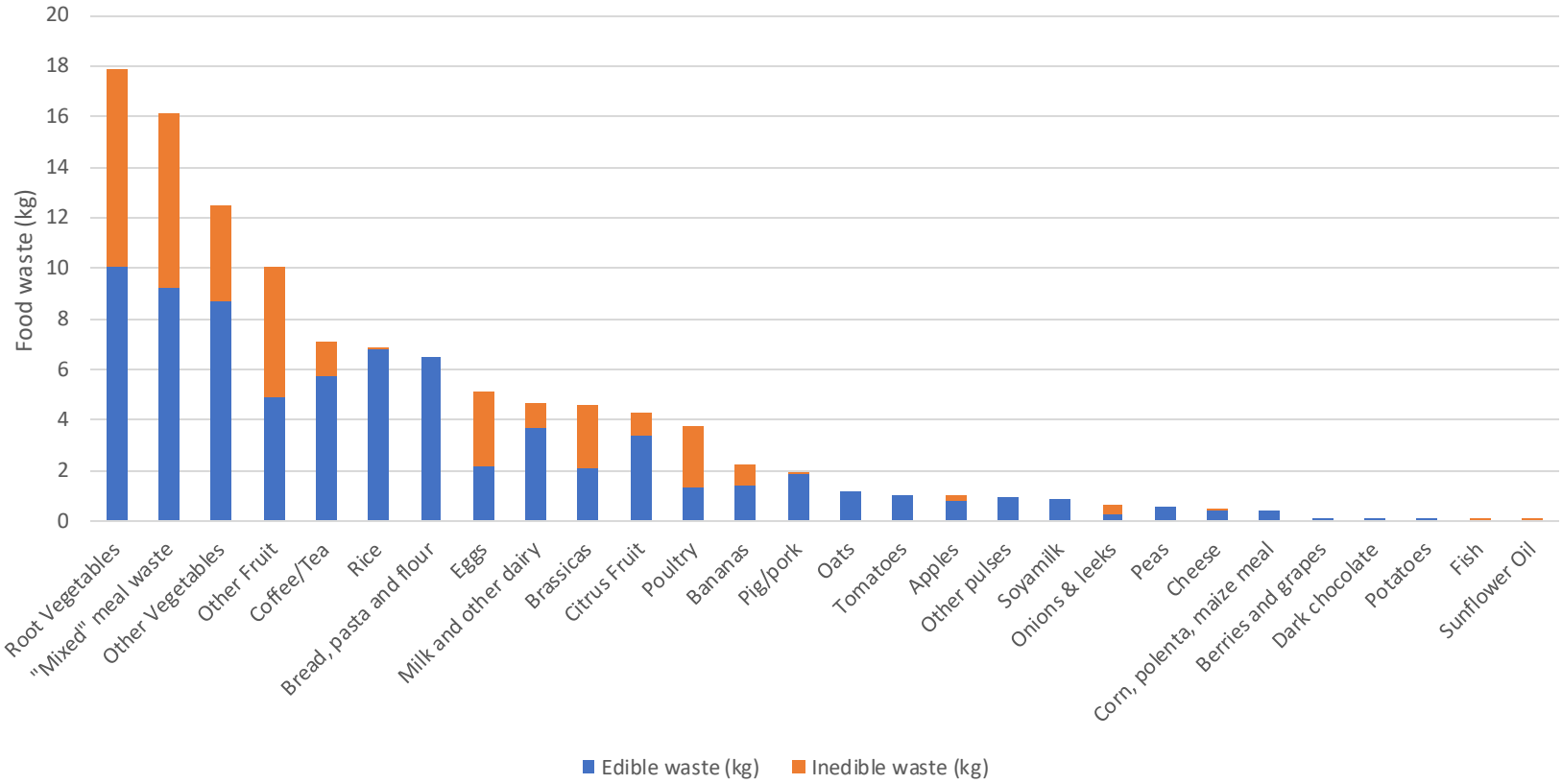
All households recorded their top 4 wasted foods

Mixed waste and vegetable peelings were two of the biggest categories, in terms of number of entries and size of individual entry

There were 12 recordings of single diary entries over 1kg!

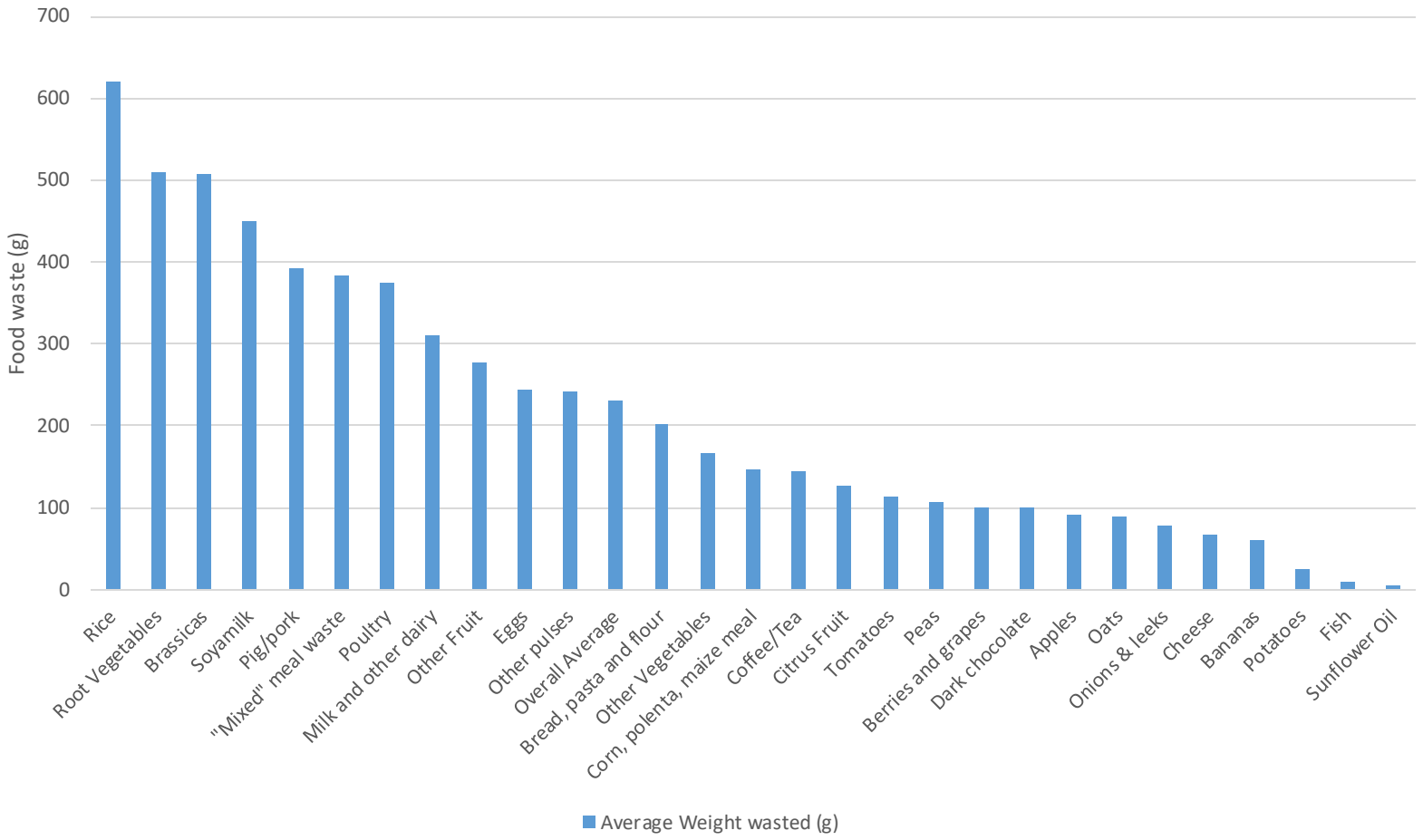
2.5kg Rice
2.4kg Fruit and veg peelings
2.1kg Leftover salad
2.0kg Veggie peelings
1.5kg Mixed veg peelings
1.2kg Veggie peelings
1.2kg Mixed veg waste
1.1kg Fruit and veg peelings
1.1kg Fruit and veg peelings
1.1kg Mixed veg waste
1.0kg Turkey bones
1.0kg Mixed veg waste

Root veg & Mixed meals: most wasted for edible & inedible



Diary entries classified into 27 categories. Root Vegetables were the largest category of food thrown away (10kg edible, 7.7kg inedible), followed by "Mixed" meal waste (9.2kg edible, 6.8kg inedible), Other Vegetables (8.7kg edible, 3.7kg inedible), Other Fruit (4.9kg edible, 5.1kg inedible), and Coffee/Tea (5.7kg edible, 1.3kg inedible), rounding out the top 5 categories (these represented 63kg or 56% of total waste). This highlights the large amount of edible waste thrown out across in participating households, and is representative of wider UK trends. Note that the edible Root Vegetable waste was described as peelings – and so not peeling vegetables, could easily reduce this waste.

Rice and Root veg: important for average weight wasted



The Average weight of food disposed of was 231g per diary entry .When calculated for each category Rice had an average disposal weight of 621g per entry (n=11), Root veg 510g (n=35), Brassicas 508g(n=9), and mixed meal waste 384g (n=42).

However some categories had few entries, e.g. Soyamilk has only 2 recorded instances (450g, n=2), and pig/pork waste (392g n=5).

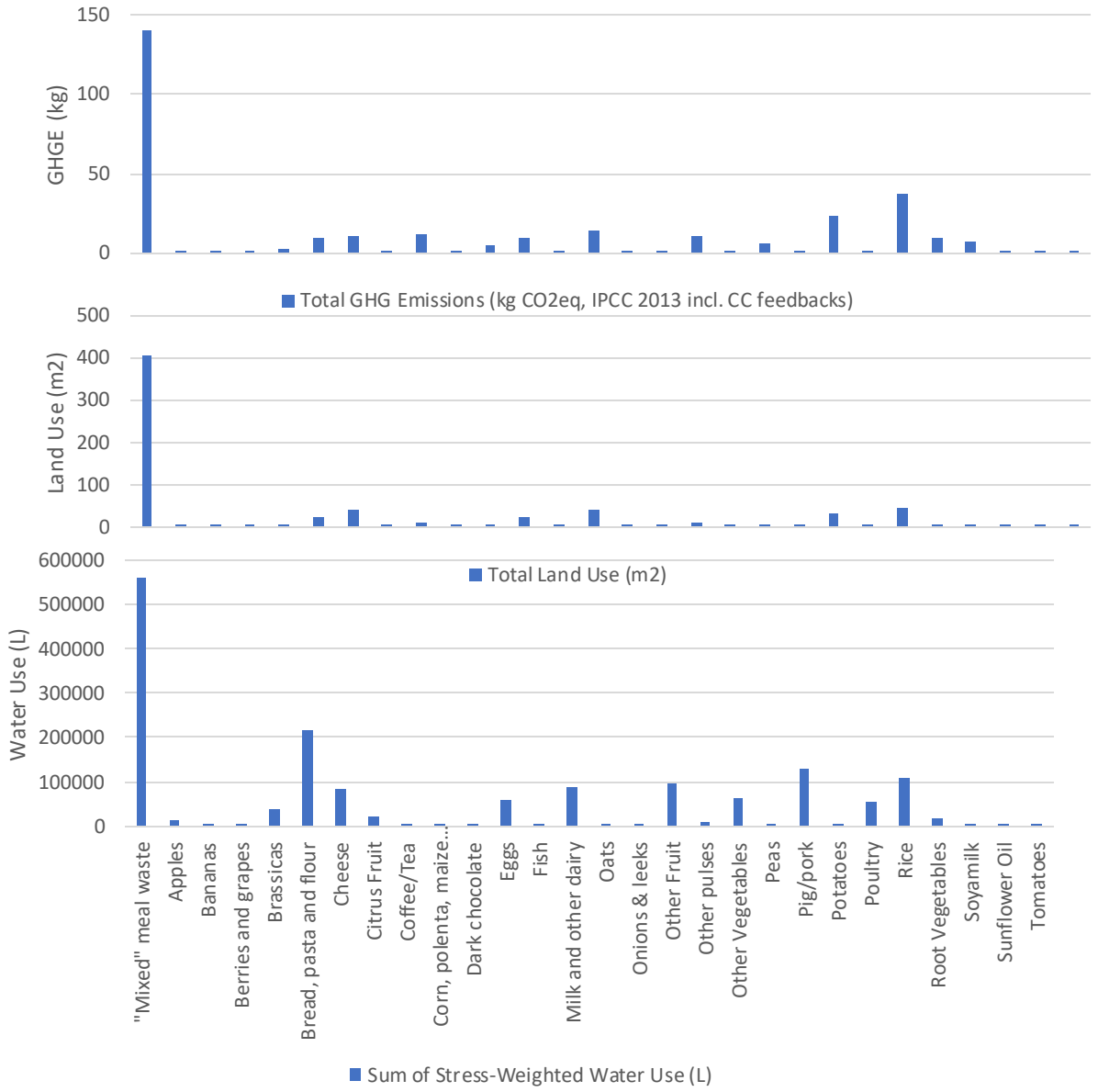
Mixed meal waste contributes most Environmental impacts

Environmental impacts were calculated for the food waste generated.

Mixed meal waste was found to embody the largest environmental impacts

- Greenhouse gas emissions equivalent to 140kg of co2e (45% of total GHGE).
- Land use equivalent to 407m2 (60% of total LU)
- Water use equivalent to 560,000L (36% of total WU)

However, these Environmental impact factors were drawn from global averages published by Poore and Nemecek (2018). As there was not values for mixed meal waste we assumed mixed meal waste to embody 8.69 kg CO2eq/kg, 25.23 m2/kg and 34779.39 L/kg. These factors could be to large if much of the mixed meal waste was not animal product derived.



Poultry & Bread waste also have major impacts

Excluding Mixed meal waste, many other items were found to embody the large environmental impacts:

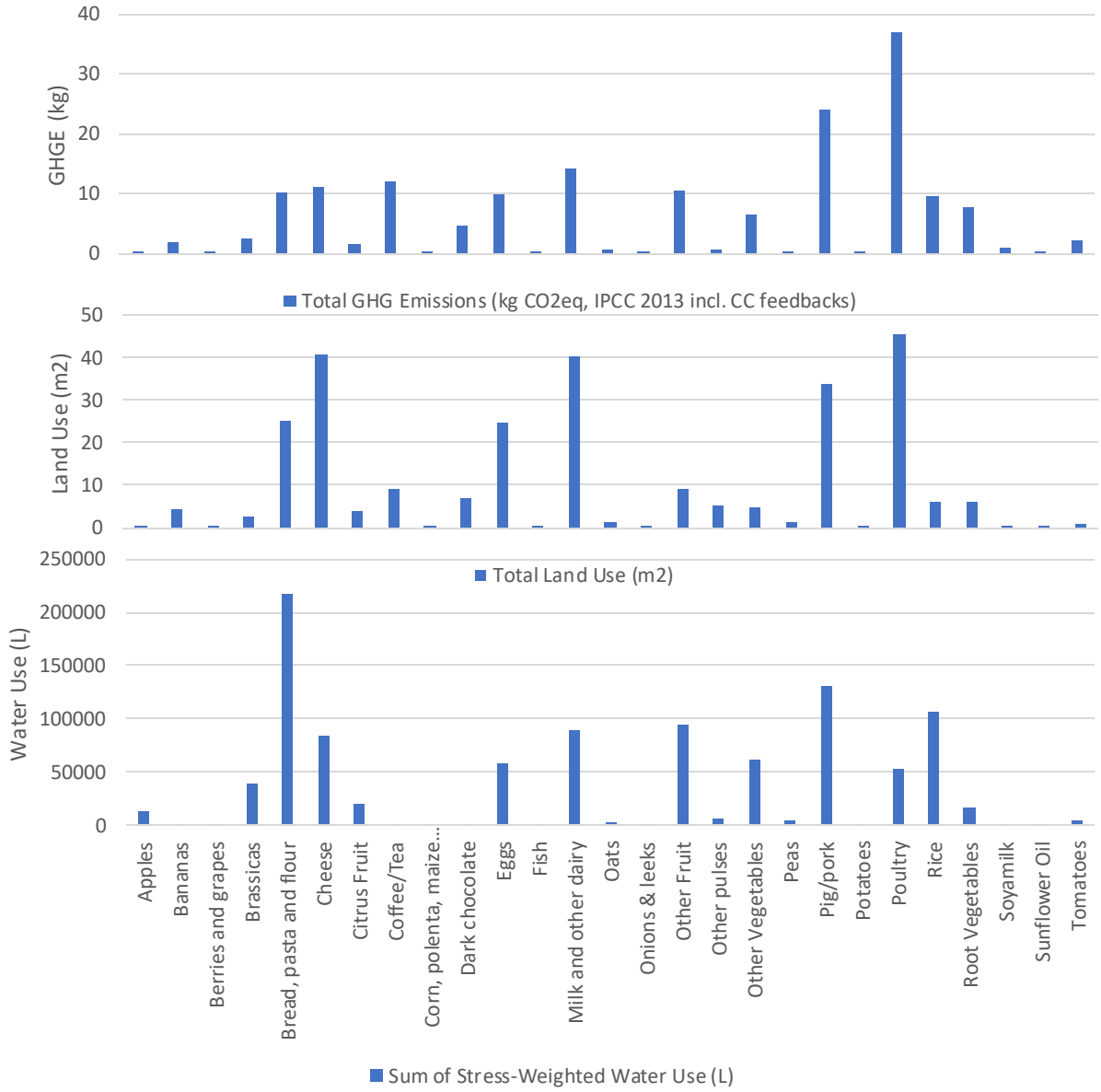
Poultry

- Greenhouse gas emissions equivalent to 27kg of co2e (12% of total GHGE).
- Land use equivalent to 46m2 (7% of total LU)
- Water use equivalent to 52,000L (3% of total WU)

Bread, pasta and flour

- Greenhouse gas emissions equivalent to 10kg of co2e (3% of total GHGE).
- Land use equivalent to 25m2 (4% of total LU)
- Water use equivalent to 216,000L (14% of total WU)

Many other wasted food also contributed to the overall environmental impacts.



Recommendations for future campaigns

This citizen science activity has shown many focus points for participants and the council. Future project could focus on three main areas:

- **Root Vegetables**, **Rice**, and **Bread products** are three categories of waste common across diaries. WRAP has existing Love Food Hate Waste (LFHW) citizen campaigns and information that could be used and co-branded. This includes Save Our Spuds, and Make Toast Not Waste.
- **Leftovers** and **Vegetable peelings** present a major opportunity for preventing waste of edible food. This represented a large share of the 38% of waste that was classified as "Not used in time". LFHW's Compl**eat**ing campaign may be useful for reducing leftover and peeling waste.
- **Increasing food waste recycling** is still important. 17% of total weight of food waste reported, and 23% of total GHGE was sent to the residual bin. See WRAP's Food waste recycling toolkit.

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