

UK Food Waste & Food Surplus – Key Facts

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Contents

This document contains an overview of most recent statistics on food waste and food surplus redistribution in the UK.

- Section 1 contains an overview of food waste and food surplus in the UK for all sectors for 2021 and 2022 (the most recent data).
- Section 2 contains the trends in UK food waste against the UK Food and Drink Pact (formerly the Courtauld Commitment) and United Nations Sustainability Development Goals 12.3 targets.
- Section 3 provides useful facts on food surplus redistribution for year 2023.
- Section 4 provides useful facts relating to household food waste.
- Section 5 presents more detail on estimates of food waste and surplus on farms.



1.0 Overview of food waste and food surplus in the UK

This section provides an overview of the most recent estimates of food waste and food surplus in the UK. 'Food waste' is used throughout as a shorthand term for 'food and drink waste'. Full definitions of 'food surplus' and 'food waste' can be found in <u>WRAP's UK</u> <u>Guidelines document</u> (page 15). An estimate of food waste generated on farms is included to give a more complete picture of UK food waste, despite the uncertainties in these estimates.

WRAP's most recent estimate of food waste in the UK is 10.2 million tonnes, using data for 2021 and 2022. This estimate covers households, hospitality & food service (HaFS), food manufacture, retail, and farm sector. Figure 1 shows the breakdown of this food waste. By weight, household food waste makes up 58% of the total, on-farm 16%, manufacturing 13%, hospitality and food service 11%, and retail 2%.

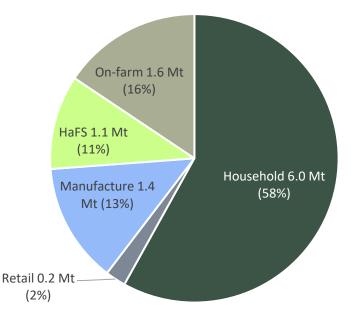


Figure 1. Total UK food waste, using data for 2021 and 2022, by sector, total = ca. 10.2 million tonnes (Mt). Apparent discrepancy between total and sum of parts due to rounding.

To put these amounts of food waste in context, approximately 39 million tonnes of food are purchased in the UK for consumption in the home¹. Therefore, total food waste in the UK (10.2 million tonnes) is approximately one quarter of this total.

The amount of food waste generated by households and the hospitality and food service sector, *as a percentage of the amounts of food purchased*, are similar at between 15% and

¹ WRAP analysis of data from <u>Defra Family Food 2022/23</u>. In addition, there are approximately 4-5 million tonnes of food and drink purchased for consumption outside the home in the UK.



18% respectively. For manufacturing the percentage food waste as a proportion of food handled is 3.8%, whilst for retail the figure is $0.44\%^2$.

Data for HaFS, manufacture, and retail relate to 2021 (published <u>here</u>); data for households related to 2022 and are published <u>here</u>. There is significant uncertainty around the amount of on-farm waste, with WRAP³ estimating this figure at 0.9 – 3.5 million tonnes (Mt) and WWF⁴ providing an estimate of 3.3 Mt, but, for the purposes of Figure 1, we use WRAP's central estimate of 1.6 Mt. Further detail on on-farm waste can be found in Section 5.0.

Data for households includes waste to sewer and home compost, but sewer waste data for other sectors is not currently available. In addition to the estimates above, there is approximately 43,000 tonnes of food waste from wholesale (2015; published <u>here</u>), and around 100,000 tonnes of food waste in litter (2012; published <u>here</u>) but neither are included in Figure 1. The UK does not have estimates for food waste from non-food businesses (e.g., food waste from offices).

Overall, food waste is made up of *wasted food* (also referred to as 'edible parts') and *inedible parts* (e.g., eggshells, animal bones, inedible fruit peel). Estimates are available for the split between edible and inedible parts for households, manufacturing, and hospitality and food service. For retail it is assumed that all food wasted is edible⁵.

For these sectors (i.e. excluding on-farm waste), 6.1 million tonnes (73% of the total) is wasted food, and 2.5 million tonnes is inedible parts (27% of the total). Figure 2 below shows the breakdown of wasted food, totalling 6.1 million tonnes. 71% by weight of this wasted food arises in households. Wasted food relating to wholesale and litter is omitted, and an estimate of on-farm wasted food is excluded as the percentage of inedible parts is unknown. Data for households in Figure 2 also includes waste to sewer and home compost, which is not currently available for other sectors.

² The Food Waste Reduction Roadmap Progress Report 2022; WRAP 2022 <u>The Food Waste Reduction Roadmap: Progress Report 2022 |</u> WRAP

³ Food waste in primary production in the UK; WRAP 2019.

⁴ Hidden Waste Report | WWF

⁵ Whilst small amounts of inedible parts are likely to come from food preparation at deli counters this has not been quantified.

5 Food surplus and waste in the UK – key facts



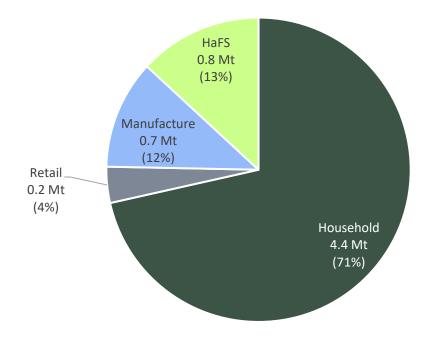


Figure 2: Wasted food (excluding inedible parts) in the UK by sector, 2021/22, total post-farm-gate = ca. 6.1Mt*

The wasted food shown in Figure 2 (i.e. post-farm gate food waste) had a value of over \pounds 22.3 billion a year (Table 1).

Sector	Tonnes	Value £ billion (using 2021 prices)
Retail	234,000	0.74
Manufacture	706,000	0.85
Hospitality and Food Service	800,000	3.21
Households*	4,360,000	17.5
Total	6,100,000	22.3

*Includes waste to sewer and home composting; 2022 data is provided for household food waste

The edible parts of food waste generated in households is associated with at least 16 million tonnes of greenhouse gas (GHG) emissions⁶. However, accurate estimates for supply chain sectors are not currently known at present. Emissions associated with food *consumption* in the UK for calendar year 2021 are detailed in <u>UK Food System GHG Emissions: 2023-24 Update (Summary Report) | WRAP - The Waste and Resources Action Programme</u>.

⁶Household food and drink waste in the UK 2022



Food surplus: In addition to food ending up as waste, around 2.8 million tonnes of food surplus from farms, manufacturing, retail and hospitality and food service is either being redistributed via charitable and commercial routes (ca. 191,000 tonnes in 2021⁷) or being diverted to produce animal feed (around 2.7 million tonnes in 2015^{8,9}). Both are classed as waste prevention according to the food material hierarchy¹⁰ (Figure 3).

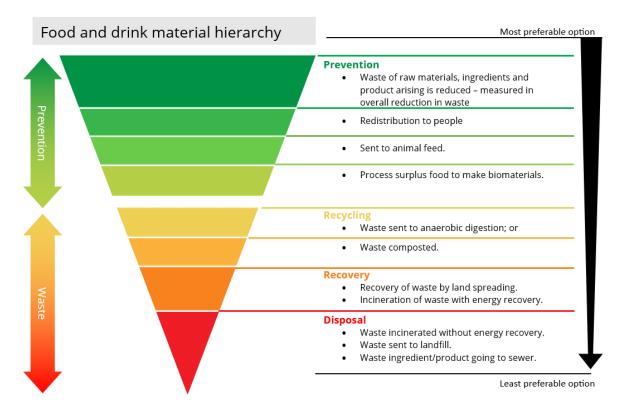


Figure 3. Food material hierarchy

⁷Surplus food redistribution | WRAP - The Waste and Resources Action Programme; WRAP, 2023

⁸ <u>Quantification of food surplus, waste, and related materials in the supply chain;</u> WRAP 2016.

⁹ Food waste in primary production in the UK

¹⁰ <u>https://www.gov.uk/government/publications/food-and-drink-waste-hierarchy-deal-with-surplus-and-waste/food-and-drink-waste-hierarchy-deal-with-surplus-and-waste</u>



2.0 Trends in food waste: UK Food and Drink Pact and SDG 12.3 targets

The UK Food and Drink Pact (UKFDP, formerly the Courtauld Commitment 2030) is the UK's voluntary agreement enabling collaborative action across the entire food chain to deliver farm-to-fork reductions in food waste, greenhouse gas (GHG) emissions and water stress. Its targets for 2030 are:

- 50% reduction in food waste arising across the UK (post-farm-gate) per person by 2030, in line with the United Nation's Sustainable Development Goal (SDG) 12.3, against a 2007 baseline.
- 50% absolute reduction in GHG emissions associated with food and drink consumed in the UK against a 2015 baseline.
- 50% of fresh food is sourced from areas with sustainable water management.

SDG 12.3 was announced in 2015 and states that "By 2030, halve per capita global food waste at the retail and consumer levels and reduce food losses along production and supply chains, including post-harvest losses".

In January 2020, WRAP published an update of UK food waste¹¹. The report contained a comprehensive set of data on the absolute (tonnages) and relative (per capita) levels of food waste from households, retail, manufacture, and HaFS sectors for year 2018. The report also documented how the levels of food waste had changed compared to the UK baseline (2007) and the last published update in 2015. Changes were reported for both total food waste and separately for wasted food (or 'edible parts'). Based on the edible fraction only, WRAP reported a reduction of 27% in food waste per capita compared to the SDG12.3 50% target, suggesting the UK was on a path to reducing edible food waste by half, by 2030. When based on total food waste, the reduction in food waste per capita would have been around 21%. Similarly, for household food waste, WRAP has previously published a 32% reduction in edible food waste per capita, the reduction would have been 2007 and 2018. A summary of WRAP's progress between 2007 and 2018 can be found in UK progress against Courtauld 2025 targets and UN Sustainable Development Goal 12.3.

Since WRAP last updated its food waste estimate, UNEP published the Food Waste Index (FWI) in 2021¹², which tracks food waste generation at country level and requires countries to:

• Measure and report the amount of both wasted food and inedible parts (i.e., total food waste).

¹¹ UK progress against Courtauld 2025 targets and UN Sustainable Development Goal 12.3; WRAP 2020.

¹² <u>UNEP Food Waste Index Report 2021 | UNEP - UN Environment Programme</u>, with an update in 2024: <u>Food Waste Index Report 2024 |</u> <u>UNEP - UN Environment Programme</u>



- Report progress vs SDG12.3 on the basis of total food waste (NOT wasted food only, i.e. the 'edible' parts'), though wasted food can also be reported separately.
- Apply the '50%' target reduction to households, retail and HaFS only (but the FWI does allow the reporting of food waste from manufacture not covered by the Food Loss Index).

The FWI also states 'disaggregation by edible and inedible parts is valuable to policymakers in guiding policy interventions to make the best possible use of food resources, supporting a circular food system and the application of the waste hierarchy', but recognised that currently few countries can disaggregate their food waste data (the UK being one). To simplify reporting, this disaggregation is proposed as an advanced reporting option.

The UKFDP food waste target is aligned with SDG 12.3 in that it has a 50% per capita reduction by 2030 target and is aligned with the Food Waste Index in that the target is applied to both wasted food and the inedible parts (i.e. total food waste). As such, the UKFDP emphasis is on total food waste. In WRAP's previous reporting – i.e., prior to the publication of the Food Waste Index 2021– whilst both the edible and total food waste figures were reported, the emphasis was on UK progress against reducing the edible parts of food waste. This is a change in semantics and emphasis only, and not a restating of results from previous years.

In 2014, WRAP made the case for a baseline year of 2007 against which to assess changes in UK food waste over time¹³. This was on the basis that a) there is robust data on household food waste i.e., the largest fraction of UK food waste from that year (around 70% in 2007) and b) this is when the UK began large-scale interventions to reduce food waste (which were aimed exclusively at household food waste until 2010 – with a focus on supply chain food waste commencing under the Courtauld 2 (an earlier period within the UKFDP) in 2010, and in 2012 on food waste from the hospitality and food service sector.

Changes to reporting for household food waste: Given changes in our understanding of measuring food waste, WRAP has improved how it tracks household food waste for the purposes of monitoring these targets. The most accurate and relevant data for assessing trends in household food waste over time is household food waste *within waste streams collected by local authorities* – specifically food waste in the general (residual) bin and in collections targeting food waste (either separate collections, or mixed garden and food waste). This comprises over 80% of the total household food waste and – for the 2022 estimate – is obtained from direct measurement from 193 waste composition analysis studies including approximately 39,000 households.

In contrast, estimates of household food waste going down the sewer (e.g., kitchen sink) and home composted are obtained from diary research. This is prone to underestimation and for the degree of underestimation to vary over time. For this reason, the data used to

¹³ Historical changes and how amounts might be influenced in the future



track these targets (and found in Table 2, Table 3, Table 4 and Table 5) do not include household food waste going down the sewer or home composted14.

Food waste trends tracked under the UKFDP target

The UKFDP target is to achieve a 50% reduction per person in total (i.e. food and inedible parts) UK food waste (post-farm gate) by 2030 compared to 2007.

- Table 2 presents a summary of the average food waste per person (per capita) for the baseline year of UKFDP (2007), 2018, and the most recent year of data (2022 for household food waste, 2021 for all other sectors). Table 3 shows the same information, but the total tonnes of food waste generated in the UK.
- Table 4 and Table 5 show the same information as in Table 2 and Table 3 but for the edible parts only (i.e. excluding the inedible parts).
- Table 2, Table 3, Table 4 and Table 5 show only food waste collected by local authorities via kerbside residual waste and targeted food waste collections, therefore exclude any food waste from kerbside dry recycling collection and HWRC. As only local authority food waste is included, the data in these tables also excludes sewage and home compost disposal.

¹⁴ More detail can be found in <u>Household food and drink waste in the UK 2022</u>



	Food waste (kg / capita / year)			Change 2018 to most recent year*		Change 2007 to most recent year*	
	2007	2018	Most recent year*	kg / capita/ year	%	kg / capita/ year	%
Household ¹⁵	90.9	66.5	70.8	+4.3	+6.5%	-20.1	-22.1%
Supply chain	50.7	43.0	40.2	-2.8	-6.5%	-10.5	-20.7%
Retail	4.7	3.816	3.5	-0.3	-7.9%	-1.2	-26.0%
Manufacture	31.017	22.7	20.6	-2.1	-9.3%	-10.4	-33.6%
HaFS ¹⁸	15.019	16.5	16.2	-0.3	-1.8%	+1.2	+8%
Total	141.7	109.5	111.0	+1.5	+1.4%	-30.7	-21.7%

Table 2: UK food waste (per capita) for 2007 (UKFDP baseline year), 2018, and the most recent year (2021 or 2022), as well as changes over time.

*Most recent year is 2022 for household food waste, 2021 for all other sectors.

Table 3: UK food waste (kt) the UKFDP 2030 baseline year (2007), 2018, and the most recent year (2021 or 2022), as well as changes over time.

	Food waste (000 tonnes)			Change 2018 to most recent year*		Change 2007 to most recent year*	
	2007	2018	Most recent year*	000 tonnes	%	000 tonnes	%
Household ²⁰	5,577	4,419	4,784	+365	+8.3%	-793	-14.2%
Supply chain	3,110	2,857	2,696	-161	-5.6%	-414	-13.3%
Retail	290	25421	234	-19.5	-7.9%	-55.5	-19.3%
Manufacture	1,900	1,505	1,379	-126	-8.4%	-521	-27.4%
HaFS ²²	920	1,098	1,083	-15	-1.4%	+163	+17.7%
Total	8,687	7,276	7,480	+204	+2.8%	-1207	-13.9%

*Most recent year is 2022 for household food waste, 2021 for all other sectors.

²⁰ Estimate for household food waste covers food waste in waste streams collected by local authorities – specifically food waste in the general (residual) bin and in collections targeting food waste. Food and drink waste disposed of down the sewer or home composted are excluded.

¹⁵ Estimate for household food waste covers food waste in waste streams collected by local authorities – specifically food waste in the general (residual) bin and in collections targeting food waste. Food and drink waste disposed of down the sewer or home composted are excluded.

¹⁶ The 2018 figure for retail has been updated. WRAP previously estimated this at 4.2 kg per capita per year.

¹⁷ The 2007 figure for manufacture has been updated. WRAP previously estimated this at 30.0 kg per capita per year.

¹⁹ It is important to stress that the estimates for HaFS are modelled, based on changes in the number and types of HaFS sites, and the assumption that food waste per site has remained constant since 2011. Currently there is not a data source to enable a UK-level estimate for food waste from this sector to be robustly estimated. Work is in progress to improve future estimates for the HaFS sector. ¹⁹ The 2007 figure for HaFS has been updated. WRAP previously estimated this at 14.5 kg per capita per year.

²¹ The 2018 figure for retail has been updated. WRAP previously estimated this at 277,000 tonnes.

²² It is important to stress that the estimates for HaFS are modelled, based on changes in the number and types of HaFS sites, and the assumption that food waste per site has remained constant since 2011. Currently there is not a data source to enable a UK-level estimate for food waste from this sector to be robustly estimated. Work is in progress to improve future estimates for the HaFS sector.



	Food waste (kg / capita / year)			Change 2018 recent ye		Change 2007 to most recent year*	
	2007	2007 2018 Most recent kg / capita/ year* year		%	kg / capita/ year	%	
Household ²⁰	66.0	43.7	50.3	+6.6	+15.0%	-15.7	-23.8%
Supply chain	33.3	27.6	26.0	-1.6	-5.8%	-7.3	-22.0%
Retail	4.7	3.823	3.5	-0.3	-7.9%	-1.2	-26.0%
Manufacture	17.424	11.6	10.5	-1.1	-9.5%	-6.9	-39.7%
HaFS ²²	11.125	12.2	11.9	-0.3	-2.5%	+0.8	+7.2%
Total	99.2	71.3	76.3	+5.0	+7.0%	-22.9	-23.1%

Table 4: UK edible parts of food waste arisings (i.e., excluding inedible parts; per capita) for 2007 (the UKFDP baseline year), 2018, and the most recent year (2021 or 2022), as well as changes over time.

*Most recent year is 2022 for household food waste, 2021 for all other sectors.

Table 5: UK edible parts of food waste arisings, (i.e., excluding inedible parts) (kt) for 2007 (the UKFDP 2030 baseline year), 2018, and the most recent year (2021 or 2022), as well as changes over time.

	Food waste (000 tonnes)			Change 2018 to most recent year		Change 2007 to most recent year	
	2007	2018	Most recent year*	000 tonnes	%	000 tonnes	%
Household ^{20*}	4,045	2,903	3,397	+494	+17%	-684	-16%
Supply chain	2,040	1,836	1,740	-96	-5.2%	-300	-14.7%
Retail	290	25422	234	-19.5	-7.9%	-55.5	-19.3%
Manufacture	1,070	770	706	-64	-8.3%	-364	-34.0%
HaFS ²²	680	812	800	-12	-1.5%	+120	+17.7%
Total	6,085	4,739	5,137	+398	+8.4%	-948	-15.6%

*Most recent year is 2022 for household food waste, 2021 for all other sectors.

²³ The 2018 figure for retail is an updated estimate. WRAP previously estimated this at 4.2 kg pr capita.

²⁴ The 2007 figure for manufacture is an updated estimate. WRAP previously estimated this at 16.9 kg per capita per year.

²⁵ The 2007 figure for HaFS is an updated estimate. WRAP previously estimated this at 10.7 kg per capita per year.



The UKFDP target is to achieve a 50% reduction per person in total (i.e. food and inedible parts) UK food waste (post-farm gate) by 2030 compared to 2007. The following statements summarise the findings from Table 2 which contains the key findings.

Changes in total food waste (<u>per capita</u>) between 2007 and the most recent year (2021/22)

- In total, food waste per capita in the UK amounted to around 111 kg in 2021/22, 30.7 kg per person lower than in 2007. This represents a 21.7% reduction compared to 2007 (the UKFDP baseline year).
- Retail food waste per capita in the UK amounted to around 3.5 kg in 2021, 1.2 kg per person lower than in 2007. This represents a 26% reduction compared to 2007 (the UKFDP baseline year).
- Manufacture food waste per capita in the UK amounted to around 20.6 kg in 2021, 10.4 kg per person lower than in 2007. This represents a 33.6% reduction compared to 2007 (the UKFDP baseline year).
- Food waste collected from UK households by local authorities amounted to 70.8 kg per person in 2022, 20.1 kg per person lower than in 2007. This represents a 22.1% reduction compared to 2007 (the UKFDP baseline year 2007).

Changes in total food waste (<u>per capita</u>) between 2018 and the most recent year (2021/22)

- In total, food waste per capita in the UK amounted to around 111 kg in 2021/22, 1.5 kg per person higher than in 2018. This represents a 1.4% increase compared to 2018.
- Retail food waste per capita in the UK amounted to around 3.5 kg in 2021, 0.3 kg per person lower than in 2018. This represents an 7.9% reduction compared to 2018.
- Manufacture food waste per capita in the UK amounted to 21 kg in 2021, around 2 kg per person lower than in 2018. This represents a 9.3% reduction compared to 2018.
- Food waste collected from UK households by local authorities amounted to 70.8 kg per person in 2022, 4.3 kg per person higher than in 2018. This represents a 6.5% increase compared to 2018.

For the UK to halve food waste from a 2007 baseline, in line with the UKFDP target, total food waste from these sectors will need to be 71 kg per person per year in 2030 (i.e., half of the 142 kg per person per year in 2007). In 2021/22, there was 31 kg per person less food waste than in 2007, a reduction of around 22%. Therefore, a reduction of a further 40 kg per person is required to meet the target, or 28% of the 2007 baseline.

There are no *sector-specific* targets within UKFDP – the target could be achieved by a proportionately higher change in one sector than the other. Table 6 presents an example of



how the target could be achieved; in this case, if each sector were to half food waste compared to 2007. As the largest sector, changes in household food waste will likely contribute most – in absolute terms – to the reduction, if the target is to be met.

Table 6: Scenario showing an example of the food waste levels required in 2030 to meet the UKFDP target.

Sector	Level of food waste required by 2030 (half 2007) (kg / person)	Change required from most recent year* to achieve reduction (kg / person)	Change required as a % of 2007 baseline
Household*	45.5	-25.3	-28%
Retail	2.5	-1.0	-20%
Manufacture	15.0	-5.6	-19%
HaFS	7.5	-8.7	-58%
Total	70.5	-40.5	-28.6%

*Most recent year is 2022 for household food waste, 2021 for all other sectors.

Changes relating to historic voluntary agreements

- Over the lifetime of the <u>Courtauld 3 voluntary agreement</u> (2012 to 2015) the estimated weight
 of food waste avoided by signatories was 100,000 tonnes, with a value of approximately £100
 million. The amount of food waste reported by signatories was around 3.6% lower in 2015
 compared to 2012²⁶.
- Under the <u>Hospitality and Food Service Agreement</u> (2012 to 2015) there was a reduction in CO₂e emissions of 11% against the (2012) baseline over the three years of the agreement. Food waste prevention activities saved an estimated 24,000 tonnes of food from being thrown away (worth £67 million)²⁷.

²⁶ <u>Courtauld Commitment 3: Delivering action on waste.</u>

²⁷ The Hospitality and Food Service Agreement - Taking action on waste.



3.0 Useful Facts on Redistribution

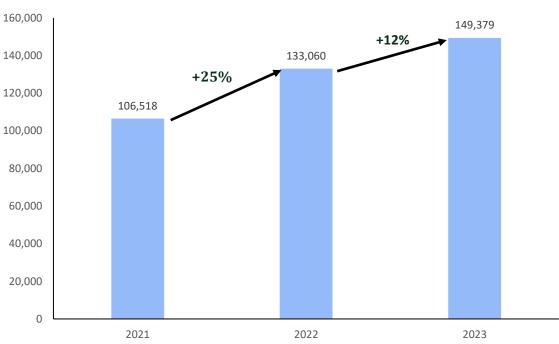
In 2024 WRAP published a Data Story <u>Annual survey of redistribution organisations in the</u> <u>UK: 2023 update</u> and the accompanying <u>Methodology and Data Information Sheet</u>, which revealed that in 2023 the amount of redistributed surplus food totalled around 191,000 tonnes (according to tonnage data from all 12 survey respondents). This includes food surplus received by redistribution organisations from the retail, manufacture, and hospitality and food service sectors, as well as from on-farm and 'mixed/other' sources²⁸. This equates to food worth approximately £760 million, corresponding to nearly 460 million meals.

- Between 2022 and 2023, there was a 15% increase in surplus redistributed; this is approximately an additional 25,000 tonnes, corresponding to food worth £100 million and is enough to provide the equivalent of nearly 60 million meals (according to data from all 12 organisations who submitted tonnage data in both years).
- Between 2021 and 2023, the amount of surplus redistributed increased by 40%; this is approximately an additional 43,000 tonnes, equating to approximately 102 million meals and corresponds to food worth over £170 million (according to data from 9 organisations who submitted tonnage data every year during the period) – see Figure 4.
- Total food redistributed between 2015 and 2023 equals ca. 780,000 tonnes, worth over £3 billion and the equivalent to nearly 1.9 billion meals.
- Tonnes of surplus food redistributed by charitable and commercial channels has both continued to rise, however, charitable channels remain far more dominant accounting for 73% of the total surplus in 2023.
- Retail and manufacture are the most common sources of redistributed surplus accounting for 71% of the total surplus in 2023. The hospitality and food service sector accounts for 7% of redistributed surplus food, whilst the farm sector accounts for 4%.

²⁸ 'Mixed' refers to where a redistribution organisation has been unable to determine the sector from which the food was sourced, but where this was either retail, manufacture or HaFS. 'Other' refers to food from sources that are from other sectors (e.g., logistics, wholesale market etc).



Figure 4: Total tonnes of surplus food redistributed between 2021 and 2023 (and year-on-year percentage increase) - for nine organisations who submitted tonnage data each year across the period.



Surplus food redistributed (tonnes)



4.0 Useful facts relating to UK household food waste

Facts about how household food waste has changed over time

- 1. WRAP research shows that in 2022, we threw away 24% less food (per capita) than in 2007. (This is the wasted food (excluding inedible parts). It compares the average amount thrown away per person, and focuses on food waste collected by local authorities, omitting food waste going down the sewer and home composted, due to challenges in tracking these latter disposal routes).
- 2. The amount of food 'saved' (i.e. not wasted in 2022 compared to 2007) would fill 1 Wembley stadium, 13 Royal Albert Halls, 5.4 million large wheelie bins (240 litres), 520 Olympic swimming pools or 140,000 bin lorries.

Facts about household food waste levels in 2022

- 3. In total, including all disposal routes, (which includes sewer and home composting), UK households waste 6.0 million tonnes of food each year.
- 4. Of the 6.0 million tonnes we throw away, almost three quarters (73% of the total) is food we could have eaten (4.4 million tonnes).
- Across all sectors in the UK, 10.2 million tonnes of food waste are generated, of which 58% (6.0 million tonnes) comes from the home.
- 6. Food that could have been eaten but gets thrown away (4.4 million tonnes) is worth around £17 billion). On average, this is around £1,000 per year for a household of four people.
- 7. The carbon associated with this food is equivalent to that generated by one in five cars on UK roads.
- 8. On average, a person in the UK wastes food equivalent to 3 meals per week.

4.1 'Fun facts' - based on 2022 household food waste data

The food and drink we waste, that could have been eaten (the 4.4 million tonnes) would fill:

- 8 Wembley Stadiums (London, UK)
- 88 Royal Albert Halls
- 36 million wheelie bins (based on a standard 240 litre)
- 3,500 Olympic sized swimming pools
- 470,000 bin lorries

As a result of the updating the data on household food waste, a number of related estimates have also been revised. The values for 2022 are shown in Table 7 and Table 8: Updated



estimates for the amounts and value of food (excluding inedible parts) wasted by reason for disposal.

Table 7: Updated estimates for the amounts and value of food (excluding inedible parts) wasted by the average individual, household, and family (per year and per month).

	Per	Time frame	kg	*Value (£)
		Year	65	£260
Household food waste excluding inedible parts	person	Month	5	£22
	household (2.4 people on average)	Year	150	£620
		Month	13	£51
		Year	260	£1,030
	Four-person household	Month	22	£86

*Values shown use 2022 prices.

Table 8: Updated estimates for the amounts and value of food (excluding inedible parts) wasted by reason for disposal.

Reasons for food being	thrown away:	Weight (tonnes)	% by weight	*Value (£bn)
Not used in time	Smelled / looked off	953,000	22	£3.71
Not used in time	Past date on label	758,000	17	£3.15
Personal preference		977,000	22	£3.25
Cooked, prepared, served too much		1,094,000	25	£4.95
Other		579,000	13	£2.40
Total		4,400,000	100%	£17.5

*Values shown use 2022 prices.

4.2 Detailed statistics – based on 2022 data

Proportions of wasted food & drink ('edible parts') by food group (by weight):

- Fresh vegetables & salad 28%
- Meals 12%
- Bakery 11%
- Dairy & eggs 9%
- Fresh fruit 8%
- Drinks 7%
- Meat & fish 6%



[The remaining 19% is made up of other foods such as sauces, pasta, rice, cakes & desserts, oils & fats, and confectionery]

Top 10 most wasted food and drink items in UK homes (that could have been eaten):

- 1. Potato (fresh)
- 2. Meals (home-made and pre-prepared)
- 3. Bread
- 4. Milk
- 5. Mixed food from multiple categories
- 6. Mixed vegetables
- 7. Poultry (chicken, turkey, duck)
- 8. Carbonated soft drink
- 9. All cakes and desserts
- 10. Potato (processed)

Whole items

This set of facts refers just to the **items thrown away whole**. This is calculated using data from a detailed waste composition analysis in which researchers divide food into detailed categories and weigh them. For example, potato is divided into potato peel, a whole potato, cooked potato.

These facts may be especially useful to understanding the impact of over-purchasing or poor storage behaviours, since they give an indication of items which were thrown away before they were even processed. It is important when referencing, to make it clear that these only include items thrown away whole.

Every day in UK homes we throw away approximately:

- 2.7 million whole potatoes
- 2.0 million whole carrots
- 970,000 whole bananas
- 1.3 million whole tomatoes
- 860,000 whole apples
- 340,000 whole oranges
- 160,000 whole onions

Equivalences



This set of facts converts the total weight of edible food thrown away into 'equivalent' items. For example, we estimate that around 480,000 tonnes of potato were thrown away in the UK in 2022, equivalent to roughly 1,300 tonnes per day. This includes whole potatoes, potato peels (which are classified as edible), mashed potatoes, and other cooked potatoes. Assuming an average weight of 160 g per potato, this is equivalent to 8.2 million potatoes per day. This figure is much higher than the 2.7 million whole potatoes quoted above as the '8.2 million potatoes' figure, in addition to whole potatoes, it includes potato peels and parts of cooked potatoes²⁹.

These facts are relevant if you want to reference total edible food waste for a specific food and want to put this food in context by comparing it to equivalent number of items. **It is important to make it clear that these are equivalences.** For example, it is not accurate to say that 8.2 million potatoes are thrown away every day. However, it could be said that: **"the edible parts of potatoes thrown away in the UK each day are equivalent to 8.2 million potatoes".**

Every **day** in UK homes we waste:

- 1,300 tonnes of potatoes, equivalent to 8.2 million potatoes.
- 190 tonnes of carrots, equivalent to 3.5 million carrots
- 130 tonnes of bananas, equivalent to 1.1 million bananas
- 130 tonnes of tomatoes, equivalent to 1.6 million tomatoes
- 190 tonnes of apples, equivalent to 1.3 million apples
- 46 tonnes of oranges, equivalent to 410,000 oranges
- 81 tonnes of onions, equivalent to 820,000 onions
- 50 tonnes of ham, equivalent to 2 million slices of ham
- 960 tonnes of bread, equivalent to 24 million slices or 1.2 million loaves
- 2.3 million glasses of milk

²⁹ The method accounts for items which are partly inedible. For example, approximately one third of a banana is made up of banana skin. We estimate that around 134 tonnes of edible banana are wasted per day. We assume average weight of 180g per banana, which means 180*2/3 = 120g of edible banana per banana. Since we are looking only at edible parts, we use the 120g figure and calculate that 134,000,000g/120g = 1.1 million bananas equivalent of edible banana are wasted per day.



5.0 More detail on estimates of food waste and surplus on farms

Estimates of food waste and surplus for on-farm food waste have been included in the above sections. This gives a more complete picture of UK food waste – including all the main sources – despite the uncertainties in these estimates.

WRAP has estimated food surplus and waste levels from primary production based on an extensive literature review³⁰. This draws on the best available data from the UK. Where no information for the UK was available, data from comparable geographies was used: Europe, North America and Australia.

The central estimate for food surplus is 2.0 million tonnes (range 0.9 - 2.7), and for food waste 1.6 million tonnes (range 0.9 - 3.5). The wide confidence ranges are due to uncertainties associated with the data used.

The estimate for food waste in primary production would suggest that more food waste arises from this sector than from hospitality & food service and retail combined.

Research published by WWF in 2022 estimates that there are 3.3 million tonnes of food waste on UK farms³¹. The difference between WRAP's and WWF's estimates is due to several reasons:

- The differences in estimates are partly driven by underlying UK production statistics; WRAP's study uses 2017 Defra agricultural statistics and WWF's report uses the 2020 FAOSTAT statistics.
- WWF's estimate includes fish and seafood whereas WRAP's does not.
- The methodology used by WWF adopted the food waste definition applied by each study that contributed data to the estimate, even where the detail of the disposal route was lacking, whereas in similar cases WRAP applied higher-level assumptions to differentiate food waste and food surplus in specific sectors. For example, in studies reporting apple waste from post-harvest grading carried out on farm, where the destination was not specified, WWF recorded this as food waste whereas in WRAP's estimate this was recorded as food surplus because it is most likely to have been sent to animal feed, which is a food surplus destination.

Given the differing estimates, results for UK food waste from all sectors are presented in Table 9: Percentage of total food waste arising in the UK by sector, on a weight basis, using

³⁰ <u>Food waste in primary production in the UK</u>; WRAP 2019.

³¹ Hidden Waste Report | WWF



the WRAP and the WWF on-farm estimate., with one column showing the contribution made by on-farm food waste from the WRAP estimate (16%) and from the WWF estimate (28%).

Table 9: Percentage of total food waste arising in the UK by sector, on a weight basis, using the WRAP
and the WWF on-farm estimate.

	Waste	Food waste as % of total using			
Sector	(million tonnes)	WRAP on-farm estimate	WWF on-farm estimate		
On-farm / primary production*	1.6 or 3.3	16%	28%		
Manufacturing	1.4	13%	12%		
Retail	0.2	2%	2%		
HaFS	1.1	11%	9%		
Household	6.0	58%	50%		

*In contrast with other parts of the food system, there is less certainty about the scale of food waste on farm. Recent WRAP and WWF estimates suggest that it is in the region of 1.6-3.3 million tonnes.

The <u>UK Food and Drink Pact</u> and the <u>Food Waste Reduction Roadmap</u> have a farm-to-fork ambition and there is an expectation that businesses will act in this important area. The current evidence is not strong enough to serve as a benchmark against which progress can be assessed and it is for this reason that primary production is not within the scope of the UKFDP food waste target³². WRAP is currently working with Defra to update estimates of food waste in agriculture.

³² The UKFDP has a target to reduce post-farm gate food waste by 50% per capita by 2030 compared to 2007.



6.0 Further information

For information about WRAP's work to reduce food waste, please visit:

- Food Waste Reduction Roadmap
- Food & Drink webpages
- UK Food and Drink Pact
- WRAP's Food Waste Data

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