

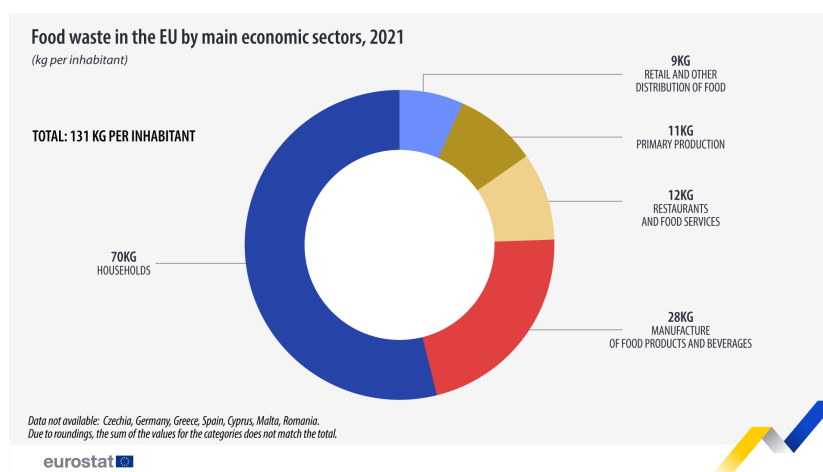
Food waste and food waste prevention - estimates

Statistics Explained

Data extracted in September 2023
Planned article update: 27 September 2024

" **Second EU-wide monitoring of food waste: in 2021 per capita generation remained stable in the EU. "**

This article provides the results of the second dedicated statistical monitoring of the amount of **food waste** in the **European Union** by sector of activity according to the **NACE rev. 2** classification and by households, excluding food losses (food not harvested or food not authorised to be marketed for safety reasons), for the year 2021.

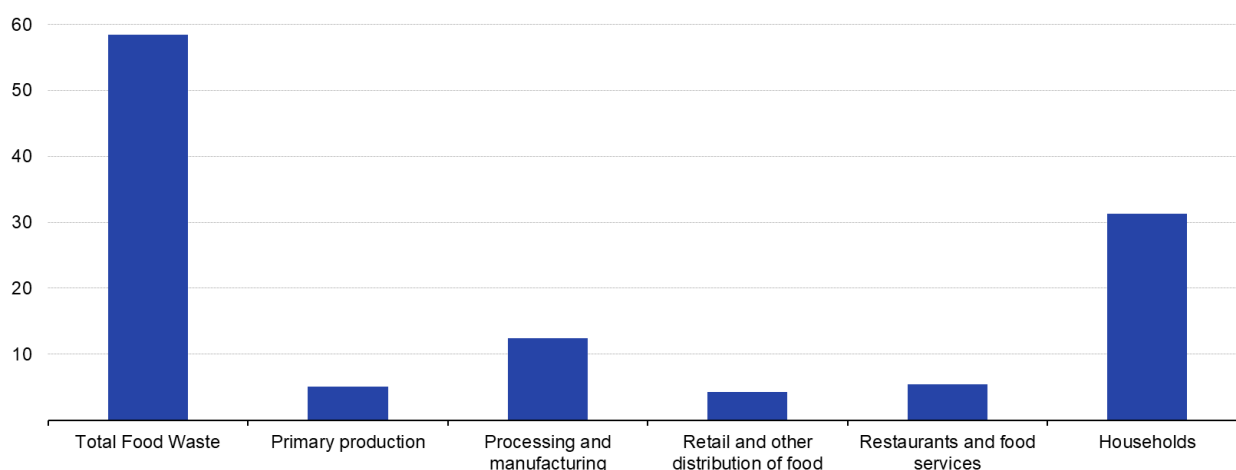


In 2021, the second year of the COVID-19 pandemic, around 131 kilogrammes (kg) of food waste per inhabitant were generated in the EU. Households generated 54 % of food waste, accounting for 70 kg per inhabitant. The remaining 46 % was waste generated upwards in the food supply chain. Household food waste is nearly twice the amount of food waste arising from the sectors of primary production and manufacture of food products and beverages (11 kg and 28 kg per inhabitant; 9 % and 21 %, respectively), sectors in which strategies exist for reducing food waste, for instance with the use of discarded parts as by-products. Restaurants and food services accounted for 12 kg of food waste per person (9 %), while retail and other distribution of food was the sector with the least amount of food waste (9 kg; 7 %); however, the impact of the COVID-19 lockdowns on these two sectors is still being analysed.

Amounts of food waste at EU level

At EU level, the total food waste measured in 2021 was above 58 million tonnes of fresh mass. Household food waste represented more than 31 million tonnes of fresh mass, with a 54 % share of the total. The second sector in terms of share (21 %) was processing and manufacturing, where the amount of measured food waste was above 12 million tonnes of fresh mass. The remaining share, a quarter of the total food waste, was from primary production sector (5 million tonnes, 9 % share towards the total amount of food waste), restaurants and food services (more than 5 million tonnes, 9 % share towards the total) and retail and other distribution of food sectors (slightly above 4 million tonnes , 7 % share). These amounts are presented in Figure 1.

Food waste estimations in the European Union, 2021 (million tonnes of fresh mass)



Data are estimated

Source: Eurostat (online data code: env_wasfw)

eurostat 

Figure 1: Food waste estimations in the European Union, 2021 Source: Eurostat (env_wasfw)

Table 1 presents the amounts of food waste declared by the countries for reference year 2021, measured in tonnes of fresh mass, by sector of activities.

Food waste by sector of activities, 2021

(tonnes of fresh mass)

	Total food waste	Primary production	Processing and manufacturing	Retail and other distribution of food	Restaurants and food services	Households
EU (¹)	58 400 000	5 100 000	12 400 000	4 200 000	5 400 000	31 300 000
Belgium	3 034 977	34 610	2 022 535	69 568	96 369	811 895
Bulgaria	711 844	60 081	131 495	41 211	117 016	362 041
Czechia (¹)	972 445	27 022	100 339	64 394	37 941	742 749
Denmark	1 344 550	57 985	607 693	99 791	72 081	507 000
Germany (¹)	10 922 321	190 203	1 612 505	762 352	1 860 980	6 496 282
Estonia	170 501	18 638	41 302	13 113	12 474	84 975
Ireland	753 081	52 691	215 601	75 019	188 955	220 816
Greece (¹) (²)	2 048 189	372 204	375 158	150 472	220 032	930 323
Spain (¹) (²)	4 260 845	845 620	1 419 257	348 219	213 023	1 434 726
France	8 764 000	1 244 000	1 720 000	633 000	1 084 000	4 083 000
Croatia	280 008	39 248	9 464	4 103	14 797	212 396
Italy (²)	8 291 265	672 971	542 409	474 252	263 013	6 338 620
Cyprus (¹) (²)	354 021	43 564	169 706	50 268	27 145	63 338
Latvia (²)	245 442	30 592	32 518	16 765	28 617	136 950
Lithuania	390 645	81 202	29 271	33 951	4 651	241 570
Luxembourg	83 622	7 235	11 333	8 861	9 466	46 727
Hungary	883 486	12 963	159 309	57 278	19 337	634 598
Malta (¹)	79 589	759	4 668	3 910	23 016	47 235
Netherlands	2 586 744	315 150	1 131 100	209 805	83 035	847 654
Austria	1 201 165	9 555	187 425	84 286	178 428	741 472
Poland	4 281 212	639 352	809 287	345 514	186 433	2 300 626
Portugal	1 874 832	126 392	75 257	224 838	162 903	1 285 442
Romania	:	:	:	:	:	:
Slovenia	143 254	71	13 428	14 465	39 923	75 368
Slovakia	537 486	23 764	125 013	17 630	8 988	362 091
Finland	693 662	49 950	158 334	57 460	80 991	346 927
Sweden	900 000	22 000	53 000	108 000	98 000	619 000
Norway	777 404	177 958	28 338	69 221	94 556	407 331

(:) not available

Figures in italic are estimates

(¹) 2021 data not reported, 2020 data presented

(²) Definition differs in some figures

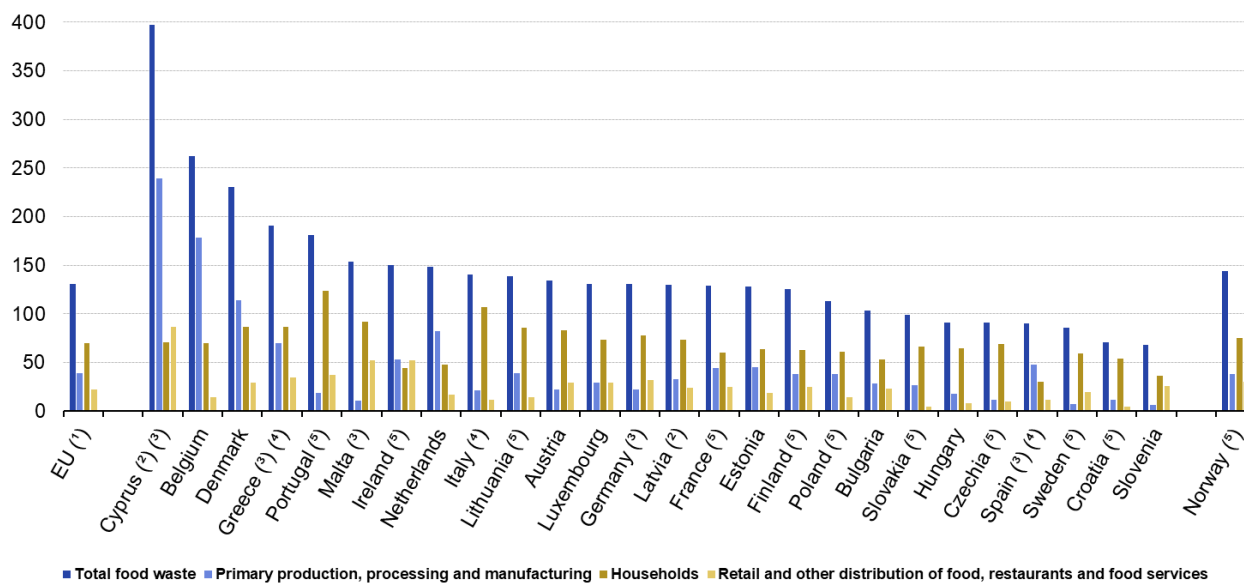
Source: Eurostat (online data code: env_wasfw)

eurostat 

Table 1: Food waste by sector of activities, 2021 Source: Eurostat (env_wasfw), definitions

Figure 2 summarises, by aggregated sectors, food waste in terms of kilograms per inhabitant; as compared with Figure 1 and Table 1, Figure 2 also presents data from the sectors primary production and processing and manufacturing aggregated in a single class; data from sectors retail and other distribution of food and restaurants and food services are also aggregated in a single class. Figure 2 displays, therefore, for each country, the five sectors collapsed into three sectors, presented side by side with the total food waste, all in kilograms per inhabitant.

Food waste by sector of activities by Member State, 2021 (kilograms per inhabitant)



(1) Estimated data.
 (2) Definition differs in some figures.
 (3) 2021 data not reported, 2020 data presented.
 (4) Definition differs or estimates in some figures.
 (5) Estimates in some figures.
 Source: Eurostat (online data code: env_wasfw)



Figure 2: Food waste by sector of activities by EU Member State, 2021 Source: Eurostat (env_wasfw), definitions

In the supply and consumption sectors, food waste generation may represent 10 percent of food supplied in the EU

Table 2 illustrates that generated food waste may count for 10 % of food supplied to EU consumers in the supply and consumption sectors ("Retail and other distribution of food", "Restaurants and food services" and "Households"). To arrive at this assumption, Eurostat has roughly estimated the food placed on the market from the 2020 FAO data on food supply quantity (source: [Food Balances Sheet, FAO database](#)) provided in kilograms per inhabitant, and compared it with food waste amounts in the supply and consumption sectors.

Comparison of food waste quantities from selected sectors and food supply quantities in the European Union

(kilograms per inhabitant)

Comparison of food waste quantities from selected sectors and food supply quantities in the European Union

(kilograms per inhabitant)

Food waste amounts for selected sectors, 2021	Estimated consumed food, 2021	Food supply quantity, FAO, 2020
92	784	876

Note: selected sectors for food waste: "Retail and other distribution of food", "Restaurants and food services" and "Households"

Data are estimated

Sources: Eurostat (online data code: env_wasfw) and FAO (<https://www.fao.org/faostat/en/#data/FBS>)

eurostat 

Table 2: Comparison of food waste quantities from selected sectors and food supply quantities in the European Union, 2021 Source: Eurostat (env_wasfw) and FAO (Food Balances Sheet)

Methodology

EU Member States measure the amount of food waste for all stages of the food supply chain using the methodology set out in Annex III of [Commission delegated decision \(EU\) 2019/1597](#).

In the context of this data collection, food means any substance or product, whether processed, partially processed or unprocessed, intended to be, or reasonably expected to be ingested by humans. Food waste consists of parts of food intended to be ingested (edible food) and parts of food not intended to be ingested (inedible food). Food waste is any food that has become waste under these conditions:

1. it has entered the food supply chain,
2. it has then been removed or discarded from the food supply chain or at the final consumption stage,
3. it is finally destined to be processed as waste.

In order to ensure comparability, food waste has to be reported as it was in its fresh mass state. In fact, in many countries there are seasonal effects on the measures of weight of food waste, due to the loss of water originally contained in the food by evaporation or drained from the waste bin, especially occurring in summertime or whenever the food waste is not collected on a daily basis. Therefore, food waste data require measurements and estimations as tonnes of fresh mass. The source of these data is the [Waste Framework Directive \(2008/98/EC\)](#), which establishes an annual reporting obligation on measurements of the levels of food waste, on [Commission delegated decision \(EU\) 2019/1597](#), that defines the common methodology and minimum quality requirements for the uniform measurement of levels of food waste, and finally on [Commission implementing decision \(EU\) 2019/2000](#), that provides the reporting format.

Annex III (Methodology for the in-depth measurement of food waste) of [Commission delegated decision \(EU\) 2019/1597](#) foresees the use of one or more of these methodologies, by sector of activity:

- "Direct measurement" and/or "Waste composition analysis": for all sectors of activities
- "Mass balance": for sectors "Primary production", "Processing and manufacturing" and "Retail and other distribution of food"
- "Questionnaires and interviews" and/or "Coefficients and production statistics": for sectors "Primary production" and "Processing and manufacturing"
- "Counting/scanning": for sectors "Retail and other distribution of food" and "Restaurants and food services"
- "Diaries": for sectors "Restaurants and food services" and "Households"

In this second data collection, several countries have improved their measurement methodology and therefore revised 2020 data; six countries have not yet transmitted data for reference year 2021 and one country has not sent any data for both reference years; still, several countries have used estimates or have indicated that for some data points their definitions differ. Estimates and differences in definitions are due to limitations in sample size, exclusion of small subsectors or of small companies or activities, incompleteness of sector surveys, suboptimal estimation of coefficients for the fresh mass calculation, misinterpretation of definitions by data reporters, difficulties in attributing the waste measurement in between two or more sectors. Currently, the data are considered stable, as there is a negligible increase of food waste in reference year 2021 compared to the previous year; however, due to lack of information from one country in reference year 2020 and from 7 countries in reference year 2021 the EU aggregates are rounded up to 100 thousand tonnes of fresh mass. EU aggregates data for reference year 2020 are calculated, by each sector, as the ratio between the sum of the reported waste amount divided by the total population of the reporting countries, and finally multiplied by the EU population in year 2020. For reference year 2021 the EU aggregates are calculated, by each sector, as the ratio between the sum of the reported waste amount divided by the total population of the countries reporting in year 2021, adjusted by a trend coefficient of growth of waste in these countries compared to their reported data in year 2020 and their population growth, and finally multiplied by the EU population of year 2021.

Data interpretation

Countries with a population of less than 10 million inhabitants that are net exporters of raw and manufactured food products are showing high amounts of food waste, especially in the processing and manufacturing sector. Data are considered stable and several countries have improved the measurement methodology.

Source data for tables and graphs

- [Download Excel file](#)

Data sources

2021 was the second reporting year of the EU-wide monitoring of food waste levels according to [Commission delegated decision \(EU\) 2019/1597](#). Information and data are based on the [Waste Framework Directive \(2008/98/EC\)](#) that establishes an annual reporting obligation on measurements of the levels of food waste, on [Commission delegated decision \(EU\) 2019/1597](#), that defines the common methodology and minimum quality requirements for the uniform measurement of levels of food waste, and finally on [Commission implementing decision \(EU\) 2019/2000](#), that provides the reporting format. Detailed information are available in the [Guidance on reporting of data on food waste and food waste prevention according to Commission Implementing Decision \(EU\) 2019/2000](#).

Context

Food waste measurement has a key role to play in the strategies for [food waste reduction](#) , that have enormous potential for diminishing the resources used along the whole food supply chain. Reducing food waste would help:

- farmers, companies and consumers to save money;
- decrease the environmental impact of food production, transport, processing and consumption.

Given its important environmental and economic impacts, food waste prevention and the need to adopt a more sustainable production and consumption model is a priority area in the EU's Circular Economy Action Plan. The Action Plan called on the Commission to establish a multi-stakeholder platform dedicated to food waste prevention. Established in 2016, the [EU Platform on Food Losses and Food Waste](#) has supported the Commission in its work to adopt EU guidelines to facilitate food donations and the use of food no longer intended for human consumption as animal feed. They also develop food waste measurement methodology and undertake work to improve date marking practices.

See also

- [Waste statistics](#)
- [Waste management indicators](#)
- [Municipal waste statistics](#)

Main tables

- Food waste and food waste prevention by NACE Rev. 2 activity - tonnes of fresh mass ([env_wasfw](#))

Database

- [Waste](#) , see:

Waste streams ([env_wasst](#))

Food waste and food waste prevention by NACE Rev. 2 activity - tonnes of fresh mass ([env_wasfw](#))

([env_wasfw](#))

Dedicated section

- [Waste overview](#)

Publications

- [All publications on waste](#) issued by Eurostat.
- [Energy, transport and environment indicators — 2020 edition](#)

Methodology

- [Guidance on reporting of data on food waste and food waste prevention according to Commission Implementing Decision \(EU\) 2019/2000](#)
- [Food waste and food waste prevention by NACE Rev. 2 activity - tonnes of fresh mass \(ESMS metadata file — env_wasfw_esms\)](#)
- [Waste statistics methodologies](#)

Legislation

- [Waste Framework Directive \(2008/98/EC\)](#)
- [Commission delegated decision \(EU\) 2019/1597](#)
- [Commission implementing decision \(EU\) 2019/2000](#)

External links

- [EU Platform on Food Losses and Food Waste](#)
- [Food waste](#)

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