



FUSIONS Food waste data set for EU-28

New Estimates and Environmental Impact

15 October 2015

Reducing food waste through social innovation

FUSIONS EU project is supported by the European Community's Seventh Framework Programme under Grant Agreement no. 311972.



Food waste is an issue of importance to global food security and good environmental governance, directly linked with all aspects of sustainability (e.g. availability of resources, increasing costs and health). The amount of food produced but not consumed leads to negative impacts throughout the food supply chain and households. There is a pressing need to prevent food waste to make the transition to a resource efficient Europe. Previous studies show the necessity for more consistent and comparable data in order to decrease the uncertainties and making it possible to better understand the magnitude of the problem, and the scale of the potential opportunities.

One task performed within FUSIONS has been to calculate an EU-28 estimate for food waste. In this study data has been obtained using a combination of national waste statistics and findings from selected research studies. The data obtained has been filtered to ensure that it was aligned to the FUSIONS definitional framework and food waste definition and used a robust methodology; hence that data is comparable between countries.

The FUSIONS definitional framework is shown in Figure 1.

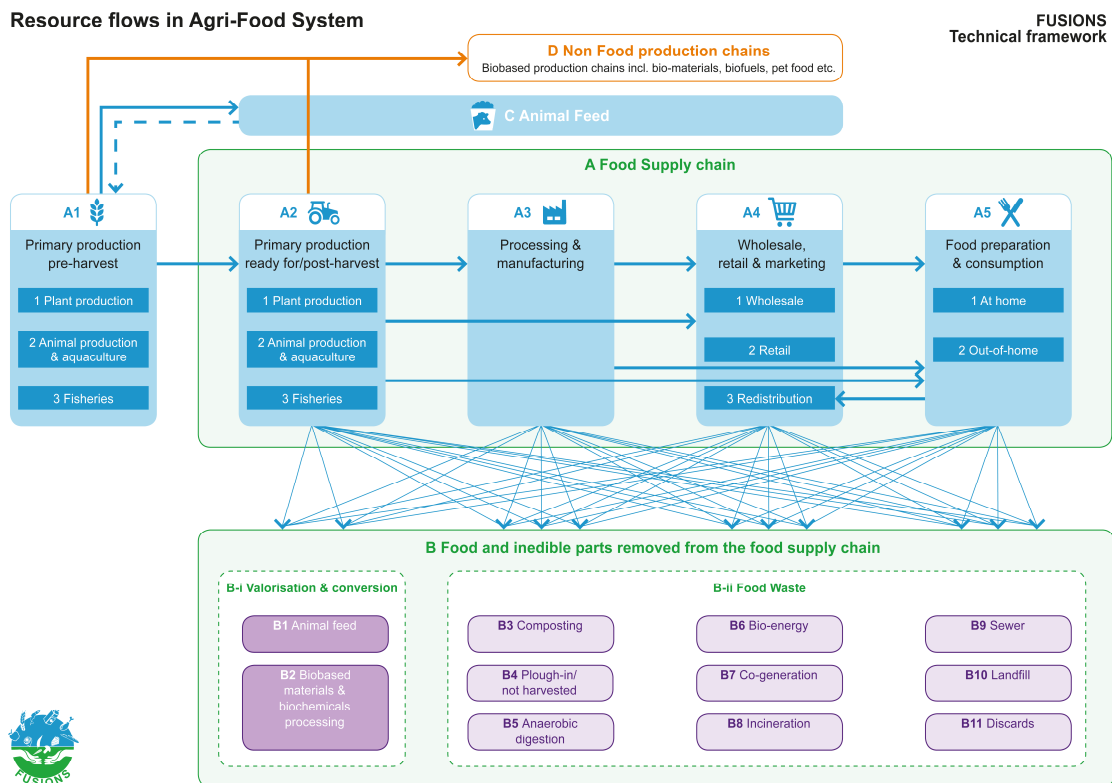


Figure 1. The FUSIONS technical framework defining the Food supply chain and Food waste

Section B-ii shows the FUSIONS definition for 'food waste'. It is defined by the final destination of all food, and inedible parts of food, removed from the food supply chain. Any food and inedible parts of food, removed from the food supply chain sent to destinations B3-B11 are termed 'food waste'. Any food, or inedible parts of food, sent to animal feed, bio-material processing or other industrial uses (B1-B2) are termed 'valorisation and conversion' and are distinct from 'food waste'.

Where there were gaps for individual member states, estimates have been made based on data obtained from member states providing data of sufficient quality. This extrapolation was built up sector by sector. Data was only obtained for up to a quarter of member states (the exact figure depending on the sector, see table 1 below) and the process of scaling the information from these member states to the whole EU-28 is responsible for a relatively large uncertainty around the resulting estimate of EU food waste. However this data set should be seen as the best estimate for EU food waste based on the evidence currently available.

The amounts will be presented in detail via a final FUSIONS report “Food waste data set for EU-28” in spring 2016. The results indicate that **EU-28 produce about 100 Mtonnes of food waste every year**, and that about 45% of this is generated from households. This estimate is for 2012 and includes food waste according to FUSIONS’ definitional framework. There is a moderately high uncertainty around the estimate; the approximate 95% confidence interval is ± 23 million tonnes.

The Global Warming Potential (GWP) of current food waste for EU in 2011 is estimated to **at least around 227 MT of CO₂-Equivalents** (Eq.). This is 16% of the total GWP of food utilization in EU in 2011. Further details will be found in report “Criteria for and baseline assessment of environmental and socio-economic impacts of food waste” that will be published during autumn 2015.

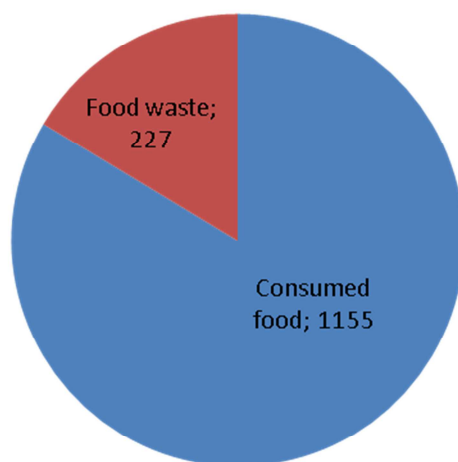


Figure 2. Estimation of Global Warming Potential (GWP) of current consumed and wasted food in EU in 2011 in MT CO₂-Equivalents

A key recommendation from this exercise for accurately quantifying food waste in EU-28 is to increase the number of EU member states that measure food waste robustly. This recommendation applies to all sectors; however, the lack of data was particularly acute for the primary production sector. A more reliable estimate can be achieved by ensuring that those studies that do take place use a consistent definitional framework and definition of food waste, have robust sampling procedures in place, and use measurement methods that are accurate. FUSIONS is taking necessary actions in order to facilitate this work outlining further the practical application of the principles, developing a Quantification Manual (to be published early 2016), and encouraging member states to have structures in place for regular food waste quantification studies.

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Related publications from FUSIONS projects can be downloaded from www.eu-fusions.org:

- *FUSIONS Definitional Framework for Food Waste*
- *Review of EUROSTAT's reporting method and statistics*
- *Standard approach on quantitative techniques*
- *Drivers of current food waste generation, threats of future increase and opportunities for reduction*
- *To be published by mid-November: Criteria for and baseline assessment of environmental and socio-economic impacts of food waste*

Table 1: Matrix describing to what extent data was taken into account when estimating the total food waste amounts.

Country	1. Production (NACE 1-3)	2. Processing (NACE 10-11)	3. Wholesale and logistics (NACE 46)	4. Retail and markets (NACE 47)	5. Redistribution (food donation etc.)	6. Food service (NACE 56)	7. Household
Austria	No data available	Food waste data of low quality	No data available	Data of sufficient quality	Data has been submitted but no estimation of food waste amounts has been made.	Data of sufficient quality	Data of sufficient quality
Belgium	Food waste data of low quality	Food waste data of low quality	Food waste data of low quality	Food waste data of low quality	No data available	Food waste data of low quality	Food waste data of low quality
Bulgaria	No data available	No data available	No data available	No data available	No data available	No data available	No data available
Croatia	Low food waste amounts	Low food waste amounts	Low food waste amounts. Several or major waste flows not being covered.	Low food waste amounts. Several or major waste flows not being covered.	No data available	Low food waste amounts. Several or major waste flows not being covered.	Low food waste amounts. Several or major waste flows not being covered.
Cyprus	No data available	No data available	No data available	No data available	No data available	No data available	No data available
Czech republic	Low food waste amounts without any explanation given	Low food waste amounts	Food waste data of low quality	Food waste data of low quality	No data available	Low food waste amounts. No explanation on what was included.	Several or major waste flows not being covered.
Denmark	Data of sufficient quality	Data of insufficient quality as only edible food waste was reported.	Data of sufficient quality	Very high food waste amounts	No data available	Data of sufficient quality	No information on what was included was retrieved.
Estonia	No data available	Low food waste amounts	Data of sufficient quality	Data of sufficient quality	No data available	Low food waste amounts	Data of sufficient quality
Finland	No data available	Data of insufficient quality as only edible food waste was reported.	No data available	High food waste amounts. No explanation on what was included.	No data available	Data of sufficient quality	Data of sufficient quality
France	Low food waste amounts. Several or major waste flows not being covered.	Data of sufficient quality	High food waste amounts. No explanation on what was included.	High food waste amounts. No explanation on what was included.	No data available	Data of sufficient quality	No information on what was included was retrieved.
Germany	Data of sufficient quality	Data of sufficient quality	Data of sufficient quality	Data of sufficient quality	No data available	Data of sufficient quality	Data of sufficient quality
Greece	Low food waste amounts without any explanation given	High food waste amounts.	Data of sufficient quality	Data of sufficient quality	No data available	Low food waste amounts. No information on what was included was retrieved.	No information on what was included was retrieved.
Hungary	No data available	No data available	No data available	No data available	No data available	No data available	No data available
Ireland	No data available	No data available	High food waste amounts. No information on what was included was retrieved.	High food waste amounts. No explanation on what was included.	Data has been submitted but no estimation of food waste amounts has been made.	Data of sufficient quality	Data of sufficient quality

Country	1. Production (NACE 1-3)	2. Processing (NACE 10-11)	3. Wholesale and logistics (NACE 46)	4. Retail and markets (NACE 47)	5. Redistribution (food donation etc.)	6. Food service (NACE 56)	7. Household
Italy	Data of sufficient quality	Data of insufficient quality as only edible food waste was reported.	Data of sufficient quality	Data of sufficient quality	No data available	No data available	No explanation given?
Latvia	No data available	No data available	No data available	No data available	No data available	No data available	No data available
Lithuania	Low food waste amounts	Data of sufficient quality	Data of insufficient quality.	Data of insufficient quality.	No data available	Data of insufficient quality.	No information on what was included was retrieved.
Luxembourg	No data available	Low food waste amounts without any explanation given	Data of sufficient quality	Data of sufficient quality	No data available	Low food waste amounts without any explanation given	Data of sufficient quality (excluding sewer and home composting)
Malta	No data available	Data of insufficient quality.	No data available	No data available	No data available	No data available	Data of sufficient quality (excluding sewer and home composting)
Netherlands	No data available	No data available	No data available	Data of sufficient quality	Data has been submitted but no estimation of food waste amounts has been made.	Several or major waste flows not being covered.	Data of sufficient quality (excluding home composting)
Poland	No data available	No data available	No data available	No data available	No data available	No data available	No data available
Portugal	Low food waste amounts without any explanation given	Low food waste amounts. Several or major waste flows not being covered.	No data available	No data available	No data available	No data available	No data available
Romania	No data available	No data available	No data available	No data available	No data available	No data available	No data available
Slovakia	Low food waste amounts. Several or major waste flows not being covered.	Several or major waste flows not being covered.	No data available	No data available	No data available	No data available	No data available
Slovenia	Low food waste amounts. Several or major waste flows not being covered.	No explanation of what was included in the amounts could be given.	Data of sufficient quality	Data of sufficient quality	No data available	Low food waste amounts. Several or major waste flows not being covered.	Park waste and non household MSW are included in the amounts
Spain	No data available	No data available	No data available	No data available	No data available	No data available	No data available
Sweden	Low food waste amounts. Several or major waste flows not being covered.	Byproducts are included in the amounts.	No data available	Data of sufficient quality	No data available	Data of sufficient quality	Data of sufficient quality
United Kingdom	Data of insufficient quality.	Data of sufficient quality	Data of sufficient quality	Data of sufficient quality	No data available	Data of sufficient quality	Data of sufficient quality

