European Commission

4.1: Reporting on food waste at EU level
Eurostat

FOOD LOSS AND WASTE MONITORING SUB-GROUP

Online, 07 November 2023

Food waste data collection 2021 (RY2021): data gathering, validation and publication process

Food waste data collections 2023 (reference year 2021) was the second food waste reporting obligation (according to COM DD 2019/1597 EC and COM ID 2019/2000 EC):

- Launch of food waste data collection 2023 for reference year 2021: 26 May 2023 (submission deadline 30 June 2023)

- Data validation and exchanges (major issues) with countries: 19 MS + NO resolved by mid SEP2023

- 7 countries have not yet reported 2021 data, 1 country have not reported 2020 and 2021 data

- Follow-up late countries: automatic reminders sent on 30 June and 7 July, additional reminders will be sent at the Metadata confirmation round.

- All submitting countries measured in tonnes of fresh mass and provided full breakdown by NACE Rev2 activities *(Primary production, Processing and manufacturing, Retail and other distribution of food, Restaurants and food services, Households)*

- Most of the countries reported according to the methodologies set out in ANNEX III of DD 2019/1597 EC

- Publication of EU-level statistics: RY2021 data released in Q3 (29SEP2023 International Day of Awareness of Food Loss and Waste) in Eurostat dissemination database and in Statistic Explained article, (second publication foreseen in March 2024)

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Food waste data collection 2023 (RY2021): **timeliness**

- Timeliness of **RY2021 (first submission)** was less performing than first submission for RY2020 (though still good for a new data collection):

Periods

	By 30 June 2023	of which, from 12 April to 29 June	1 - 7 JUL 2023	8 - 22 JUL 2023	23 JUL 2023 - 29 SEP 2023	15 SEP 2023 - 29 OCT 2023	TOTAL (26 OCT 2023)
First submissions	17 MS+ 1 EFTA	13 MS +1 EFTA	2 MS	1 MS			20 MS + 1 EFTA
Published countries					20 MS + 1 EFTA	20 MS + 1 EFTA	20 MS + 1 EFTA
Publication embargo					0	0	0
# revisions RY2021					3 (QR)	1 (QR)	
# revisions RY2020	4	3	0	3	1	0	

	By 30 June 2022	of which, from 16 to 29 June	1 - 7 JUL 2022	8 - 22 JUL 2022	23 JUL 2022 - 23 OCT 2022	24 OCT 2022 - 6 MAR 2023	TOTAL (6 MAR 2023)
First submissions	18 MS+ 1 EFTA	7 MS	3 MS	3 MS	1 MS	1 MS	26 MS + 1 EFTA
Published countries					23 MS + 1 EFTA	26 MS + 1 EFTA	26 MS + 1 EFTA
Publication embargo					2 MS	0	0
Number of revisions	0	0	0	0	17	5	22

Some countries revised 2020 data; it might be that missing countries are performing further analysis before the transmision of reference year 2021

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Data analysis – numerical
## examples of cross-country comparison

For reference year 2021 validation was mainly considering consistency towards data of reference year 2020;

4 countries revised 2020 data: the outcome is a reduction of data variance (however, it is necessary to see data from missing countries before deriving a conclusion)

Validation of 2020 data used cross-country comparison checks of levels of food waste in kilograms per capita, still considering neighbouring situations and per capita Gross National Income (GNI)

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Comparison of 2020 data revisions
(publication SEP23 versus MAR23)

Food waste by production and processing activities and by consumption activities, year 2020, by semester of publication (kilograms of fresh mass per inhabitant)
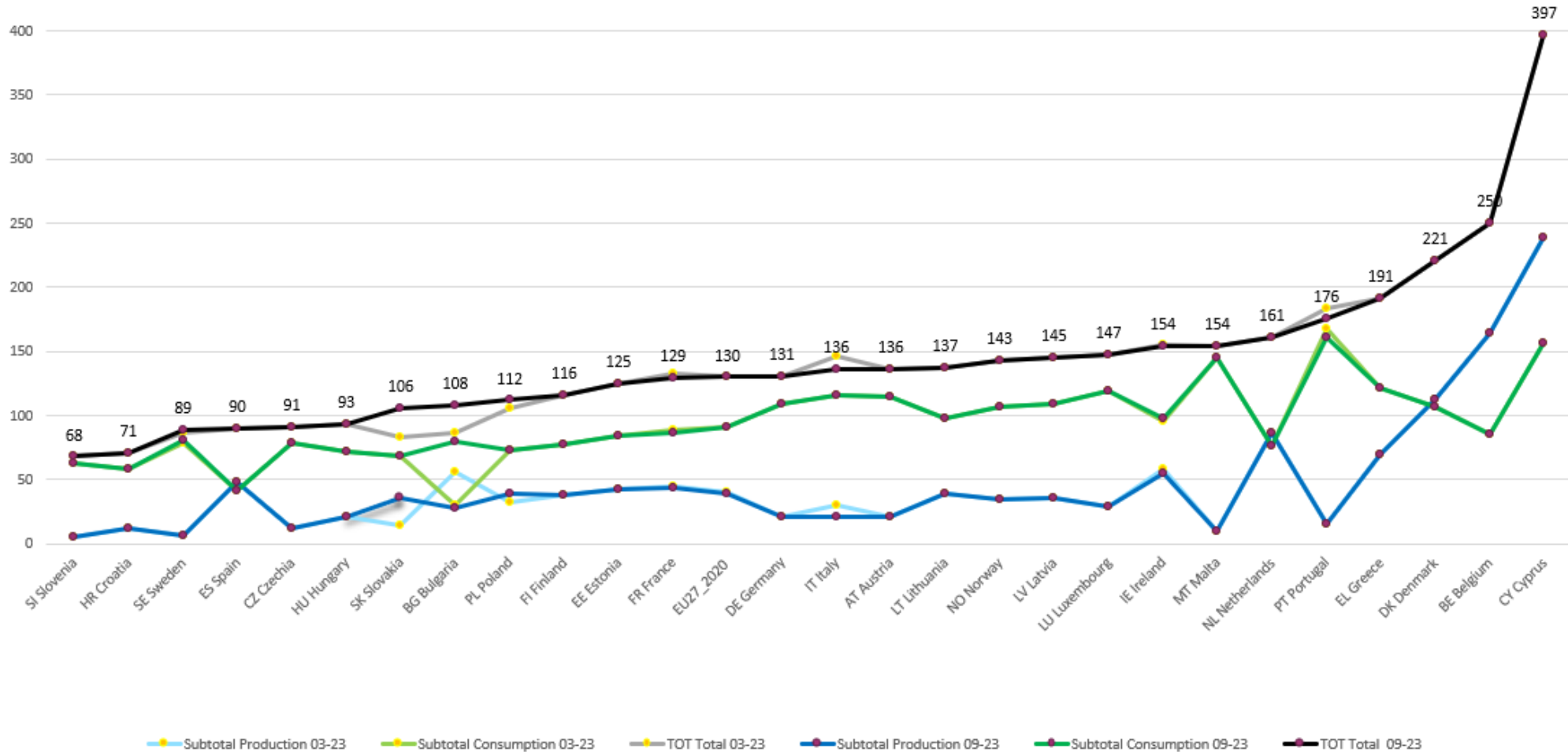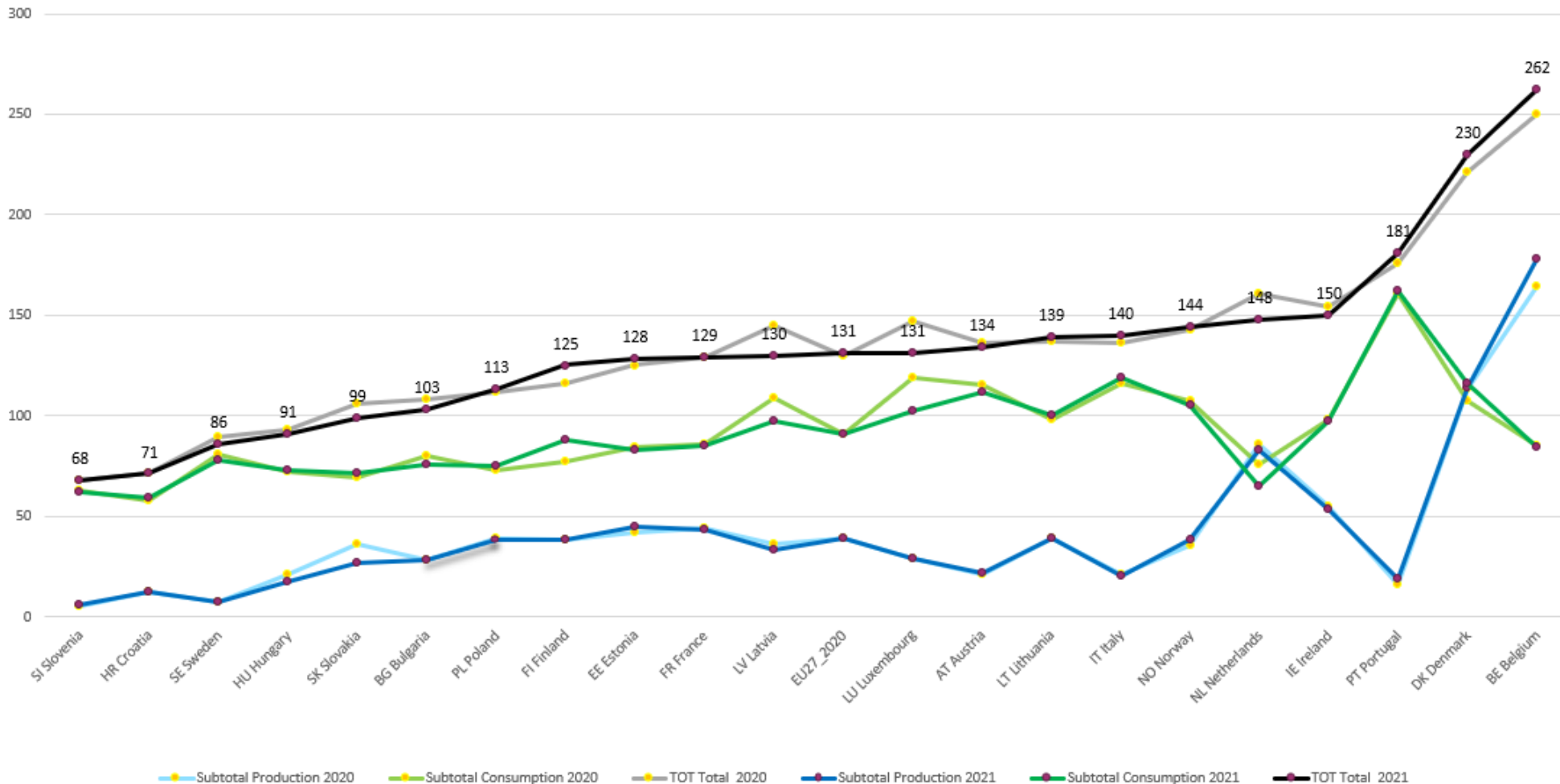
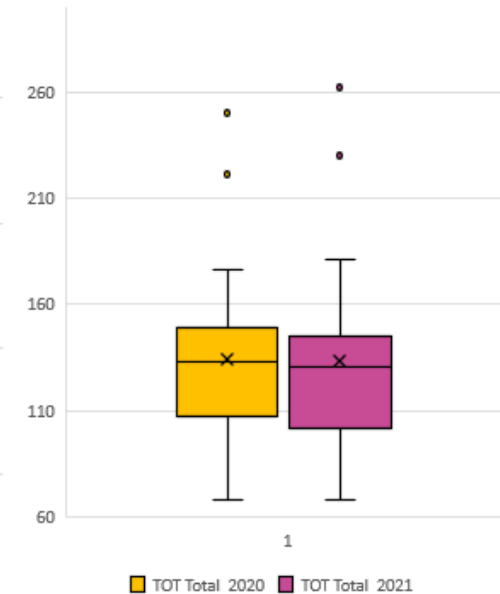Distribution of total by publication date (by revision) of 2020 data
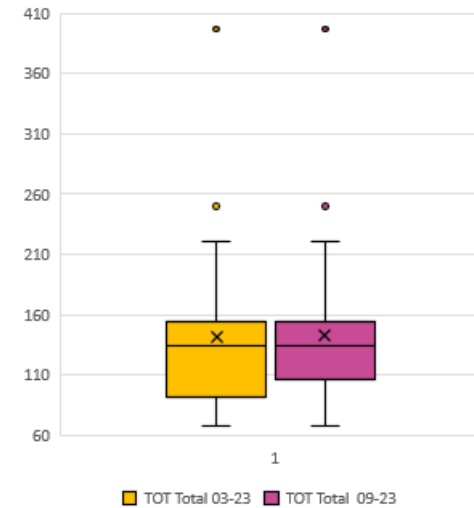
Comparison 2021 versus 2020 data
(only submitting countries)

Food waste by production and processing activities and by consumption activities, year 2020 and 2021, (Publ: SEP23)
(kilograms of fresh mass per inhabitant)

Distribution of totals by publication date (by revision) of 2020 data

Legend:
- Subtotal Production 2020
- Subtotal Consumption 2020
- TOT Total 2020
- Subtotal Production 2021
- Subtotal Consumption 2021
- TOT Total 2021

TOT Total 2021 values: 68, 71, 86, 91, 99, 103, 113, 125, 128, 129, 130, 131, 131, 134, 139, 140, 144, 148, 150, 181, 230, 262

Countries (x-axis): SI Slovenia, HR Croatia, SE Sweden, HU Hungary, SK Slovakia, BG Bulgaria, PL Poland, FI Finland, EE Estonia, FR France, LV Latvia, EU27_2020, LU Luxembourg, AT Austria, LT Lithuania, IT Italy, NO Norway, NL Netherlands, IE Ireland, PT Portugal, DK Denmark, BE Belgium

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Comparison 2021 versus 2020 data
consumption activities (only submitting countries)

Food waste by production and processing activities and by consumption activities, year 2020 and 2021, (Publ: SEP23)
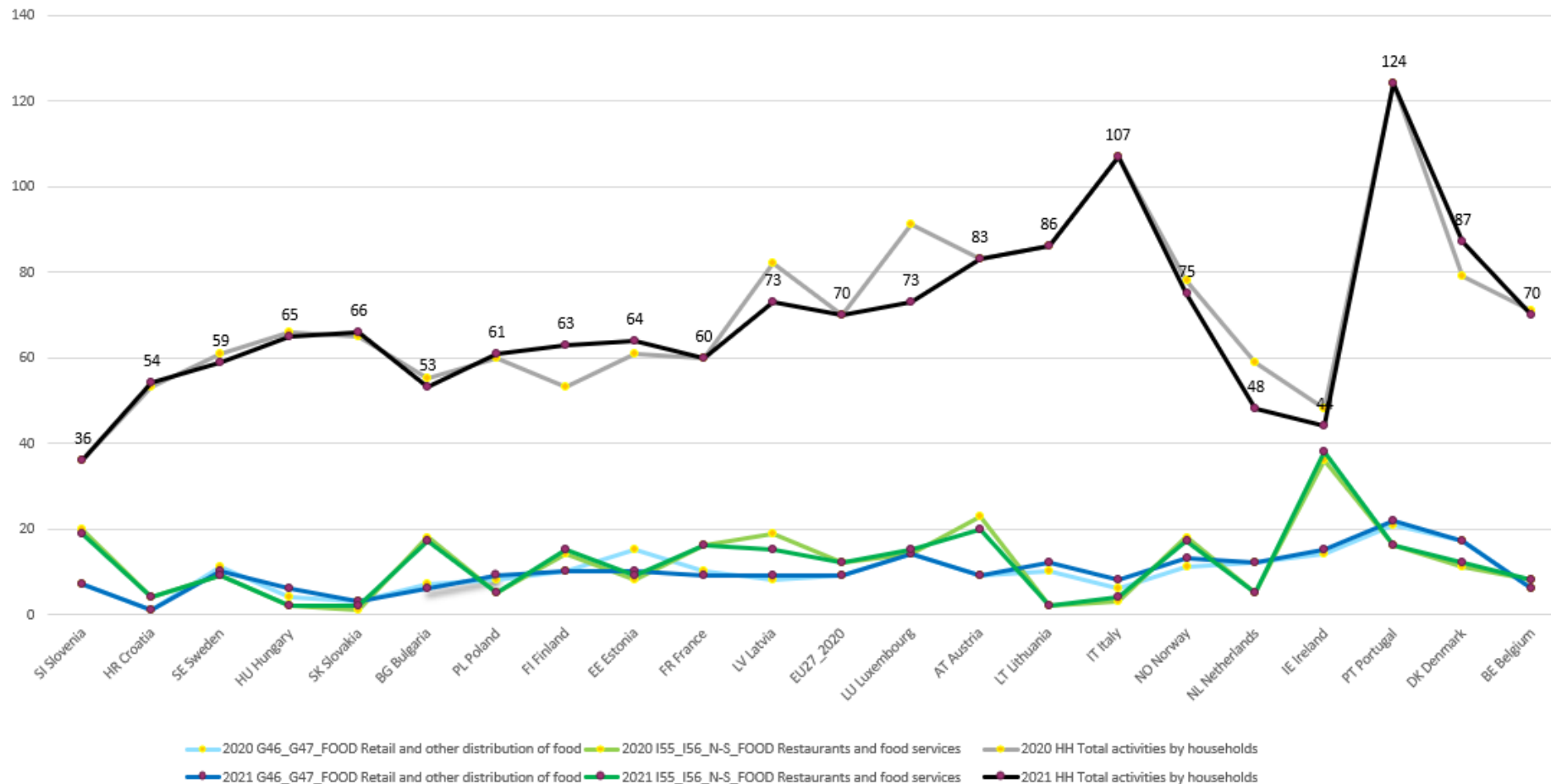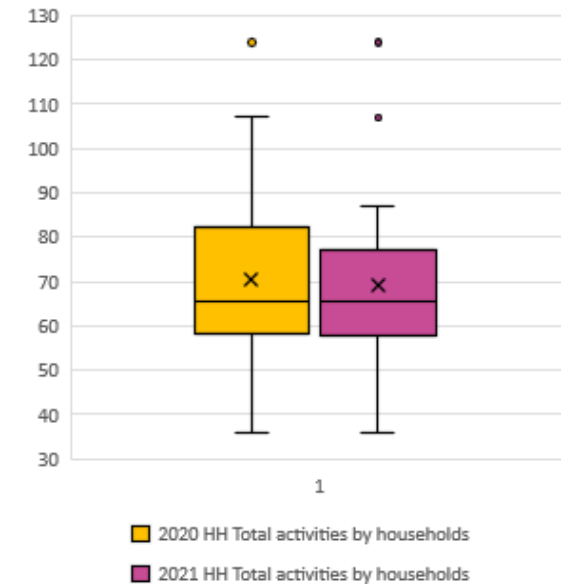(kilograms of fresh mass per inhabitant)

Distribution of HH food waste by publication date (by revision) of 2020 data

2020 HH Total activities by households
2021 HH Total activities by households

2020 G46_G47_FOOD Retail and other distribution of food   2020 I55_I56_N-S_FOOD Restaurants and food services   2020 HH Total activities by households
2021 G46_G47_FOOD Retail and other distribution of food   2021 I55_I56_N-S_FOOD Restaurants and food services   2021 HH Total activities by households

Data analysis – Quality Report information

- Issues identified by the countries during the reporting

- Issues identified during validation

- Suggested classifications

- Suggested future reporting

Food waste: QR 7.2 highlight for 20% difference compared to the previous year

- Variations greater than 20% by food stage are mandatory according to legislation: COMMISSION IMPLEMENTING DECISION (EU) 2019/2000, Annex, section B:

  > 7.2. Explanation of tonnage difference (if applicable)
  >
  > Please explain the causes of the tonnage difference (which stages of the food supply chain, sectors or estimates have caused the difference, and what the underlying cause is) where the variation is greater than 20 % compared to the data submitted for the previous reporting year.

- Eurostat has to inform DG SANTE about missing mandatory information

- It applies from reference year 2021 (second reporting year. The previous reference year (RY-1) is prefilled by Eurostat.

- **Currently, all countries that have submitted 2021 data have justified 20% tonnage difference**

Food waste

Data quality issues identified by the countries and reported in the quality report

- Missing or exclusion of reporting subsectors (no response to survey, no identification of potential respondents, costs of inclusions of small businesses)

- Low share of respondents from survey, discards of respondents **lacking knowledge of food and food waste definitions**, or discards of respondents unfitting the sectors (country validation and auditing procedure of respondent's applicable sector)

- Some countries informed Eurostat on the risk of underestimation as collected waste amounts (tonnes) in place of tonnes of fresh mass

- Covid related 2020 special issues (mainly the lockdown consequences on restaurants and canteens)

- **Recommendation: if not highlighted in 2020 reporting, please inform Eurostat in QR section 7.3 of any problem, indicating also the concerned years**

- **Recommendation: please highlight in section 7.2 any methodological change/improvement, even in the case that it has not evidenced a variation higher than 20%, so that Eurostat can verify sensitivity to methodological changes**

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Food waste *The metadata document : draft overview*

	METADATA					CLASSIFICATION OF APPLIED METHODOLOGY					
	Year		Year					Fresh Mass			
Stage:	2020	Flag	2021	Flag	Method 2020	Method 2021	Year 2020	Year 2021	Description year 2020	Description Year 2021
Primary production (A01_A03_FOOD):	Main types of productions were covered, making up to 80% of companies	D	Same methodology applied	D	QI_WG_CS	QI_WG_CS	Y	Y	questionnaires and/or interviews at waste generators combined with coefficients or scaling factors	questionnaires and/or interviews at waste generators combined with coefficients or scaling factors
Processing and manufacturing (C10_C11):	Main companies were selected, based on product production statistics; some companies were not able to provide sufficient information	D	Same methodology applied	D	QI_WG_CS_MB	QI_WG_CS_MB	Y	Y	questionnaires and/or interviews at waste generators combined with coefficients or scaling factors and finally combined with mass balance	questionnaires and/or interviews at waste generators combined with coefficients or scaling factors and finally combined with mass balance
Retail and other distribution of food (G46_G47_FOOD):	Main sectors were selected based on statistical data related to the number of companies and production value; some companies were not able to provide sufficient information	D	Same methodology applied	D	QI_WG_MB	QI_WG_MB	Y	Y	questionnaires and/or interviews at waste generators combined with mass balance	questionnaires and/or interviews at waste generators combined with mass balance
Restaurants and food services (I55_I56_N-S_FOOD):	The main catering sectors were selected based on statistical data related to the number of companies and production value; it was not possible to use direct measurement or diaries due to COVID-19 limitations	D	Methodolgy has improved by using direct measurements and diaries to cover the missing sectors		QI_WG_MB	QI_WG_MB_DM_SU	Y	Y	questionnaires and/or interviews at waste generators combined with mass balance	questionnaires and/or interviews at waste generators combined with mass balance, direct measurments and surveys
Households (HH):	Information was collected from 68 households; the Cochran formula (statistical significance) was used to determine the sample	D	Methodolgy has improved by surveying 60% of the former year surveyed households and by additionally analysing 200 households reported survey. The confidence level of the data was higher than 95%, by means of One-way ANOVA, both performed as group intra comparison with the previous year and groups; the average of kg per capita of year 2021 is differing less than 1 kg per capita.		DI_WG	DI_WG	Y	Y	diaries at waste generators	diaries at waste generators

Food waste *Classification: overview of methodology list*

Draft proposal in ANNEX 2 of WSWG document "9.2 Food waste reporting"

DM_WCF	direct measurement at waste collectors and waste facilities
DM_WG_DS	direct measurement at waste generators under direct studies at waste generators
DM_WCA	direct measurement combined with waste composition analyses
DM_??_DS	direct measurement, unknown measurement point, combined with direct studies
QI_WG_CS	questionnaires and/or interviews at waste generators combined with coefficients or scaling factors
QI_WG_CS_MB	questionnaires and/or interviews at waste generators combined with coefficients or scaling factors and finally combined with mass balance
QI_WG_MB	questionnaires and/or interviews at waste generators combined with mass balance
DI_WG	diaries at waste generators
DM_WG_ER	direct measurement at waste generators electronically reported by waste generators
DM_??_MW_ER	direct measurement, unknown measurement point, by municipalities waste reporters, electronically reported by municipalities
DM_??_WG_ER_CS	direct measurement, unknown measurement point, at waste generators electronically reported by waste generators, corrected with coefficients or scaled
QI_WG_?MS	questionnaires and interviews at waste generators, unknown if mass balance or scaling is applied
SDY_QI_WG_CS	study made in a different year with questionnaires and interviews at waste generators, with coefficients or scaling factors
SDY_DM_WG_WCA_CS	study made in a different year, with direct measurement at waste generators, including WCA, finally applying coefficients or scaling factors
S_SU_WG_ER	study in the reporting year with survey at waste generators, electronically reported
S_DMOS_WG_CS	study in the reporting year with on site direct measurements at waste generators, combined with coefficients or scaling factors
S_SU_WG_SA	study conducted in the reporting year with survey at waste generators, on a sample
DI_WG+WCA_MW	diaries at waste generators combined with WCA of municipal waste
CS_MB_WG	Coefficient and/or scaling and mass balances applied to sectorial data at the level of waste generators
DM_WCF_MMW_CS	direct measurement at waste collectors and waste facilities of mixed municipal waste, corrected with coefficients or scaled
DM_WCF_NWL	direct measurement at waste collectors and waste facilities, with negligible water loss.
FMYES_UNSPEC	FMconfirmed_Measurement point not specified, coefficients to recalculate fresh mass are not specified
UNSPEC	Measurement point not specified, coefficients to recalculate fresh mass are not specified
QI_WG	questionnaires and/or interviews at waste generators
DM_MW+WCA_WG_CS	direct measurement, by municipalities waste reporters, combined with WCA at the waste generators sites, for the calculation of coefficients or scaling factors to be applied to direct measurement
DM_WCF_WCA_Q_WLU	direct measurement at waste collectors and waste facilities in combination with waste composition analyses and a questionnaire, water loss unknown (any loss of water cannot be reliably estimated)
SU_WG_SA_WR	Survey at waste genereator, on a sample with weekly reporting
SU_OS_WEMPL	Survey conducted for an other sector, weighed by employment figures of the reported sector
S_SU_WGM_ER_EST_JRC	study in the reporting year with survey on the waste generators obliged to mandatory report, electronically reported, and estimation for missing generators, combining JRC estimations
S_SU_WGM_ER_HC	study in the reporting year with survey on the waste generators obliged to mandatory report, electronically reported, high coverage
S_SU_WGM_ER_LC_JRC	study in the reporting year with survey on the waste generators obliged to mandatory report, electronically reported, low coverage, compensated with JRC estimates
DM_??_MW_ER-OS	direct measurement, unknown measurement point, by municipalities waste reporters, electronically reported by municipalities, subtracting othersectors.
DM_WCA_WG_DY	direct measurement combined with waste composition analyses at the point of waste generator, different year
JRC_MFA	only JRC mass flow analysis estimation was used
CSC+COEFF_WG	Counting sanning plus coefficients, from study on sit at waste generator
DM_WG_ER+JRC_PROD	direct measurement at waste generators electronically reported by waste generators, combined with JRC data on missing products

Reminder: Questionnaire: on what's new in the questionnaire version 2023

- Highlights of validation

- Tonnage difference reporting

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Food waste: QR 7.2 highlight for 20% difference compared to the previous year: how does validation work

- You have to insert data in Table 1, first column:

nace_r2	Stage of the food supply chain	COL	Standard footnote	Confiden tiality	Explanatory footnote	COL_ED	Standard footnote	Confiden tiality	Explanatory footnote	DSP_WW	Standard footnote	Confiden tiality	Explanatory footnote	Comparison with previous year (20% variation according to QR section 7.2) or missing data
A01_A03_FOOD	Primary production	1.000												Warning: please report in the quality report, section 7.2, the reason why there is a variation higher than 20% compared
C10_C11	Processing and manufacturing	4.000												Warning: please report in the quality report, section 7.2, the reason why there is a variation higher than 20% compared
G46_G47_FOOD	Retail and other distribution of food	80000.000												No issue detected
I55_I56_N-S_FOOD	Restaurants and food services	4.000												Warning: please report in the quality report, section 7.2, the reason why there is a variation higher than 20% compared
HH	Households	800000.000												No issue detected
TOT	Total	880009.000												No issue detected

TABLE 1: Data on food waste amounts
Unit: tonnes of fresh mass

Country:
Reference year: 2021

Total food waste according to Article 1 of 2019/1597*

Total food waste** / Of which: edible food waste*** / Food drained as or with wastewaters

PLAUSIBILITY WARNINGS

Restore table colour | Validate questionnaire

Food waste: QR 7.2 highlight for 20% difference compared to the previous year: how does validation work

7.2. Explanation of tonnage difference (if applicable)

Please explain the causes of the tonnage difference (which stages of the food supply chain, sectors or estimates have caused the difference, and what the underlying cause is) where the variation is greater than 20 % compared to the data submitted for the previous reporting year.

Stage of the food supply chain	Variation (%)	Main reason for the difference
Primary production	-99.99279487	tytytytytytyty
Processing and manufacturing	-99.98733696	
Retail and other distribution of food	-0.386594882	
Restaurants and food services	-99.97821308	
Households	8.454135424	

Add rows as appropriate.

Pre-filled by Eurostat with non-modifiable data and formulas. It appears only for information, for validation purposes.

reference year 2020	reference year 2021	Variation % (automatic calculati	Amount of differencce (Tonnes	Absolute variation for Threshold	Formula-check footnote exists
13879	1	-99.99279	-13878	99.992795	Footnote subm
173734	22	-99.98734	-173712	99.987337	Footnote subm
84326	84000	-0.386595	-326	0.3865949	
201956	44	-99.97821	-201912	99.978213	Footnote subm
737639	800000	8.4541354	62361	8.4541354	

Red cells will appear in the quality report where the explanatory note is mandatory.

Thank you

Slides 5-7 and 16, source: Eurostat

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