

Update on Supply Chain Segment Self reporting and insights on the Climate Footprint of Dutch Food Waste

11 July 2024, Wageningen University & Research

Sanne Stroosnijder, Hilke Bos-Brouwers & Martijntje Vollebregt

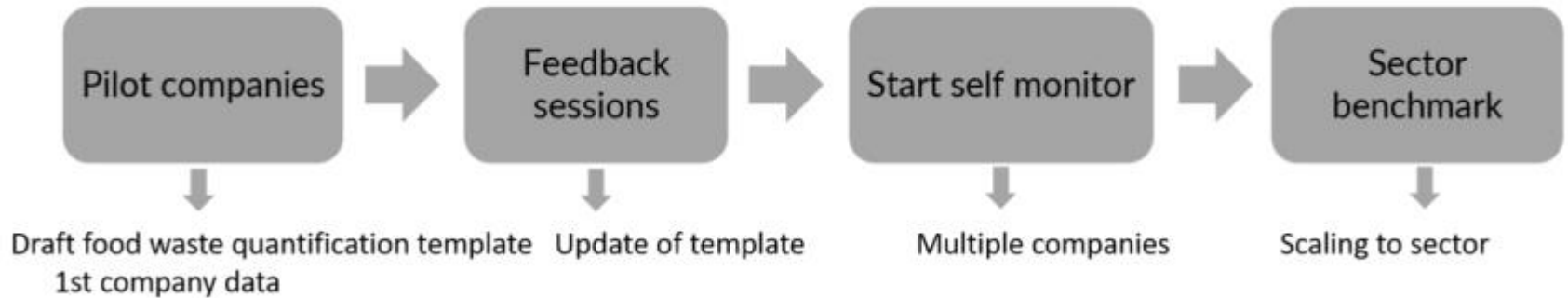


Self-reporting of FLW in NL

- Aiming for: engagement of all stakeholders in the food system on FLW reduction, addressing own operation (reporting) and within their chain (benchmark supports cooperation)
- by stimulating self-reporting and KPI development
- by providing harmonised (sub)sector specific monitoring templates and benchmarking.



Organising self-reporting of FLW in NL



Steps in development of template and benchmark:

1. Alignment and presentation of FLW topic to companies, often via branche organisation meetings
2. Pilot to develop sector specific registration templates
3. Broader participation of sector with call to companies
4. Meetings to share results and benchmark, discuss findings and communication

Supporting back-end in place on data management: agreements, procedure, online secure data portal, additional data security for analyses

Challenges & opportunities in self-reporting

Challenges:

- Definitions & scope
- Context and sector challenges
- Subsectors
- Expert support needed

Opportunities

- Templates support harmonisation and standardisation
- Sector bench marking
- Snowballing and engagement of other actors
- Prioritisation of FLW reductions within companies

Self-reporting of food loss & waste in NL



Retail
On categories
2018, 2020, 2022, 2023



Bakery and confectionary industry
9 productgroepen
Nulmeting: 2023
Vervolg: in ontwikkeling



Potato processing
Frozen and chilled
2020, 2021, 2022



Slaughterhouses and primary meat processing (pig, veal, beef);
2021, 2022



Industrial bakeries
Dialy fresh, frozen/gas-packed, pastry
2020, 2021, 2022



Meat processing
Pilot in progress



Vegetable and fruit trade and minimal processing
2020-2022



Company catering
Company restaurant and banqueting
2022



For all sectors: 2023 data in progress

Realisation in Dutch FSC segments

- Examples of external communication:
 - Potato processing industry: [Food waste in potato processing industry down 5.5% compared to 2020 – WUR](#)
 - Company catering: [New insight in understanding of waste issues in corporate catering – WUR](#)
 - Supermarkets: [Food waste in supermarkets down by 17.4% compared to 2018 - WUR](#)
- Several sector templates available [WUR- Measuring and Monitoring Food Waste and Impact \(EN/NL\)](#):
 - (industrial) bakeries
 - potato processors
 - fruit and vegetable companies
 - confectionery producers
 -more templates will be added in the future

Climate footprint of Dutch Food Waste

- What is the link between food waste and climate change?
- Providing quantitative & qualitative insights to connect with other policy areas
- Data gaps & data quality issues increase when more KPIs are being included
 - GHG emissions
 - Blue water use
 - Land use
 - Eutrophication/N₂O emissions
- Best estimates

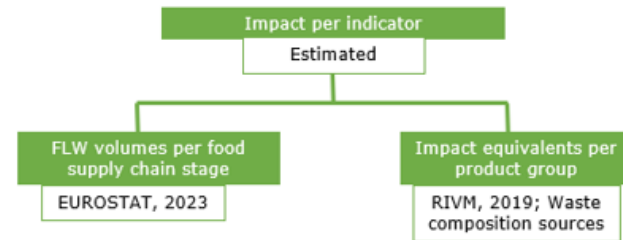


Figure 3: Methodology to calculate the impact of FLW on climate change in the Netherlands.

Overview of total – food system – food waste related GHG emissions in the Netherlands

- For the Netherlands the contribution of food waste to GHG emissions is estimated at 9 megaton CO₂-eq/year (based on RIVM, 2019), which is around 5% (based on RIVM, 2019) to 9% (based on Crippa et al., 2023) of the total GHG emissions in the Netherlands

System level	GHG emissions data
Total GHG emissions in the Netherlands <i>(reference year = 2022)</i>	168 Mton CO₂-eq/year → 100% of total GHG emissions → 9.5 ton/capita.yr
Food system induced GHG emissions <i>(reference year = 2018)</i>	52 Mton CO₂-eq/year → 31% of total GHG emissions → 3.0 ton/capita.yr
Food waste induced GHG emissions <i>(reference year = 2019)</i>	8.8 Mton CO₂-eq/year → 5% of total GHG emissions → 0.5 ton/capita.yr

Overview of the climate impact of FW in NL, across FSC segments & relevant CC indicators

Impact indicators	Food Waste	GHG emissions	Blue water use	Land use	Eutrophication (N ₂ O emissions)
	Kton/year	Kton CO ₂ -eq/year	Billion litre/year	Thousand hectares /year	Ton N/year
Total	2,587	8,807	570	693	15,000
Primary production	315	(676)	(49)	(45)	(1,000)
Processing and manufacturing	1,131	(3,723)	(294)	(345)	(7,000)
Retail and distribution of food*	210	753	34	50	1,000
Restaurants and food services	83	335	19	24	1,000
Households	848	3,321	174	229	5,000

* including return of unsold bread to animal feed

Data presented in brackets is due to lack of sufficient data quality in estimating indicators.

Climate impact and food waste hotspots across 3 FSC segments

Retail & distribution of food		
Product groups	Food waste (kton)	Associated GHG emissions (kton CO ₂ -eq)
Fresh meat & fish	15	205
Bread & bakery	74	176
Dairy, eggs, ready-to-eat, refrigerated products	25	126
Other fresh products and non-perishable products	29	125
Potatoes, vegetables and fruit	67	121

Restaurants & food services		
Product groups	Food waste (kton)	Associated GHG emissions (kton CO ₂ -eq)
Other fresh products and non-perishable products	33	145
Fresh meat & fish	6	79
Potatoes, vegetables and fruit	23	42
Dairy, eggs, ready-to-eat, refrigerated products	7	37
Bread & bakery	13	32

Households		
Product groups	Food waste (kton)	Associated GHG emissions (kton CO ₂ -eq)
Other fresh products and non-perishable products	246	1076
Fresh meat & fish	68	920
Potatoes, vegetables and fruit	288	520
Dairy, eggs, ready-to-eat, refrigerated products	85	421
Bread & bakery	161	384

- The food waste from the 'Fresh meat and fish' product category attributes to the highest amount of associated GHG emissions at the retail and distribution supply chain stage.
- In the restaurant and food services and household supply chain stages, the food waste from the product group 'Other fresh products and non-perishable products' contributes most towards associated GHG emissions. Products with a high GHG emissions contribution within this product group include e.g. vegetable oils, sandwich fillings and processed meats.

CLIMATE IMPACT OF FOOD WASTE IN THE NETHERLANDS

More
than
words



OVERVIEW IMPACTS OF FOOD WASTE ON GHG EMISSIONS




CONTRIBUTION TO DUTCH CLIMATE TARGETS

Key takeaways from NL update

- Improving data collection and quality of food waste (self) reporting & monitoring
- Transforming data to information & action
- Connect food waste with wider policy & business priorities on climate change
- Collaborate and exchange to further support FSC segments and FBOs

Thank you for
your attention!



To explore
the potential
of nature to
improve the
quality of life

sanne.stroosnijder@wur.nl

hilke.bos-brouwers@wur.nl

martijntje.vollebregt@wur.nl