

# Food waste estimation in Latvia

D.Āriņa<sup>1</sup>, I.Teibe<sup>2</sup>, R.Bendere<sup>3</sup>, Z.Melnalksne<sup>3</sup>

<sup>1</sup>Institute of Physical Energetics, Riga, LV-1006, Latvia

<sup>2</sup> Public Utilities Commission, Riga, LV-1039, Latvia

<sup>3</sup>Waste Management Association of Latvia, Riga, LV-1006, Latvia

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Presenting author email: [dace.arina@gmail.com](mailto:dace.arina@gmail.com)

## Introduction

The Directive 2008/98/EC lays down an obligation for Member States to include food waste prevention into their waste prevention programs, they must take an action to reduce food waste by 50% till 2030 and to monitor and assess the implementation of food waste prevention results by measuring the levels of food waste based on a common methodology at each stage of the food supply chain.

## Materials and methods

To estimate produced amount of primary production (crop, animal, and fishing production), processing and manufacturing, retail and other distribution of food, restaurants, food services, and households were used data from Latvian Environment, Geology and Meteorology Centre and Central Statistical Bureau Republic of Latvia. The amount of food waste within stages of the food supply chain were established by combination of coefficients and production statistics, questionnaires and interviews, waste composition analysis and measurements.

To estimate produced amount of household food waste, in this research were used survey - best practice measurement of household level food waste by Herpen *et al* (2016), which was slightly adjusted for the consumption of Latvian households. Based on the structure of this survey to verify quantitative results of the survey, the diary was developed for an individual household or group of individuals to keep a record of food waste information on two weeks basis. The practical results were compared with the state statistics according to waste codes included in the European list of waste for types of waste which typically include food waste in this stage of the food supply chain.

## Results and discussion

The measurements show that in total at all stages of the food supply chain was produced 594.69 thousand tonnes or 310 kg per capita in 2019 and 614.82 thousand tonnes or 320 kg per capita in 2020 of food waste. The distribution by stages of each food chain shown in Table 1.

Table 1. Estimated produced food waste amount by each stage of the food supply chain

Stage of the food supply chain	2019		2020	
	(thousand tonnes)	(%)	(thousand tonnes)	(%)
Primary production	320.97	54%	333.70	54%
Processing and manufacturing	53.48	9%	66.11	11%
Retail and other distribution of food	48.37	8%	47.85	8%
Restaurants and food services	13.99	2%	10.63	2%
Households	157.87	27%	156.53	25%
TOTAL	594.69	100%	614.82	100%

According to calculations of household level food waste, 158 thousand tonnes or 84 kg per capital living in household was produced in 2019, and 157 thousand tonnes or 83 kg per capital living in household was produced in 2020, of which into the mixed municipal waste stream was collected, respectively: 120 thousand tonnes in 2019 and 117 thousand tonnes in 2020, as part of food waste are recycled or reduced at source (home composting, pets feeding, sewerage etc.). After estimated composition of household level food waste, the unavoidable part of food waste in average is 64%.

Figure 1 presents the results of the study for 2019 and 2020 show that from total generated food waste amount 595 thousand tonnes in 2019 and 615 thousand tonnes in 2020, 183 thousand tonnes in 2019 and 178 thousand tonnes in 2020 were disposed at landfills, and the main part of food waste was recycled and reduced at source.

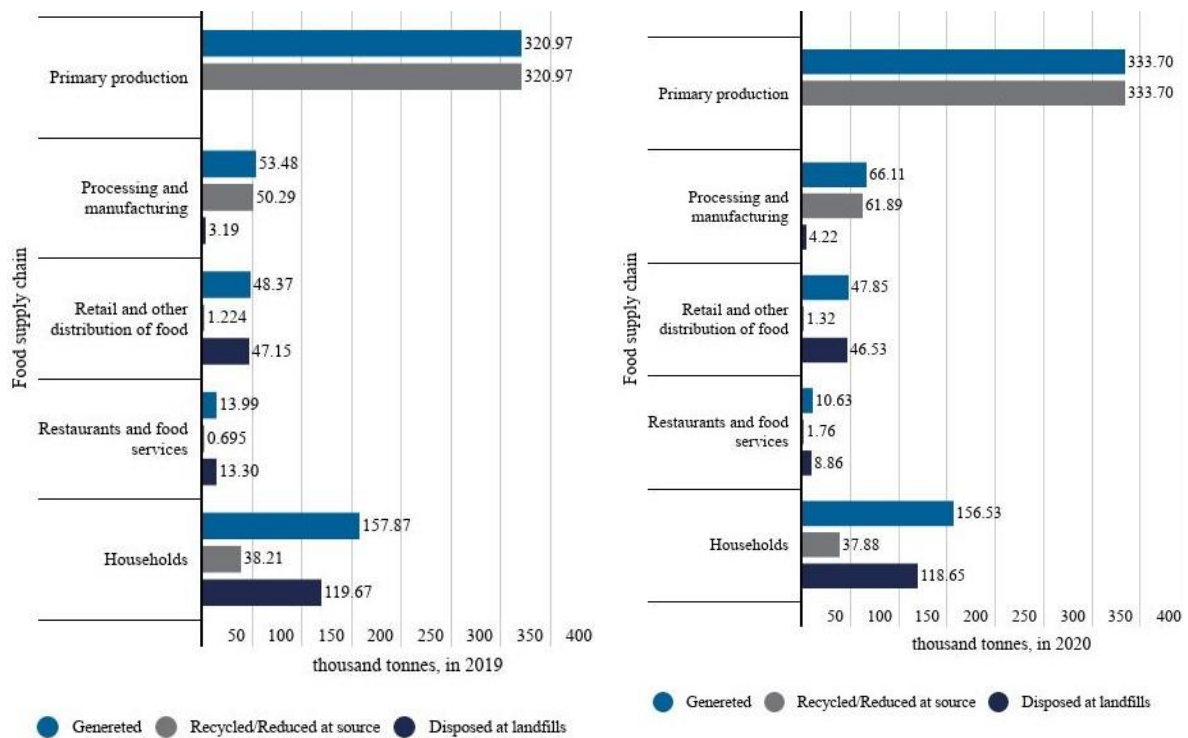


Fig.1. Generated food waste amount by food supply chain and treatment, 2019-2020

### Conclusions

The obtained results correspond to the structure of food production in Latvia. Comparing the results of this case study with the amount of food waste generated between EU MS, the chosen data collection methods can be considered suitable for the intended purpose.

In order to obtain data more objectively, it is necessary to start a source sorted food waste collection from all its creators - restaurants, cafes, points of sale and other similar sources of food waste already next year.

In order to obtain further data on the generation of food waste, it is necessary to supplement the questionnaire form “Waste 3” of the Latvian Environment, Geology and Meteorology Center with the NACE code of the activity, as well as the number of employees during the respective reporting year.

### References

Herpen, Erica van; Lans, I.A. van der; Nijenhuis, M.A.; Holthuysen, N.T.E.; Kremer, S. 2016. Best practice measurement of household level food waste: Milestone no.2. Available at: <https://library.wur.nl/WebQuery/wurpubs/532623>

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