



Bio-waste in Europe – turning challenges into opportunities

Almut Reichel | SCALIBUR Final Conference | 19th October 2022 | EEA

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- 1. Why bio-waste deserves more attention**
 - 2. Possible ways forward**
 - 3. Bio-waste opportunities**

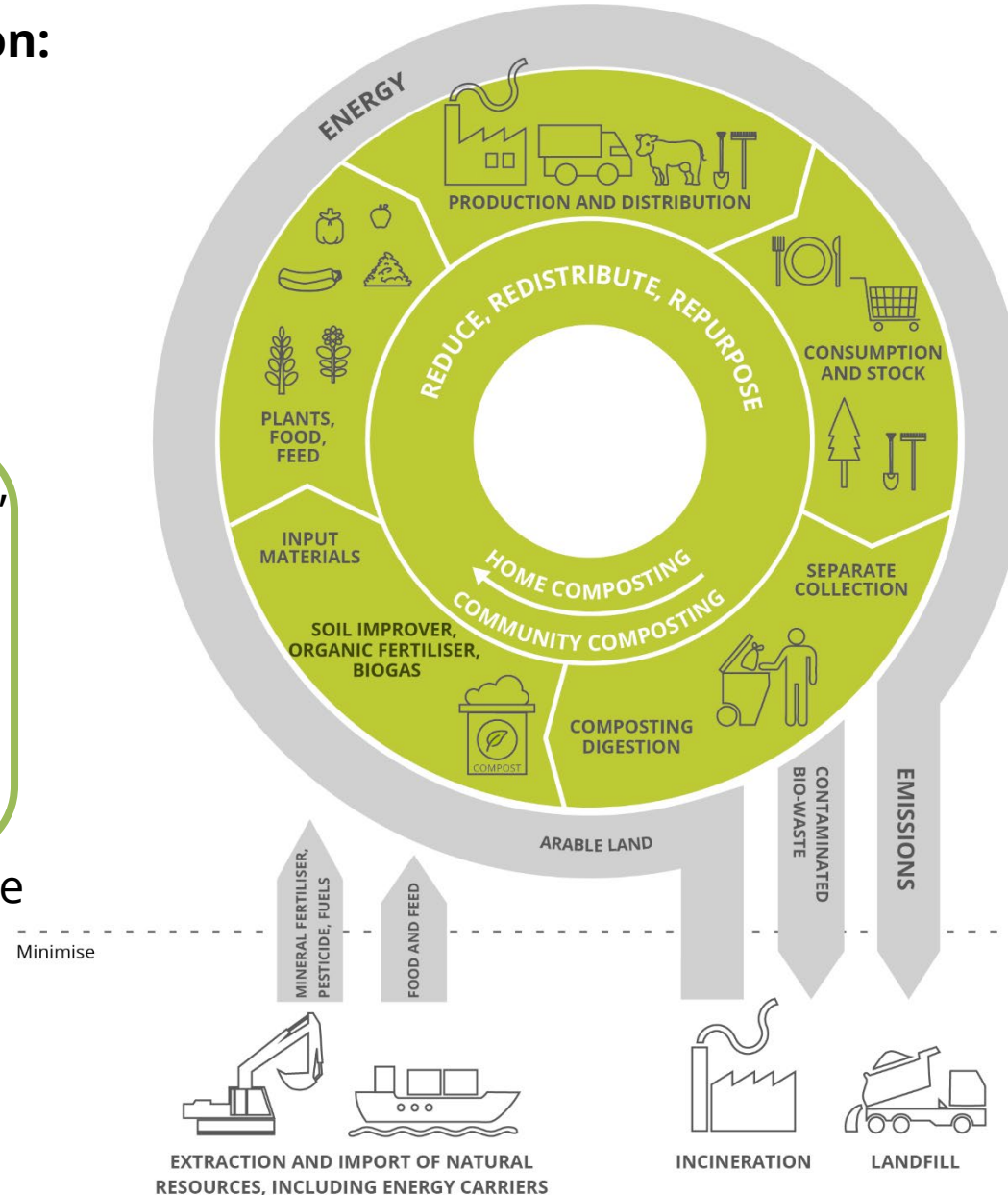


1.
Why bio-waste deserves more attention

Bio-waste in a circular economy

Bio-waste definition:

- Biodegradable garden and park waste,
 - food and kitchen waste
- from households,
 - offices,
 - restaurants,
 - wholesale,
 - canteens,
 - caterers,
 - Retail,
- comparable waste from food-processing

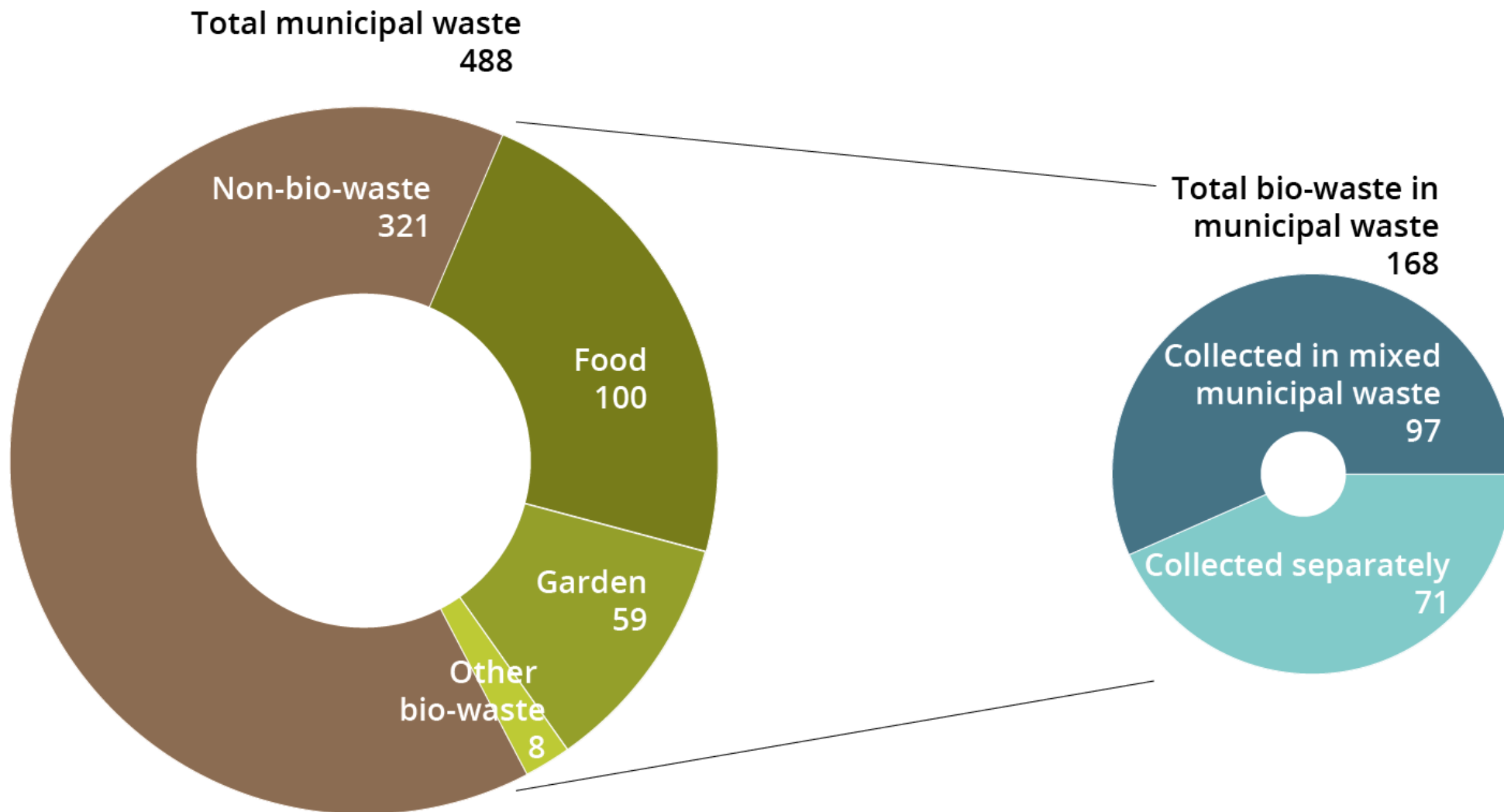


Waste Framework Directive:

- Separately collect bio-waste or ensure recycling at source by 2023
- Recycling targets for municipal waste (55% -> 60% -> 65%)
- Monitoring food waste

SDG: halve food waste by 2030

Bio-waste in municipal waste (EU-28)

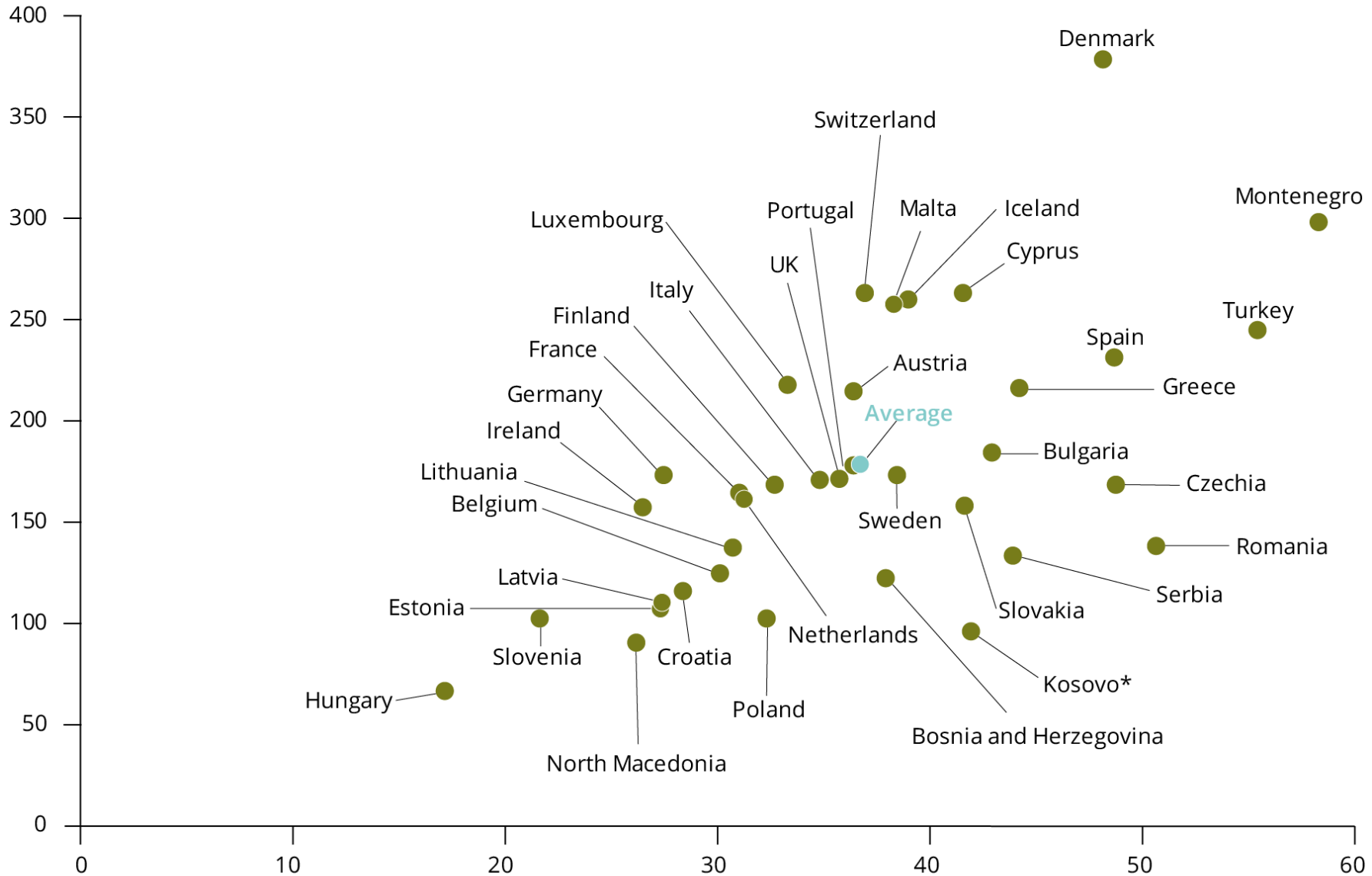


Unit = kg/person

How much bio-waste is there in municipal waste?

Bio-waste generation (kg/person)

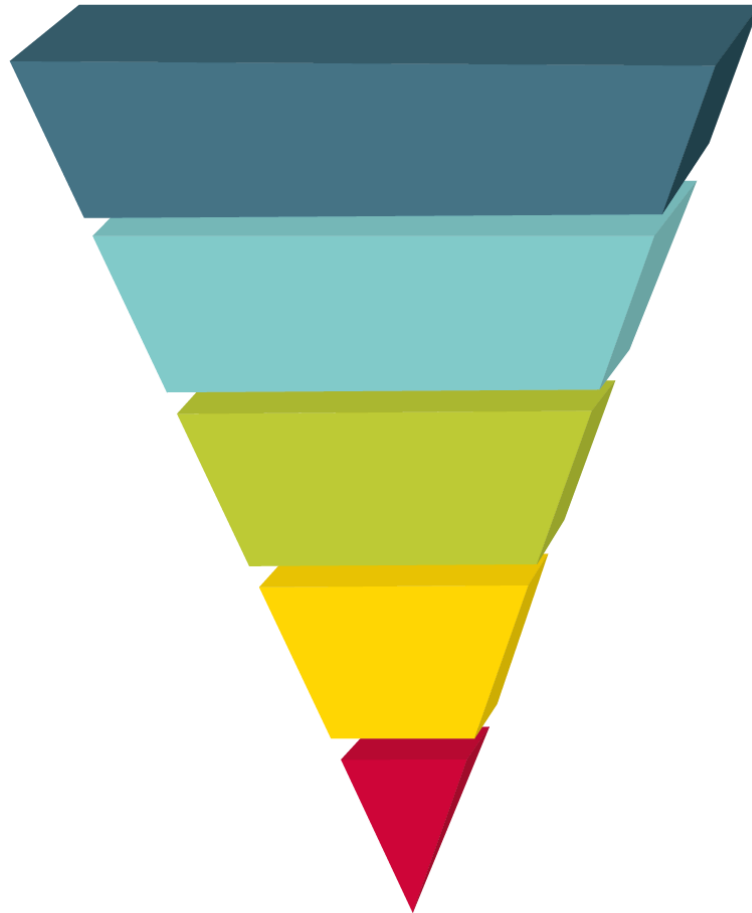
Year: 2017



A close-up photograph of a pile of organic waste, including vegetable scraps, fruit peels, and plant matter. A semi-transparent grey text box is overlaid on the center of the image, containing the text "2. Possible ways forward".

2.
Possible ways forward

Food waste: prevent, reuse, recycle



Prevent

- Waste of raw materials, ingredients and products arising is reduced — measured in overall reduction in waste

Re-use

- Redistribution to people
- Sent to animal feed

Recycle

- Waste sent to anaerobic digestion
- Waste composted

Recover other value

- Incineration of waste with energy recovery

Dispose

- Waste incinerated without energy recovery
- Waste sent to landfill
- Waste disposed of in sewerage system

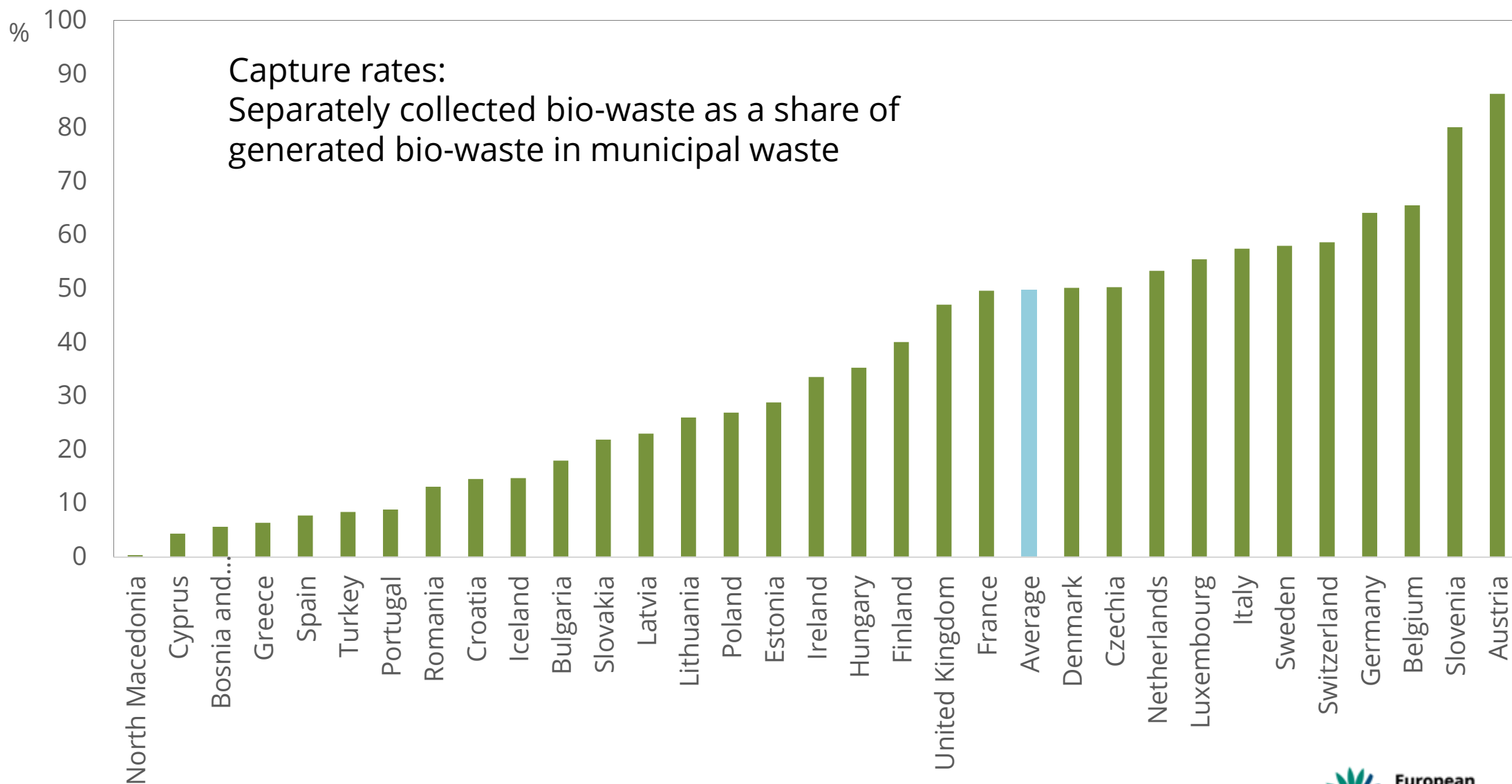
Most preferable option



Least preferable option

Source: EEA, modified with permission from SEPA (2016)

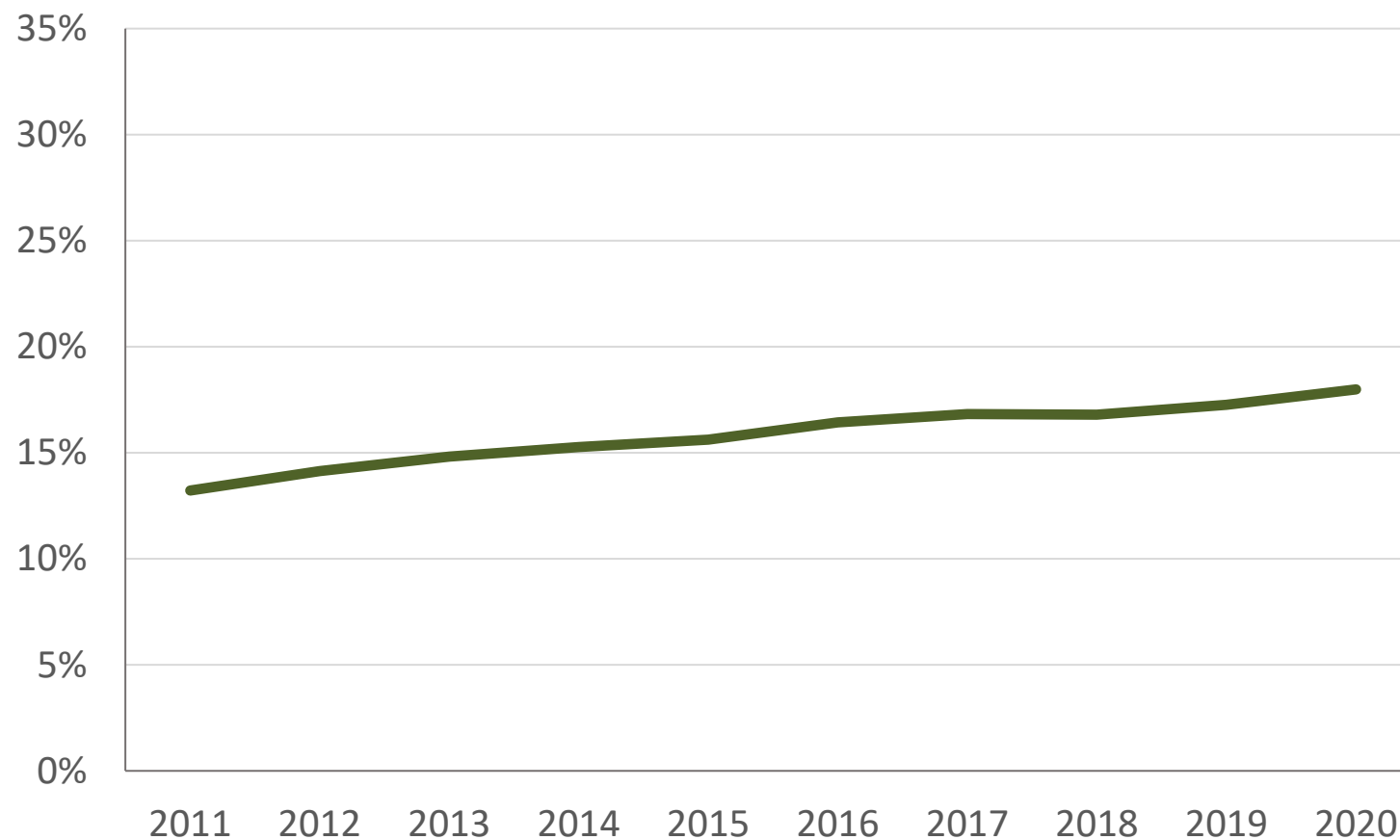
Separately collected bio-waste



Source: EEA, based on provided by Eionet through an EEA and ETC/WMGE survey

Trends in composting and digestion of bio-waste

Share of municipal waste composted/digested

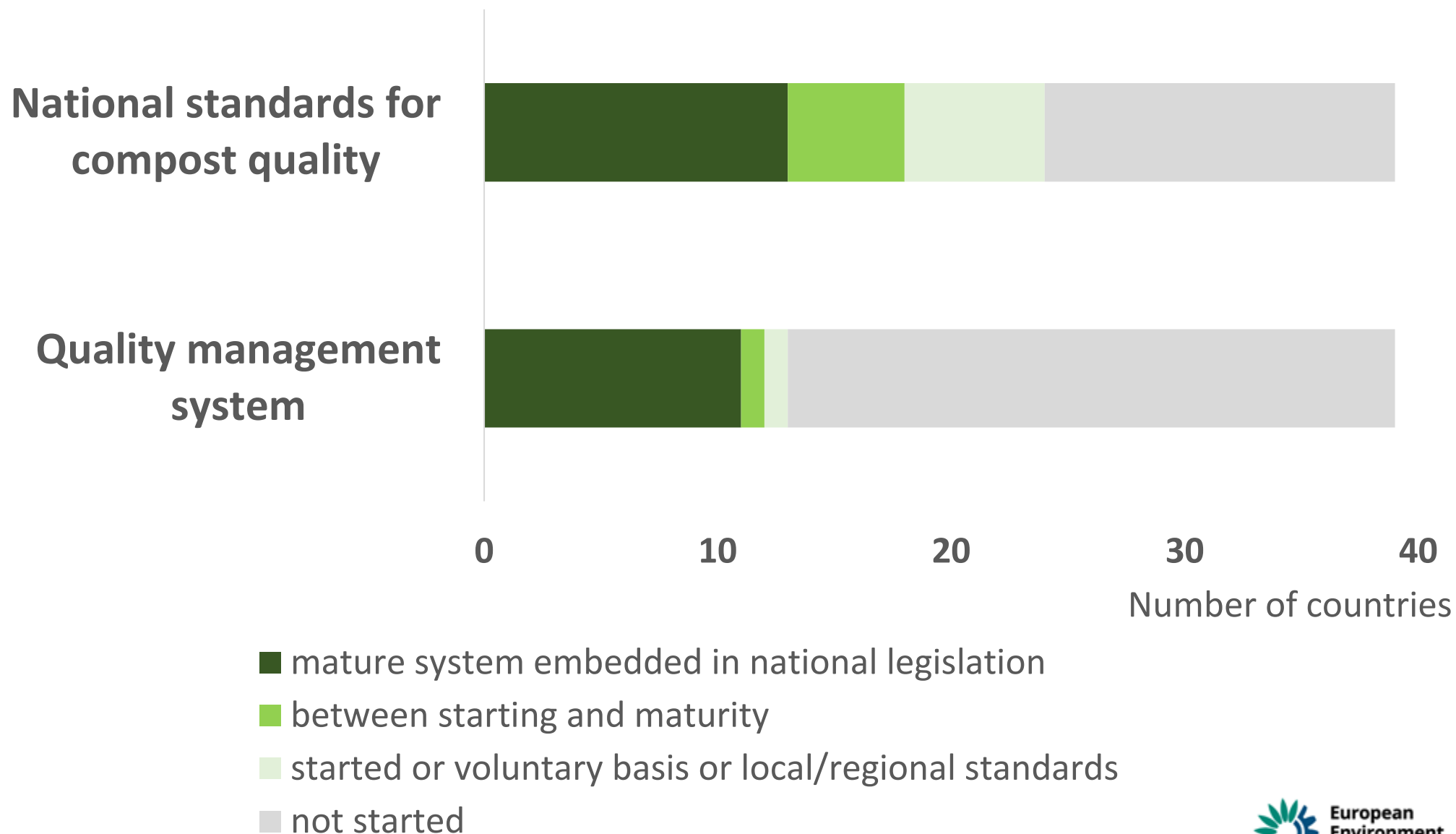


Source: Eurostat

A close-up photograph of a pile of organic waste, including vegetable scraps, fruit peels, and plant matter. The waste is piled together, with some items like a green leafy vegetable and a piece of orange peel clearly visible. The lighting is dramatic, with strong highlights and deep shadows, creating a textured and somewhat chaotic appearance. A semi-transparent grey horizontal band is overlaid across the middle of the image, containing the text.

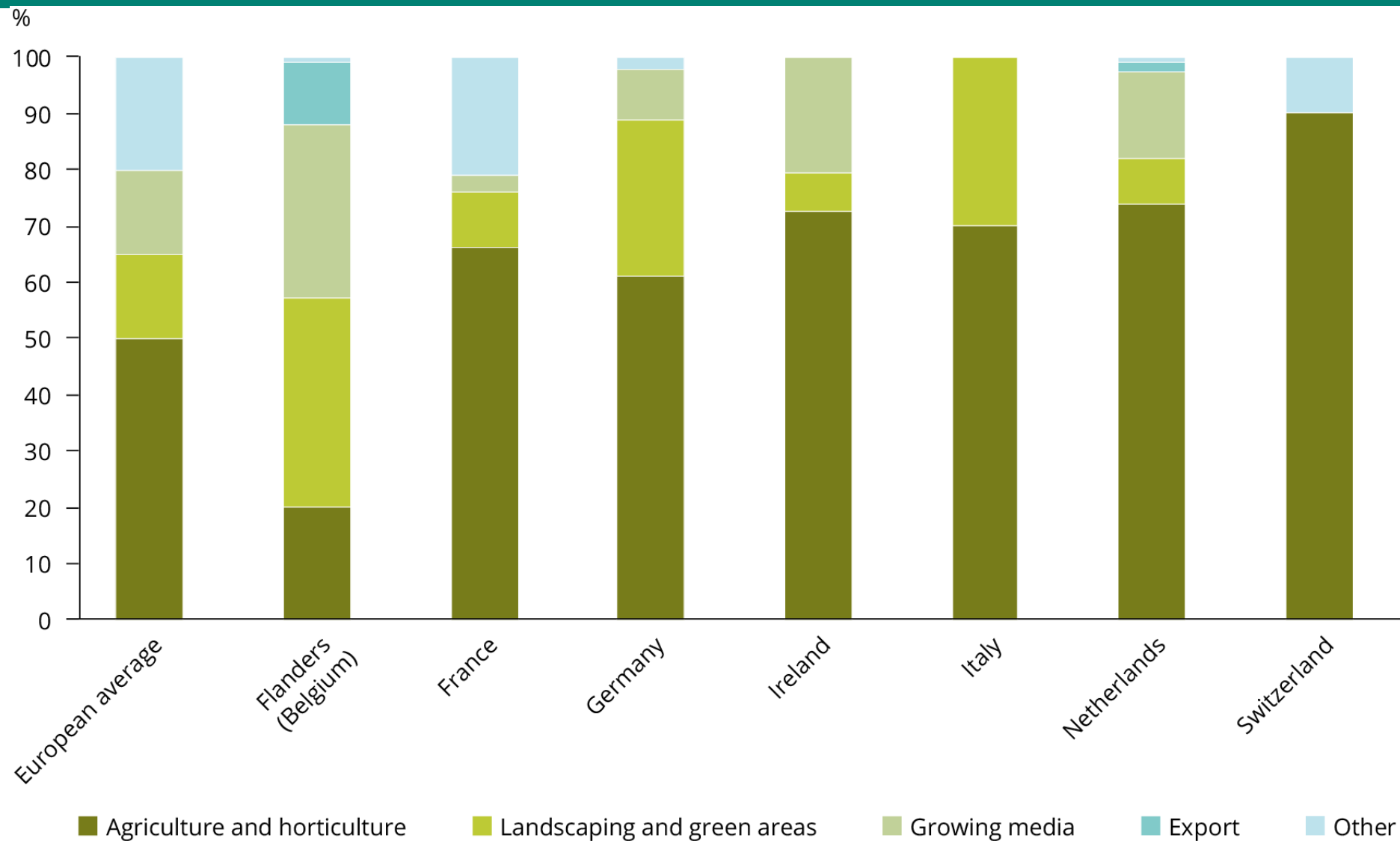
3. Bio-waste opportunities

Quality assurance of compost



Source: EEA, based on information provided by Eionet through an EEA and ETC/WMGE survey

Market for compost



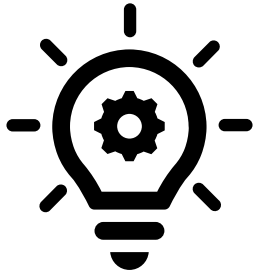
Source: EEA. Data for FR, IE, IT, NL from ETC/WMGE (2019a), for the European average from ECN (2019), for DE from BGK (2018), for Flanders from VLACO (2019), and for CH from Fuchs (2016).

Turning bio-waste into new products

If the bio-waste currently collected with mixed municipal waste was composted/digested, it could deliver another

- 134 000 tonnes of nitrogen fertilizer
- 44 000 tonnes of phosphate fertilizer

Emerging opportunities for higher-value products from bio-waste



Bioethanol?

Animal feed and insect protein?

Volatile fatty acids?

Hydrochar and activated carbon?



Biohydrogen?

High-density biofuels?

Upcoming: better knowledge




'Early warning' assessments related to waste targets (2023)

- More recent data on municipal waste composition
- New information on countries' policies on separate collection and home-composting of bio-waste
- Bio-waste treatment capacities
- Countries' plans to introduce national quality standards for compost and digestate



NEW Eurostat data

- Municipal waste material breakdown, including bio-waste category
- 1st reported food waste data, incl. breakdown by sectors



Thank you for your attention!

Find the report at

<https://www.eea.europa.eu/publications/bio-waste-in-europe>

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