

European Compost Network

Welcome from Europe -

**Bio-waste management and carbon
sequestration potential**

Massimo Centemero, vChair ECN

Marco Ricci, ECN TG's Compostable Plastics

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19/05/2021 ECOMONDO – Biowaste Management in Europe



www.saveorganicsinsoil.org



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www.compostnetwork.info

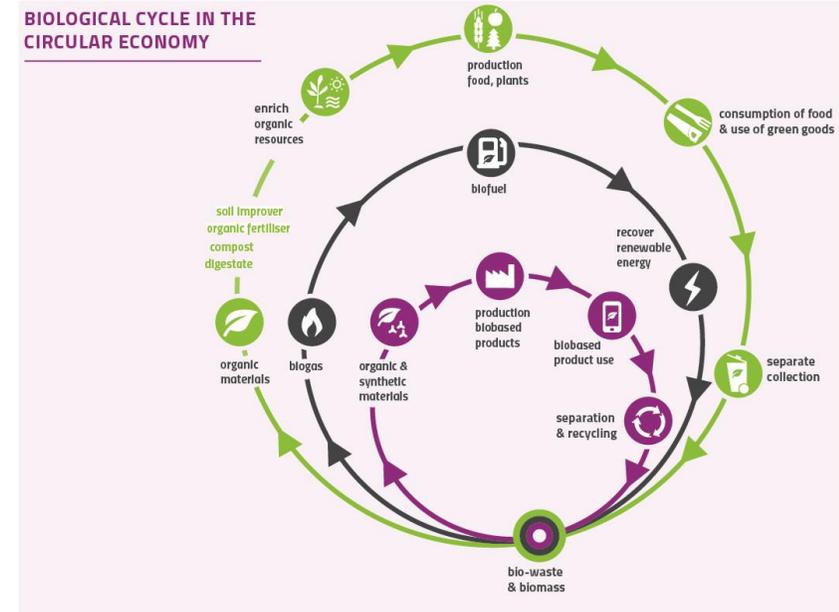
European Compost Network



ECN's Vision

“Living well within the limited resources of the planet respecting the organic cycle”

- ECN is the leading European membership organization
- Promoting sustainable recycling practices of organic resources: composting, anaerobic digestion...

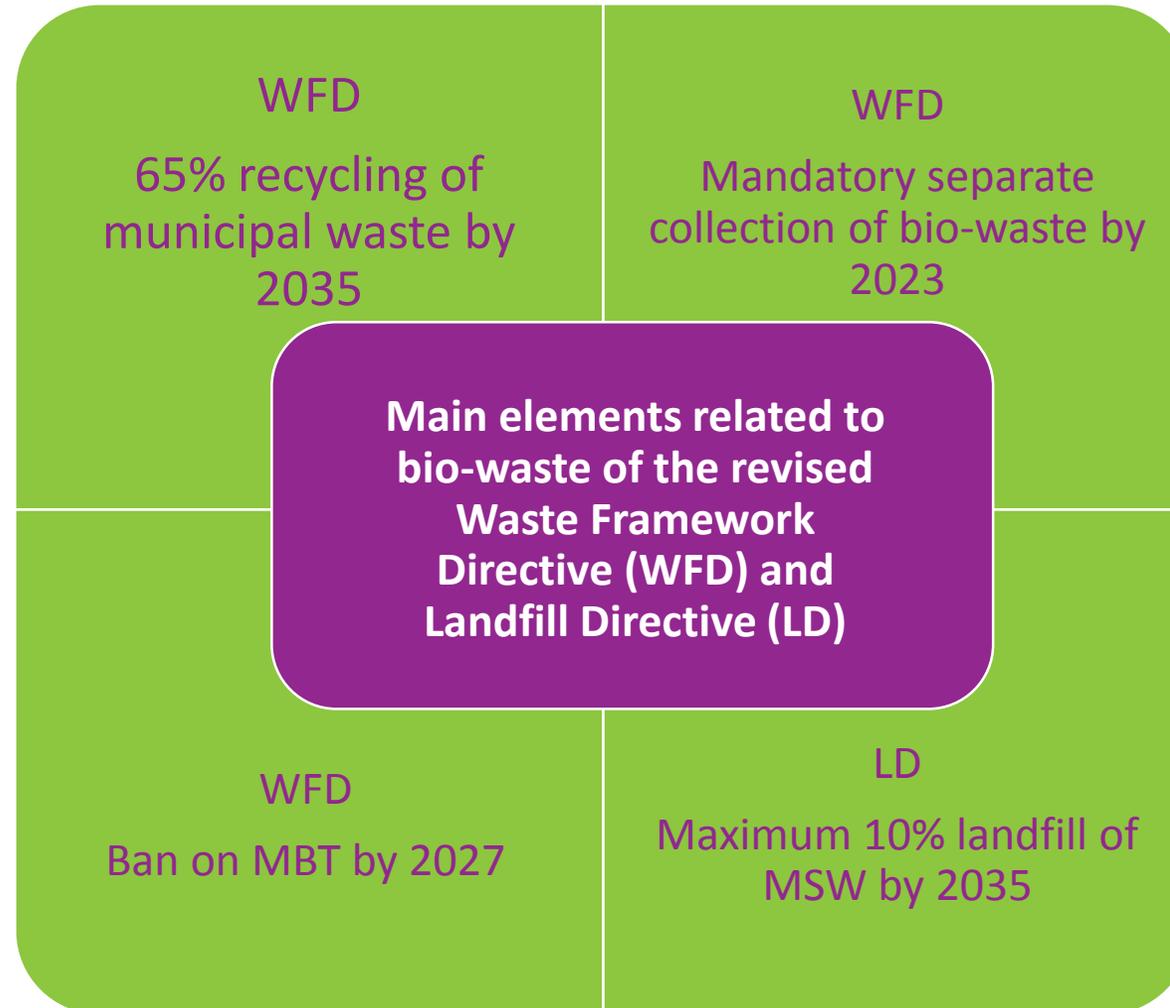


65 members from 27 European countries

48 M tpa treatment capacities

4.500 treatment plants (composting & AD)

The Waste Legislation on Bio-Waste Recycling

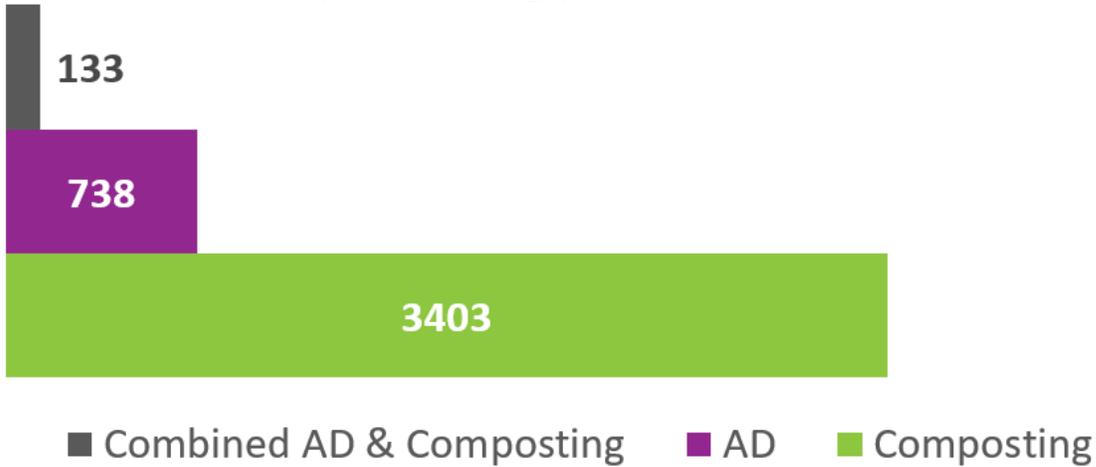


State on Bio-Waste Management in Europe



4274

Composting & AD bio-waste processing plants

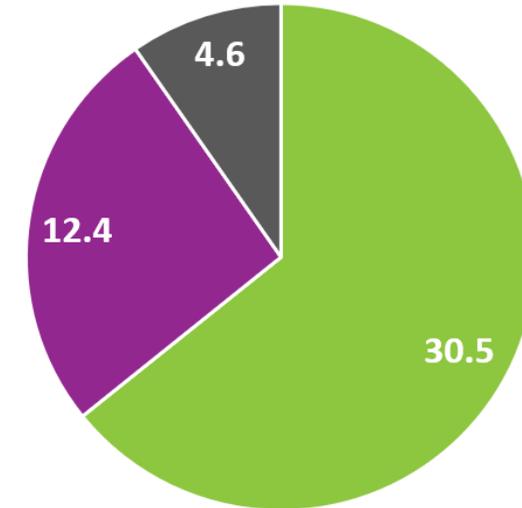


Source: ECN Status Report 2019

based on data from 18 European countries

(AT, BE, CH, DE, EE, FI, FR, HU, IE, IT, LT, NL, NO, PL, PT, SE, SI, UK)

47,5 million tonnes
bio-waste composted / digested

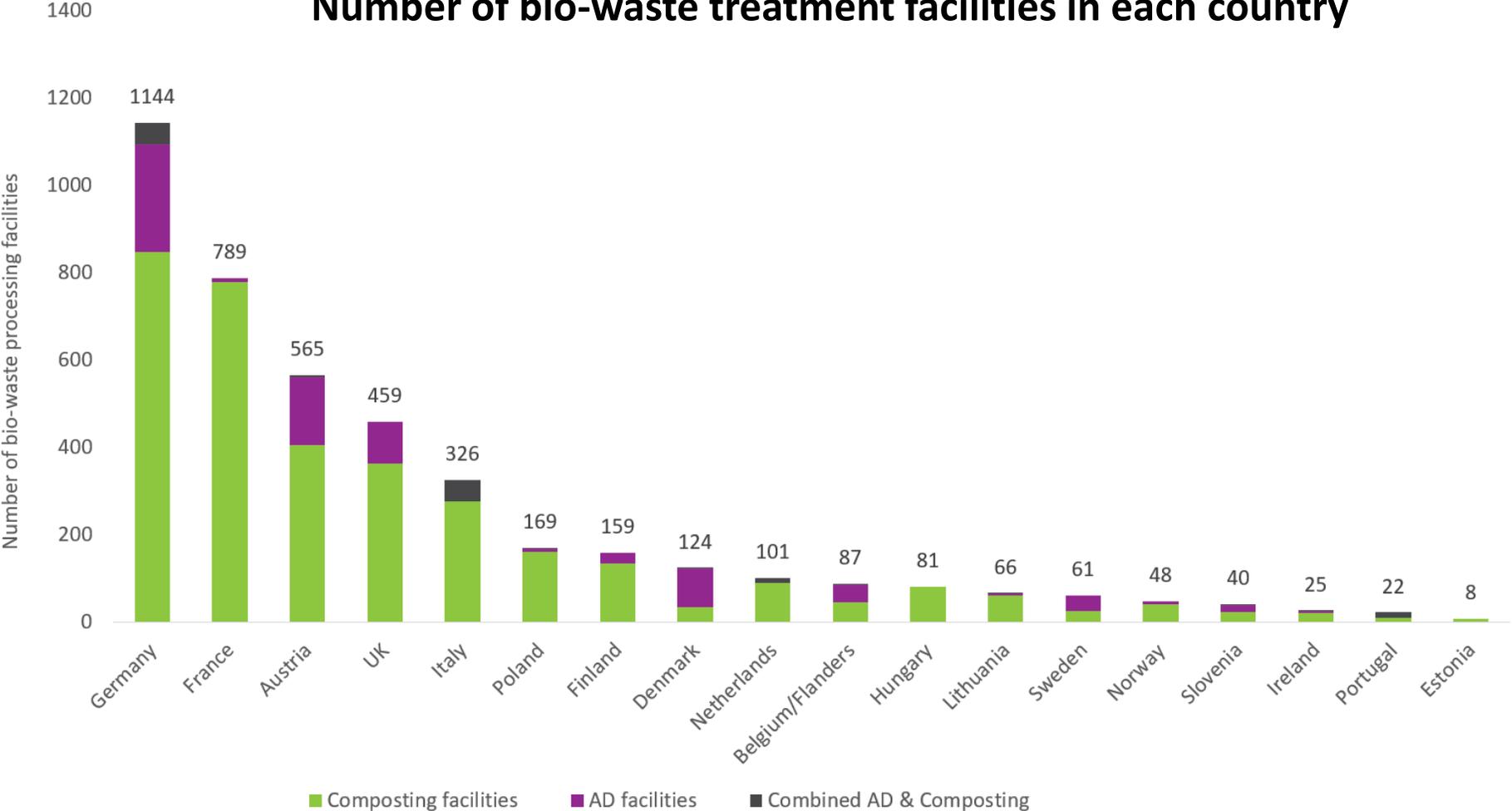


- Composting
- AD
- Combined AD & Composting

State on Bio-Waste Management in Europe



Number of bio-waste treatment facilities in each country



Source: ECN Status Report 2019, based on data from 18 European countries
 * AT, BE, CH, DE, EE, FI, FR, HU, IE, IT, LT, NL, NO, PL, PT, SE, SI, UK

Municipal waste & Recycling rates

Austria

4,928
Thousand tonnes
of municipal
waste per year

564 kg
Municipal waste
per capita per year

58%
Recycling rate



Germany

52,133
Thousand tonnes
of municipal
waste per year

633 kg
Municipal waste
per capita per year

67%
Recycling rate



Belgium

4,746
Thousand tonnes
of municipal
waste per year

419 kg
Municipal waste
per capita per year

54%
Recycling rate



Italy

30,112
Thousand tonnes
of municipal
waste per year

497 kg
Municipal waste
per capita per year

46%
Recycling rate



Source: ECN Status report 2019

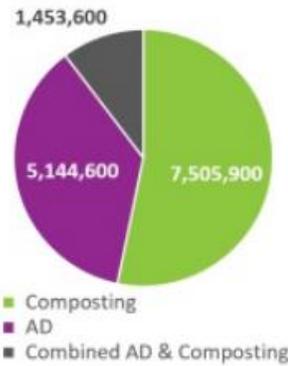
Bio-waste Management



Germany



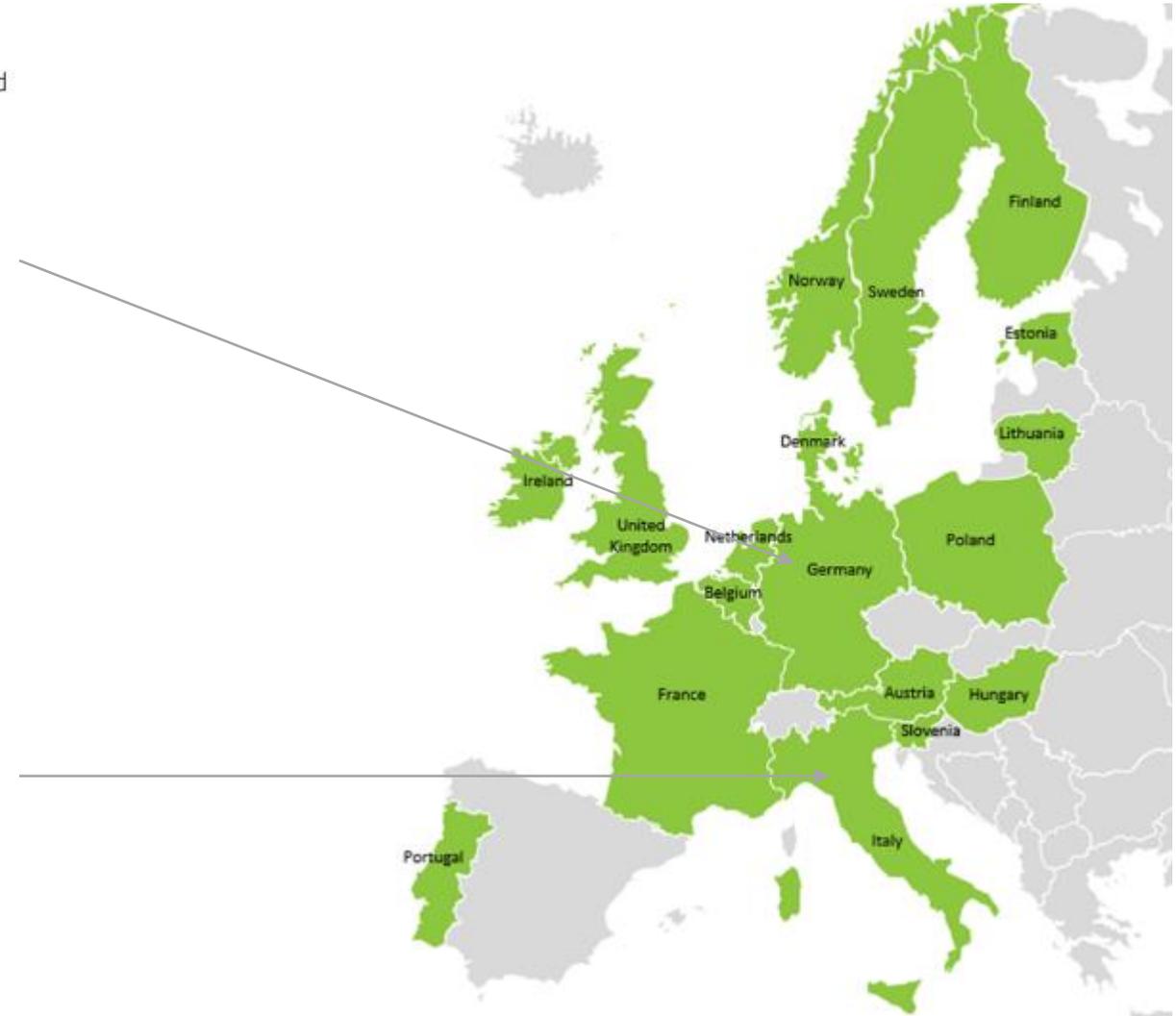
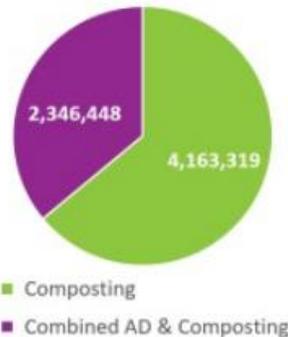
14.1 million tonnes
bio-waste composted / digested



Italy



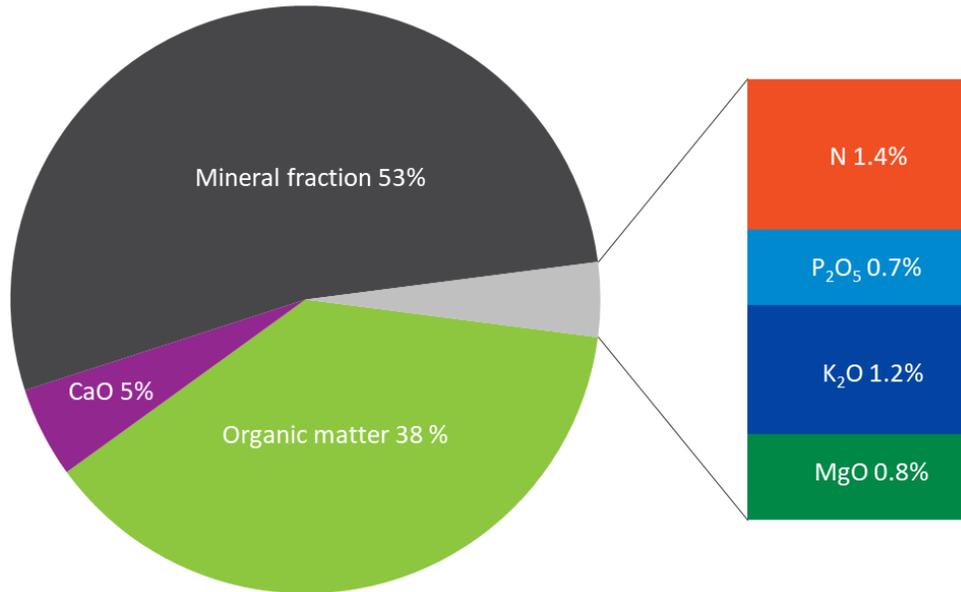
6.5 million tonnes
bio-waste composted / digested



Compost & Digestate – Nutrients and Organic Matter

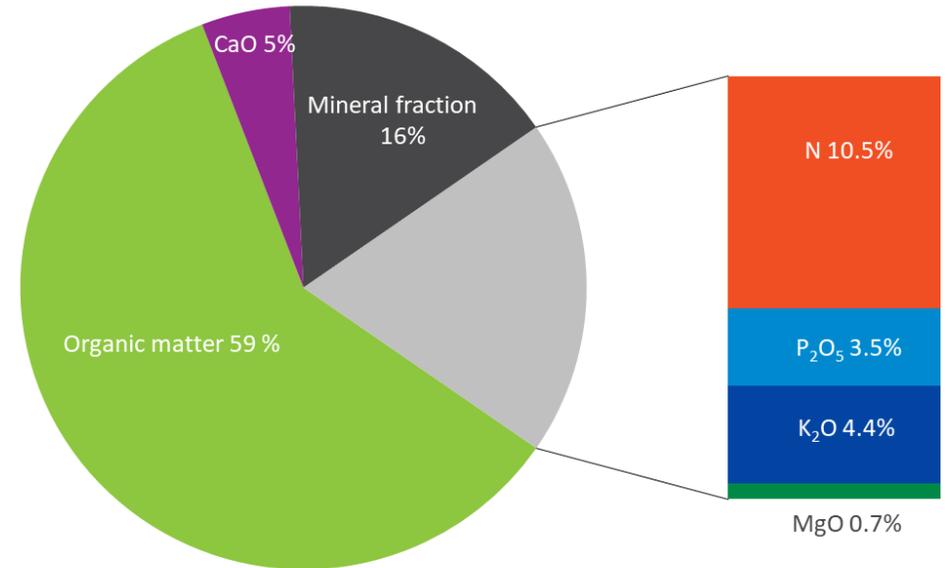


Compost Typical Composition (% dry matter)



Organic Soil Improver

Digestate typical composition (% dry matter)



Organic Fertiliser

and /or

Nutrient and Organic Matter Value



11.7
Million tonnes of
compost



4.1
Million tonnes of
digestate



Nutrients
129
Thousand tonnes of
NITROGEN RECYCLED



42
Thousand tonnes of
PHOSPHATE RECYCLED

(Theoretical estimates)

Carbon

3.5
Million tonnes
(dry mass) organic
carbon recycled

1.8
Million tonnes
(dry mass) humic
substances recycled

15,7 Mio. Tonnes of Compost and Digestate can replace

- **1.5 % of Total Inorganic Nitrogen***
- **4.3 % of Total Inorganic Phosphorus***

Application of 30 tonnes of fresh compost per hectare

- **9 tonnes of organic matter is added to the soil**

Compost Stores Carbon in the Soil

Soils can be improved by regular applications of quality compost.

- A fraction of the organic matter in compost is converted into a stable form called **'humus'** - this remains in soil for many years.

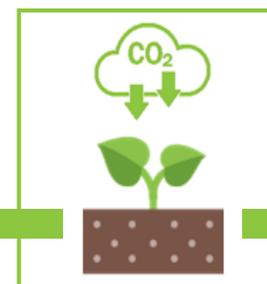
**1 tonne of compost (fresh mass)
sequesters**

30 kg soil organic carbon

110 kg CO₂ equivalents

(equivalent to 11% of its mass)

Source: ECN Factsheet 1: Soil Structure & Carbon Storage. www.compostnetwork.info



BIO-WASTE



COMPOST



SOIL



Soil Carbon Sequestration

Calculation basis

In 2017 appr. 48 million tonnes of bio-waste was treated, resulting in an estimated 12 million tonnes of compost (74% of the total) and 4 million tonnes of anaerobic digestate (26% of the total).

Scaling up, the median value of 118-138 million tonnes of bio-waste was taken, and it was assumed that there would be a pro-rata increase in compost and digestate production (i.e. 74% of the total would be compost and 26% digestate).

Europe Current

48 MILLION
TONNES A YEAR OF
BIO-WASTE

12 MILLION
TONNES A YEAR OF
COMPOST

1.3 MILLION
TONNES
A YEAR OF CO₂
EQUIVALENTS

EQUIVALENT TO **281**
WIND TURBINES
RUNNING FOR A YEAR⁵



Europe Potential

128 MILLION
TONNES A YEAR OF
BIO-WASTE

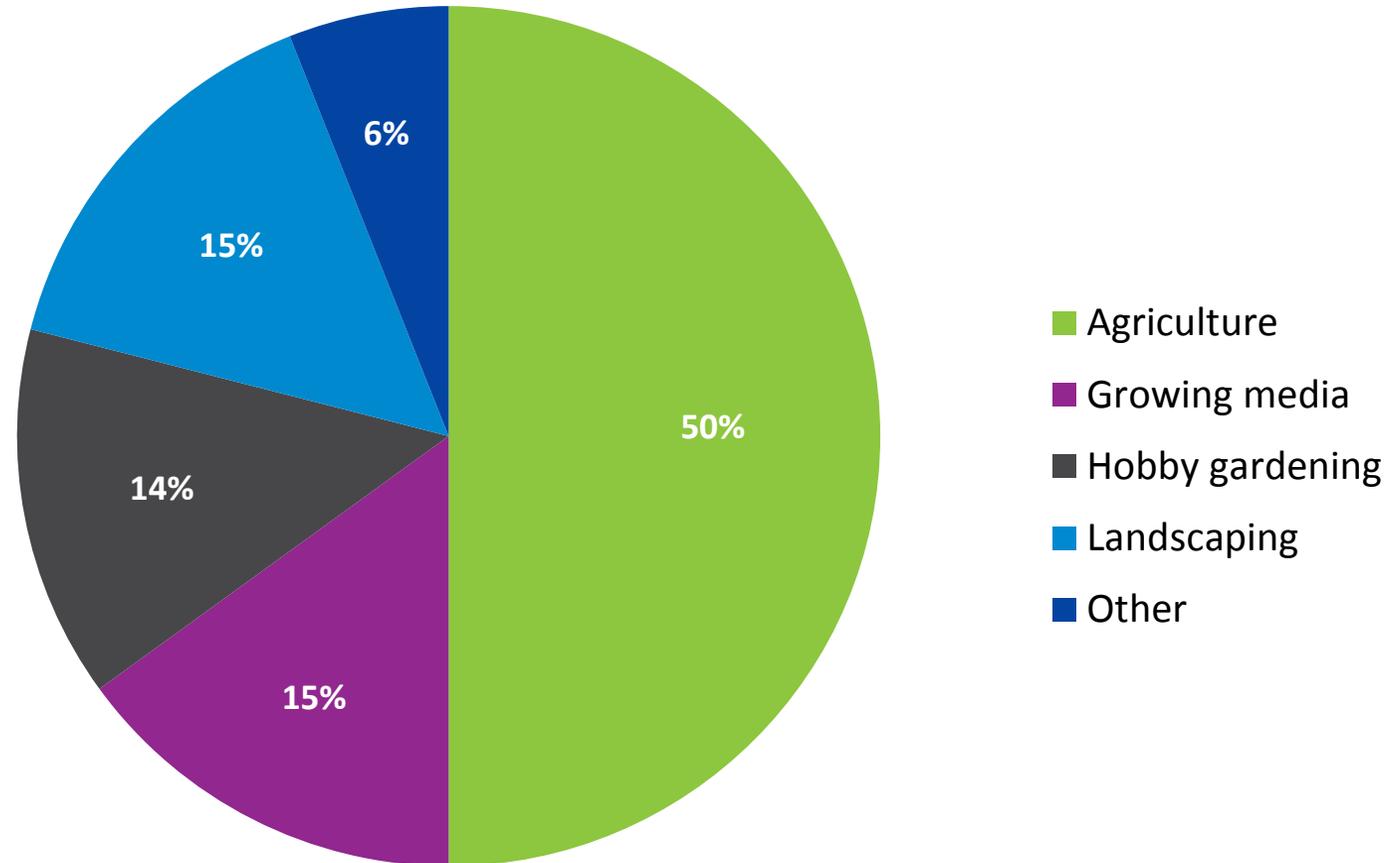
32 MILLION
TONNES A YEAR OF
COMPOST

3.5 MILLION
TONNES
A YEAR OF CO₂
EQUIVALENTS

EQUIVALENT TO **756**
WIND TURBINES
RUNNING FOR A YEAR⁵



Source: ECN Factsheet 1: Soil Structure & Carbon Storage. www.compostnetwork.info



Source: ECN Status Report 2019



Awareness raising campaign 'Save Organics in Soil'

- Raising the importance of soil organic matter and its role in sustainable and productive agriculture
- Recycling of carbon from bio-waste plays a key role in improving soils and for keeping soils healthy and productive.

EU policy response

- EU Carbon Farming Initiative within the Farm to Fork Strategy
- A New Soil Strategy for Europe to achieve land degradation neutrality by 2030.

The goals are to

- Protect soil fertility, increase organic matter, restore degraded soils, reduce erosion
- Define a 'good ecological status' for soils.



ICAW 2021

A Compost Journey Across Europe

- 23 videos from 14 countries
- 14 selected for the event
- All videos here:

<https://www.compostnetwork.info/policy/biowaste-in-europe/international-compost-awareness-week/a-compost-journey-across-europe/>

Further information



Sign the manifesto

‘Save Organics in Soil’:

www.saveorganicsinsoil.org



Join the international conference

Growing Media2021:

www.growingmedia2021.com



Visit ECN Homepage:

www.compostnetwork.info



GrowingMedia2021—International Symposium on Growing Media, Soilless Cultivation, and Compost Utilization in Horticulture

22-27 August 2021, Ghent, Belgium