Circular economy roles and responsibilities

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Austria

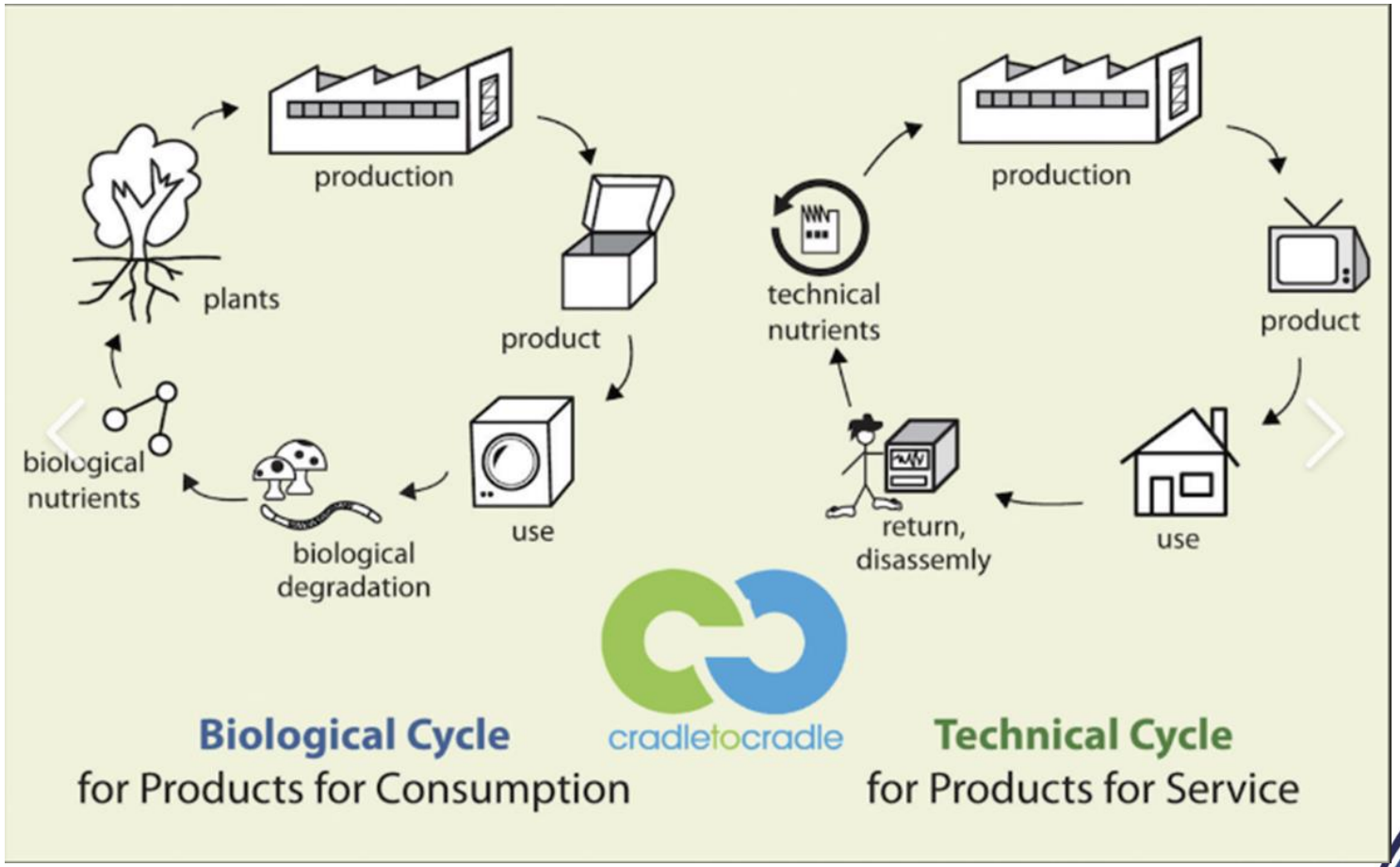
European federation for agricultural recycling

EFAR aderisce al Protocollo Lombardo per lo Sviluppo Sostenibile

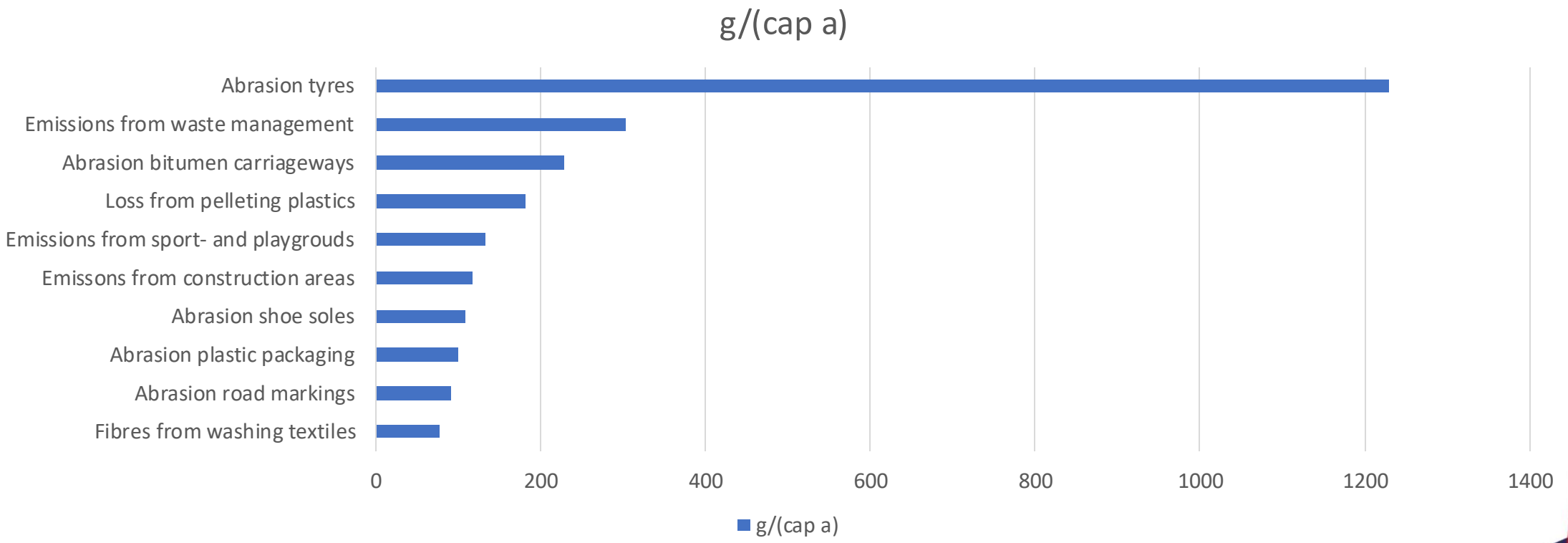
Sostenibilità in Lombardia

Regione Lombardia

cradle to cradle



Sources microplastic emissions



Grafik: LABORPRAXIS • Quelle: Bertling, Jürgen.; Bertling, Ralf; Hamann, Leandra: Kunststoffe in der Umwelt: Mikro- und Makroplastik. Ursachen, Mengen, Umweltschicksale, Wirkungen, Lösungsansätze, Empfehlungen. Kurzfassung der Konsortialstudie, Fraunhofer-Institut für Umwelt-, Sicherheits- und Energietechnik UMSICHT (Hrsg.), Oberhausen, Juni 2018 • Daten herunterladen • Erstellt mit Datawrapper

Sources PFAS

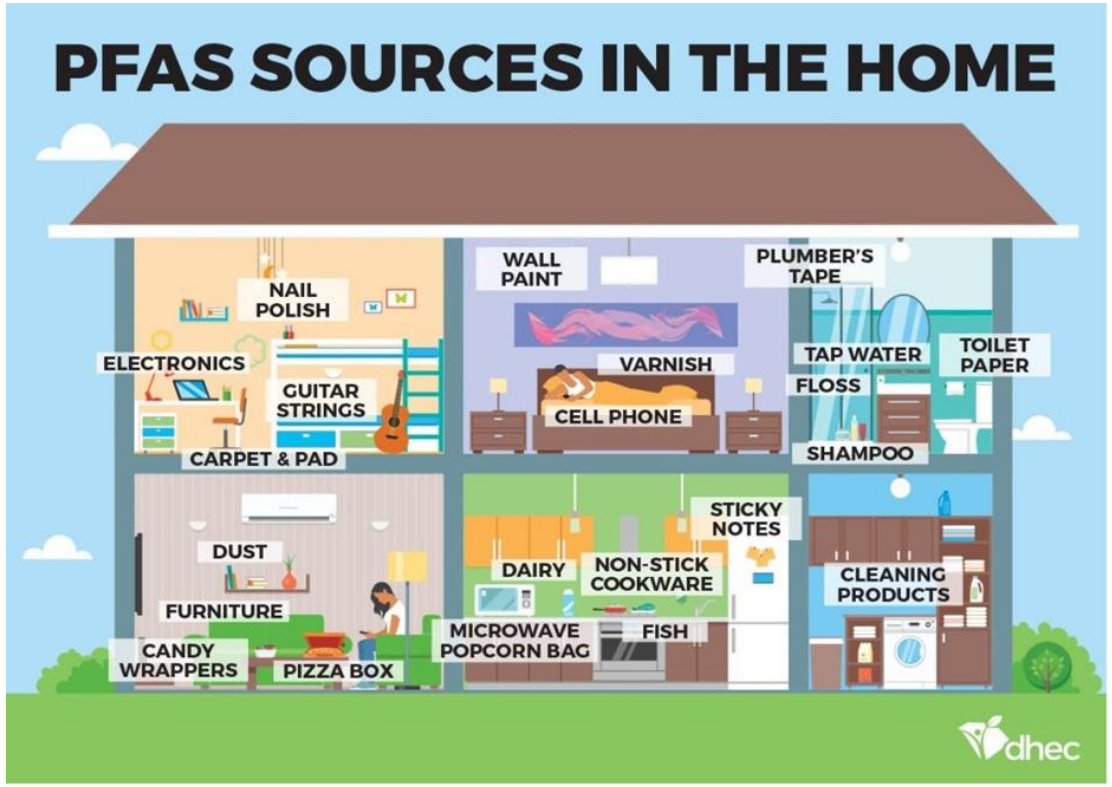
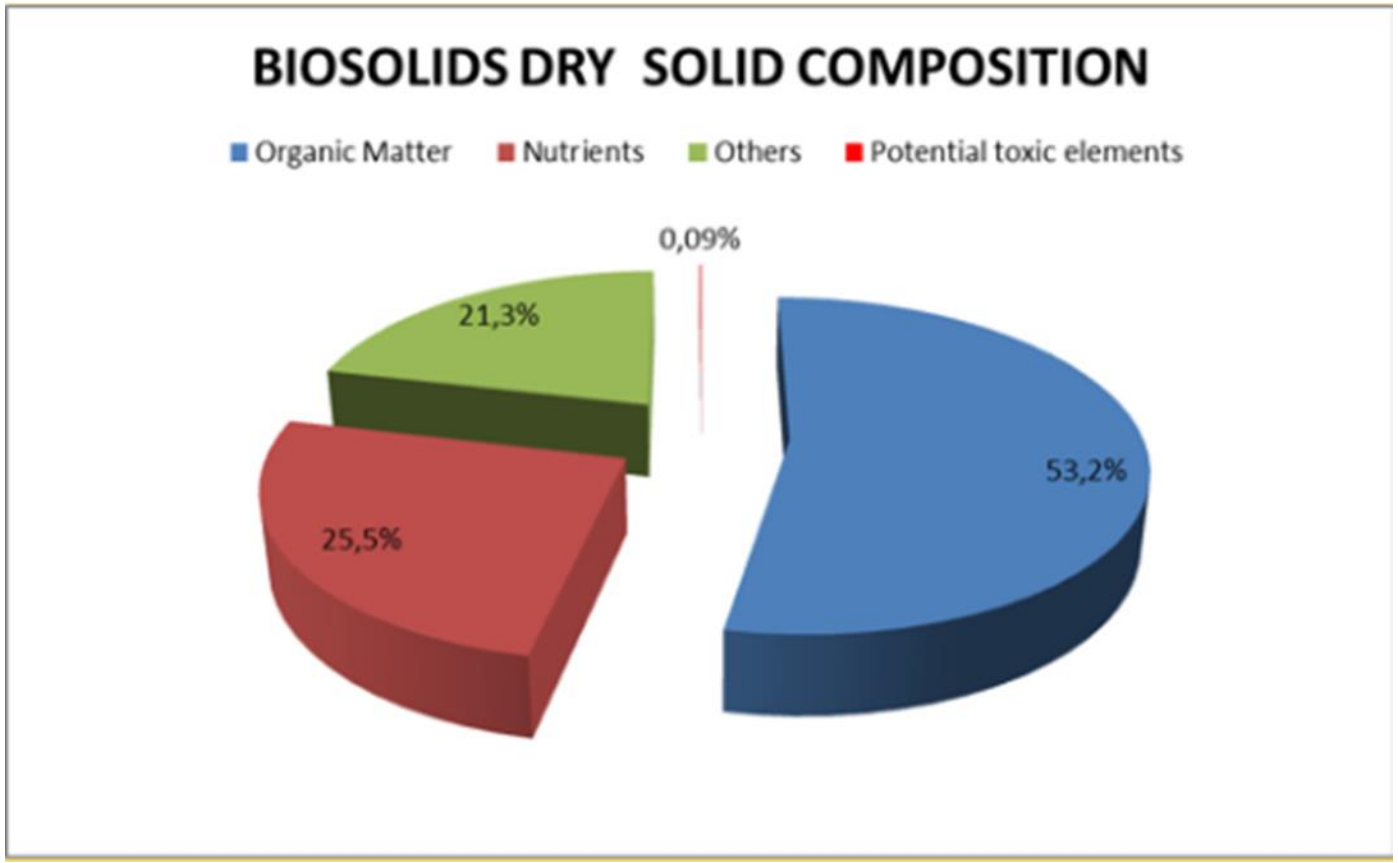


Figure 1: Graphic from DHEC depicting PFAS sources in the average home. EPA estimates that 80% of our exposure comes from sources oth than drinking water.

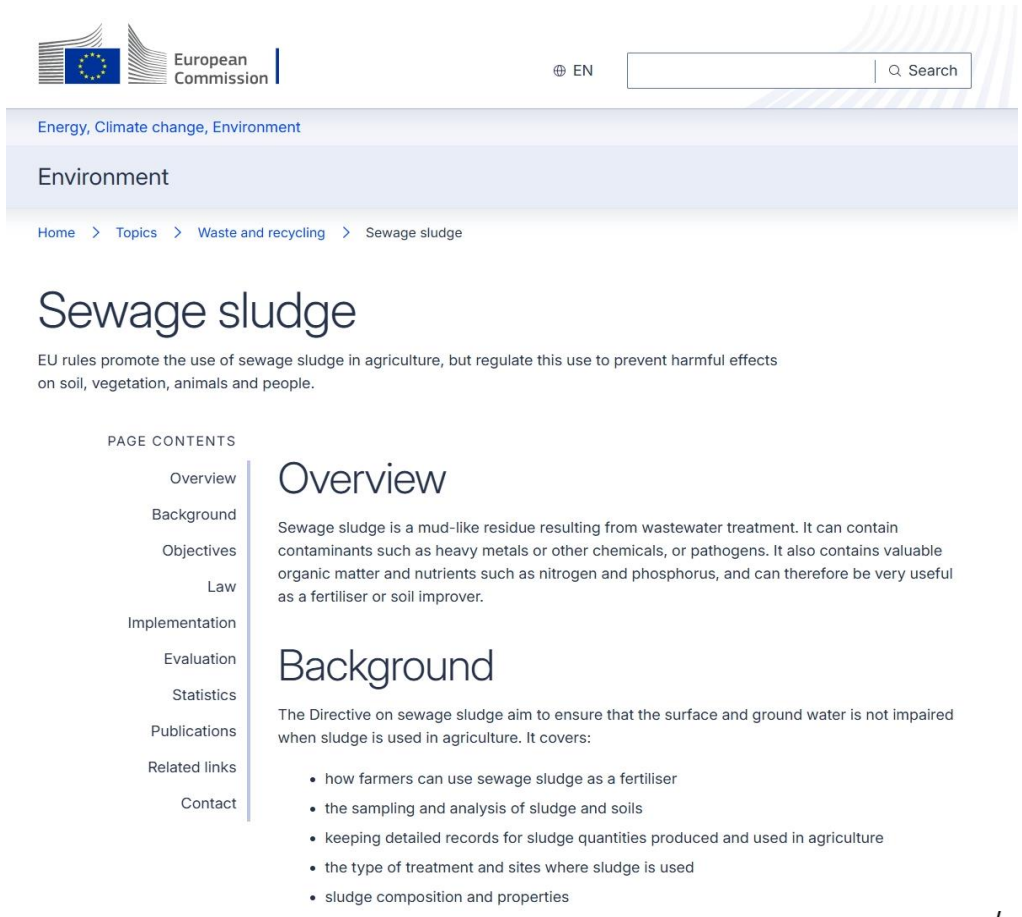
(https://scdhec.gov/environment/polyfluoroalkyl-substances-pfas)

Biosolids composition



Sewage sludge EU

- [Sewage sludge - European Commission]



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Sewage sludge

EU rules promote the use of sewage sludge in agriculture, but regulate this use to prevent harmful effects on soil, vegetation, animals and people.

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Overview

Sewage sludge is a mud-like residue resulting from wastewater treatment. It can contain contaminants such as heavy metals or other chemicals, or pathogens. It also contains valuable organic matter and nutrients such as nitrogen and phosphorus, and can therefore be very useful as a fertiliser or soil improver.

Background

The Directive on sewage sludge aim to ensure that the surface and ground water is not impaired when sludge is used in agriculture. It covers:

- how farmers can use sewage sludge as a fertiliser
- the sampling and analysis of sludge and soils
- keeping detailed records for sludge quantities produced and used in agriculture
- the type of treatment and sites where sludge is used
- sludge composition and properties

Sewage sludge EU 2

Objectives

The aims of the Sewage Sludge Directive are

- to protect humans, animals, plants and the environment by ensuring that heavy metals in soil and sludge do not exceed set limits
- to increase the amount of sewage sludge used in agriculture

The Directive also

- sets limits for the concentration of seven heavy metals in sewage sludge intended for agricultural use and in sludge-treated soils (cadmium, copper, nickel, lead, zinc, mercury, chromium)
- bans the use of sewage sludge that results in concentrations of these heavy metals in soil exceeding these limit values

Law

- Sewage Sludge Directive
- Consolidated version of the Sewage Sludge Directive
- Summary of EU sewage sludge law
- Regulation aligning and streamlining reporting requirements in environmental legislation
- Decision on procedural rules in the field of environmental reporting
- Directive on the treatment of urban wastewater

Implementation

The latest report on the implementation is available here.

Sewage sludge EU 3

Document 52023SC0158

COMMISSION STAFF WORKING DOCUMENT EXECUTIVE SUMMARY OF THE EVALUATION Council Directive 86/278/EEC of 12 June 1986 on the protection of the environment, and in particular of the soil, when sewage sludge is used in agriculture

SWD/2023/0158 final

Executive summary

The Sewage Sludge Directive [1] (SSD) aims at encouraging the use of sewage sludge in agriculture while preventing negative health and environmental impacts. It sets quality requirements for the sludge and the soil on which it is to be used, by setting upper limits on their content in seven heavy metals (cadmium, copper, nickel, lead, zinc, mercury, chromium). It also requires sludge treatment before application, and consideration of the nutrient needs of the plants.

Effectiveness

About 40% of the 2 to 3 million tons of sludge yearly produced in the EU (17 kg/ha) are applied on farmland. The other share is incinerated (27%), composted (about 10%), or landfilled (currently estimated at 11%, and phasing out). Sludge use in agriculture has remained the main route for sludge management in the EU, allowing to curb sewage sludge disposal through landfilling, while acting as a fertiliser which also shows to improve further soil properties.

Implementation Report

5.7 Application of Sludge in Agriculture

The quantity of sludge generated has stayed relatively constant over this timeframe, generally ranging from around 7 million to 8 million tonnes. The most significant rise occurred between 2008 and 2010, after which production levels remained fairly stable until 2012. Following a dip in 2013, production has averaged about 7 million tonnes, exhibiting minor annual fluctuations. Similarly, the volume of sludge utilized in agriculture has largely remained steady, typically between 2 million and 3 million tonnes.
The most pronounced annual variation took place between 2012 and 2013, marked by a significant decline.

Solutions for circular economy

- No connection from rural areas to urban markets without soulutions to bring valuable resources back
- Strict regulation to avoid contamination of the biological cycle
- Cascading approach for organic waste – energy + fertilizer + soil improver from wastewater and biowaste
- Follow EU waste hierarchy and recycling targets!