Regionernes Videncenter
for Miljø og Ressourcer

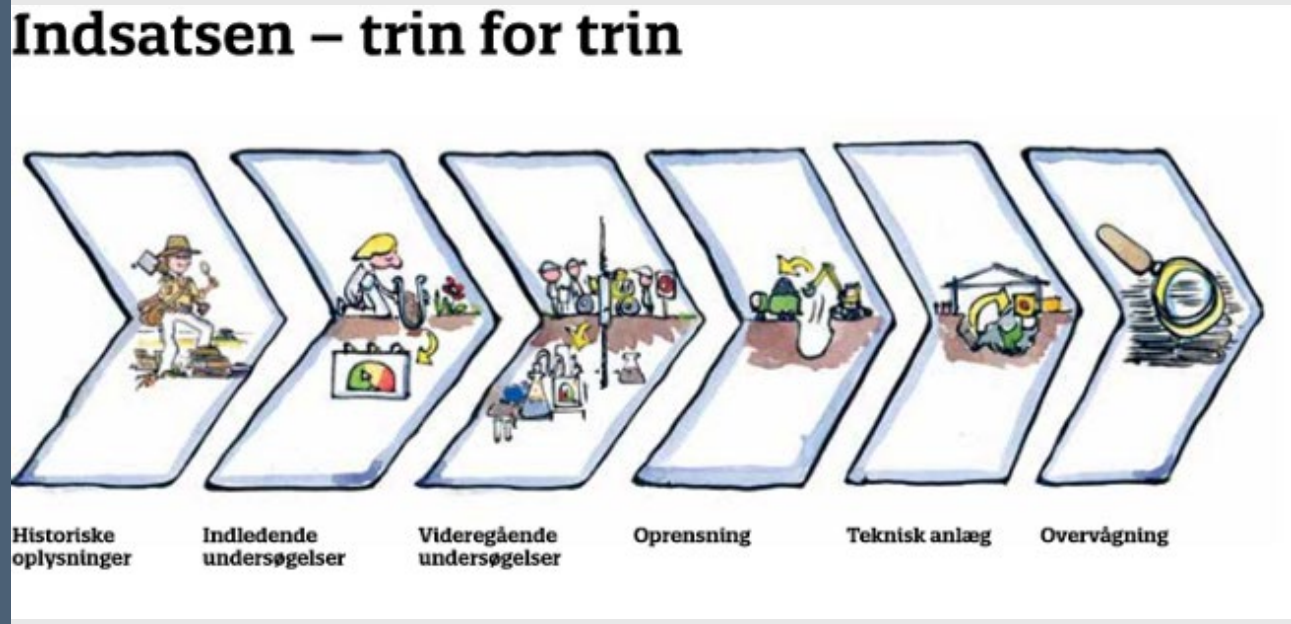
30. maj 2024
ENVINA

Reguleringsmæssige tendenser på jordforureningsområdet – med afsæt i forslaget til et Jorddirektiv (Soil Monitoring Law)

Christian Andersen

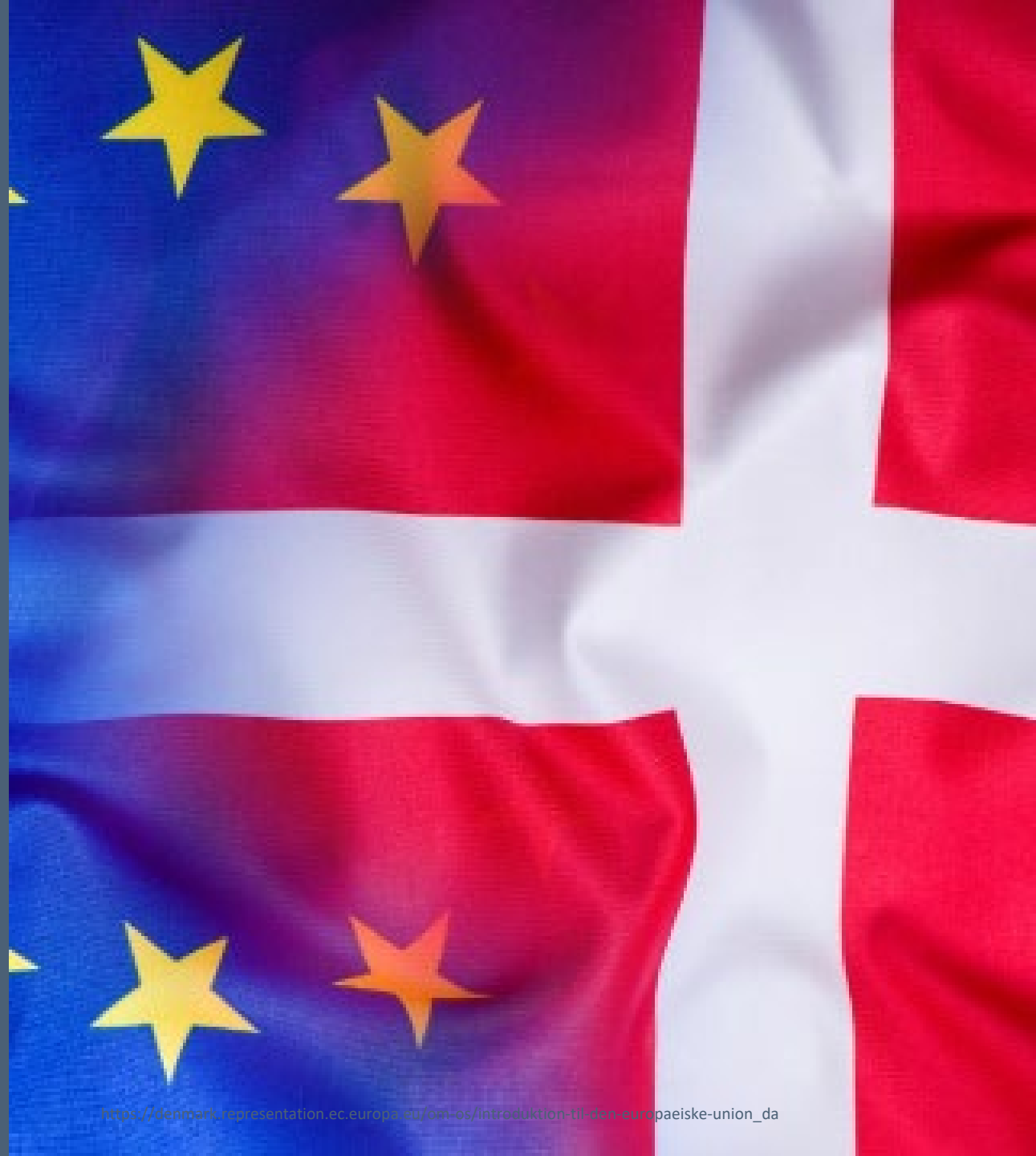
Punktkilder skal man

- Identificere (artikel 13)
- Undersøge (artikel 14)
- Risikovurdere, risikoreducere (artikel 15)
- Oprette et register for (artikel 16)



Potentielle konfliktpunkter

- Terminologi (identificere, undersøge, risikovurdere, trinvis tilgang)
- Skal grunde med igangværende aktiviteter kortlægges?
- Skelner vi mellem ny og gammel forurening?
- Risikobaseret tilgang vs. Genopretning til hidtidig tilstand
- Skal alle potentielt forurenede grunde undersøges?
- Kommissionen undervurderer hvad jordforureningsopgaven koster (400 mia. kr.)
- Delegerede beføjelser til Kommissionen



https://denmark.representation.ec.europa.eu/om-os/introduktion-til-den-europaeiske-union_da

Læringspunkter fra SML

- Styrket genanvendelse – af jord og grunde
- Diffus forurening og baggrundsniveauer
- Ansvarshierarki
- Eksponeringsveje
- Bæredygtighed som kriterie for indsatsen
- Forsigtighedsprincippet og en fornyet afvejning af hensyn

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CAVEAT:

Det følgende er klippet fra et ikke-offentlige kompromisforslag samt enkelte ændringsforslag. Direktivet er endnu ikke vedtaget. Direktivet får – hvis vedtaget – formentlig ingen eller begrænset indflydelse på JFL

https://commons.wikimedia.org/wiki/File:Flag_map_of_the_European_Union.png

Chapter 1

Article 1 - Objective

1. The objective of the Directive is to put in place a solid and coherent soil **monitoring framework** for all soils across the EU and to continuously improve soil health in the Union with the view to achieve **healthy soils** by 2050 and maintain soils in healthy condition, so that they can supply multiple ecosystem services at a scale sufficient to meet environmental, societal and economic needs, prevent and mitigate the impacts of climate change and biodiversity, increase the resilience against natural disasters and for food security **and that soil contamination is reduced to levels no longer considered harmful to human health and the environment**.

2. This Directive lays down measures on:

(a) monitoring and assessment of soil health;

(b) sustainable management of soils;

(c) **identification and management of contaminated sites**.

Chapter 1

1a. This Directive contributes to fulfilling international and Union-level commitments, objectives and goals, including those contained in:

….

(f) the Roadmap to a **Resource Efficient Europe** (COM/2011/0571);

[Turning waste into a resource]

- Se også EU soil strategy for 2030 hvor der nævnes et 'soil pasport' – udgik af direktivforslaget

Chapter 1

Art. 3 – definitions

(10) ‘contaminated site’ means a delineated area with confirmed soil contamination caused by **point-source anthropogenic activities**

(11) ‘**soil descriptor**’ means a parameter describing a physical, chemical, or biological characteristic of soil health;

[Chapter 2 angår moniteringsnetværket – chapter 3 Bæredygtig praksis, net land take etc.]

Annex I - II

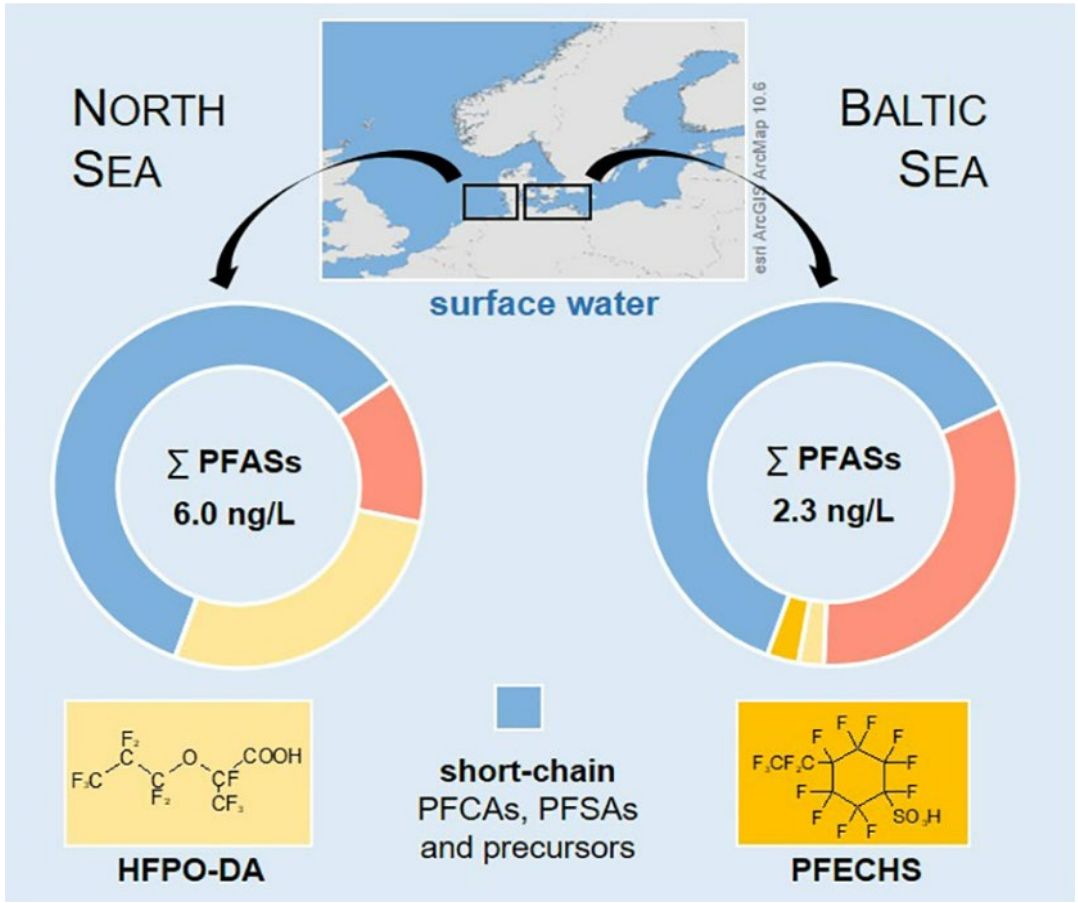
Annex I Part B: soil descriptors with criteria for healthy soil condition established at Member States level.

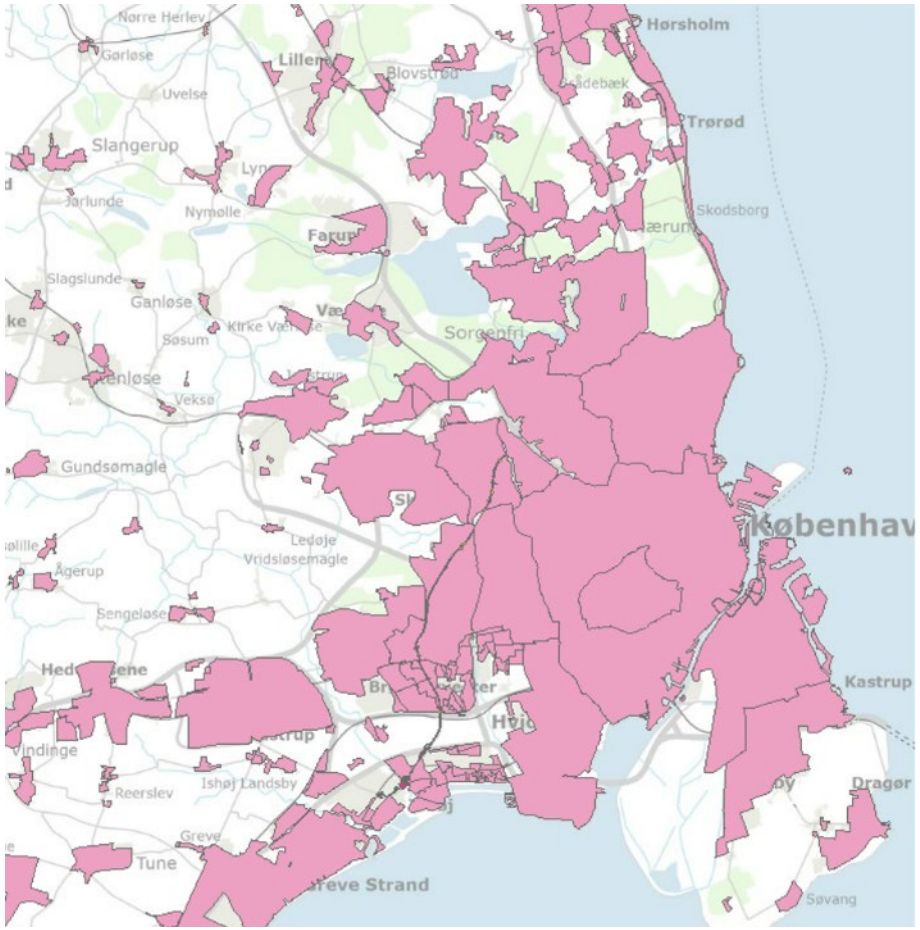
- concentration of heavy metals in soil: As, Sb, Cd, Co, Cr (total), Cr (VI), Cu, Hg, Pb, Ni, Tl, V, Zn (µmg per kg) - concentration of a selection of organic contaminants
- **Natural and anthropogenic background levels should be taken into account in the risk assessment.**

Annex II

Concentration of heavy metals in soil: … Concentration of a selection of organic contaminants defined by Member States and taking into account existing Union legislation (**e.g. on water quality or pesticides**)

Eksempler på baggrundsniveauer





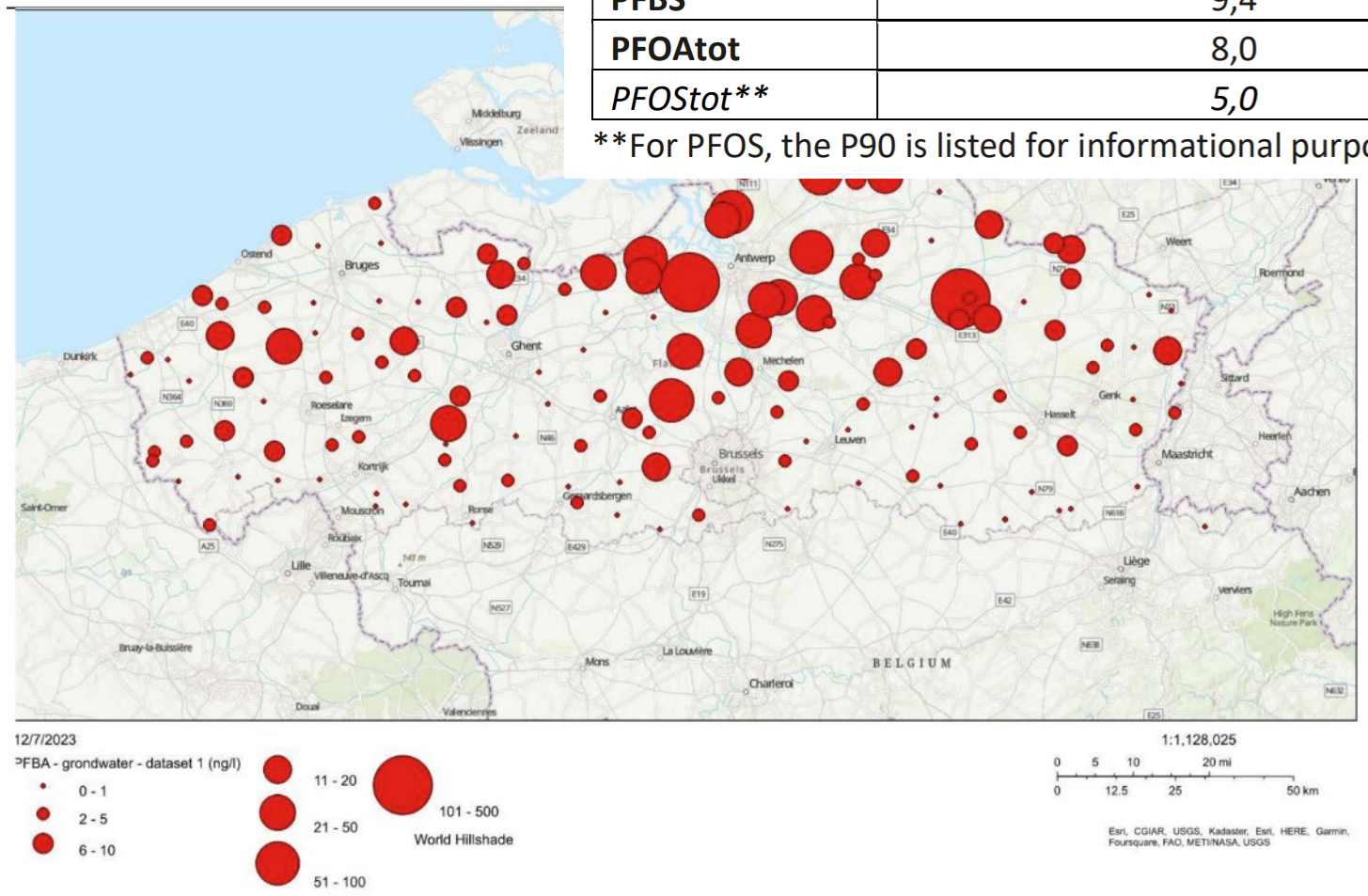
https://www.sciencedirect.com/science/article/pii/S0048969719324167

Baggrundsværdi for PFAS i Flandern

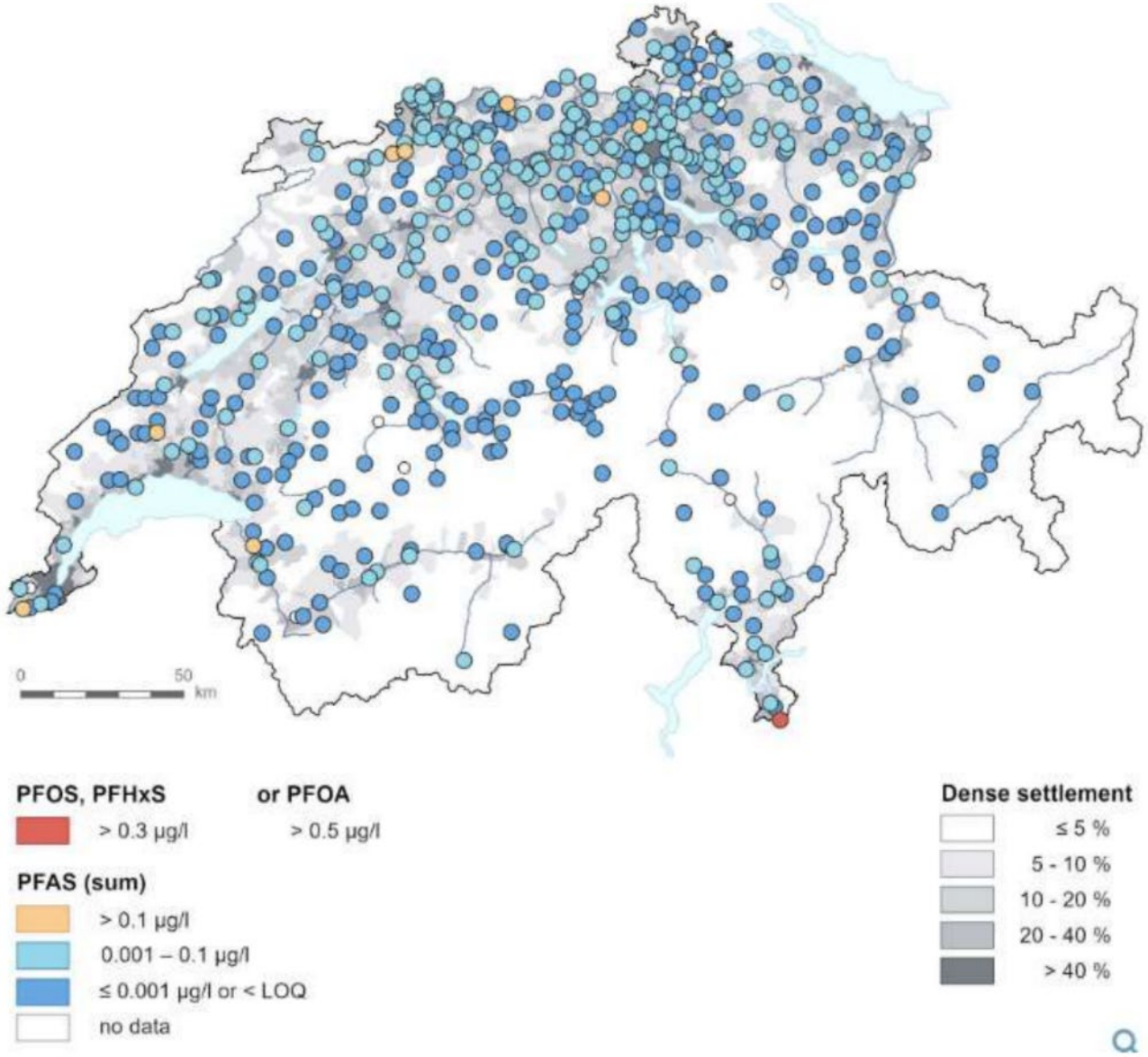
Table B: Proposed background value for PFBA, PFBS, and $PFOA_{total}$ in groundwater and indicative P90 value for PFOS in groundwater

	P90 in ng/L
PFBA	21,0
PFBS	9,4
PFOAtot	8,0
*PFOStot***	*5,0*

**For PFOS, the P90 is listed for informational purposes only, it is not proposed as a background value.



Schweiz


0
50
km
PFOS, PFHxS
or PFOA
> 0.3 µg/l
> 0.5 µg/l
PFAS (sum)
> 0.1 µg/l
0.001 – 0.1 µg/l
≤ 0.001 µg/l or < LOQ
no data
Dense settlement
≤ 5 %
5 - 10 %
10 - 20 %
20 - 40 %
> 40 %

NL - no distinction between natural and antropogenic BGL - the purpose of BGL is what can be reused

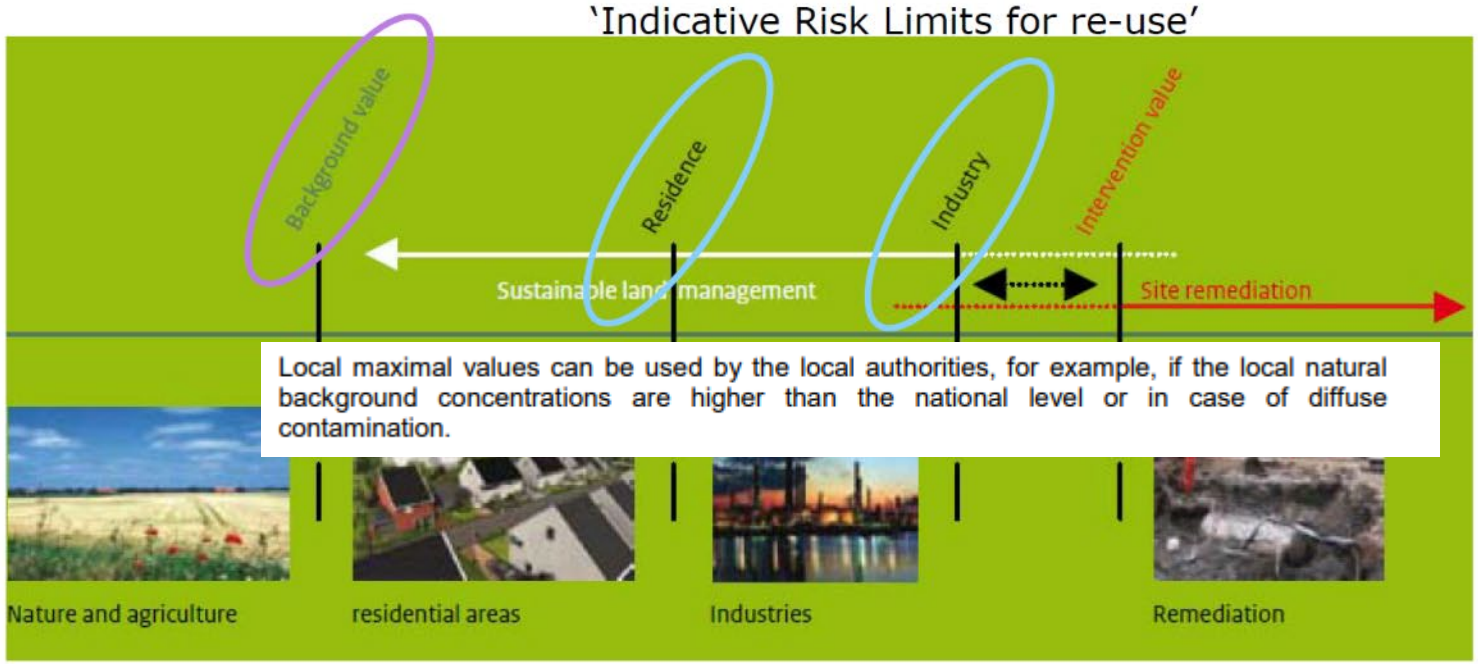
Building blocks for Soil & Sediment standards

Substance screen

- Going from longlist (~50 substance(shortlist (4 groups+PreFAS)
- Based on expert judgement (expert
- Longlist established b sources
- Criteria for ranking:
  - **P**ersistance
  - **M**obility
  - **B**ioaccumulatio
  - **T**oxicity
  - **E**missions
  - **O**bservations a
- Additional considerat substances/type of a standards not derive

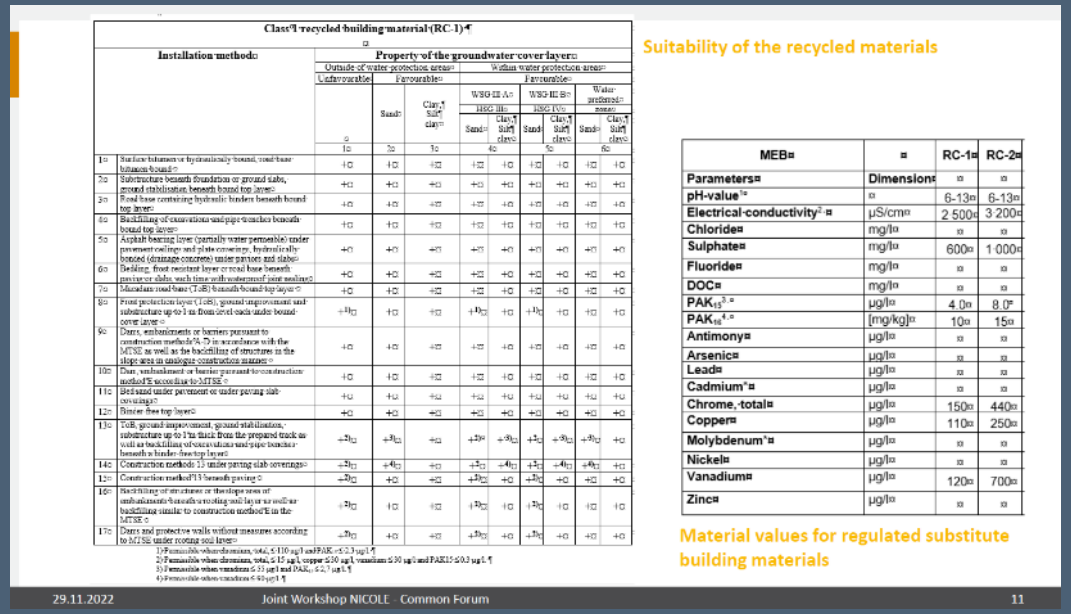
Select

Medium chain (C14-C17)
Polybromated
Pyrethroids
Glyphosate &
Prefas: N-EtF



Genanvendelsesprotokol i Tyskland

- Produktkatalog for materiale genanvendelse



Class I recycled building material (RC-1)

	Installation method	Property of the groundwater cover layer								
		Outside of water protection areas			Within water protection areas					
		Unfavourable	Favourable		Favourable					
			Sand	Clay, silt, clay	WSG III A		WSG III B		Water protected zones	
					HSG III		HSG IV			
					Sand	Clay, silt, clay	Sand	Clay, silt, clay	Sand	Clay, silt, clay
		0	1	2	4		5		6	
1	Surface bitumen or hydraulically bound, road base bitumen bound	+	+	+	+	+	+	+	+	+
2	Substructure beneath foundation or ground slabs, ground stabilisation beneath bound top layer	+	+	+	+	+	+	+	+	+
3	Road base containing hydraulic binders beneath bound top layer	+	+	+	+	+	+	+	+	+
4	Backfilling of excavations and pipe trenches beneath bound top layer	+	+	+	+	+	+	+	+	+
5	Asphalt bearing layer (partially water permeable) under pavement coverings and plate coverings, hydraulically bonded (drainage concrete) under pavers and slabs	+	+	+	+	+	+	+	+	+
6	Bedding, frost resistant layer or road base beneath pavers or slabs, each time with watertight joint sealing	+	+	+	+	+	+	+	+	+
7	Macadam road base (ToB) beneath bound top layer	+	+	+	+	+	+	+	+	+
8	Frost protection layer (ToB), ground improvement and substructure up to 1 m from level each under bound cover layer	+[1]	+	+	+[1]	+	+[1]	+	+	+
9	Dam, embankments or barriers pursuant to construction methods 7-9 in accordance with the MTSE as well as for backfilling of structures in the slope area in analogue construction manner	+	+	+	+	+	+	+	+	+
10	Dam, embankment or barrier pursuant to construction method 8 according to MTSE	+	+	+	+	+	+	+	+	+
11	Bed sand under pavement or under paving slab coverings	+	+	+	+	+	+	+	+	+
12	Joint or free top layer	+	+	+	+	+	+	+	+	+
13	ToB, ground improvement, ground stabilisation, substructure up to 1 m thick from the prepared track as well as backfilling of excavations and pipe trenches beneath a binder-free top layer	+[2]	+[3]	+	+[2]	+[3]	+[2]	+[3]	+[3]	+
14	Construction methods 13 under paving slab coverings	+[2]	+[3]	+	+[2]	+[3]	+[2]	+[3]	+[3]	+
15	Construction method 13 beneath paving	+[2]	+	+	+[2]	+	+[2]	+	+	+
16	Backfilling of structures or the slope area of embankments beneath covering and layer as well as backfilling similar to construction method 8 in the MTSE	+[2]	+	+	+[2]	+	+[2]	+	+	+
17	Dams and protective walls without measures according to MTSE under rooting soil layer	+[2]	+	+	+[2]	+	+[2]	+	+	+

1) Permissible when chromium, total ≤ 110 µg/l and PAK ≤ 2.3 µg/l
2) Permissible when chromium, total ≤ 15 µg/l, copper ≤ 50 µg/l, vanadium ≤ 50 µg/l and PAK15 ≤ 0.3 µg/l
3) Permissible when vanadium ≤ 33 µg/l and PAK15 ≤ 2.7 µg/l
4) Permissible when vanadium ≤ 83 µg/l

Suitability of the recycled materials

MEB		RC-1	RC-2
Parameters	Dimension		
pH-value[1]		6-13	6-13
Electrical conductivity[2]	µS/cm	2 500	3 200
Chloride	mg/l		
Sulphate	mg/l	600	1 000
Fluoride	mg/l		
DOC	mg/l		
PAK15[3]	µg/l	4.0	8.0
PAK16[4]	[mg/kg]	10	15
Antimony	µg/l		
Arsenic	µg/l		
Lead	µg/l		
Cadmium	µg/l		
Chrome, total	µg/l	150	440
Copper	µg/l	110	250
Molybdenum	µg/l		
Nickel	µg/l		
Vanadium	µg/l	120	700
Zinc	µg/l		

Material values for regulated substitute building materials

29.11.2022 Joint Workshop NICOLE - Common Forum 11

Example on decision key for material containing Chromium, Joerg Frauenstein, UBA, Athens 2022, on the German Substitute Building Materials Ordinance

Chapter IV

Art 12

Member States shall establish a **hierarchy** of responsibility defining the responsible party or parties [normalt: forurener-operatør-ejer-lokal myndighed-stat]

Art. 15

The risk reduction measures may consist of the measures referred to in Annex V. When deciding on the appropriate risk reduction measures the **costs, benefits**, effectiveness, durability, **sustainability, improvement of soil health** and technical feasibility of available risk reduction measures shall be taken into account.

Annex VI – Principles for site specific risk assessment

- **Natural and anthropogenic background concentrations should be considered.**
- Exposure assessment requires to identify the path by which soil contaminants may reach receptors. Exposure pathways may include inhalation, ingestion, dermal contact, **plant uptake**, migration to groundwater or others.
- The risk characterization helps to assess and prioritize the need for risk reduction and remediation measures, and to ensure that the condition of the soil is compatible with the current and planned land use **[Fit-for-use principle]**

Preambles/ betragtning

- (43)…it is essential to also consider the impact of contaminated sites on other environmental media **or matrices other than only soil, such as groundwater or surface water**.
- (45) specific events can also trigger such investigation…**soil excavation, and land use changes**, **land or real-estate transactions**… baseline reports
- (46b) The cost-benefit analysis of undertaking investigation, site-specific risk assessment or remediation **should be positive**.
- Member States should also define what constitutes an unacceptable risk from a contaminated site based on scientific knowledge, the **precautionary** principle, local specificities, and current and planned land use.

Precautionary principle, article 191, 2. TEUF

"Union policy on the environment shall aim at a high level of protection taking into account the diversity of situations in the various regions of the Union. It shall be based on the precautionary principle and on the principles that preventive action should be taken, that environmental damage should as a priority be rectified at source and that the polluter should pay."

- is linked to the risk management - EURLEX

In addition, the **general principles** of risk management remain applicable when the precautionary principle is invoked. These are the following five principles:

- proportionality between the measures taken and the chosen level of protection;
- non-discrimination in application of the measures;
- consistency of the measures with similar measures already taken in similar situations or using similar approaches;
- examination of the benefits and costs of action or lack of action;
- review of the measures in the light of scientific developments.

Communication (COM(2000) 1final) on the precautionary principle

Preambles/ betragtning

- (46c) In order to reduce the risks of contaminated sites to an acceptable level for human health and the environment, Member States should ensure that adequate risk reduction measures including remediation are taken. The optimum remediation solution should be **sustainable** and selected through a balanced decision-making process that takes account of the **environmental, economic and social impacts.**
- **Certain remediation techniques can also negatively impact soil health**
- (46d) In case of contaminated sites for which no accountable party can be identified or held accountable, Member States should be able to use financial instruments and **EU financial programmes** in order to fulfil the obligations regarding soil investigation and remediation.

Læringspunkter fra SML

- Styrket genanvendelse – af jord og grunde
- Diffus forurening og baggrundsniveauer
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