

National Institute for Public Health and the Environment Ministry of Health, Welfare and Sport

Dutch (European) policy on soil and groundwater pollution; a short reflection on the training

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OUTLINE

- Introduction
- **G** Framework and tools
- **D** European cooperation



THE DUTCH LANDSCAPE





THE DUTCH LANDSCAPE





THE DUTCH LANDSCAPE





POTENTIALLY CONTAMINATED SITES NL







POTENTIALLY CONTAMINATED SITES EUROPEAN UNION European Commission 2013

D Anually:

€ 6 Billion (€ 6.000.000.000)

20 Billion Real Brasileiro (R\$ 20.000.000.000)



PROBLEM OR NO PROBLEM?

PCB soil concentration = 1 mg/kg_{dw}

Risk?

One in a million: low

□ 1.8. 10¹⁸ molecules: high <u></u>



PROTECTION TARGETS NL



9



PROTECTION TARGETS EU







| | Human health | Ecosystem | Wildlife | Crops | Animal products | Groundwater | Surface water |
|---------------|--------------|-----------|----------|-------|-----------------|-------------|---------------|
| Austria | | | | | | | |
| Belgium (Fl) | | | | | | | |
| Belgium (Wa.) | | | | | | | |
| Czech Repl. | | | | | | | |
| Denmark | | | | | | | |
| Estonia | | | | | | | |
| France | | | | | | | |
| Germany | | | | | | | |
| Finland | | | | | | | |
| Hungary | | | | | | | |
| Italy | | | | | | | |
| Luthania | | | | | | | |
| Netherlands | | | | | | | |
| Poland | | | | | | | |
| Slovania | | | | | | | |
| Spain | | | | | | | |
| Sweden | | | | | | | |
| UK | | | | | | | |
| 15 entries | 14 | 8 | 1 | 4 | 1 | 11 | 6 |



ATTITUDE TODAY

We have many sites to deal with

Cost-efficiency

- **Fitness-for-use**
- Regional scale



 Green remediation technologies/ Natural attenuation



ATTITUDE TODAY - 2 -

- Brownfields: social economical boundary conditions
- Combining remediations with construction works/ Financial contribution of the market



SUSTAINABILTY

- Political window dressing?
- **Ecological healthy soils!**



Trend: long term stable production chains



GOLDEN TRIANGLE

- Policy
- Research institutes(CETESB, RIVM)
- Consultancies





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- **Framework and tools (snapshots)**
- **D** European cooperation



DUTCH FRAMEWORK FOR SOIL QUALITY MANAGEMENT





INTERVENTION VALUE

Risk for:

Human health



□ the ecosystem





18 out of 28 EU Member States: risk-based SSVs





5 (2+3) in development (20 out of 27 EU Member States)





URGENCY OF REMEDIATION

Site-specific risks:

- Human health risks
- Ecological risks
- Risk due to contaminant migration





PROCEDURE SITE-SPECIFIC RISK ASSESSMENT

- Smart combination between
 - calculation
 - measurements



Efficient/ pragmatic





TIERED APPROACH

In each tier.

- □ More site-specific
- Less conservative
- More realistic
 - \rightarrow More complex

"Simple when possible/

more complex when necessary"

CSOIL EXPOSURE MODEL





FOOD SAFETY: RISKS FROM VEGETABLE CONSUMPTION



Tiered approach: acceptable or non-acceptable risk





EXPOSURE DUE TO INHALATION INDOOR AIR (VOLASOIL model, 1996)

Vapour intrusion processes





ECOLOGICAL PROTECTION

Affected fraction of species and processes





SITE-SPECIFIC RISKS FOR THE ECOSYSTEM

Rutgers and Jensen, 2011





SANSCRIT





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NETWORKS - 1 - Since 1996:





Concerted Action on Risk Assessment for Contaminated Sites in the European Union







CONTAMINATED LAND REHABILITATION NETWORK FOR ENVIRONMENTAL TECHNOLOGIES



International Committee on Contaminated Land Meeting



ICCL international committee on contaminated land



NETWORKS - 2 -

1996-today:



Network for Contaminated Land in Europe

Industry in cooperation with academics and service providers

Balance between science and efficiency



EU POLICY ON SOIL TODAY



- Water Framework Directive
- EU Soil Thematic Strategy (8 threats, including soil contamination)
- No Soil Framework Directive



HERACLES

2007-2009 (today)

HUMAN HEALTH AND ECOLOGICAL RISK ASSESSMENT FOR CONTAMINATED LAND IN EU MEMBER STATES



Harmonization



EUROPEAN COMMISSION DG-JOINT RESEARCH CENTRE Institute for Environment and Sustainability Soil and Waste Unit



WHAT DOES HARMONIZATION IMPLY?

- One set of SSVs? No!!
- The same blueprint? No!



- $\Box \quad \rightarrow \quad \text{Toolbox, including}$
 - standardised tools
 - flexible tools



FLEXIBLE TOOLS

Accounting for differences in:

□ Geography



- □ Culture/ social aspects
- Political decision making



Brazilian colleagues:



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