SOIL POLICY AND DEVELOPMENTS IN THE MANAGEMENT OF CONTAMINATED SITES IN EUROPE

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Stimulating innovation
Supporting legislation

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Outline presentation

1. European Policy and Soil Protection
2. Management of Contaminated Sites in EU
3. EU Funding of Research Projects
4. International developments
What is the Joint Research Centre?

The JRC is a Directorate General of the European Commission

European Council

European Parliament

Commissioner (2014-2019)
Education, Culture, Youth and Sport
Tibor Navracsics

European Commission
28 Commissioners

JRC Director General
Vladimir Sucha

Scientific and technical support to EU policy development and implementation
1. European Policy and Soil Protection
Why should we care about Soil protection at European level?
Major threats affecting soils in Europe

**Soil sealing:** some **1000 km² per year** = 270 ha/day are taken mainly from agriculture for urban and infrastructure development ... In 10 years an area of the size of Cyprus

**Soil erosion:** **1.3 million km²** in EU-27 estimated to be affected by soil erosion by water

**Soil contamination:** estimate of **3.5 M sites** potentially contaminated with **0.5 M sites** really contaminated (2006) – 4.5 M sites, Ernst & Young study (2013)

Landslides: Over 630,000 landslides currently registered in national databases. Estimated affected surface areas are: 7% Italian territory, 5% Slovakian territory, 1% Portuguese territory
The Soil Thematic Strategy

Overall objective is the protection of soil functions and sustainable use of soil, based on the following guiding principles:
- Prevention of soil degradation
- Restoration of degraded soils

Sets out the four pillars of EU soil policy

REFIT Communication COM(2013) 685, 2.10.2013
Withdrawal of a proposal for a Soil Framework Directive

The Commission remains committed to the objective of the protection of soil and will examine options on how to best achieve this. Any further initiative in this respect will however have to be considered by the next college.
EU legislation with relevance for soil contamination

- **Polluter pays**: Environmental Liability Directive (2004/35/EC) defining “land damage”, which is any land contamination that creates a significant risk of human health. Aims at ensuring the rehabilitation of the environment.


- **Water**:
  - EU Water Framework Directive (2000/60/EC) requires a program of measures, including measures to address land contamination that causes water pollution.
  - EU Groundwater Directive (2002/118/EC) aims to prevent or limit pollutants, including pollutants from historical contamination of land, into groundwater.
EU legislation with relevance for soil contamination (2)

- **Emissions**: The EU Integrated Pollution Prevention and Control Directive (2008/1/EC) requires the permitting of new or existing industrial and agricultural activities with a high pollution potential – *replaced by the Industrial Emissions Directive (IED)*
Industrial Emissions Directive

- IED - 2010/75/EU - to be transposed nationally by 2013.
- Covering around 52,000 industrial and agricultural installations with a high pollution potential, from refineries to pig farms.
- Major changes as far as soil is concerned:
  - Introduction of periodic monitoring of soil (and groundwater)
  - Establishment of a **baseline report** prior to operating the installation/first update of permit
  - Obligation to remediate the site to its original state upon closure of the installation (**no-degradation approach**)
  - EC published guidance document for baseline report (as requested by Article 22 of the directive)
WHAT NEXT?
The Soil Framework Directive was withdraw but...
Commission is still committed to achieve soil protection:

- **The Soil Thematic Strategy is still alive**
- **Resource Efficiency Roadmap** « by 2020 EU policies take into account their direct and indirect impact on land use in the EU and globally... with the aim to achieve no net land take by 2050; soil erosion is reduced and the soil organic matter is increased, with remedial work on contaminated sites well underway »
- The Commission is further developing the scientific knowledge-base (...) leading to a Communication on land use (in 2016).
- **7th EAP provisions on land and soil protection (2014-2020)**
- **Rio+20 Outcome Document 'The Future We Want' (2013)** EU will strive to achieve a land degradation neutral world in the context of sustainable development.
General Union Environment Action Programme (7th EAP) to 2020 ‘Living well, within the limits of our planet’

Priority objective 1:
To protect, conserve and enhance the Union’s natural capital

25. To reduce the most significant man-made pressures on land, soil and other ecosystems in Europe...

28. ..., the 7th EAP shall ensure that by 2020 (...) (e) land is managed sustainably in the Union, soil is adequately protected and the remediation of contaminated sites is well underway

Steps for a new initiative

- Meeting of the Director General of DG ENV with the Directors General of Environment in September 2014 – gap analysis of soil legislations and policies needed
- A study on soil legislations and policy instruments will be launched in 2015 for knowledge update (IA done in 2006)
  - For soil contamination regulatory context analysed in details (Ernst & Young study, 2013)
  - Feed-back required from EIONET WG
- Need to improve knowledge e.g. on soil biodiversity, soil contamination etc.
- Lessons learnt exercise
- Network to be rebuilt – objective of EIONET
- Dialogue with stakeholders – using existing platforms
2. Management of Contaminated Sites in EU
Key policy questions addressed

PQ1 What is the estimated extent of soil contamination?

PQ2 How much progress is being achieved in the management and control of local soil contamination?

PQ3 Which sectors contribute most to soil contamination?

PQ4 Which are the main contaminants affecting soil and groundwater in and around contaminated sites?
### Indicators of contaminated sites in EU

<table>
<thead>
<tr>
<th>The European Pollutant Release and</th>
<th>Funding mechanisms for orphan sites</th>
<th>Inventories for contaminated sites</th>
<th>Progress per management step</th>
</tr>
</thead>
<tbody>
<tr>
<td>Estimated allocation of public and private</td>
<td>Identified sites</td>
<td>Most frequently applied remediation</td>
<td>Progress in management of</td>
</tr>
</tbody>
</table>

Reference Report on the management of contaminated sites in Europe (JRC, 2014)

- There are an estimated 2.5 million potentially contaminated sites in Europe, where soil contamination is suspected and detailed investigations are needed.
- Of the circa 115,000 contaminated sites that have already been identified in Europe, nearly half of them (46%) have already been remediated.
- Contaminated sites are mainly managed using ‘traditional’ techniques such as excavation and off-site disposal, which together account for about one third of management practices.
- Mining activities, metal industries and gasoline stations are the most frequently reported sources of soil and groundwater contamination. However, the range of polluting activities varies considerably from country to country.
- The most frequently occurring contaminants are mineral oils and heavy metals.
The results of the questionnaire compiled by the JRC. The questionnaire was sent to 39 European countries; 27 countries returned the questionnaire.

Most frequently applied occurring contaminants

### In soil
- Heavy metals: 35%
- PAH: 11%
- Mineral oil: 24%
- BTEX: 10%
- Others: 10%
- CHC: 8%
- Cyanides: 1%
- Phenols: 1%

### In groundwater
- Heavy metals: 31%
- PAH: 6%
- Mineral oil: 22%
- BTEX: 15%
- Others: 14%
- CHC: 10%
- Cyanides: 1%
- Phenols: 1%
**National Targets**

**Austria**  
2025  Identification of CS completed

**Denmark**  
2016  Site identifications and preliminary investigations are completed nationwide

**Estonia**  
2030  All contaminated areas to be remediated or sustained

**Romania**  
2020  Environmental remediation of the majority of polluted areas

**Switzerland**  
2025  Remediation or containment of historic soil contamination
1st EIONET NRC soil ad hoc WG on CS & Brownfield meeting (10-11 March 2015)

16 Member Countries represented + DG ENV, JRC and EEA

1. Proposals for the revision of the indicator "Progress in the management of contaminated sites in Europe"
2. EIONET meeting conclusions and follow-up actions
Proposals for the revision of the indicator "Land and Soil Indicator" LSI003

Proposal 1.- To consider as baseline the year 2001 when CSI015 was established. In case the country started building a national programme after 2001 a different baseline – year will be specified by this country.

Proposal 2.- New expressions were proposed to replace the parameters PCS, CS and Remediated Sites (RS)
The new expressions are ranked from 1 to 6 as following:

1. **Sites where polluting activities took place** (e.g. based on Annex 2 of proposed SFD, but usually based on country-specific list) - (rather than ‘Sites registered’);

2. **Sites in need of investigation/still to be investigated** – clear suspicion of contamination (not relevant to all countries, in some countries there is a transition from situation 1 to situation 2 following risk assessment);

3. **Sites that have been investigated, but no remediation needed** (unless land use change, i.e. fit for current use);

4. **Sites that need remediation or RRM** (risk-reduction measures, including natural attenuation if monitored) – see definition remediation of Common Forum;

5. **Sites under/with on-going remediation** (probably common for all countries);

6. **Sites remediation completed** (probably common for all countries);
Proposals for the revision of the indicator "Land and Soil Indicator" LSI003

Proposal 3.- New "sites where polluting activities took place" be counted separately from the "Baseline" and reported separately...

Proposal 4.- To ask the 11 EIONET countries, for which it is not clear if they keep a comprehensive national/regional or local inventory for contaminated sites, in which way are they monitoring the progress in the management of contaminated sites.

Proposal 5.- With no common European legislative framework on soils, there is no formal working group to develop a harmonised approach to setting environmental standards for soil quality. The Chair invited the experts to share the information and methodology available in their countries.

Proposal 6.- For 22 EIONET countries it is not clear if they have established policy targets relating to the management of contaminated sites. They will be invited to submit their targets relating to the management of contaminated sites.
Way forward of the EIONET Soil

- To recollect information for the revision of the (new) indicator LSI003 Countries are invited to submit questions to EC-JRC by e-mail to ana.paya-perez@ec.europa.eu until 31 July 2015

- A story book of "good/bad/successful stories of soil land restoration" will be jointly published by Commission DG ENV, JRC and EEA as contribution of the "EIONET Soil Group on Contaminated Sites and Brownfields" to the International Year of Soil. Countries to send by e-mail to ana.paya-perez@ec.europa.eu up to 10 stories, summarized in maximum of 6 pages including graphics and pictures. Submissions are accepted until 30th June 2015.

- Next meeting of EIONET NRC Soil on 14-15 of October 2015 in Copenhagen (DK).
3. EU Funding of Research Projects
   a) LIFE
   b) EUREKA
   c) Regional Policy
Publication ‘LIFE and Soil protection’, DG ENV (2014) providing information on LIFE projects on Soil protection (147)

- **21 projects Soil sealing**
- 13 projects Soil biodiversity
- 24 projects Soil carbon capture
- 11 projects Soil monitoring
- 12 projects Water and soil
- 43 projects Sustainable agriculture
- **23 projects Land contamination**

http://ec.europa.eu/environment/life/project/Projects/index.cfm?fuseaction=home.getProjects&themeID=42&projectList
## LIFE Calls 2015 indicative table

### Provisional Calendar 2015: Summary Table

<table>
<thead>
<tr>
<th>Grant Type</th>
<th>Phase</th>
<th>Opening Date</th>
<th>Closing Date</th>
</tr>
</thead>
<tbody>
<tr>
<td>Traditional Projects</td>
<td></td>
<td>01 June 2015</td>
<td>15 September 2015</td>
</tr>
<tr>
<td>Preparatory Projects</td>
<td></td>
<td>01 June 2015</td>
<td>30 October 2015</td>
</tr>
<tr>
<td>Technical Assistance Projects</td>
<td></td>
<td>01 June 2015</td>
<td>Mid September 2015</td>
</tr>
<tr>
<td>Integrated Projects</td>
<td>Concept Notes</td>
<td>01 June 2015</td>
<td>01 October 2015</td>
</tr>
<tr>
<td></td>
<td>Full Proposals</td>
<td></td>
<td>Mid April 2016</td>
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</tbody>
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EUREKA Call FOR PROJECTS 2015-2016

Opening of the Call: March 9, 2015
Deadline for Project Outlines: April 30, 2015, 17:00 CET
Deadline for Project Submission: June 17, 2015, 17:00 CET
Labeling of successful Applications: October 2015 / January 2016

Participating Countries:
- Austria (AT)
- Bosnia and Herzegovina (BA)
- Bulgaria (BG)
- Croatia (HR)
- Czech Republic (CZ)
- Germany (DE)
- Hungary (HU)
- Montenegro (ME)
- Romania (RO)
- Serbia (RS)
- Slovak Republic (SK)

The Danube region call for project - Funding regional innovation from EUREKA Secretariat

More information ➤ http://www.eurekanetwork.org/calls
Rehabilitation of brownfield sites

Within Regional Policy Investment priorities relating to the environment (Art. 5(6) ERDF and Art. 3(c) CF) include:

- Protecting and restoring biodiversity, soil protection and restoration and promoting ecosystem services including NATURA 2000 and green infrastructures;

- Action to improve the urban environment, revitalisation of cities, [...] regeneration and decontamination of brownfield sites (including conversion areas), reduction of air pollution and promotion of noise-reduction measures;

- The objective is to limit land take on Greenfields and recycling of land, including remediation of contaminated sites. The special ERDF objective is ‘Sustainable urban development’.

Promote the regeneration of brownfield sites and more generally the remediation of contaminated sites, respecting the 'polluter pays' principle.
4. International developments
Proclamation by the UN General Assembly of the **World Soil Day** (5 December) & of the **International Year of Soils 2015**

- **FAO's Global Soil Partnership (GSP) and its Inter-governmental Tech Panel on Soils (ITPS)**
- **May 2014** – **1st European Soil Partnership**
- **July 2014** **Adoption of four GSP pillars of action**
- **June 2015** - **The Third Plenary Assembly (PA) of the Global Soil Partnership** will take place from 22 to 24 at FAO headquarters in Rome
- **Global Soil Week** (in Berlin, April 2015)
- **Economics of Land Degradation** initiative
- LDNW Inter-governmental WG under **UNCCD**
- **IPBES** and its land degradation assessment
- **G8** Russian initiative on healthy soils
- **Expo 2015** in Milan: *Feeding the World. Energy for Life*
- UN adoption of **Sustainable Development Goals** in 2015
Thank you for your attention!

EUROPEAN SOIL PORTAL

http://eusoils.jrc.ec.europa.eu/

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