The new European Thematic Strategy for Soil Protection – hopes and risks

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Overall objective

- **Preventing** further soil degradation and preserving its functions:
  - when soil is used and its functions are exploited, **action has to be taken on soil use and management patterns**,  
  - when soil acts as a sink/receptor of the effects of human activities or environmental phenomena, **action has to be taken at source**.

- **Restoring** degraded soils to a level of functionality consistent at least with current and intended use, thus also considering the cost implications of the restoration of soil.
Why EU Level of intervention?

- Soil degradation affects other environmental areas
- Distortion of the functioning of the internal market
- Transboundary impact
- Food safety
- International dimension
Annual cost of soil degradation

Though difficult to estimate, several studies demonstrate significant annual costs of soil degradation to society in the ranges of:

- erosion: €0.7 – 14.0 billion[1],
- organic matter decline: €3.4 – 5.6 billion,
- compaction: no estimate possible,
- salinisation: €158 – 321 million[2],
- landslides: up to €1.2 billion per event,
- contamination: €0.6 – 17.3 billion[3],
- sealing: no estimate possible,
- biodiversity decline: no estimate possible.

[1] This estimate covers only costs of erosion in 13 countries, including the major Member States where erosion occurs. Data is not available for the others.
[2] This estimate covers only the costs of salinisation in three countries, data is not available for others.
[3] An independent study estimated that the costs of soil contamination could amount annually to up to €208 billion. Nevertheless this estimate had a high degree of uncertainty, therefore the intermediate value of €17.3 billion per year was retained.
ACTIONS AND MEANS

- **Framework legislation** with protection and sustainable use of soil as its principal aim;
- **Integration** of soil protection in the formulation and implementation of national and Community policies;
- **Research** supported by Community and national research programmes;
- **Public awareness** of the need to protect soil.
Article 1
Subject-matter and scope

Soil defined as the top layer of the earth’s crust situated between the bedrock and the surface, excluding groundwater.

Soil functions to be protected:
1. Biomass production, including in agriculture and forestry;
2. Storing, filtering and transforming nutrients, substances and water;
3. Biodiversity pool, such as habitats, species and genes;
4. Physical and cultural environment for humans and human activities;
5. Source of raw materials;
6. Acting as carbon pool;
7. Archive of geological and archeological heritage.
Threats to soil functions as originally identified in COM(2002) 179

- Erosion
- Decline in organic matter
- Soil contamination
- Soil sealing
- Soil compaction
- Decline in soil biodiversity
- Salinisation
- Floods and landslides
Framework legislation (1)

Erosion, organic matter decline, salinisation, compaction and landslides

**COMMON CRITERIA** set in Directive

Model or empirical **MONITORING**

Member States establish **RISK ACCEPTABILITY**

Risk Area **IDENTIFICATION**

Member States establish a **TARGET** for Risk Area

Member States adopt **MEASURES** to achieve target

**REPORT** to Commission
### SECTION 1
COMMON ELEMENTS FOR THE IDENTIFICATION OF AREAS AT RISK OF EROSION

<table>
<thead>
<tr>
<th>Element</th>
</tr>
</thead>
<tbody>
<tr>
<td>Soil typological unit (STU) (soil type)</td>
</tr>
<tr>
<td>Soil texture (STU level)</td>
</tr>
<tr>
<td>Soil density, hydraulic properties (STU level)</td>
</tr>
<tr>
<td>Topography, including slope gradient and slope length</td>
</tr>
<tr>
<td>Land cover</td>
</tr>
<tr>
<td>Land use (including land management, farming systems and forestry)</td>
</tr>
<tr>
<td>Climate (including rainfall distribution and wind characteristics)</td>
</tr>
<tr>
<td>Hydrological conditions</td>
</tr>
<tr>
<td>Agro-ecological zone</td>
</tr>
</tbody>
</table>
Framework legislation (2)

Contamination

Member States establish an INVENTORY of contaminated sites

Soil Status Report

Member States adopt a NATIONAL REMEDIATION STRATEGY

REPORT to Commission

Common DEFINITION in Directive

Common LIST OF POTENTIALLY POLLUTING ACTIVITIES in Directive

MECHANISM FOR « ORPHAN SITES »
### COUNCIL REGULATION (EC) No. 1782/2003 of 29 September 2003

#### ANNEX IV

**Good agricultural and environmental condition referred to in Article 5**

<table>
<thead>
<tr>
<th>Issue</th>
<th>Standards</th>
</tr>
</thead>
<tbody>
<tr>
<td>Soil erosion:</td>
<td>Minimum soil cover</td>
</tr>
<tr>
<td>Protect soil through appropriate measures</td>
<td>Minimum land management reflecting site-specific conditions</td>
</tr>
<tr>
<td></td>
<td>Retain terraces</td>
</tr>
<tr>
<td>Soil organic matter:</td>
<td>Standards for crop rotations where applicable</td>
</tr>
<tr>
<td>Maintain soil organic matter levels through appropriate practices</td>
<td>Arable stubble management</td>
</tr>
<tr>
<td>Soil structure:</td>
<td>Appropriate machinery use</td>
</tr>
<tr>
<td>Maintain soil structure through appropriate measures</td>
<td>Minimum livestock stocking rates or/and appropriate regimes</td>
</tr>
<tr>
<td>Minimum level of maintenance:</td>
<td>Protection of permanent pasture</td>
</tr>
<tr>
<td>Ensure a minimum level of maintenance and avoid the deterioration of habitats</td>
<td>Retention of landscape features</td>
</tr>
<tr>
<td></td>
<td>Avoiding the encroachment of unwanted vegetation on agricultural land</td>
</tr>
</tbody>
</table>
### Integration (2)

The impact of Conservation Agriculture in Europe (2005)

<table>
<thead>
<tr>
<th>Country</th>
<th>Total under Conservation Tillage (1000ha)</th>
<th>% Arable land under Conservation Tillage</th>
<th>% Arable land under No-Till</th>
</tr>
</thead>
<tbody>
<tr>
<td>Belgium</td>
<td>140</td>
<td>17.2</td>
<td>-</td>
</tr>
<tr>
<td>Czech Republic</td>
<td>350</td>
<td>11.0</td>
<td>-</td>
</tr>
<tr>
<td>Denmark</td>
<td>230</td>
<td>10.1</td>
<td>-</td>
</tr>
<tr>
<td>Finland</td>
<td>1150</td>
<td>52.3</td>
<td>6.8</td>
</tr>
<tr>
<td>France</td>
<td>3870</td>
<td>21.1</td>
<td>0.7</td>
</tr>
<tr>
<td>Germany</td>
<td>2500</td>
<td>21.2</td>
<td>1.7</td>
</tr>
<tr>
<td>Greece</td>
<td>430</td>
<td>10.8</td>
<td>7.4</td>
</tr>
<tr>
<td>Hungary</td>
<td>500</td>
<td>10.9</td>
<td>0.2</td>
</tr>
<tr>
<td>Ireland</td>
<td>10</td>
<td>0.9</td>
<td>-</td>
</tr>
<tr>
<td>Italy</td>
<td>560</td>
<td>7.0</td>
<td>1.0</td>
</tr>
<tr>
<td>Portugal</td>
<td>418</td>
<td>21.1</td>
<td>2.3</td>
</tr>
<tr>
<td>Slovak Republic</td>
<td>179</td>
<td>12.6</td>
<td>2.6</td>
</tr>
<tr>
<td>Spain</td>
<td>2400</td>
<td>18.0</td>
<td>4.5</td>
</tr>
<tr>
<td>Switzerland</td>
<td>102</td>
<td>25.4</td>
<td>2.9</td>
</tr>
<tr>
<td>UK</td>
<td>2680</td>
<td>45.6</td>
<td>3.1</td>
</tr>
<tr>
<td>Total</td>
<td>30669</td>
<td>15.4</td>
<td>1.1</td>
</tr>
</tbody>
</table>

Source: SOWAP, 2006 (EU Life ENV project)
Research

• Processes underlying soil functions (e.g. soil’s role in global CO2 accounting and in the protection of biodiversity),
• Spatial and temporal changes in soil processes,
• Ecological, economic and social drivers of soil threats,
• Factors influencing soil eco-services,
• Operational procedures and technologies for soil protection and restoration.
• **Soil biodiversity**
Awareness raising

- Wide distribution of the Soil Atlas of Europe, and maintenance of the soil web site http://eusoils.jrc.it for open access to policy relevant soil information in Europe,
- Continuation of the European Summer School on Soil Survey to provide specific training to young researchers,
- Encouragement of initiatives such as the European Manifesto on Earth Heritage and Geodiversity,
- Integration of soil knowledge and protection aspects in Community-funded information and training events,
- Soil management awards, where appropriate,
- Initiatives within the UNCCD, particularly in 2006, International Year of Deserts and Desertification.
What next?

• Large debate at EU and National level
  – Committee of the Regions
  – Economic and Social Committee
  – European Parliament
  – European Council
    • On agenda of German Presidency 1st Semester 2007?

• Co-decision procedure?
  .....2008....2009....???????
Thank you for your interest!

“Unity in diversity”