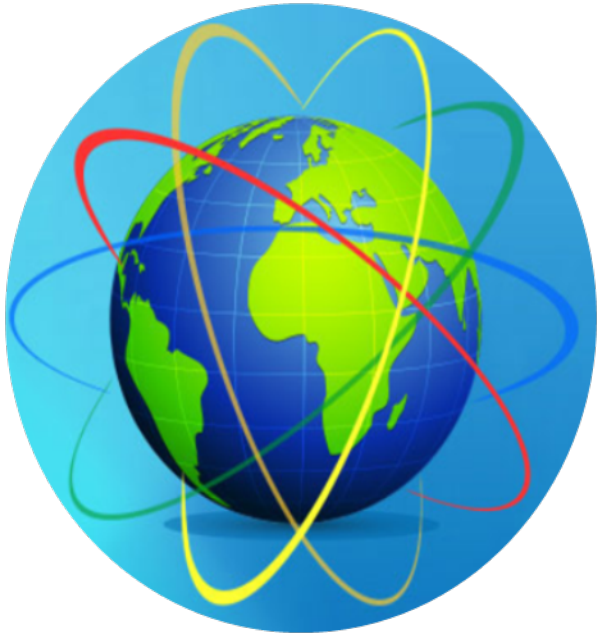
The 3rd International conference on Sustainable Remediation

Theme 4: Case studies



Economic value of sustainable soil management

Policy based case study for the Netherlands

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Agenda

- Context
- Methodology
- Results
- Follow up
- Conclusions & Recommendations

Context

- **The orientation of the Dutch soil policy is changing. Soil policy is being integrated with spatial planning, energy, water and subsoil policies**
- **Soils are part of the natural capital which supports the economy and well-being of the society (find the balance between the use and protection of the natural capital)**
- **Dutch Ministry of Infrastructure and the Environment: ? What is the (added) socio-economic value of sustainable soil management (Terra incognita)?**

Methodology

- Focus in the case study on both:
  - the direct economic value and
  - the socio-economic benefits of sustainable soil management
- The case study was a first scan based on:
  - available statistics
  - literature from the Netherlands and neighboring countries

Results: Direct economic value

- The following economic sectors were included:
  - Use of energy resources (gas & oil, geothermal energy, ground source heating)
  - Soil engineering (ground works related to construction and urban development)
  - Soil maintenance (soil remediation and re-use and recycling of soil materials)
  - Soil-based production (soil based agriculture, production of drinking water, mineral resources)

Results: Direct economic value

- **Contribution of soil management to the Dutch economy (based on year 2009):**
  - **5% of the Gross Domestic Product (GDP)**
  - **7% of the Dutch production value.**
  - **3% of the Dutch employment**

Results: Direct economic value

- **Contribution of the different economic sectors:**

	NL Gross domestic product	NL employment
Energy production	59%	4%
Soil engineering	21%	39%
Soil maintenance	1%	1%
Soil based production	19%	56%

Results: socio-economic benefits

- Focus on the potential socio-economic benefits related to:
  - Adaptation to climate change & Food production
  - Urban development, public health and biodiversity
  - Transition to use of sustainable energy
- Presented are only the potential benefits that could be quantified within the scope of this study (but there are many more)
- Benefits are presented as capitalized amounts

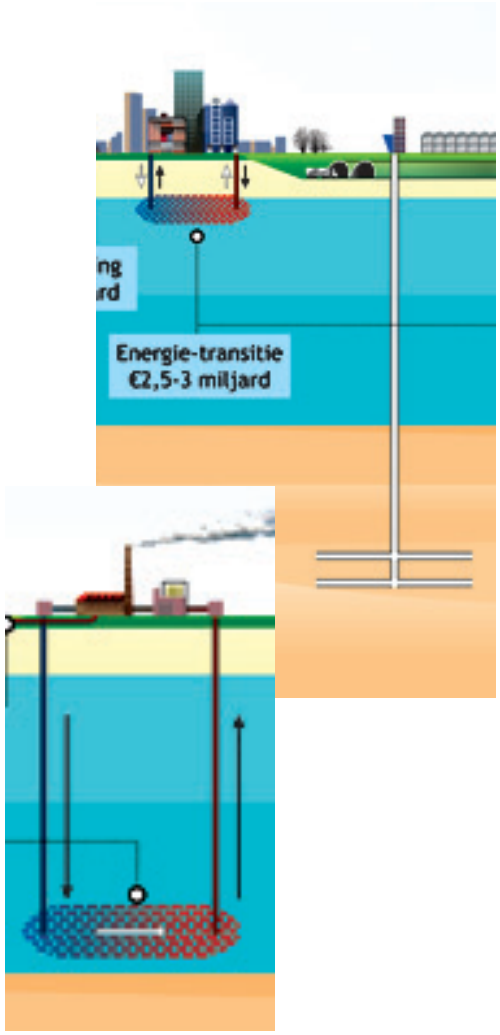
Results: climate change and food production

- **Sustainable soil management helps to:**
  - **prevent the mineralisation of organic soil material and soil degradation (benefits in the order of 3 up to 4 billion euro),**
  - **Reduce the effects of soil sealing (benefits in the order of 1 up to 1.5 billion euro).**

Results: Urban development

- **Sustainable soil management helps to:**
  - **prevent the occurrence of damages related to water shortages and flooding (benefits in the order of 11 up to 18 billion euro),**
  - **create social benefits related to health and can increase real estate value (benefits in the order of 0.5 up to 2.5 billion euro).**

Results: Sustainable energy



- **The use of seasonal thermal energy storage in the subsoil and the use of geothermal energy can contribute to:**
  - **the reduction of CO2-emissions in the Netherlands (reductions form 5% up to 15%**
  - **with socio-economic benefits in the order of 2.5 up to 3 billion euro).**

Follow up

- Regional analysis of the economic value of the sustainable soil management (municipality of Dordrecht/ Drechtsteden)
  - Input for the discussion with other fields of policy on how to integrate sustainable soil management
- EIA and Cost Benefit Analysis for the Dutch "Strategic (spatial) Agenda for the Underground" (ministry I&M: STRONG)
  - Focus on the strategic agenda for sustainable use of the underground form a national point of view

Conclusions & recommendations

- **Soil management is an important economic sector and of great importance to other sectors like agriculture, energy and water**
- **The potential socio-economic benefits of sustainable soil management are substantial**

  (net value 18 to 29 billion euro, increasing up to 1 billion euro/year in 2050)
- **Soil remediation makes up for only a small part of the economy of soil management**
- **The economics of soil are a very helpful tool to help to integrate sustainable soil management in other policies**

Closure / questions / thanks / authors details

- Thanks you for your attention
- Questions ??

Tauw

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