Defining a European Soil Research Agenda

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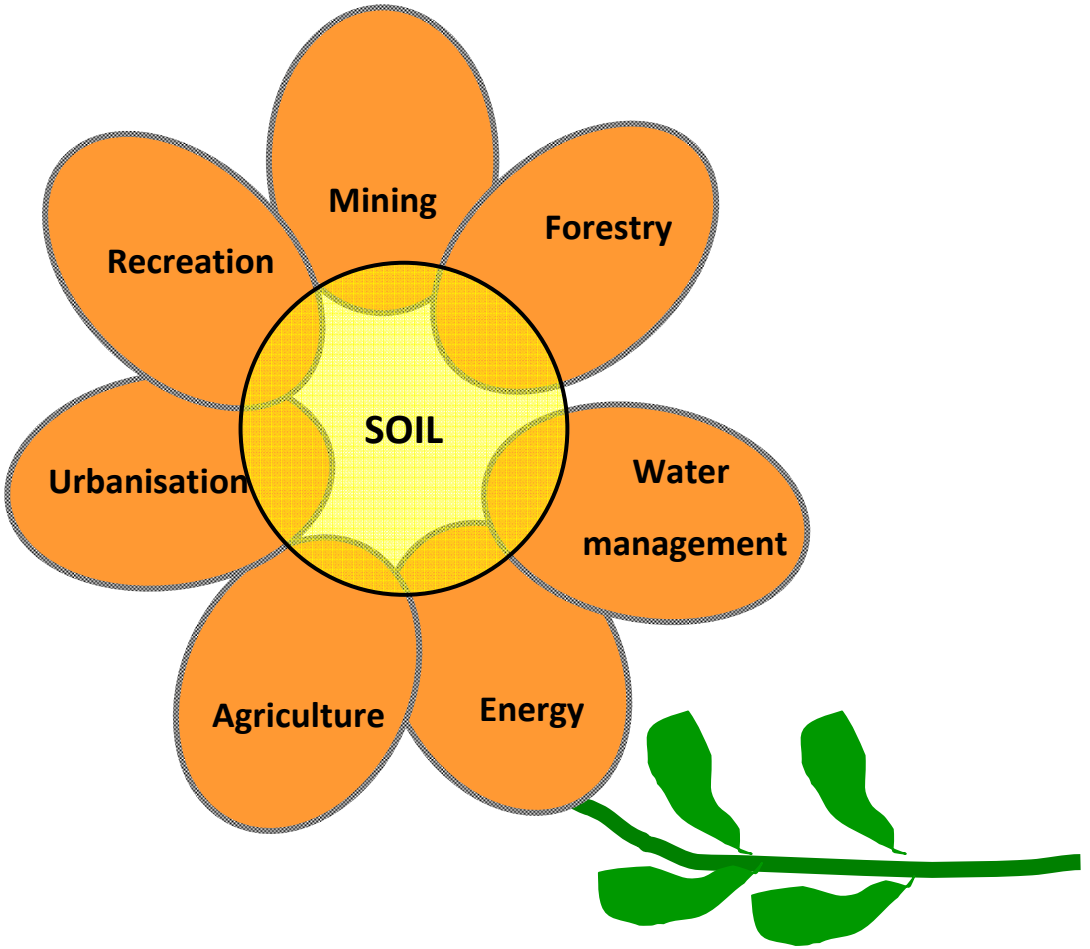
General Approach (1)

- Relevant societal developments in European countries
- Soil functions supporting / influenced by these relevant developments
- Preserve or enforce relevant soil functions
- Research needs to do so

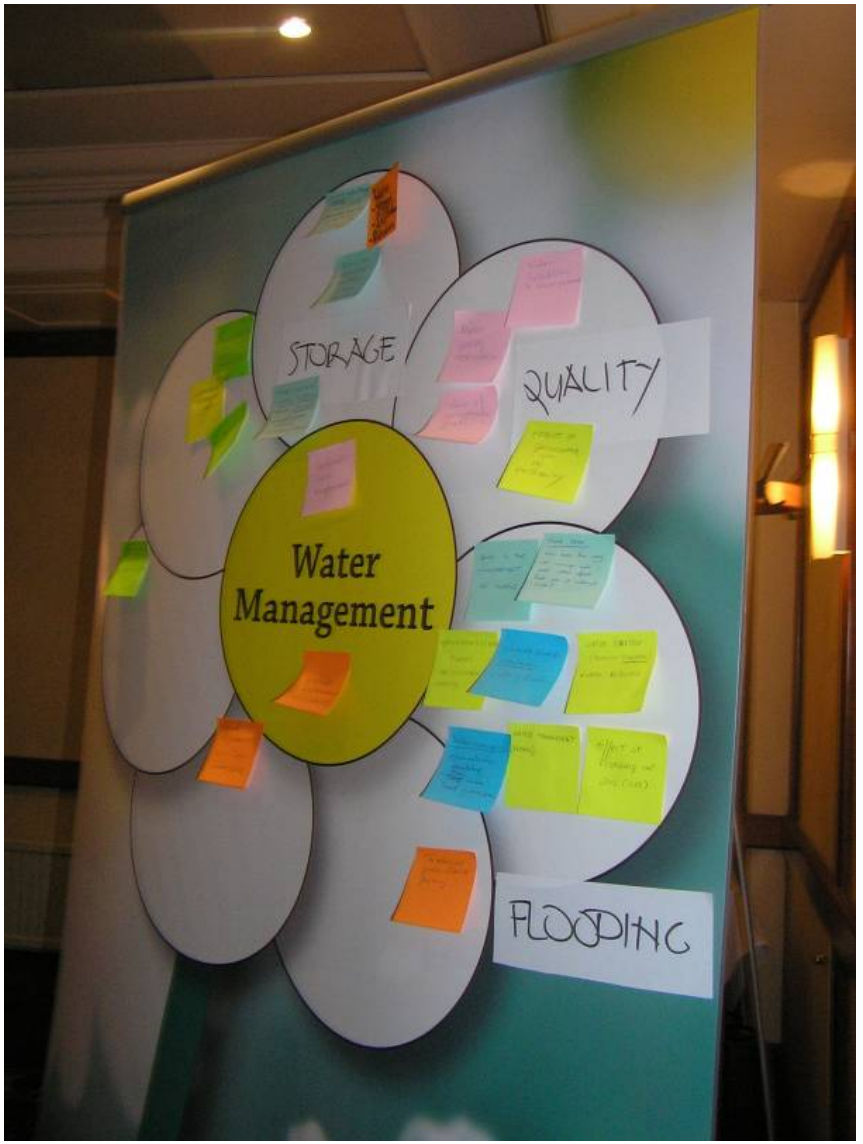
Relevant Policy Areas



General Approach (2)

- Discussion with “visionaries” in partner countries about developments and issues
- Workshop with R&D funders about knowledge questions
- Workshop with researchers about research questions


Regional
soil and
groundwater
Site
Remediation


STORAGE
QUALITY
Water Management
FLOODING


Agriculture and Nature
ECOSYSTEMS


URBAN PLANNING
URBAN ECOLOGY
Urbanisation
CONTAMINATION

Relevant Societal Developments

- Energy and climate change
- Sustainable water management
- Sustainable agriculture
- Sustainable urbanisation

Energy and Climate Change

- **Energy savings and sustainable production:**
  - Storage of heat and cold
  - Thermal energy
- **Emission of greenhouse gasses**
  - CO_2-storage
  - NO_2 and Methane production
- **Bio fuel crop production**
- **Effect of climate change on soil quality**

Sustainable Water Management

- **Retention and flooding:**
  - Capacity, how to increase?
  - Effect of flooding on soil quality
- **Groundwater quality:**
  - Effects of land use, emissions, diffuse pollutants
- **Soil as a water filter**
- **Water management strategies**
- **Sediments**

Sustainable Agriculture

- **Ecosystem services:**
  - What is it, what is the role of soil?
  - What are impacts, how to respond?
- **Relation between soil functions and agriculture;**
  - Effects on soil quality, How to support sustainability?
- **Role of soil in mineral cycles:**
  - Carbon, Nitrogen, Phosphorus

Sustainable Agriculture

- **Agricultural practices and soil functions:**
  - Compaction, irrigation, salination?
- **Land slides and erosion**
- **Rural planning**

Sustainable Urbanisation

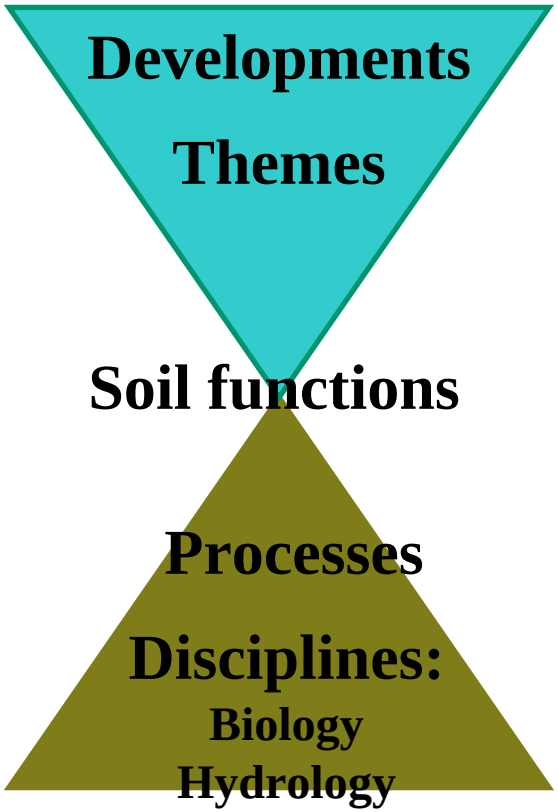
- **Contamination:**
  - Risks, management, remediation
- **Urban ecology:**
  - Role, positive effects
  - Threats, sealing
- **Urban planning**

Soil Functions

- Production
- Filtering
- Biodiversity
- Basic materials
- Carbon sink
- Archive

		Soil function:		Energy and climate change	Water management	Agriculture	Urbanisation
Chemical, physical and biological environment	→	1. Production		*		*	
	→	2. Filtering, transformation and storage	a. mineralization organic compounds	*		*	
	→		b. self purification		*	*	*
	→		c. water storage	*	*	*	*
	→		d. water filtering		*	*	
	→		e. transformation of phosphate, nitrogen, carbon	*		*	
			f. production of warehouse gasses	*		*	
	→	3. Biodiversity	a. illness and plague resistance			*	
	→		b. landscape formation		*	*	
	→	4. Build environment	a. resilience		*	*	*
	→		b. adaptation	*	*	*	
	→	5. Raw materials	a. mining				
	→	6. Carbon sink	a. assimilation	*		*	
	→		b. production of bio fuels	*		*	
		7. Archive					*

Questions and Research Needs



Research Needs