EU land and soil activities

NRC Soil meeting
15/10/2015

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Soil Thematic Strategy: genesis and structure

- 6th EAP objective to protect natural resources and promote sustainable use of soil
- 4 pillars
Soil Framework Directive

- Originated from the need to ensure a sustainable use of soils and protect their function in a comprehensive manner in a context of increasing pressure and degradation of soils across the EU
- Proposal has been pending for almost eight years without qualified majority in Council in its favor
- The Commission decided to withdraw the proposal, opening the way for an alternative initiative in the next mandate.
  - "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"
7th Environment Action Programme

Objective

• By 2020: "land is managed sustainably in the Union, soil is adequately protected and the remediation of contaminated sites is well underway;"

• This requires, in particular: "increasing efforts to reduce soil erosion and increase soil organic matter, to remediate contaminated sites and to enhance the integration of land use aspects into coordinated decision-making involving all relevant levels of government, supported by the adoption of targets on soil and on land as a resource, and land planning objectives;"

Commitments

• "The Union and its Member States should also reflect as soon as possible on how soil quality issues could be addressed using a targeted and proportionate risk-based approach within a binding legal framework. Targets should also be set for sustainable land use and soil."
Soil Thematic Strategy: what is needed

Supporting decisions at various levels (EU, State/Region, municipality, farm, firm, consumer, etc.)

Emphasis on economic arguments (MAES, feedback on growth & jobs, etc.) + integration land perspective + focus on best practices, what can be done

Better understanding contribution of existing EU policy instruments and national implementation (Agriculture, Climate, Water, Biodiversity, Cohesion, Impact Assessment, etc.)

Have a clear picture of policy cycles and other opportunities for improving soil dimension (reviews, REFIT, etc.)

Better integrate / demonstrate added value of research performed so far

Articulation research agenda at global, EU and MS levels

Precise understanding what MS are doing before defining options for a new proposal

Critical factor for ensuring success in the other 3 pillars
Ongoing key actions under the EU Soil Thematic Strategy

• 2015
  • Launch of an EU Expert Group on Soil Protection
  • Inventory of soil protection measures in all EU MS (regulation, voluntary, support schemes)
  • Pilot Mapping and Assessment of Soil-related Ecosystem Services
  • 2015 International Year of Soil - organisation 3 events
Ongoing key actions under the EU Soil Thematic Strategy

• 2016 and beyond
  • Assessment of impact of CAP and national policy instruments on soil ecosystems and ecosystem services
  • Cost of inaction / socio-economic benefits of soil protection (based on MAES-Soil)
  • Identification/assessment of mechanisms to help transforming soil ecosystem services valuations into monetary flows providing and maintaining positive economic feedbacks
  • Integration findings into review EU policy & funding instruments
New Expert Group on soil protection

- Requirement 7th Environment Action Programme to "reflect as soon as possible on how soil quality issues could be addressed using a targeted and proportionate risk-based approach within a binding legal framework"
- The Commission has established an Expert Group with Member States. First meeting on 19/10
- Objectives:
  - Discussion key policy issues, including the ecosystem services approach
  - Contribution to inventory and gap analysis of soil protection policy instruments in all EU MS (regulation, voluntary, support schemes) (support contract to start October/November)
Land as a Resource
Land as a Resource: at the crossroad of objectives 1 and 2 of 7th Environmental Action Programme (EAP)

(1) Protect, conserve and enhance natural capital
- Land degradation neutrality
- Link to water and biodiversity policies + further policy on soil
- Identification of scope and limitation of potential trade-offs between land uses

(2) Resource-efficient, green and competitive low-carbon economy
- Maximizing net socio-economic benefits from land use
- Efficient allocation: matching land use and land suitability
  (1ha ≠ 1ha...)
- Reduce land use, increase recycling

Land as a resource
Policy Background

• 2011 EU2020 Strategy / Road Map for resource-efficient Europe (RERM)
  • Milestone: “By 2020, EU policies take into account their direct and indirect impact on land use in the EU and globally, and the rate of land take is on track with an aim to achieve no net land take by 2050;
  • soil erosion is reduced and the soil organic matter increased, with remedial work on contaminated sites well underway”.

• 2012 Rio+20 outcome document “The future we want”:
  • land and soil degradation recognized as a global problem
  • Milestone on land: "strive to achieve a land degradation neutral world in the context of sustainable development"

• 2013 7th Environment Action Programme for the EU
  • calls for setting targets on land take and on a number of crucial soil quality aspects (erosion, organic matter and contamination).
Conference on Land as a Resource
19/6/2014

http://ec.europa.eu/environment/land_use/conference_en.htm

• The issues at stake
• National and regional experiences
• Exploring possible EU answers
Resource-efficient use of natural capital...

Optimizing socio-economic benefits from land use functions

- Jobs
- Settlements, infrastructures
- Recreation
- Biodiversity
- Land efficiency
- Extraction + abiotic energy sources
- Provision of land-based products
- Regulating services

No degradation of land as natural capital

- Holistic perspective on Land components:
  - Soil AND water, biodiversity, climate, topography/localisation, etc
- Linked to quantification of ecosystem services
- Emphasis on resilience

Natural Capital
How to deal with synergies and trade-offs? Also an issue for EU policies!
Focus on the economic impacts and feedbacks

Costs of political inaction
(or variant: large scale growth, jobs and investments plan)

Socio-economic impact of measures

Land use Efficiency policies

Socio-economic drivers – business-as-usual scenario
(or variant: large scale growth, jobs and investments plan)
Work on Land Use Efficiency & Land Degradation Indicators

- **Land Use Efficiency:**
  - Provide a picture of overall economic net benefits / energy balance. Multi-functionality: specify minimum provision levels and maximum acceptable trade-offs.

- **Land Degradation:**
  - Based on soil erosion and organic matter, complement with ecosystem services and link with water resources

- **Land Take:**
  - RERM focus on "no-net land take" to be complemented with information on intensity land use, actual impacts, and potential for land recycling

- **Global impacts:**
  - Land Footprint and beyond: bio-productivity and impact oriented indicators. Still high methodological / data challenges

- **Need to address these topics together!**
Need to act at EU level?

Market Failures
Land use decision do not properly take into the real costs to society of unsustainable land use and land use change, and the benefits for land recycling and soil protection.

Strategic Failures
The proper design, articulation or implementation of policy instruments requires the definition of a robust set of indicators, that could eventually be used for target setting at various levels of policy intervention.

Regulation Failures
There are failures in the design, the coherence or the implementation of EU or national policies and regulations, which prevent the achievement of sustainable land management.

Knowledge Failures
The systems for assessing/monitoring land use, land efficiency and land degradation need to fit better to the policy needs, and there is scope for a more efficient articulation of data gathering processes.

Subsidiarity, proportionality tests
Existing policy and funding instruments

Identification
Policy Options

Monitoring/Evaluation
Key activities

- **External studies**
  - Identification appropriate indicators & relevance and feasibility of setting targets
  - Analysis of the need to act at EU level
- **Joint JRC-EEA-ENV work on analysis of land degradation and inefficient use processes based on:**
  - Set of indicators covering Land Use Functions
  - Past trends (based on recent Copernicus Land 2012 data + EEA-ETC reports)
  - Modelling scenarios with JRC LUISA platform
- **Integration into existing processes**
  - e.g. follow-up SDGs Post 2015
- On-going internal discussion on potential inclusion of a Communication on Land as a Resource in Commission Work Programme 2016.
Commission study to analyse soil legislation and policy instruments

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Background

• **SOER 2015:**
  - Continuous degradation of soils in Europe
  - National legislation has not succeeded in preventing soil degradation sufficiently across the EU28

• **Soil is not subject to a comprehensive and coherent set of rules in the Union.**

• Some soil protection aspects scattered in different Community policies contributing in various degrees to mainly indirect protection of soil

• Protection of agricultural soils is part of Common Agriculture Policy (CAP) with Cross Compliance rules, greening practices and support measures under the Rural Development Programme (RDP)

• Different pieces of EU legislation for soil contamination and pollution:
  - Directive 1999/31/EC on the landfill of waste
  - Directive 2004/35/EC on environmental liability
  - Directive 2010/75/EU on Industrial Emissions

• Cohesion Policy, State Aids, Research & Innovation, etc.
Objectives

• **Deliver a critical analysis of the efficiency of soil related policies and measures at EU or Member State level, including those not specifically aiming at soil protection.**
  - Collect information assessing the effectiveness of soil legislation and soil protection measures at Member State and EU level on the state of soil.
  - Perform a cross-policy analysis identifying the efficiency and gaps of EU policies and national legislation in addressing the soil threats and soil functions.
  - Provide recommendations for EU actions and to stimulate a discussion with experts from Member States and stakeholders.

• **The outcome shall support the baseline for any further proposal for action at EU level, taking fully into account the proportionality and subsidiarity principles.**
Preliminary identification of available sources

- **Databases and reports available at EC**
  - Notifications from MS under the CAP first pillar, the GAEC notifications, relevant audit reports, assessments of the rural development programmes (RDP) and available indicators used for CAP monitoring
  - FP7 CATCH-C Deliverable D5.524 (2015) “Policy context implementing soil management practices in EU and selected member states”
  - Ernst&Young (2013) Evaluation of expenditure and jobs for addressing soil contamination in Member States”
  - Austrian UBA (2011) “Overview of best practices for limiting soil sealing or mitigating its effects in EU-27”
  - + other older sources
- **Any available assessment of soil policy instrument at national level is welcome!**
Timing & consultation

• 10-months contract (to be signed later this year), open call for tender ENV.B.1/SER/2015/0022
  • By month 3: Inventory of policy instruments at EU and national level and compilation in a web collaborative platform
  • By month 6: Gap analysis of policy instruments
• Continuous consultation of Member States and Stakeholders and further update of the inventory/gap analysis
  • Interaction with MS competent authorities and stakeholders at national level, exploiting existing networks such as EIONET
  • Ad-hoc meetings to discuss findings of tasks 1 and 2
  • Final 2-days workshop in Brussels with MS experts and stakeholders
MAES-Soil pilot state of play

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Background

- Preliminary discussion at WG MAES Sept 2014
- Call for manifestation of interest Dec 2014
- Scoping meeting January 2015 (BE, FI, NL + EC)
- Presentation preliminary work plan at WG MAES March 2015
- BE co-lead (Jan Verboven); co-ordination meetings with BEES soil group on 20/3 and 19/6
- Informal signals for contributions from ES, FR, NL and UK
- Wiki created, to be used to gather input and comments
Objectives

• **Capacity building**: opportunity for exchanging experiences and involving stakeholders. Implies communicating on success but also fail factors at EU, national, regional and local levels.

• **Policy-oriented** deliverables, providing realistic method for soil ecosystem services assessment, with direct with potential application e.g. in Environmental Impact Assessment (EIA), environmental compensation discussions, etc.

• Improvement of the **knowledge base**, through the building of a shared assessment framework connecting EU, national, regional and local interests and decisions.

• There are numerous **EU policy frameworks** that will directly benefit from this pilot project, including the EU Biodiversity Strategy to 2020, the Soil Thematic Strategy (COM 2006/231 EC), the 7th Environmental Action Programme 2014-2020, CAP, Forest Strategy, Disaster Prevention, Climate Change policies, etc.
Threats to soil biodiversity (FP7 EcoFinders project)

- Soil ecosystem services provision relies on soil biodiversity + interactions within soil communities and between below- and above-ground

- Main threats:
  - Nitrogen fertilization rates,
  - Loss soil organic matter
  - Land use change

- Major need to continue the effort of characterization of soil biodiversity at the European level at a more tight grid, in the context of MAES-Soil
  - Major need to capitalize information on physical-chemical and biological soil properties
  - Connect these efforts with national and world initiatives
The need to consider all soil ecosystem services together

CULTURAL
Storing geological and archeological heritage

landscape stability

PROVISIONING
Biomass production
Raw material provisioning

carbon flux
water flux
nutrient flux
soil structure
food security
climate change

genetical heritage
gene pool
medicines
education

conservation of materials

food security

SUPPORTING
Biodiversity reservoir
Acting as platform for human activities

climate change

biological activity
bioremediation

REGULATING
Storing, filtering and transforming nutrients and water
Acting as a carbon pool

Environment
Shortlisting ecosystem services

From CICES

- **Provisioning**
  - Biomass (+detail?)
  - Water
  - Genetic materials from all biota

- **Regulation & Maintenance**
  - Soil formation and composition (conditions for the provision of the other services)
  - Bio-remediation, pollutant Filtration-sequestration,
  - Mass stabilisation and control of erosion rates,
  - Hydrological cycle and water flow maintenance / Flood protection,
  - Global climate regulation by reduction of greenhouse gas concentrations,
  - Micro and regional climate regulation,

- **Cultural**
  - Heritage preserved in soils,
Concrete outputs 2015

- *Policy Brief*
  - Description key soil ecosystem services & interactions
  - Relevant indicators
  - Knowledge and policy-relevant conclusions
- *Inventory of indicators*
  - Template
  - Link to available datasets
  - Supply and demand
- *Development of a network of practitioners.*
Next steps

• *Provision of contents (BE and EU-wide + additional contributors welcome): indicators and policy brief*
• *Input to assessment of user needs LUCAS in-situ survey*
• *Co-ordination with LANDMARK at steering committee meeting in November 2015 (Toulouse)*
The MAES-SOIL Wiki collaborative platform

- Drafting Policy Brief
- Template for introducing indicators/maps
- Calendar, minutes of meetings, etc.

https://webgate.ec.europa.eu/fpfis.wikis/display/MAESSoil/MAES+Soil+Pilot
ECAS password – only registered users – you are welcome!
mailto:ENV-SOIL@ec.europa.eu
Landmark

- Horizon 2020 4 ½ years project lead by TEAGASC (IE)
- **Specific objectives:**
  - Toolkit for soil management optimizing soil functions both from an agronomic and ecosystem function perspective
  - Monitoring scheme for soil functions applicable at regional level
  - Policy framework for functional land management at European scale, optimizing the sustainable use of soil resource.
- Some MAES-Soil participants (BE and EC) also members of consortium or steering committee (1st meeting Nov 2015)
Work at EU level (with JRC and EEA)

- Continental scale assessment of most relevant soil ecosystem services
  - based on main soil functions developed by JRC and EEA
    - biomass production function (Arable land, Grassland, Forest)
    - capacity to store, filter and transform substances and water
    - capacity to act as carbon pool
    - capacity to act as biodiversity pool
    - capacity to provide a platform for human activities
    - raw material provision function
    - capacity to store the geological and archaeological heritage
- Impact of land use changes on soil ecosystem services
  - past changes 2000 – 2012 with CLC, scenarios 2050 with LUISA

- Access to Maps and data: ESDAC / BISE
- LUCAS soil survey: priorities for 2018+
Thank you for your attention!

• You input is welcome for both processes of soil policy instrument inventory and MAES-Soil pilot!

• More information:
  • Jacques.delsalle@ec.europa.eu
  • http://ec.europa.eu/environment/land_use/index_en.htm
  • http://ec.europa.eu/environment/soil/index_en.htm