

JOINT RESEARCH CENTRE - Work Programme 2010

Action n° 22004 - SOIL - Soil Data and Information Systems

Institute for environment and sustainability (Ispra)

Policy Theme: 2 - Solidarity and the responsible management of resources

Agenda No & Title: 2.2 - Natural resources

Web site address (URL): <http://eussoils.jrc.ec.europa.eu/>

Type: Action

Action Leader: MONTANARELLA Luca JRC.DDG.H.7

Customer/users (outside the European Commission):

- European Environment Agency
- European Food Safety Agency
- THE FOOD AND AGRICULTURE ORGANIZATION OF THE UNITED NATIONS (FAO)
- The Group on Earth Observations
- United Nations Environment Programme (UNEP)
- World Data Centre for Soils

Customer DGs (inside the European Commission):

- AGRI - Agriculture and Rural Development
- DEV - Development
- TREN - Energy and Transport
- ENTR - Enterprise and Industry
- ENV - Environment
- AIDCO - EuropAid
- ESTAT - Eurostat
- REGIO - Regional Policy

Keywords:

Keywords:

Soil Data Centre, Soil Thematic Strategy, Soil Framework Directive, Desertification, Land Use and Land Use Change

Rationale:

Soil data and information are relevant for a number of EU policy areas: agriculture, soil protection, bio energy, water protection, nature protection, development policy, health and sustainable development. The EU Thematic Strategy for Soil Protection addresses these different policy areas in a coherent manner and proposes the way forward towards effective soil protection in Europe. Policy relevant soil data and information will therefore play a crucial role in the policy development and implementation process. In addition, a number of global multilateral agreements also ratified by the European Community (United Nations Framework Convention on Climate Change (UNFCCC), Convention on Biological Diversity (CBD), United Nations Convention to Combat Desertification (UNCCD) demand an increasing amount of soil data and information: climate change, biodiversity and desertification are global issues that are strongly related to soil degradation phenomena at the global scale. This Action will provide, through the establishment of the European Soil Data Centre a single focal point for soil data and information for the Commission. It will therefore support the other Commission's services in the implementation of the Thematic Strategy for Soil Protection as adopted by the European Commission and in the negotiations towards the adoption of the proposed Soil Framework Directive through the EU Institutions and their subsequent implementation in the Member States. The Action will also facilitate the reporting and assessment obligations by Member States.

This action supports a large number of other JRC actions by providing updated soil data and information. Main users are: MONDE, TREES, SHAPE, FOREST, DESERT, FLOODS, AGRI4CAST, FOOD SEC, ISFEREA, AFOLU, AGRI-ENV, TP ACP Observatory, TP BIOFUELS.

Summary of the project:

EU policy relevant soil information, from initial field data collection all the way to final reporting will be managed by this Action. This will be achieved by using the European Soil Data Centre (ESDAC) as the single soil information focal point. It will serve the Commission's needs in implementing the Thematic Strategy for Soil Protection (COM (2006)231) and in the negotiation of the Soil Framework Directive (COM(2006)232) as well as its subsequent implementation in Member States. Advanced modelling techniques and scenario analyses will be used to provide soil information to end users in relation to the major threats to soil identified in the Thematic Strategy for Soil Protection (erosion, decline of organic matter, compaction, salinisation, landslides, sealing, contamination and loss of soil biodiversity). A strong scientific and technical support to UNFCCC, CBD and UNCCD will be provided by the development of an operational Global Soil Information System (GLOSIS) for the regular assessment of global soil degradation processes in the framework of the GEO initiative.

International Activities

European Dimension:

More than 40 European countries and regional authorities collaborate in a well established network, the European Soil Bureau Network, managed by this Action. A full list of members is available at http://eusoils.jrc.it/esbn/esbn_members.html. As a new development within FP7, Action SOIL has established the European Soil Data Centre (ESDAC), as an INSPIRE compliant fully nested system on soil data and information operated by a network of National and Regional (data centres).

Outside Europe:

This Action is one of the major global players in the development and operation of soil data and information systems. Within FP7 the following global and regional initiatives have been established:

Global activities

* A global network of soil science institutions and data providers has been established: GlobalSoilMap.net is a network including partners from all continents aiming to produce a new digital soil map of the world using established and emerging state-of-the-art technologies for soil mapping and predicting soil properties at high spatial resolution. Within the Group of Earth Observation (GEO) Work Plan 2009-2011 it is co-leading with ISRIC the sub-task US-09-03c "Global Soil Data".

Regional and Bilateral activities

* Soil Atlas of Latin America - In the framework of the EUROCLIMA project financed by DG AIDCO a Soil Atlas of Latin America will be compiled during 2010 for final publication by 2013.

* Soil Atlas of Africa - As a contribution of the JRC to the Africa and the Caribbean and Pacific Observatory, the Soil Atlas of Africa will be the reference for soil information in Africa. The project allows for full involvement of the local stakeholders in the design, data collection and final publication of this atlas, which is scheduled for 2010. Further reading is available at http://eusoils.jrc.it/library/maps/africa_atlas/index.html.

* EU-China cooperation agreement in soil science: Following an exploratory mission coordinated by this Action, an extensive collaboration agreement has been signed with the Chinese Academy of Sciences and the Institute of Soil Science. The agreements include exchange of staff and joint activities aiming towards the development of joint soil information systems and soil degradation assessments.

* Collaboration agreements established with the Food and Agriculture Organisation (FAO), Consultative Group on International Agricultural Research (CGIAR), ISRIC - World Data Centre for Soils, Tamil Nadu University (INDIA), Krasnoyarsk University, Moscow University, Soil Conservation Service of Iceland. Further collaboration, including other institutions world wide will follow, and allow the expansion of international collaboration within the Action, with the

ultimate goal of completing the new Global Soil Information System by end of the FP7.

This Action will provide a coherent approach to soil data collection and distribution for different policy areas and initiatives relevant to the EU, while assuring high scientific quality, policy relevance and technical support as needed. The Action will focus on the following overarching objectives:

1. The establishment of the European Soil Data Centre (ESDAC) as a single focal point for all soil data and information in Europe and the operation of the European Soil Archive Facility for long-term storage of soil samples.
2. The development of procedures and methods for data collection, quality assessment and control, data management and storage, data distribution to Commission and external users, fully complying with INSPIRE principles for spatial data infrastructures.
3. Research and development of advanced modelling techniques, indicators and scenario analyses in relation to the major threats to soil (erosion, decline of organic matter, compaction, salinisation, landslides, sealing, contamination, and loss of soil biodiversity), as identified in the Thematic Strategy for Soil Protection.
4. Supporting the other Commission's services with soil information and scientific as well as technical assistance in negotiating the Thematic Strategy for Soil Protection and the proposal for a Soil Framework Directive through the EU Institutions and their subsequent implementation at Community and Member State level.
5. Extension of the coverage of the European Soil Information System (EUSIS) towards a fully operational Global Soil Information System (GLOSIS), providing relevant soil information for the implementation of multilateral environmental agreements, like UNFCCC, CBD and UNCCD, and contributing to the ground segment of the Global Monitoring for Environment and Security (GMES) as well as to the AU - EU Strategic Partnership via the JRC's "ACP Observatory" (African, Caribbean, Pacific) Thematic Programme.

Specific Objectives for 2010:

- **Objective 10:**

To operate and maintain the European Soil Data Centre (ESDAC).

- Deliverable 10.1: 2010-12-31. Report on the operation of ESDAC (31/12/2010)
[CAT2 - Policy support documents]
- Deliverable 10.2: 2010-12-31. Report on the organization of EIONET data flows for soil data; Support to EEA (31/12/2010)
[CAT2 - Policy support documents]

- Deliverable 10.3: 2010-12-31. Soil erosion map for Europe based on EIONET and data collected through LUCAS-Soil [CAT5 - Other policy support products and services]
- Deliverable 10.4: 2010-12-31. Topsoil Organic Carbon map for Europe based on data collected through EIONET and data collected through LUCAS-Soil. [CAT5 - Other policy support products and services]
- Deliverable 10.5: 2010-12-31. Update of data and information concerning contaminated sites across the EU based on data collected through EIONET. [CAT5 - Other policy support products and services]

- **Objective 20:**

Development of new procedures and methods for data collection, quality assessment and control, data management, data storage and data distribution.

- Deliverable 20.1: 2010-12-31. Final evaluation report of the BIOSOIL demonstration project on forest soil monitoring in Europe (in collaboration with JRC-IES Action FOREST) [CAT2 - Policy support documents]
- Deliverable 20.2: 2010-12-31. Analysis of BIOSOIL soil data for spatial representation to identify local particularities in sampled parameters (in collaboration with JRC-IES Action FOREST)
- Deliverable 20.3: 2010-12-31. Progress Scientific and Technical Report of DIGISOIL: An integrated system of data collection technologies for mapping soil properties. [CAT2 - Policy support documents]
- Deliverable 20.4: 2010-12-31. Progress Scientific and Technical Report of iSOIL: Providing techniques and recommendations for high resolution, economically feasible, and target orientated soil mapping under conditions realistic for end-users [CAT2 - Policy support documents]
- Deliverable 20.5: 2010-12-31. Report on contribution to the specifications for soil in support to the INSPIRE Directive (in collaboration with action SHAPE) [CAT2 - Policy support documents]

- **Objective 30:**

Research and development of advanced land management/land use modelling techniques, indicators and scenario analyses.

- Deliverable 30.1: 2010-12-31. Progress Scientific and Technical Report on the European Land Evaluation Initiative (ELEIN)
[CAT2 - Policy support documents]
- Deliverable 30.2: 2010-12-31. Progress Scientific and Technical Report on the use of Earth Observation-based indicators assessing regional and local soil erosion. Support to GMES.
[CAT2 - Policy support documents]
- Deliverable 30.3: 2010-12-31. Evaluation of soil characterization under a forestland cover in view of potential conversions of land cover type to support land cover change analysis.
[CAT3 - Validated and harmonized methods and measurements]
- Deliverable 30.4: 2010-12-31. Landslide susceptibility map for Europe (Â“Tier 1Â”) and recommendations for national- and regional-level maps from successive Tiers.
[CAT5 - Other policy support products and services]

- **Objective 40:**

Direct support to Commission services and agencies.

- Deliverable 40.1: 2011-09-30. Report with updated information and data on the status of European soils for incorporation in the State of the Environment Report 2010 of the EEA including soil country analysis reports . Support to EEA
[CAT2 - Policy support documents]
- Deliverable 40.2: 2010-12-31. First results of the analysis of collected soil samples of the LUCAS Soil survey reported to EUROSTAT and DG ENV
[CAT5 - Other policy support products and services]
- Deliverable 40.3: 2010-03-31. Scientific and technical report on the definition of "degraded land" in the Renewable Energy Directive. Support to DG ENV and TP BIOFUEL.
[CAT2 - Policy support documents]

- Deliverable 40.4: 2010-12-31. Scientific and Technical Report on Agri-Environmental indicator nr.26 "Soil Quality" (JRC lead) including maps, data and full assessment within the DPSIR framework. Support to EUROSTAT/EEA
[CAT2 - Policy support documents]
- Deliverable 40.5: 2010-12-31. Educational and awareness raising materials in support to the implementation of the EU Thematic Strategy for Soil Protection
[CAT5 - Other policy support products and services]
- Deliverable 40.6: 2010-12-31. Soil Biodiversity Atlas published as JRC contribution to the International Biodiversity Year 2010 (31/12/2010) and input for the discussions on soil biodiversity in the context of the discussions of the UN CBD in general and in particular for COP 2010.
[CAT2 - Policy support documents]
- Deliverable 40.7: 2010-03-31. Report on marginal GHG emissions for European agricultural soils and global N₂O emissions (direct/land use change) on the basis of empirical/mechanistic models. (IES GHG-AFOULU and TP BIOFUEL) (Work for DG TREN and DG ENV, partly financed by AAs).
[CAT2 - Policy support documents]
- Deliverable 40.8: 2010-12-31. Updated version of the EEA main indicators as regards soil contamination and the management of contaminated sites. Support to EEA and DG ENV.
[CAT2 - Policy support documents]
- Deliverable 40.9: 2010-12-15. Data, maps and information in support of the PPR Working Groups of EFSA. Support to EFSA.
[CAT5 - Other policy support products and services]

- **Objective 50:**

Development of the Global Soil information System (GLOSI).

- Deliverable 50.1: 2010-12-31. Soil Atlas of Africa (31/12/2010) Support to JRC's Thematic Programme "ACP Observatory"
[CAT2 - Policy support documents]
- Deliverable 50.2: 2010-12-31. Information synthesised (maps, tables, indicators and analysis) at national level for

sustainable development policies in the different thematic domains of the Observatory in ten prototype countries, Actions involved: 42002 FOODSEC, 42001 MONDE, 41002 ISFEREA, 22008 DESERT, 24004 SOLO, 21203 PROCAS, 13107 REEF, 42003 TREES-3, 24003 ICPAC-EEI, Support to JRC's Thematic Programme 'ACP Observatory'

[CAT2 - Policy support documents]

- Deliverable 50.3: 2010-12-31. Deliverable 5.3.1: Interim report on the different drivers of "Competition for Land" in Central Africa (agriculture, charcoal and firewood, biofuels, mining, forest logging, protected areas, land grabbing) and their interactions with key ecosystem services (food, fibre, biodiversity, carbon, grazing...) and conflicts, Actions involved: 42003 TREES-3, 42001 MONDE, 13105 BIoS, 41002 ISFEREA, 21106 SUSTAG, 42002 FOODSEC, Support to JRC's Thematic Programme 'ACP Observatory' (31/12/2010)
 - Deliverable 50.3: 2010-12-31. Deliverable 5.3.2: Interim report on the different drivers of "Competition for Land" in the Horn of Africa (agriculture, charcoal and firewood, biofuels, mining, land grabbing) and their interactions with key ecosystem services (food, fibre, biodiversity, carbon, grazing...) and conflicts Actions involved: 42002 FOODSEC, 42001 MONDE, 41002 ISFEREA, 22008 DESERT, 24004 SOLO, 21106 SUSTAG; Support to JRC's Thematic Programme "ACP Observatory"
- [CAT2 - Policy support documents]
- Deliverable 50.4: 2010-12-31. Progress Scientific and Technical Report on the collaboration with the Soil Conservation Service of Iceland
- [CAT2 - Policy support documents]
- Deliverable 50.5: 2010-12-31. Progress Scientific and Technical Report on the development of a Soil and Terrain (SOTER) database for Europe and rule-based landform classification methods. Support to GEOSS/GEO and "GMES"
- [CAT2 - Policy support documents]
- Deliverable 50.6: 2011-06-30. Border harmonization workshop for the soil geographical data of Turkey & Caucuses (Enlargement & Integration)
- [CAT5 - Other policy support products and services]
- Deliverable 50.7: 2010-03-31. Extension of the European Soil Information System to Armenia, Azerbaijan and Georgia
- [CAT5 - Other policy support products and services]

- Deliverable 50.8: 2010-12-31. EC stand and exhibit at the World Soil Conference in Brisbane, Australia 2010)
[CAT5 - Other policy support products and services]
- Deliverable 50.9: 2011-06-14. Conference and Workshop on Northern Circumpolar Soils: From the European to the Global Scale (Enlargement & Integration)
[CAT5 - Other policy support products and services]

Last Updated 29/01/2010 23:39:25