

**Sub-task Number:** US-09-03c

**Sub-task Title:** Global Soil Data

**Overarching Task:** Cross-Cutting Products and Services

**Area:** USER ENGAGEMENT

**Relevant Committee:** UIC (User Interface Committee)

**Related Targets:** (to be included in 2009)

**Sub-task Definition** (as given in the 2009-2011 Work Plan):

Support the development a Global Soil Information System (GLOSIS) building upon the work of the International Soil Reference and Information Centre (ISRIC), the Joint Research Centre of the EU and FAO. Incorporate the various existing regional SOTER initiatives into a coherent system for soil data – to support implementation of major multilateral environmental agreements (e.g. UNFCCC, UNCCD and CBD) and provide harmonized & policy-relevant information to users at the regional and national level. As the European contribution to GLOSIS, e-SOTER will deliver a web-based regional pilot platform with data, methodology, and applications, using remote sensing to validate, augment and extend existing data.

**Leads** (GEO Member or PO, Entity carrying out the work, Contact: e-mail):

NL (ISRIC) Point of Contact: Vincent van Engelen, vincent.vanengelen@wur.nl

EC-JRC and EC DG RTD : Luca Montanarella, luca.montanarella@jrc.ec.europa.eu

**Motivation/Background** (Why should this Task or sub-task be implemented? What relevance to society? What is the state of the art? 3-5 lines)

Soil - the planet earth's living skin - is vital for many elements in global cycles, including carbon, oxygen, nitrogen and water; it plays a major role in regulating global processes. Soils influence global and local development such as improvement of food security, mitigation of green house gas emissions to curtail climate change, maintenance of biodiversity, supply of water and production of energy crops. Current global soil information is not up-to-date. There is an incomplete Soil and Terrain database (SOTER) at scales 1:5 and 1:1 M for about half of the globe, compiled with legacy soil data and DEMs. New Digital Soil Mapping (DSM) techniques are now being partly implemented in the FP7 e-SOTER project and fully in the AfSIS project that is part of *GlobalSoilMap.net*.

The reasons for this sub-task in the GEO context are similar to those behind e-SOTER and *GlobalSoilMap.net*:

- The need to map the global soil patterns for understanding the role of soils in global processes
- Incomplete global soil information
- Improvement of soil mapping by incorporation of DSM techniques

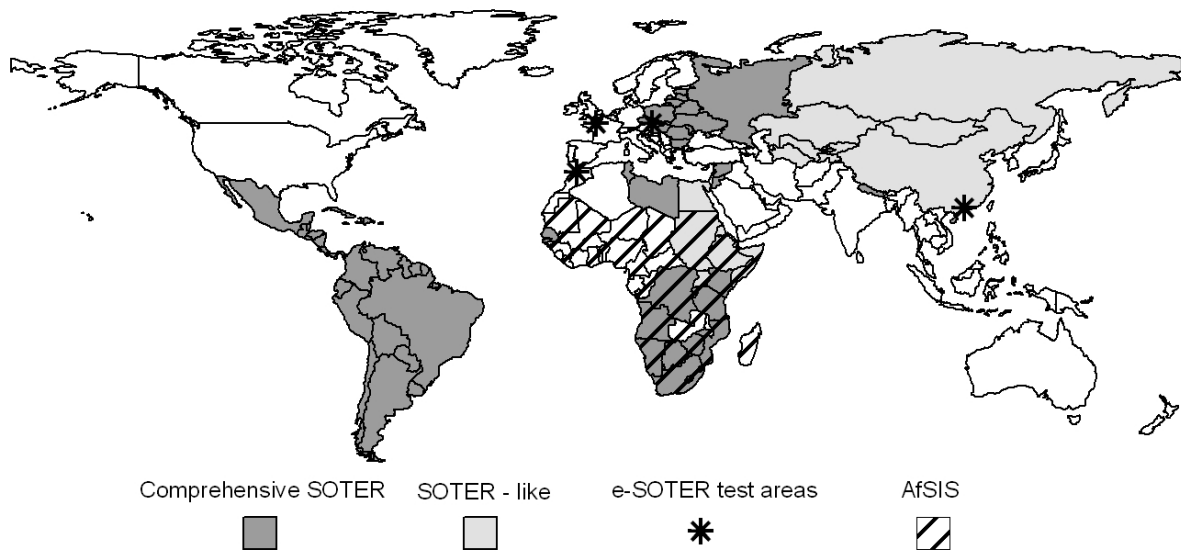
**Outputs** (e.g. products and services which result from the activities of the Task/sub-task; outlined in the form of deliverables with timelines)

Planned:

The e-SOTER projects' aims are to deliver the following:

- a methodology to create 1:1 million-scale SOTER databases, and an enhanced soil and terrain database at scale 1:1 million
- an artifact-free 90m digital elevation model
- methodologies to create 1:250 000-scale enhanced SOTER databases for four pilots
- advanced remote sensing techniques to obtain soil attribute data
- validation and uncertainty propagation analysis;

*Produced (current status):* current status of SOTER databases; test areas of *e-SOTER*; project area of *AfSIS*.



**Activities** (operations or work processes through which resources are mobilized to produce specific outputs; outlined in the form of milestones including timelines)

Planned:

e-SOTER project methods continent-wide applied (Europe)

Under the GlobalSoilMap.net initiative the Africa Soil Information System has started in 2009.

Progress (current status):e-SOTER project started in September 2008, windows studies deliverable in 2010.

[Note: Updates on outputs and activities will be formally provided twice a year, according to the GEO schedule for 2009]

**Resources** (indication of resources – e.g. financial, human – contributed by GEO Members or Participating Organizations to produce outputs)

e-SOTER windows financed by EU FP7 funds; AfSIS/GlobalSoilMap.net is financed by the Bill and Melissa Gates Foundation.

Additional funding sought for application of e-SOTER methods to rest of Europe.

**Architecture and Data Component**

1) Please briefly describe any task-related Earth observation resources (data set, system, website/portal) and any related Web Service interfaces that are contributed to GEOSS. State whether these items are or will be registered with the GEOSS Component and Service Registry for access via the GEO Web Portals, and whether any associated standards or other interoperability arrangements will be registered in the Standards and Interoperability Registry.

2) Please also describe what data and information your activity/system needs that you would request to be accessible through the GEOSS Common Infrastructure.

**Capacity Building Component**

*(capacity building is defined to include the development of capacity related to: (i) Infrastructure and technology transfer (Hardware, Software and other technology required to develop, access and use EO); (ii) Individuals (education and training of individuals to be aware of, access, use and develop EO) and (iii) Institutions – building policies, programs & organizational structures to enhance the value of EO data and products).*

*1) In accordance with the above definition does this Task have a capacity-building component? If so, please provide a short description of this component including a description of end users.*

No

*2) Have any additional CB needs for this Task been identified? Please provide a short description.*

**User Engagement Component**

*(please briefly describe to what extent end users are engaged in this Task and influence the nature of the outputs produced)*

**Science and Technology (S&T) Component**

*1) Please briefly describe the elements of scientific research or technological development contained in this Task.*

*2) In relation to the S&T component(s) of this task, please describe gaps, priorities, continuity needs, barriers, scientific expertise and additional resource needs (this information will be used for developing a gaps and needs assessment in Task ST-09-01)*

**Members and POs' Contributions to Outputs and Activities above:**

*(Input is optional. This section gives the chance to Members and POs to provide more details (3-5 lines) on their individual activities, making a clear connection with the Outputs and Activities outlined above).*

**Participation (Table to be filled in 2009):**

Type	Member or PO	Representing	Contact Name	EmailAddress
Lead(PoC)	NL	ISRIC – World Soil Information	Vincent vanEngelen	vincent.vanengelen@wur.nl
Lead	EC	JRC – DG RTD	Luca Montanarella	luca.montanarella@jrc.ec.europa.eu
Contributor				