

European Soil Bureau Network (ESBN) Plenary 2010.

Venue: DG ENV in Brussels, BELGIUM

Date: 21 – 22 September 2010.

URL: http://eusoils.jrc.ec.europa.eu/esbn/esbn_meetings_plenary2010.html

Micheal Hammel welcomed the ESBN to DGENV and gave an overview of the activities of the soils group within DGENV.

Rachel Creamer again welcomed the delegates to the meeting and introduced the agenda for the next two days. This was followed by a tour de table where ESBN members were asked to introduce themselves.

Rachel Creamer then gave an overview of the on-going activities within the ESBN over the last 12 months. Introducing the members of the Steering Committee and explaining that Endre Dobos, Arnold Arnoldussen and Wolf Ecklemann who be standing down and that the SC had received nomination of 3 new members: Allan Lilly, Erika Micheli and Joseph Kozak. Rachel explained the concept of the ESBN working groups (for all new or EIONET members). The outputs this year include two atlases; Soils of the Circumpolar Region and Soil Biodiversity Atlas. Finally Rachel presented the major discussion topics within the SC within the last 12 months. This resulted in a discussion between members of the SC and the network with regard to the identification and implementation of the benchmark sites.

Luca Montanarella presented the **current status in JRC and the future**. His presentation included Overview of main activities in 2010 and the proposal for the work programme 2011.

Luca Montanarella presented his proposal for the formation of the **ESDAC Data Quality Control Group**. He underlined the need for external peer review and QA/QC control. Members of the proposed group should be registered within the database of independent experts of FP7: <https://cordis.europa.eu/emmp7/index.cfm>
The reviewers will be reimbursed for the time required for the peer review and QA/QC procedures according to standard procedures for fee paid experts of the European Commission. The web address is mentioned above and is communicated to the members of the ESBN. Members are also asked to email R.Creamer when they sign up, so we have an active list of members who are willing to review.

Peter Schad presented “**The use of WRB to produce map legends**”. An electronic version of the IUSS working group WRB output is available in the FAO web-portal. Peter explained the concept of the classification individual soils and the terminology. For map legends there is a guidelines how to publish legends at scale 1:250.000 (published Jan 2010). He presented also 4 reference levels:

- 1:5.000.000 and smaller
- 1:5.000.000
- 1:5000000 – 1.000.000
- 1.000.000– 250.000

3 new interesting concepts have been explained during his presentation:

- Dominant soils >50% of soil cover
- Co-dominant : 25% - 50% of soil cover
- Associated soils: 5-25% of soil cover

The Map Units Qualifiers (Prefix – Suffix) was an interesting part of his presentation

Question 1: Why there are so many optional terms?

Reply 1: It depends on the purpose of the map and the tradition of the person who maps.

Question 2: Is there any standard proposal for Colors and ramps of Legends?

Reply 2: Find more information in the European Soil Portal:

http://eussoils.jrc.ec.europa.eu/ESDB_Archive/ESDBv3/legend/LegendData.cfm

The afternoon session was dedicated to the results of the ESNB working Groups:

Endre Dobos presented the current status of **Working Group 1: INSPIRE directive**.

The mandate of the WG was highlighted focusing on the data specifications and support to the JRC and ESDAC. A brief description of the INSPIRE directive and the major components of the directive (Metadata, Interoperability, Data and Service sharing) was given. There is a roadmap for the data specifications development which has specific actions and deliverables during the next 3 years. There are some parallel activities which are running currently in Europe (INSPIRE WG, ESDAC, ESNB WG1, GSSOIL, ISO, etc...). The role of the WG1 is to interpret the INSPIRE framework directive and the soil-related aspects which have been specified in the ESDAC Consortium Tender. Also WG1 supervises the outputs/deliverables from ESDAC consortium and supports the INSPIRE TWG through its delegated members.

A brief intervention from **Arnold Arnoldussen** related to the information about the **INSPIRE TWG Soil**. He explained the structure of the Thematic Working Group (TWG) INSPIRE Soils and the roles identified in this group (Facilitator, members, Editor...). He explained the composition of the group (11 experts) and how they have been selected from the 41 applications. The roadmap and the deadlines of the deliverables were presented. He presented also the work that has been done so far: Kick off meeting, Technical modeling meeting, teleconferences almost every second week. He explained also the topics where the group has focused: Soil Mapping & Soil Contamination. The analysis of the User requirements is an important phase and there are around 100 submissions of Reference Material which has to be analysed.

Working Group 2: Wolf Eckelmann presented briefly (no PPT) the activities of the WG.

Working Group 3: Delineation of priority areas for soil risk (Mark Kibblewhite).

A background to the establishment of the WG was given by focusing on what happened in 2005 (given feedback to DG ENV regarding soil assessment of soil resources). Mark presents a new step-wise framework for determining risk areas. Critical soil degradation processes and resulting harms per WRB soil type presented. Acceptability of harm has been presented as 3 levels of acceptable harm to soil. He proposes a qualitative

recommendation (Considerable risk, Identified risk, Low expectation of unacceptable harm) about risk areas. The presenter was “bombarded” by more than 10 questions from the audience about this interesting approach.

Working Group 4: Education - Awareness Raising (Arwyn Jones – Rachel Creamer)

The objectives of the WG and the possible audience have been identified. The Audience is quite wide and the initial objectives were ambitious.

The recent developments have been highlighted:

- Joint ENSA/WG4 workshop
- Successful Awareness raising section in the European Soil Portal
- 3rd meeting of Group – Cranfield University
- Presentation at IUSS World Soils Congress, Aug. 2010
- Presence at the IUSS meeting on actions for soil education and awareness raising
- Development of Action Plan for target bodies (EU, MS....)

3 broad groupings that have been identified to be influenced:

- Education Sector (Diverse community..., 7-9 year old children are so imaginative). There is a series of proposals for the education sector (guidance to schools, Curricula mapping, Soil pack for every school in Europe, Travelling soils exhibit, etc).
- Politicians, policy advisors and associated agencies (Policy and decision maker sector)
- Public (Dirt Movie, posters, multilingual websites, Use of professional marketing agency, Soil ‘figurehead’)

Some actions have been proposed for the near future:

- The soil science community will establish a range of benchmark soils (Produce a catalogue of the key soil landscape units, harmonized documentation and presentation, etc)
- Proposal to engage also National Soil Science Societies
- Bring together all the activities related to raising awareness (Derived from 19 IUSS World Congress).

Biodiversity Working Group (Ciro Gardi)

JRC received the mandate from Convention on Biological Diversity (CBD) to study soil biodiversity. Among the objectives of the WG was the publication of Biodiversity Atlas. The Atlas is a major contribution to the 2010 year of Biodiversity. Among the goals of the atlas were to raise awareness on soil biodiversity and CBD. Some figures are very impressive: 10 editors, 61 authors, 128 pages, 440 images.....etc. Soil Biodiversity threat (Map) has been produced by the expert knowledge from the WG. It is the first attempt to estimate the risk (pressure) of soil biodiversity.

What is next for the WG?

- Research Projects (Eco-finder)
- Biodiversity hot spot and critical areas
- Evaluate (modeling) of threats at EU scale.

Landslides Working Group (Arwyn Jones)

The WG is outside the ESNB classical forum since it has a lot of geological aspects. The rationale of the WG was presented focusing on some important landslide events. Over the last 12 months the WG has worked for the development of a European wide landslide susceptibility map. The WG has successfully submitted a proposal in UN-supported International Programme. In the next 12 months they will expand the Tier-1 to Tier-2 methodology and they will apply it in national/regional maps.

Rachel Creamer chaired the session and she summed up underlining that Working Groups are on a volunteer basis and members participate on their own initiative. However we need active engagement to move the activities and objectives of the WGs forward.

The first day of the plenary was concluded with the discussion on the **proposed Soil Framework Directive**.

Luca Marmo (DG ENV) briefed on the latest news:

Recently there is an extreme opposition in the council since they consider soil as national competence. Other Member States (MS) find the proposal for Directive too costly in this particular financial situation. Instead, more than 20 MS find the Directive useful and they want to move ahead. Every time, a Council Presidency tries to break through and propose again the directive, there is always a blocking minority. The last try was the Spanish presidency. The major obstacle is the French-German axis which is against the Directive. The technical issues are not a problem and adjustments may be streamlined. The problem is focused on the political will.

Soil Group of DG ENV is currently active in the discussion of CAP 2013 reform. This is the only floor that soil is discussed in the legislative level. Soil is also included in the discussions about biodiversity and in the reform of agricultural policies.

The European Soil Bureau Network (ESBN) can identify 2 roles to fulfill:

- The Institutional role of scientific/technical aspects linked to Soil Thematic Strategy. ESNB can provide support in order to make operational the concepts of the proposed Directive. Their expertise can be used also in sectors like Bio-fuel and renewable energies. Definition of degraded land which is linked to bio-fuels investment seems to be a hot topic.
- Less Institutional since ESNB members can be “multipliers” of the Soil Directive to their own countries towards policy makers (ministries, members of parliament, regional authorities). They should make their opinion available to public forums and especially to the members of the European Parliament. The role of European Parliament is very important and recently there were 3 negative positions in the Committee of the European Parliament for issues related to soil.

Afterwards, there were many interventions from the audience.

Question: What are the weakest points in the proposed Directive? Which is the role of NGOs and general public?

Reply: The NGOs are not as interested in soil as they are in Climate change, Transport and other policy sectors. For example WWF or Green Peace have not shown significant support in promoting the Soil Framework Directive.

Regarding the weakest points, positions are different from different countries:

- UK does not disagree in principle with the Directive but they do not like article 1, art.2....art...3 etc. Ownership problem related also to contaminated sites identification is a major issue.
- French Agriculture ministry never rejected the Directive. The SFD can be an extra tool for subsidizing good farming policies. The problem of France is related to contaminated sites identification.
- Germany is the major obstacle.

Pavel Bielek described his experience in the process of decision making. He described that the current Legislative documents” existing in European level trying to support soils, are no longer accepted by ministerial representatives. He proposes a new version of such documentation for the proposed Directive.

Stanislaw Bialouz expressed his opinion according to his experience of Berlin Forum after the rejection of the directive (few months later). He underlined that ESNB should play an important role in changing the mind of politicians and that they should focus on economical aspects as well.

Mark Kibblewhite: Food quality is not satisfactory and the quantity is not enough. ESNB is in position to develop a document emphasizing the need for food security in relation to soil protection. ESNB members should encourage Lobbies and NGOs to come with the ESNB side. Regarding contaminated lands, the situation varies from MS to MS. In UK for example, there is no public registry about contaminated lands.

José Luis Rubio explained the example of Research Area Council and the lobbying that took place in the press involving many organizations and associations. ESNB should involve also other organizations such as IUSS, European Union of Soil Sciences, etc

Christine Le Bas: She proposed to identify the Gaps that National Legislations in Objection Countries (NL, DE, AT) have with the proposed text in the Framework directive.

Luca Marmo concluded that the Economical aspect is very important. He highlighted 3 points:

- He compared the possible cost of the Directive with the costs for land degradation currently paid.
- He highlighted the importance of Food security.
- At the end, he underlined the role of NGOs and the relevant associations.

Rachel Creamer then explained to the members of the meeting that the SC had formulated a letter to the minister for Rural Affairs in the Hungarian Government which will adopt the European Presidency at the start of 2011. The letter requests that the

Hungarian presidency table the SFD as an item in the presidency, which requires changes to the current SFD documentation.

The 2nd day focused on the harmonized soil data for Europe.

Requirements and use for soil data at the EU level (results from the ESDaC Consortium) have been presented by **Stephen Hallet**.

This specific task of the consortium had 3 tasks:

- Document “applications” using soil data
- Collect Reference Material
- Analysis of Reference Material

Use of web portal was very useful and the TWiki allowed them to store centrally the documents, get feedback, collect data forms and it is a consistent approach. They made use of the same type of questionnaire (38 pages long) as the INSPIRE other thematic groups (1 &2 Annexes). The questionnaire was sent to 103 LMOS and to member states. 31 Questionnaires were returned and 15 Reference Material were captured.

The Analysis recognize as Actors the ones who have an interest in the application of soils. The Actors have been classified in 5 key areas (Government, Public Agencies, EU Bodies, Public interest, Private sector). They classified the Use Cases and they have identified that Collection of soil information is done for:

- Soil Mapping
- Soil Inventories
- Soil Thematic Mapping

The Use case is a high level diagram for communicating and reaching the consensus about an application that we try to achieve. The use cases are derived from the questionnaires (capture the questionnaire content).

General Conclusions:

- Few truly European soil applications
- Much soil information is used but few of them are following the OGC standards-compliant web services.
- Reference Material is even scarcer
- Use cases are useful for stakeholder communication
- Much of soil activity is occurring away from formal LMO and SDIC organizations

LMOs and SDICs are interesting lists. Panagos referred the case that ESDaC Consortium Website may be confusing in relation with ESDaC Data Portal. Montanarella referred that links should be established in both sites in order to clarify the 2 cases.

Endre Dobos presented some **Use Cases** which is the Task B in the INSPIRE WG.

The Inter-linkage concept and database development was presented. Data coming from local/regional level can directly update the European Soil Database. The conceptual model has to answer questions such as the number of operational levels, the characterization of target units, and the transformation between spatial units. Who are the users/data providers (actors) of soil data? All those requirements drive to the need of a

Conceptual Data Model. The Conceptual model defines 4 groups. The UML framework helps to draw use cases. Use cases may be different from country to country but a general one can be developed (making more abstractions).

Arnold Arnoldussen presented in detail the activity of **TWG on INSPIRE**.

INSPIRE doesn't imply the collection of new data and doesn't affect existing data copyright issues. The Technical provisions laid down Implementing Rules for:

- Metadata
- Interoperability of spatial data sets and services
- Network services (Discovery, view, download)
- Data services.

INSPIRE has specific requirements: It is obligatory for all MS. All MS are obliged to deliver the data as specified. It is an Open and transparent process. The Task of TWG is:

- Deliver the Data Specification
- Support INSPIRE Team in implementing Rules

Deadline of 29 Oct 2010: Version 1 of the Data Specifications will be delivered to the INSPIRE Team in JRC. Contacts with other teams will be taken and feedback will drive to version 2 of DS in Aug. 2010. This document will be delivered to Member States and after a review the version 3 will be delivered.

Challenges:

- The INSPIRE Concept is new for most of the team members
- Cost benefit analysis: A complex structure should drive the MS to translate their data to this structure(too much cost)
- Time Frame: Very short available time for developing data specifications.
- The level of detail (too simple or too complex?)

If it is too complex, it will be impossible to find any data. Instead if it is too simple, there will be few benefits from this exercise. The WG has decided to go one step deeper and for the first version to be quite ambitious. The WG is also works in rephrasing its scope.

He presented also what happened till September 2010:

- First screen of Use cases
- Analysis of regulations
- Detailed Description of use cases
- Start modeling the work. (use cases have to be translated in UML model)

Use cases will show some lack of knowledge and the **WG will contact the ESNB Network**. The European Soil Database (ESDB) is taken as reference material. The contaminated sites will be registered (are they allowed to show the coordinates for contaminated sites? – INSPIRE as a European Directive is stronger than national protection laws). The target group of INSPIRE is the society and not the soil scientists.

Luca Montanarella underlined that INSPIRE is the core of our future business and new datasets will be driven by INSPIRE data specifications. He invited the **other projects (E-Soter, GlobalSoilMap....etc) to be INSPIRE compliant** since this is law.

Gerben Mol from Alterra announced **Conference in soil science** “Soil Science in a Changing World” 18-22 September 2011.

Luca Montanarella proposed to combine this Conference with the next Plenary on 2011

Rainer Baritz presented the GSSOIL project.

The aim of the project is to improve access to INSPIRE related spatial data. He presented also the INSPIRE schedule. The participating group has its origin in ENVASSO project. Their best practice is to support the development of a European geodata infrastructure for soil data, lower the barriers to use data from different sources and develop methods to produce interoperable spatial soil data. The expected results are:

- A catalogue of soil data existing in Europe
- Soil Metadata profile and best practice meta data development
- Data Harmonisation
- Soil Portal (Multi-lingual thesaurus, View data services, data editor, WMS and prototype WFS...)

He underlined that good cooperation with existing Data Centers exist. Also, they have input from other parallel activities. He briefed on the most important working packages(WP).

WP2 included the development of a Soil Theme Data Catalogue (335 products from 19 countries). He insisted that some of the data can still be distributed with cost (even if INSPIRE exists). WP3 relates to data management and Metadata. One of the activities of this WP is to deliver products to the INSPIRE TW on Soil. Their proposal for Metadata follows the guidelines of ISO19115. They have identified a core metadata set that they compile and there is another part of optional fields. The WP4 focused on Harmonization and Interoperability. They have developed and share data using OGC Standards and they propose that agreement on content descriptions can reach much more in terms of semantic harmonization.

The WP4 will deliver their UML model (SoilML) and will test the applicability of GeosciML. WP5 included mainly the development of GS portal and the establishment of semantic services (Thesaurus). There is a first draft of soil terminology (thesaurus) and few services have been developed in their portal.

An update on the requirements of **harmonized 1:250.000 Soil Map** has given by **Wolf Eckelmann**.

The ESNB WG2 asked JRC to include their requirements in Terms of Reference (ToR) of the consortium. There is an updated map of the countries which have completed, or are in process or they don't have 1:250.000. Even countries that have declared that they developed the 1:250.000 map, their scale varies from 1:200.000 to 1:400.000. Different scales and different geometric and semantic qualities cause mismatching.

Regarding **taxonomies**, some of MS use the WRB standards (either old or the updated one), other MS use their own taxonomy and at the end few countries use the USA soil Taxonomy. In Brisbane there were some developments and it was proposed to have a single taxonomy (merge USA and WRB). According to Eckelmann it is not possible to translate the national taxonomies to WRB according to an example from Germany. Another issue is the **Mapping unit**: France is mapping in departments, Germany is mapping as a map sheet grid. Coordinating different neighboring countries is not easy.

Conclusions:

- JRC and ESNB would appreciate a clear statement of the Commission about the importance of a 1:250.000 soil map
- EU projects and actions should be scanned to better justify data needs and data requirements
- An updated Manual of Procedures should be the basis of a wide approach towards 1:250.000.
- Do we need to update the existing 1:1.000.000 soil Map?

He also advised the ESNB members to promote the results whenever 1:250.000 has been used.

The next 3 talks have to reply to the following 4 questions for a harmonized soil data infrastructure for Europe:

- *How feasible is it that Member States provide national data to support a 1:250,000 database development*
- *How will the spatial data infrastructure for a European soil dataset look? Will the data be INSPIRE compliant?*
- *What soil properties will the project deliver?
What is the scale/resolution of those properties?*
- *How feasible is collection of new data at Member State level and cross border? And what are the cost implications?*

e-Soter Approach (Vincent Van Engelen)

He gave a general overview of the project and how the e-SOTER fits in the FP7 setting. He also highlighted that e-SOTER is a task in GEOSS for global soil Data.

Objectives of e-SOTER:

- The methodologies developed in e-SOTER should contribute to the completion of SOTER Database.
- Build on existing EU contribution to SOTER
- Fill the gaps
- Provide contribution to GEOSS

Steps forward:

- Data collection will not take place but use of legacy (Existing data) in some windows testing areas.
- Transformation to classical Soter format
- Data Management: Validation
- Interpretations: Major threats in the window areas
- Deliver the Data through a data Portal.

Some Activities and new directions:

- In the current Soter, it is missing Remote Sensing data for validation and correction of survey data. Now SRTM exist and it can be used to validate the data.
- Generate new data surfaces.
- Improve the quality application
- Develop a freely accessible web service

Afterwards, the major work packages of the projects were presented briefly:

Endre Dobos focused on SOTER unit delineation using SRTM and MODIS data. This work has been done in his stay in Ispra in collaboration with Joel Darrousin.

Erika Micheli presented the WP2 and the working methodology (RS and WRB diagnostics). The missing data is a major obstacle running e-SOTER. She underlined the major problems in the compilation of Database: different number of profiles, nomenclatures and classification systems. Some possible solutions for data standardization can be:

- Conversion of values
- Pedotranfer function for missing data
- Translation/correlation tools

3 possible approaches can be adopted:

- Steps of the working methodology (expert one) have been presented.
- Reclassification algorithm is also presented (A lot of data sources are needed)
- Taxonomic distance for correlation

Expert knowledge remains very important and data availability us a major obstacle.

Steve Hallet demonstrated the Software used for the implementation of WP6. The application can be used for land us planning, land monitoring, sustainable land use. SoterML: Formal specification for handling soil data information (XML Format). SoterML is based on Geosci. Services that can be supported: WMS/WFS, KML export, Metadata, SoterML import.

GlobalsoilMap.net project was presented by Alfred Hartemink. Soil is an important input for the big 5 (Water, Bio-Diversity, Food, Energy, Climate). Hundred of thousands of maps, much soil data and other information exist around. Main Aspects of the GlobalSoilMap.net are:

- GlobalSoilMap.net tries to capture and capitalize the existing data.
- Soil Properties and not Soil Classes
- Key properties (organic carbon, texture, Ph, Depth, Bulk density, AWC, EC)
- Showing uncertainties: People understand the prediction or the uncertainty concepts.
- The fine resolution grid: 90m x 90m based on SRTM availability, 18 Billion Pixels. The Grid is very ambitious as a concept.
- It is a Global Project

Initially, the project is based on legacy data. Large differences exist in legacy input data. GlobalSoilMap.net has set up 11 task groups.

Conclusions drawn up:

- Soil information is recognized as a major source of information
- Soil is in the middle of 5 (biodiversity, Climate, Water, Food, Energy)
- There is a strong demand for soil data
- Enormous opportunity for Science.

Connection between e-SOTER and GlobalSoilMap.net (Van Engelen)

A Table of Objectives, Activities, Outputs and Funds has been drawn and can be used to compare the 2 projects. There are partly parallel efforts that will mutually benefit each other. There is an exchange of products between e-SOTER and GlobalSoilMap.net. e-SOTER and GlobalSoilMap.net contribute both to GEOSS (support the development of global system ...). 2 outputs have foreseen:

- Soil Class Products (e-SOTER)
- Soil Property data

Panaos Panagos presented the **EIONET Data Collection** currently running in JRC. He focused on the technical details of this exercise and he highlighted the opportunity given to Member States to improve their maps.

Rachel Creamer made the **Synopsis** of the day trying to reply the major question *“How feasible is it that MS provide national data to support 1:250.000 database developments?”*.

?? Bielek supports extensively the proposal for use of 1:250.000. Soil is so demanded in various domains. He also presented the example of Less Favorite Areas. Which use as input detailed soil data.

Mark Kiblewhite pointed out the problem of harmonization and the high number of European Projects currently dealing with data standardization. He insists that we should direct the Member States in the use of the detailed soil information 1:250.000. He proposed to look for fields such as “Degraded areas” and “Less Favourite Areas” where soil data are extensively used.

Luca Montanarella: Data is an Infrastructure, it is not research. Our task as JRC is to produce research and not to collect data. 1:250.000 is not research and seems to be a data collection. He proposes that ESN should decide on one specific methodology among those presented (e-SOTER, GlobalSoilMap.net, etc) and then pressure their representatives to finance those activities.

Alfred Hartemink: ESDaC produces products instead of collecting data.

Hendrick Madsen: He accused the Members of the group of not replying in his request for extending the Soil Profile Analytical Database. He pointed out the problem of SPADE where only 4 countries have replied positively and 2 gave changed data to the proposed modified SPADE 2008 version.

Endre Dobos: underlines the use of INSPIRE and how this will guide towards the implementation of detailed soil databases.

Bob Jones: He proposed an alternative solution, as it would be better to provide series of soil function maps instead of soil threats.

Rainer Baritz: He asked what is the function of the network? We need a framework (request for a product) and mandate for the network.

Luca Montanarella explained the history of the network and how the network has grown up for the implementation of the European soil Database. The 1:1.000.000 was the major objective and the next objective was the implementation of 1:250.000. The network has the role to advise the JRC on which direction should go in relation to soil information. Last decision was to re-write the Manual of Procedures for 1:250.000 (terms of reference)

Rainer Baritz underlined that JRC gives an excellent opportunity to the network (by keeping it alive) and by providing the framework through the Consortium.

Luca Montanarella proposed to the network to use the model of GlobalSoilMap.net project. It is a similar case where the network has to respond to questions such as “What you want to produce? How could participate on this consortium? How is willing to support it? Or finance it?” He suggested the way forward and how the network should operate from now on.

Rachel Creamer: We should be more pro-active and deliver products.

Regarding the second question posed by Rachel Creamer “*How will the spatial data Infrastructure for European soil dataset look? Will the data be INSPIRE compliant?*” They proposed to ask the DGs and clients what are their needs but in any way they should be INSPIRE compliant.

Regarding the third question posed by Rachel Creamer “*What soil properties will the project deliver? What is the scale/resolution of those properties?*”

The network should be called by the Commission in order to fill the gaps.

Luca Montanarella confirmed that there are a lot of money to implement soil activities (Research programmes, Funds by the Commission). It is time to focus on issues that are priority. He highlighted the next steps:

- The work done in TWG on INSPIRE is very good. There is no need to have an ESN WG on INSPIRE.
- Regarding the second Working Group “1:250.000”, something should move and some actions should be taken immediately. He proposed to follow the example of GlobalSoilmap.net and write a 10-pages technical Specifications Document.
- WG3: Should continue and have a look for the implementation guidelines related to the renewable energies, Land Degradation.
- WG4: Very Good Success! Continue
- Biodiversity and Landslides WGs are out of the scope of the network

He concluded that it is better to move from soil threats to soil functions. Identify and map those functions will be a further objective of the network.