



Meeting of the NRC Soil 2019 and Workshop soil monitoring

Draft report

Date: 12 – 14 February 2019

Venue: European Environment Agency, Kongens Nytorv 6, Copenhagen DK

Summary:

Meeting objectives:

- To continue and enhance EIONET partnership with member countries on soil and related topics in support of EEA knowledge base and assessments
- To discuss the state of play of soil monitoring in Europe
- To improve synergies between national soil monitoring systems and LUCAS
- To discuss the draft results of the SOER 2020
- To discuss how to conduct the next European soil condition assessment
- To learn from national experiences
- To discuss the status and information needs about soil contamination in Europe
- To find a common understanding about soil degradation

Meeting documents:

- Draft Objectives and Roadmap: European Soil Condition Assessment 2020/21
- Draft Terms of Reference (ToR) (2019): Working Group on Soil Contamination
- Draft ToR and Table of Content (ToC): Task Force Soil Monitoring
- Activity report 2018: ETC/ULS

Outcome:

- Attendance and constructive inputs from 30 countries allowing good progress of the NRC Soil agenda
- Broad agreement about the need to improve soil monitoring; Task Force Soil Monitoring has been established, chaired by JRC.
- Contamination is one of the NRC Soil's core activities: Ad hoc WG Contaminated Sites will evolve to become the Working Group Soil Contamination; Frank Swartjes of RIVM was asked to chair; cooperation with the Common Forum on Contaminated Land
- ToRs for Task Force and Working Group will be finalized via e-consultation
- Contributions by ETC/ULS are appreciated; its supporting function to the NRC Soil is welcome.
- NRC Soil members support the European Soil Condition Assessment 2020/21 by sharing national information and country summaries.
- Flagging of the soil condition as deteriorating/not-on-track has been confirmed

Meeting report: Gundula Prokop (ETC ULS), Rainer Baritz (EEA)

Workshop soil monitoring

Date: 12 February 2019 (afternoon)

The meeting was jointly opened by the representatives from EEA, JRC and DG ENV. **Josiane Masson (DG ENV)** specified why soil data and soil monitoring are relevant for European policies. **Rainer Baritz (EEA)** emphasized the current mosaic of knowledge and the great variety of soil surveys and monitoring. Further efforts are needed to bring existing information together into harmonized indicators. The developments of the LUCAS-Soil programme were explained by **Arwyn Jones (JRC)**. Currently, the 2021 survey is planned, and country-specific contributions could be suggested.

“SOILS4EU”, a contract study for DG ENV, was introduced by **Gzegorz Siebielec (IUNG, Poland) and Josiane Masson (DG ENV)**. The project has studied the information contained in the EU Wiki¹ complemented by a workshop held on 7th November during the last meeting of the International Network of Soil Information Institutions (see [INSII](#)): various European countries have soil monitoring activities; however, soil information is sometimes scattered between different authorities or organisation, measurements are patchy and mostly not comparable. The lack of common protocols (e.g. indicators, e.g. GSOCmap) was raised during the aforementioned workshop.

Even though national soil monitoring often concentrates on agricultural land, the experiences of the ICP Forests (Level I and Level II surveys) are of great importance (**Nicole Wellbrock, Forests Soil Expert Panel, Thuenen Institute, Germany**). The network successfully demonstrates how a country-driven soil monitoring across Europe can be built, if resourced.

In the following session, **NRC Soil members** presented examples of national soil monitoring. **Frank Glante (UBA)** presented a joint system of the 16 German federal states, involving 800 permanent monitoring sites and ca. 5-yr resampling; the system is partially integrated with the forest soil surveys. France (**Antonio Bispo, INRA**) has a soil monitoring system² with 2,240 sites that is now resampled over a 10 year period (second phase 2017-2027, is currently underway). INRA is currently conducting a study comparing LUCAS Soil with the national system. Similarly, Austria (**Gundula Prokop, EAA**) investigates the accuracy of LUCAS Soil for Austrian agricultural soils (soil analysis, variability, indicators). **Martine Swerts (VPO)** presented the Belgian regional schemes for forest/non forest (sampling density, return intervals), and how a national subsample has been implemented for soil carbon.

The subsequent **discussion** then investigated the purpose and need for a European soil monitoring system. Mr Jones (JRC) noted that for the SOER2010, only the state of soil threats were described and not trends in soil condition. Ms Masson (DG ENV) pointed to new reporting needs introduced by EU policies (e.g. 7th EAP, Resource Efficiency Roadmap) and SDGs (although not binding). Prof Kibblewhite (MK Soil Science), supported by Wim de Vries (Wageningen Research), remarked that LUCAS-Soil provides timely and valuable topsoil data that are comparable across the EU, and the ICP Forests could be a good role model for a country-based input. However, it must be kept in mind that the latter was triggered by a joint problem (acid rain, Chernobyl) and a political protocol (UNECE LRTAP).

¹ “Inventory and Assessment of Soil Protection Policy Instruments in EU Member States” (report see [here](#)); EU WIKI see [here](#) (access can be requested through the members of the Expert Group on [Soil Protection](#))

² RMQS (Réseau de Mesures de la Qualité des Sols)

The starting point for further action to promote European soil monitoring could be soil organic carbon, which is relevant for several policies inside and outside the EU (CAP, Climate change, biodiversity and soil protection, land degradation neutrality). Ms Wellbrock (ICP Forests) added that a common monitoring system must be funded (e.g. see Forest Focus Regulation (EC)N2152/2003 and the Biosoil demonstration project). Ms Sirma (Ministry of Agriculture, Latvia) requires the demonstration of added-value of such monitoring. Mr Jones (JRC) added that currently, LUCAS-Soil samples are only collected on 10 % (ca. 26,000) of the LUCAS field visited sites, offering the potential to extend.

Rainer Baritz (EEA) and Arwyn Jones (JRC) summarised the discussion: there is a wealth of national soil survey data across Europe but the information is scattered and not harmonised (various parameters are analysed using different methodologies). For agricultural soils, LUCAS-Soil is the only current harmonized resampling programme across EU-28. Unfortunately, none of the current indicators builds on country-level data³, and EU-wide trends are difficult to extrapolate to national/regional scale.

Workshop conclusions

- A concept for a European soil monitoring approach, based on commonly agreed set of indicators, and on improved synergies between existing capacities at EU and at country-level, is needed. It appears that the members of the EU Expert Group on Soil Protection are important stakeholders to discuss and evaluate such a concept.
- The experiences from ICP Forests are valuable for a European soil monitoring concept.
- The LUCAS-Soil 2018 survey started to take on board country-level requirements; this could be extended for the 2021 survey.
- Transboundary data compatibility remains a challenge, and approaches to refine protocols and harmonization of methods are needed (see the current work of the Global Soil Partnership for soil carbon).
- Soil compaction is a soil threat that shows a clear knowledge gap, at both national and European levels.
- A new Task Force Soil Monitoring of the NRC Soil shall be created. The discussion of the draft Terms of Reference (ToR - [link](#)) followed on Day 2 of the NRC Soil Meeting.

Meeting of the NRC Soil 2019

Session 1: Opening

The meeting was opened by Ronan Uhel (Head of Natural Capital and Ecosystems, EEA), who explained EEA's long-term goals, and the role of environmental assessments and policy demands. Currently, the attention to soil protection is high, in particular in the context of climate change and competitive land uses (e.g. food and biomass for the production of renewable energy). EEA and Eionet need to provide more knowledge about the multi-functionality of soils and its sustainable use.

The **meeting objectives** were explained by Rainer Baritz (EEA). He summarized the 2018 activities of the NRC Soil, highlighting the support EEA has received from NRC Soil for developing the SOER 2020. The recent results of the Ad hoc WG Contaminated Sites were successfully published in [JRC \(2018\)](#); the indicator "[Progress of the Management of Contaminated Sites](#)" still requires updating.

³ Eurostat, 'Soil' as a natural resource, see [here](#); EU SDG see [here](#). For MAES, see [here](#)

Cooperation with the World Health Organisation (WHO) and the Common Forum on Contaminated Land shall be deepened. The NRC Soil has contributed to the SOER2020; this support can be then extended towards a European Soil Condition Assessment, by 2021 latest.

Mr Baritz also stressed the Eionet governance as the (only) formal technical network in Europe with the mandate to support policy development and implementation with knowledge at European level. Due to the complexity of soil issues, NFPs increasingly enable PCPs (primary contact points) who maintain the national information exchange among experts from different fields inside and across institutions.

Tour de Table. 32 EEA Member States registered to the meeting: Austria, Belgium (3), Czechia, Bulgaria, Denmark (2), Finland, France (2), Germany, Hungary, Iceland, Italy, Ireland, Kosovo, Latvia (2), Lithuania, Luxemburg (2), North Macedonia (2), Montenegro, The Netherlands, Poland, Portugal, Romania, Serbia, Slovakia (2), Slovenia, Spain, Sweden, Switzerland, Turkey and the United Kingdom. Bosnia-Herzegovina and Croatia remained absent. In total, the meeting was attended by **58 participants** (Annex 1). The following partners and stakeholder organisations were also represented: ICP Forests, Common Forum on Contaminated Land, World Health Organisation (WHO), European Topic Centre for Urban, Land and Soil Systems (ETC ULS), Global Soil Partnership (GSP) and the Food and Agriculture Organisation of the United Nations (FAO), European Soil Partnership (ESP), DG Environment, Joint Research Centre (JRC), European projects (Soils4EU and Landmark), and one key lecturer (consultant) from the UK.

Session 2: European dimension

Priorities for soil protection in Europe

Josiane Masson (DG ENV, Brussels) presented the challenges to monitor the state of soils and to ensure its sustainable use through adequate policies. Soil functions are increasing threatened, i.e. 45% of EU soils are low or very low in SOC. Soil and land protection gained a new momentum at the global level, in particular through the SDG 15.3, UNCCD's land degradation neutrality (LDN) target setting, the UNCBD and UNFCCC, the GSP and its new global soil carbon map ([GSOCmap](#)).

Ms Masson highlighted the continued dialogue with the EU member states through the EU [Expert Group on Soil Protection](#), established in 2015. An inventory of soil protection measures has been conducted in 2017¹ and a WIKI on soil-related policy instruments was developed (EU Soil WIKI¹). It shows that soil protection is scattered among many policies, even lacking a common definition of soil (confusion between soil and land), lacking common thresholds, targets and priorities, lacking incentives to identify soil threats and their impacts, lacking monitoring and reporting of the state of soil and land uses.

The discussion supported these views. It is positive that many countries have national legislations in place, however, binding targets are usually lacking at EU level. Efforts must be strengthened to elaborate the common denominators across the EU. The objective that a target shall be "well under way" (see 7th EAP) was criticized, since the degree or success of implementation cannot be measured.

Post 2020 and emerging issues on soil protection

Prof. Mark Kibblewhite (MK Soil Science, UK) reflected on the challenges of generating soil information for soil protection, in the modern societal context and stakeholder's interests, and with detailed view on current knowledge and its gaps. Risk assessment of soil contamination is lacking comparable approaches (perception of health risk, background values).

Despite progress in knowledge and data collection, impacts related to human exposure and the dynamic nature of landscape and soils (e.g. flooding) are not sufficiently targeted.

The keynote was well-received and generated discussion about soil monitoring, state and impact of soil contamination, and the focus of soil assessments towards the public. It was commented that the rise of the sea level was also an emerging issue for soil protection as it triggers coastal erosion, salt water intrusion and remobilisation of contaminants.

New soil data developments at the Joint Research Centre

Arwyn Jones (JRC, Ispra) widened the scope for soil information in the current political and societal debates. JRC has placed soils in several policy-driven projects dealing with natural capital, agriculture and climate change. One of the core data sets is LUCAS-Soil, which is used to populate soil indicators at EU-level and to support modelling activities. Soil is increasingly relevant in discussions about the CAP reform.

Mr Jones also addressed the NRC Soil, which could review European soil indicators and deepen knowledge gaps (e.g. compaction), and assess the trends and drivers of soil degradation. He expressed JRC's readiness to further support the work of NRC soil on soil contamination.

Session 3: Soil condition assessments

National soil assessments.

NRC Soil members from Germany (Frank Glante, Umweltbundesamt) and Switzerland (Elena Havlicek, BAFU) presented their recent national soil condition assessments. Both assessments largely follow the structure of the EU Soil Thematic Strategy (soil threats). Aspects such as impacts on soil functions, emerging pollutants, soil biodiversity, and climate change are covered. Ms Havlicek highlighted the challenges to deal with fragmented information and heterogeneous data sources. The Swiss assessment eventually created an [action programme 'Sustainable Use of Soils as a Resource'](#) and the *Swiss Soil Strategy*.

The presentations were appreciated since they provide insight to the challenges to create clear and evidence-based messages for stakeholders. Ms Vidojevic informed that Serbia publishes a Soil State Report on a two-year basis.

SOER2020 on soil & European soil condition assessment 2020/21

Rainer Baritz (EEA) summarized the structure and conclusions of the draft SOER2020, which is currently under external review (including by Eionet). Soil condition is flagged under deteriorating trends, and policy objectives are not on track. The section on soil distinguishes between physical, chemical and biological soil degradation, and provides facts about the most important soil threats under these three headings.

Mr Baritz thanked the NRC Soil for the input provided during August 2018: 13 NRC Soil members provided specific information on case studies, which has been partially used to support the evidence. This survey plus updating and further supplements by NRC Soil, would be the source for a European Soil Condition Assessment (see [link](#)).

The current SOER2020 review has only reached few NRC Soil members. It was agreed that all members actively contribute to the ongoing review. For the discussion about the new European Soil Condition Assessment, see final session on Day 2.

Session 4: Soil contamination

Rainer Baritz (EEA) briefly summarized challenges from policies, and introduced the scope and structure of the session. After the recent report by JRC/Ad hoc WG Contaminated Sites, the future roadmap of the NRC Soil needs discussion. A draft Terms of Reference (ToR) for follow-up was prepared and distributed before the meeting (see [link](#)).

Xenia Trier (EEA, Group on Air pollution, Environment and Health) presented **Occurrences and impacts of chemicals in soils and other media: scientific and policy context**. Globally the production and diversity of chemicals is growing rapidly, while impacts and risks are largely unknown. Cocktails of chemicals, by-products during its decomposition, and emerging chemicals such as PFAS create additional uncertainties and challenges. She highlighted [IPCHEM](#), JRC's Information Platform for Chemical Monitoring; NRC Soil may significantly contribute, as soil is one of the media considered by the platform.

Frank Swartjes (National Institute for Public Health and the Environment, The Netherlands) focussed on the **Assessment of soil and groundwater quality in Europe**. He mainly focused on risk assessment methods and soil screening values (SSV), and its variability among countries, chemicals and exposure pathways. While a single harmonized set of SSVs for Europe seems impossible to achieve, a toolbox with different standards and applications may be feasible.

Johann Ceenaeme (OVAM, Flanders, Belgium) presented **Challenges for a policy on emerging contaminants in soil**. He stressed the general absence of guidelines and monitoring data about certain POPs including some pesticides, pharmaceuticals, micro plastics and nanoparticles. He explained how the Flemish Soil Decree tackles past and future soil pollution. Targeted measuring campaigns for specific contaminants (e.g. 1,4 dioxane and PFAS and soil and groundwater pollution) are put in place.

Fanta Miroslav (CENIA, CZ) provided supplementary information (in written) about the Water Information System for Europe (WISE). It contains information about more than 500 compounds, including hazardous substances such as pesticides. Soil contamination may be the basis for many WISE observations, however, current data do not allow for combined interpretations.

Wim De Vries and Marco Trombetti (ETC/ULS) shared their results about **Limits of contaminants: example of heavy metals in agricultural soils (thresholds)**. The work by the ETC combines monitoring data with modelling and threshold values. The accumulation of Pb, Cd, Cu and Zn in soils is widespread, though its evaluation is difficult because of the great variability of threshold (and background) values. The work continues to develop a knowledge base of thresholds values for use by the NRC Soil.

The **Common Forum on Contaminated Land in Europe (CF)** is an important partner network to the NRC Soil, represented by its chair, Dietmar Müller-Grabherr (Umweltbundesamt Austria). CF emphasises information exchange about site management/remediation; of great importance are concepts to derive thresholds and to track the fate of contaminants. Rainer Baritz (EEA) invited CF to join the discussion about the future tasks of the Ad hoc WG Contaminated Sites.

Esther Goidts (SPW, Wallonia, Belgium) presented the **results of the CF questionnaire on diffuse soil pollution** (details see [here](#)). 15 countries participated: there is high variability in the monitoring, evaluation (thresholds) and management of diffuse soil pollution; separation between diffuse and local contamination is not always clear. Some countries informed, that decision-making tools/evaluation procedures are in place, and that diffuse contamination should be remediated; heavy metals and POPs are the most problematic

pollutants. The interim results reveal interest by partners to engage in a discussion about soil pollution targets, indicators, and monitoring. Still ongoing is a case study exercise. The final deliverable is a “policy brief” to inform stakeholders and policy makers on current practices and obstacles in addressing diffuse soil pollution.

Marco Martuzzi (WHO, European Centre for Environment and Health) provided global and European perspectives to **soil contamination and health**. In June 2017 the Ostrava Declaration was signed, which includes “Prevent and eliminate the adverse effects of waste management and contaminated sites”. Implementation includes the identification of priority sites for remediation. The presentation was supplemented by an announcement from FAO (Ms Rodriguez Eugenio) that a **GSP questionnaire on soil pollution** will soon be launched to all members of the Global Soil Partnership as support to the UNEA Resolution on soil pollution (see [announcement](#), [questionnaire](#)).

The discussions after each presentation confirmed that NRC’s work on contaminated sites must be deepened as a response to continuously high information needs from policies and stakeholders. The need to develop suitable indicator/s at European level has been stressed several times. Another future line of envisaged action is diffuse contamination and developing harmonized thresholds. These topics must be reflected in the draft action plan (ToR) for the WG Soil Contamination (see [link](#)), which prepares and facilitates action for the whole NRC Soil. Activities will be supported by EEA, ETC/ULS and JRC, as well as through cooperations (Common Forum, WHO, FAO/Global Soil Partnership).

Session 5: Soil degradation

Gundula Prokop (ETC/ULS) presented **Background and challenges** about ETC’s 2018 activities regarding soil degradation (see [link](#)). Terms such as degradation and damage have to be carefully used, and common thresholds are needed to assess the current state. ETC’s work supported the SOER 2020 (see Ch. 5.3 “Policy Context”), and will be extended to address soil monitoring terms and methods (e.g. information collection in WIKI-style).

During the discussion, it was suggested to develop a unique indicator for soil degradation, combining all soil threats. ETC/ULS does consider several soil threats, however, the level at which soil threats damage soil functions, is largely unknown. The importance of thresholds was confirmed by several statements (Ms Masson, DG ENV; Prof Kibblewhite, MK Soil Science). It was further commented that work on soil degradation may contain a forward-looking component, involving the effectiveness of measures (Sigbert Huber, Austria; Ester Goidts, Belgium). Frank Glante (Germany) proposed that sealed soil should be treated as soil degradation by default, emphasising the impact of infrastructure and construction.

ETC’s technical approach to study degradation was then presented by Marco Trombetti and Wim de Vries (ETC/ULS): **Soil degradation with a focus on soil organic matter decline**. Different SOC thresholds were applied to LUCAS 2009 SOC values. The evaluations support the general threshold of 2%; however, local conditions such as soil texture introduce large variation (ca. 1-3%). JRC is currently modelling the impact of crop rotation, tillage and other measures (Arwyn Jones, JRC). Prof. Kibblewhite (MK Soil Science) discussed the meaning of such thresholds since SOC levels have declined towards a minimum, with very weak impacts on soil productivity (probably due to the compensation by increased input of fertilisers). Mogens Greve (Denmark) observed negative crop responses to low SOC levels. Jozef Kobza (Slovakia) supported the importance to stratify thresholds according to qualitative data such as soil type. Countries also validated the abundance of SOC-declined cropland soils (e.g. Ms Vidojevic, Serbia, and Ms Sirma, Latvia).

Networks

Yusuf Yigini (FAO) presented the current developments of the **Global Soil Partnership (GSP)**. Various Eionet institutions and EEA are members of the GSP (thus automatically also members of the **European Soil Partnership, ESP**; see [here](#)). Mr Yigini presented activities related to the development of the Global Soil Information System (GLOSIS). He announced new 2019 GSP data products, including salinization, SOC sequestration potential, erosion and black soils. During the discussion, NRC Soil members emphasized, that coordination of activities should be improved. Ms Prokop (Austria) had referred earlier to a GSOCmap harmonization project with neighbouring countries, and Ms Wellbrock (ICP Forests) noted that some countries are still improving GSOCmap, and engagement in new data products would be challenging.

Elena Havlicek (Chair ESP) presented recent activities of the ESP, such as an overview of case studies for sustainable soil management (Pillar 1). Ms Havlicek then introduced the concept for the EUROSIL2020 conference, which focuses on the SDG. The idea was raised that the draft European Soil Condition Assessment could be presented and discussed with the science audience. Also, the working group and task force of the NRC Soil could hold back-to-back meetings during the conference.

Final Session

The final round of discussions focussed on the three main meeting topics:

Working Group on Soil Contamination

The chair of the Ad hoc WG Contaminated Sites, Ana Paya-Perez (JRC) has retired. NRC Soil and EEA is deeply thankful for her guidance and efforts!

Frank Swartjes (RIVM, The Netherlands) was proposed as the new chair. He would seek clarification with his senior management and report back in due time.

Rainer Baritz (EEA) then referred to the drafted Terms of Reference (ToR) (see [link](#)). The discussions during this meeting have confirmed to him, that contamination is a core topic of the NRC Soil; there are many links between local and diffuse contamination (thresholds, substances), which requires a revision and extension of the mandate for the Ad hoc WG. The nature of the WG is not *ad hoc* anymore, so he proposed to rename to "**WG Soil Contamination**". This was accepted.

The following experts agreed to continue their participation in the working group: Johan Ceenaeme (Belgium-Flanders), Dragana Vidojevic (Serbia), Pol Tock (Luxembourg), Esther Goidts (Belgium-Wallonia), Antonio Callaba de Roa (Spain), and Jorge Santos Garcia (Portugal). Ali Albayrak (Turkey) and several other NRC Soil members declared an interest, but need to study the draft ToR and check with their NFPs.

Mr Swartjes (RIVM, The Netherlands) remarked that one of the hindrances for timely and ambitious operation of the Ad hoc WG was the lack of support for meetings. Mr Baritz (EEA) explained, that the problem has been identified, and that at least a restricted number of WG members can be supported for a WG meeting. Also, EEA will explore the use of web meetings, and has already foreseen some supporting tasks for ETC/ULS (e.g. soil WIKI for the NRC Soil).

As for the content of the ToR, Ms Masson (DG ENV) added that it was important for policy makers to have spatial information on contaminated sites, aggregated if needed at NUTS3

level or – as suggested by Mr Baritz (EEA), the Functional Urban Areas (FUA) of the European Urban Atlas.

Task Force on Soil Monitoring

In relation to the monitoring workshop, Mr Baritz (EEA) introduced the draft Terms of Reference (ToR) for the Task Force (TF) Soil Monitoring (see [link](#)). It was confirmed that the task force should have a limited scope (to develop a monitoring concept, to support the political discussion of the EU Expert Group on Soil Protection). Details regarding the ToR should be exchanged via e-consultation after the NRC Soil meeting. Mr Jones (JRC) repeated the opportunity for countries to propose modifications of the sampling approach for their territories.

The following experts volunteered to contribute to the TF: Frank Glante (Germany), Petra Karo (Slovenia), Petru Ignat (Romania), David Wall (Ireland), Mogens Greve (Denmark); France and some other NRC Soil members may also contribute with an expert (tbd).

Mr Baritz (EEA) noted that the background document for the TF Soil Monitoring also consists of a draft Table of Content (ToC), indicating the main topics, which require analysis and discussion. He emphasized that both the WG Soil Contamination as well as the TF Soil Monitoring may represent a core writing team, which prepares material for the whole NRC Soil. During the process, any NRC Soil member may participate and contribute.

Soil condition assessment

Mr Baritz (EEA) explained the concept for a joint report by EEA and Commission services (JRC & ENV) – the European Soil Condition Assessments 2020/21 (see [link](#)). Such an assessment would essentially build on contributions from the JRC and NRC Soil members. Countries, which supported the SOER2020 would have an advantage, however, the foreseen template will be more detailed, and intends to reach all NRC Soil members. The time plan for the production of this assessment was presented.

While the product is welcome, some NRC Soil members expressed concerns about limited resources, limited recent data and coverage as well as overlapping tasks. Although the time horizon seems realistic (ca. one year for the national contributions), it was agreed that the requested content should focus on cases studies, research results and a country summary – rather than an extensive national status report. Ms Goidts (Belgium-Flanders) suggested that it would be efficient to develop/use a joint document repository such as a Wiki. EEA will explore this together with the ETC/ULS.

Draft country templates and a draft Table of Content (ToC) will be sent to all NRC Soil soon.

Next meeting, acknowledgements

Participants thanked Martina Stolarikova (EEA) for the organizational support. Mr Baritz (EEA) thanked all participants and guests for their engaged participation. EEA will seek to host the next meeting early February 2020.

Annex 1: List of participants

International Institutions and experts	
EEA	Rainer Baritz , Ronan Uhel
EC DG ENV	Josiane Masson
EC DG JRC	Arwyn Jones
ICP Forest	Nicole Wellbrock
Common Forum Contaminated Land	Dietmar Müller-Grabherr
ETC/ULS	Wim de Vries , Marco Trombetti , Gundula Prokop
UN FAO	Yusuf Yigini , Natalia Rodriguez Eugenio
MK Soil Science (consultant)	Mark Kibblewhite
WHO	Marco Martuzzi
Countries	
Austria	Sigbert Huber
Belgium	Johan Ceenaeme , Esther Goidts , Martien Swerts
Bulgaria	Trayana Pateva
Czech Republic	Miroslav Fanta
Denmark	Christian Andersen , Vibeke Ernstsén , Mogens Greve
Estonia	Kadi Trepp
Finland	Teija Haavisto
France	Veronique Antoni , Antonio Bispo
Germany	Frank Glante
Hungary	András Guti
Iceland	Anna Maria Ágústdóttir
Ireland	David Wall
Italy	Marco Di Leginio
Kosovo under the UNSCR 1244/99	Mentor Shala
Latvia	Sanda Ilgaza , Kristine Sirma
Lithuania	Virgilija Gregorauskiene
Luxembourg	Simone Marx , Pol Tock
North Macedonia	Margareta Cvestkovska
Montenegro	Vesna Novakovic
Netherlands	Frank Swartjes
Poland	Grzegorz Siebielec
Portugal	Jorge Santos Garcia
Romania	Petru Ignat
Serbia	Dragana Vidojevic
Slovakia	Jozef Kobza , Katarina Paluchová
Spain	Antonio Callaba de Roa
Sweden	Asa Valley
Switzerland	Elena Havlicek
Turkey	Ali Albayrak
United Kingdom	Anna Mikis

Croatia and Bosnia-Herzegovina registered, but could not join due to illness/flight cancellation.

**EIONET meeting National Reference Centres Soil 2019
(NRC Soil)**

including

Workshop Soil Monitoring

Session on soil contamination (with Ad-hoc WG Contaminated Sites and Brown-fields)

Agenda

(06. Febr. 2019)

Date: 12 – 14 February 2019

Venue: European Environment Agency, Kongens Nytorv 6, Copenhagen DK - 1050

Room: Conference Room

Workshop Soil monitoring

Tuesday, 12. February 2019

Chair: Arwyn Jones (JRC)

13:00 - 13:30	Registration	
13:30 – 13:35	Introduction and aims of the workshop	Arwyn Jones (JRC)
13:35 – 13:45	Tour de Table	All
13:45 – 14:00	Context and challenge: requirements for European soil monitoring (Europa-wide and national)	Jointly JRC, EEA, DG ENV
14:00 – 14:15	LUCAS Soil – 2009/12-2015-2018: mandate, design, experiences, 2021	JRC
14:15 – 14:30	National soil monitoring systems (DG ENV Wiki and beyond)	DG ENV & Soil4EU (Grzegorz Siebielec, IUNG, PL)
14:30 – 14:45	Recommendations from research	Rachel Creamer (Chair Landmark project)
14:45 – 15:00	European forest soil monitoring	Nicole Wellbrock (member ICP Forests Soil Expert Panel)
15:00 – 15:10	<i>Reflections on first part</i>	All
15:10 – 15:30	Coffee break	
15:30 – 16:30	Overview Examples from national systems: DE, FR, AT, BE	NRC Soil members
16:30 – 17:30	<i>Discussion: Improving synergies between national and European soil monitoring systems – options for the LUCAS Soil module; new NRC Soil task force for monitoring and policy options</i>	All
17:30-17:45	<i>Conclusions and next steps</i>	JRC/ENV/EEA

NRC Soil Meeting

Wednesday, 13. February 2019

Chair: Rainer Baritz (EEA)

08:30 – 09:00	Registration	
09:00 – 09:10	Welcome	Ronan Uhel and Chris Steenmans (EEA)
09:10 – 09:30	Meeting objectives; activities 2018; challenges 2019	Rainer Baritz (EEA)
09:30 – 10:00	Tour de Table	All

European dimension

10:00 – 10:20	Priorities for soil protection in Europe	DG ENV
10:20 – 10:40	Post-2020 and emerging issues in soil protection	Mark Kibblewhite (MK Soil Science)
10:40 – 11:00	European Soil Data Centre: new soil data and perspectives	JRC
<i>Questions/suggestions after each presentation</i>		
11:00– 11:15	<i>Coffee</i>	

Soil condition assessments

11:15 – 11:45	National soil assessments: Germany and Switzerland	Frank Glante (UBA), Elena Havlicek (BAFU)
11:45 – 12:15	SOER2020 on soil	EEA
12:15 – 12:30	Towards a European Soil Condition Assessment 2020/2021	EEA (JRC/DG ENV)
<i>Summary: Key points from the discussion (preparation for final session)</i>		
12:30 – 13:30	Lunch	

Soil Contamination

13:30 – 13:45	State of soil contamination in Europe (diffuse and local) and challenges from policies	JRC and EEA
13:45 – 14:00	Occurrences and impacts of chemicals in soils and other media: scientific and policy context	Xenia Trier (EEA)
14:00 – 14:15	Assessment of soil and groundwater quality in Europe	Frank Swartjes (RIVM, NL)
14:15 – 14:30	Challenges for a policy on emerging contaminants in soil	Johan Ceenaeme (OVAM, Flanders)
14:30 – 15:00	Overview of limits of contaminants: example of heavy metals in agricultural soils (thresholds)	Wim De Vries and Marco Trombetti (ETC/ULS)
15:00 – 15:30	<i>Discussion: synthesis, ongoing and future activities</i>	All
15:30 – 16:00	<i>Coffee</i>	
16:00 – 16:20	Activities relating to NRC's work on contaminated sites: – Common Forum Contaminated Land in Europe (CF) – WHO and the Ostrava Declaration	Dietmar Mueller-Grabherr (UBA, AT) (Chair CF) Marco Martuzzi (WHO)
16:20 – 16:35	Results of the CF-questionnaire on diffuse soil pollution	Esther Goidts (SPW, Wallonia)
16:35 – 17:15	<i>Discussion: status and information needs about soil contamination; ToR WG Soil Contamination</i>	All
17:15 – 17:30	Day summary	EEA

Thursday, 14. February 2019

Soil degradation

09:00 – 09:30	Background and challenges	Gundula Prokop (EEA, AT and ETC/ULS)
09:30 – 10:00	Degradation of soil organic matter	JRC and ETC/ULS
10:00 – 10:30	<i>Discussion: current understanding and data about soil degradation, outlook/next steps</i>	All

Networks

10:30 – 10:45	Global Soil Partnership (GSP)	Yusuf Yigini (FAO)
10:45 – 11:00	European Soil Partnership (ESP) and EUROSIL 2020	Elena Havlicek (Chair ESP)

11:00 – 11:30	<i>Coffee</i>	
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Discussion and meeting conclusions

11:30 – 12:00	Soil Monitoring: summary of workshop, follow-up, task force monitoring	All
12:00 – 13:30	Next steps of the NRC Soil: – European Soil Condition Assessment 2020/2021 – NRC Soil Tasks, 2019 roadmap	All
13:30	<i>End of Meeting</i>	All