NETHERLANDS

Questions and remarks in relation to the directive on Soil Monitoring and Resilience (COM 2023 416 final)

Below are some questions and comments from The Netherlands for the Commission.

1. Article 1 of the proposal states that **the aim of the directive** is, inter alia, to continuously improve the condition of the soil. Does this mean that **no deterioration** of the soil may take place anywhere or is this an average across the country?

2. How does the Commission see the link between **soil health measurements** and the identification and evaluation of the effectiveness of sustainable soil management measures?

3. The Commission proposes **a one-out, all-out principle** for soil health. Why has the Commission not chosen to link soil health assessment to the provision of *a number of* ecosystem services, appropriate to the function to be fulfilled?

4. The **Dutch marine clay soils** (sedimented under water) naturally have a low organic matter content and a high clay content. This makes it impossible to achieve the set targets (SOC/clay ratio 1/13). How should the Netherlands deal with this (as an example)?

5. The **Dutch phosphorus problem**, including the measurement methods P-Olsen vs. P-CaCl2: the proposed measurement method, the range with regard to phosphorus concentrations in the soil and the proposed reference method for phosphorus determinations are not suitable. In addition, phosphorus has no effect on soil ecology or public health and the Netherlands is already working towards balanced fertilization. Is it possible for the Commission to ease the requirements and leave more room for customization?

6. What do the **land take principles** mean? Does the Commission mean that member states must respect these principles (of compensation etc.) in decision-making? What kind of spatial planning tasks does the Commission envision as this is already the Member States' mandate? How should member states understand "compensate as much as possible the loss of soil"?

7. What is the Commission's view of the assessment of **land take and a critical loss** to ecosystem services? What is meant by critical loss? Is the Commission coming up with a guideline here or can Member States come up with a method themselves?

8. Is the **assessment of land take** aimed at the application of the mentioned principles (land take, compensation) in order to reduce land take, or does it refer to the surface where land take occurs? The Dutch situation calls for attention to careful handling of space in line with said principles, rather than the net loss of a certain type of soil. Soil does not disappear, but is replaced by another surface (for example replacement with fill sand).

9. **Soil functions**: in the Netherlands we focus on functions or service. How does this relate to the more physical and chemical aspects in the annexes? Does the Commission aim for the directive to become more compulsory in the next fase, in which case we need to decide for additional standards?

10. How should we see the **balance between natural, semi-natural land and artificial soil**? For example: a new neighborhood is constructed on agricultural soil, of which 30% is defined as park/gardens/banks. What does this mean in terms of land take?

11. Can the EC further clarify the required **compensation for land take**? How should (the level of) land take be monitored? Does this require an assessment of decisions in the process of licensing/project decisions?

12. The proposal states that the **review** should assess the need to set more specific requirements to ensure that unhealthy soils are regenerated and that the objective of achieving healthy soils by 2050 is achieved. Why, already after six years, knowing that soil processes are slow and soils are immobile has a revision been chosen, and what impact does the Commission think this revision could have?

13. Can the Commission elaborate on the purpose of the **soil health certificate**? The proposal talks about a link with certification for carbon removal. Is the instrument primarily intended as an agricultural instrument? And is the certificate intended as a market incentive for good soil management or as an awareness-raising tool?

14. The **definition** of land is defined as: the earth's surface that is not covered by water. In the Netherlands it often happens that the earth's surface is temporarily under water, but that still makes it land. A clarification of the definition is in order. Without unambiguous definitions, it is not possible to achieve the data quality for proper and unambiguous monitoring.

15. In Article 1 on the objective of the Directive, the **terms "soil health" or "healthy soil"** refer to the entirety of soils in an area that collectively sufficiently fulfill the desired ecosystem functions. Article 9 of the Directive contains a much narrower definition of healthy soil. Not at (soil) system level, but aimed at the assessment of a particular soil. Different concepts and definitions about soil health are reflected in the assessment of the impact of the directive.

16. In connection with the investigation of **potentially contaminated sites**: is a distinction made between historic and new sites? Can we read the proposal in such a way that potentially contaminated sites can sometimes wait for research until, for example, a zoning initiative?

17. What exactly does the EC means by "**easy access to impartial and independent advice**" (article 10, paragraph 2)?

15 September 2023

LITHUANIA

Comments on the Proposal for a Directive of the European Parliament and of the Council on Soil Monitoring and Resilience (Soil Monitoring Law)

Lithuania welcomes the Commission's proposal for a Soil Monitoring and Resilience Directive and supports the overall goal of the proposal to achieve healthy EU soils by 2050.

The Proposal is important because of the lack of consistent legal regulation in the field of soil protection in Lithuania. Historical soil pollution is also an important issue for us. We believe that the implementation of the Directive will require significant financial and human resources. It is therefore important that sufficient time is given to adapt to the new requirements and that EU funds can be used.

We would be grateful for a more detailed explanation of some of the provisions of the Proposal.

1. Article 13(3) requires Member States to ensure that **all** potentially contaminated sites are identified within 7 years of the entry into force of the Directive. We believe that, even with every effort, there may be cases of historical pollution that were previously unknown to the authorities. If new data becomes available, will it still be possible to include potentially contaminated sites in the register after 7 years? In such a case, will Member States be sanctioned for not including **all** potentially contaminated areas in the register by the specified deadline? How should the phrase "all" be understood?

2. Some soil testing methodologies currently used in Lithuania differ from those set out in part B of Annex II. For example, we use the *Aqua regia* method to estimate the concentration of heavy metals in the soil. ISO 17586-2016 referred to in the Proposal is not sufficiently sensitive and is not suitable for soil testing in Lithuania. For determination of pH in H_2O and $CaCl_2$ extract we use the KCl method. We would like to ask the Commission to clarify whether we will continue to be able to use these methodologies or whether we will be obliged to apply the methodologies set out in part B of Annex II. We would also like to point out that some of the standards listed in part B of Annex II are no longer valid, e.g., ISO 10390:2005 has been replaced by ISO 10390:2021.

3. We are convinced that when setting limit values for soil chemical composition, natural background concentrations at local and regional level, as well as land use practices, must be considered. There may be cases where concentrations of certain chemical substances will exceed the limit values, but the exceedance is not caused by pollution, but by natural characteristics of the area. Will the soil still be considered unhealthy? It is also unclear whether the limit values will be set at EU level or whether they will be set by the Member States themselves.

4. Following the adoption of the Proposal, the Commission stated in its press release that the Proposal does not impose any direct obligations on landowners and land managers, including farmers. We therefore have doubts about Article 23 on penalties. The Directive lays down measures on monitoring and assessment of soil health, sustainable soil management, as well as requirements for contaminated sites. The implementation of the Directive will be carried out mainly by the competent authorities of the Member States. It is therefore not clear who could be fined in relation to the turnover of the legal person or to the income of the natural person. How the fines could take into account the population or the environment affected by the violation. We would appreciate the Commission's detailed explanation on how Article 23 should be implemented. We stress the need for a horizontal approach and harmonization of the provisions on penalties in all environmental proposals. We strongly believe that the issue of imposing sanctions must remain within the competence of the Member States in order to fit into the different national legal systems.

5. The Proposal states that Member States will be able to take into account the soil health data surveyed under the enhanced LUCAS soil. Being aware of the specificities of LUCAS, we are concerned about the complex alignment of LUCAS data with national data.

6. Article 10(1)(a) requires Member States to take measures on all managed soils. We would appreciate the explanation of how the phrase "all managed soils" should be understood. Do we correctly understand that the provisions of Article 10(1)(a) apply only to agricultural land?

7. Article 7(1) requires Member States when monitoring and assessing soil health, to apply the soil descriptors and soil health criteria referred to in Annex I. We question the need to assess all the criteria set out in parts A and B of Annex I. We believe that Member States must be given sufficient flexibility to choose the soil descriptors and soil health criteria that best reflect their national specificities. In addition, we doubt whether all the criteria should be assessed every 6 years. We believe that some criteria do not change so often and could therefore be assessed less frequently.

8. Currently, Lithuania does not carry out soil monitoring as intensively as required by the Proposal. The implementation of the Proposal will require the establishment of a new monitoring system and a data reporting process. This will create significant administrative and financial burdens for competent authorities, the public sector, scientific institutions, and other organizations. Guidance on EU funding opportunities for healthy soil mainly refers to the currently used or already planned for use financial funds. We would therefore like to ask the Commission for explanation whether there are additional EU funds that could be used for the implementation of the Directive, in particular for soil monitoring and the identification of potentially contaminated sites. If not, is it planned to provide such funding in the future.

LATVIA

written comments on the Soil Monitoring Law Directive: Follow up to the informal VC of the WPE on 27 July 2023

1. The Legal basis section of the Explanatory Memorandum mentions that "the proposal does not contain measures affecting land use", but Articles 10, 11, and 15 may affect land use.
2. Subsoil compaction is soil descriptor given in part A of Annex I, and mentions that "Member States may replace this descriptor with an equivalent parameter". Can fixed depth increments be considered equivalent? Additionally, topsoil compaction given in part C of this Article does not provide such flexibility.
3. Part C of Annex I provides list of soil descriptors without criteria, which may have criteria defined as part of evaluation of this Directive. Which of the currently defined soil descriptors without criteria are intended to be defined at Union level and which at Member State level?
4. Part C and D of Annex I provide optional soil descriptors and land take indicators contrary to paragraph 1 of Article 7 making it unclear which soil descriptors are mandatory and which are optional.
5. According to paragraph 1 of Article 8, part A of Annex II is mandatory and does not offer any flexibility similar to other paragraphs of this Article. Methodology for determining sampling points states that stratified random sampling shall be used, which may limit possible usage of already established national monitoring schemes that use different sampling methodologies.
6. What is the scientific basis for methods given in Annex II?
    a. For extractable phosphorus, many available methods are available and used in different Member States. Additionally, ISO 17586:2016 already given as the reference methodology for concentration of heavy metals in soil is also suitable and within scope for determination of phosphorus. As such, it would be more appropriate and cost efficient to use ISO 17586:2016 as the reference methodology for phosphorus.
    b. For soil acidity, ISO 10390:2005 given as the reference methodology is withdrawn and the current published version is ISO 10390:2021. ISO 10390 provides three extractants – water, potassium chloride solution, and calcium chloride solution, but as reference methodology only two are mentioned. For what reason the potassium chloride is excluded, considering it is also often used, included in the 10390:2021, and soil acidity is soil descriptor without criteria in the current proposal?
7. Article 3 does not contain soil sealing definition.
8. According to Part B of Annex I, two of the descriptors for soil contamination is Cr (total) and Cr (VI). According to Part B of Annex II reference methodology is ISO 17586:2016. How it is possible to differentiate between Cr (total) and Cr (VI) in accordance to ISO 17586:2016?

9. Regarding proposed regulation on contaminated and potentially contaminated sites, Latvia has concerns about possible *administrative and financial resources*, which would be necessary. Therefore, we would suggest considering a longer implementation period.
10. *Article 3* does not contain potentially contaminated site definition and remediated contaminated site definition. Latvia suggests including those definitions.
11. *Eastern European countries* did not have private companies and landowners before year 1990 or even later, so there is a specific situation in those countries and therefore specific solutions could be needed, because the polluter is not existing anymore. The current landowners could not be held responsible, because they got back their land without any evaluation regarding contamination. This situation is different from countries, where a private owned lands have been in place for decades and therefore Eastern European situations needs a different regulation and management of such contaminated sites (historical contamination). Latvia suggests that Chapter IV should address this different Eastern European situation and foresee various instruments.
12. In Commission Regulation (EU) No 651/2014 of 17 June 2014 declaring certain categories of aid compatible with the internal market in application of Articles 107 and 108 of the Treaty[1] there are definitions for *remediation, rehabilitation, ecosystem and biodiversity*, Latvia suggests exploring those definitions and possible applicability in this directive.

Comments regarding framework:

1. *1.4.4. Indicators of performance*- number of investigated potentially contaminated sites. Investigation status may be very different: it may contain sites having undergone an initial investigation as well as sites having undergone a full-scale risk assessment. There should be discussion about the utility of this indicator.
2. *1.4.4. Indicators of performance.* One of the main indicators foreseen to monitor the implementation is *number of remediated or properly managed contaminated sites*. What is/would be the criteria or indicators for properly managed contaminated sites, how properly managed contaminated site will be defined? Latvia suggests using the indicator of *remediated area*, not the number of remediated sites.

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[1] https://eur-lex.europa.eu/legal-content/EN/TXT/?uri=CELEX:02014R0651-20230701

IRELAND

Proposal for a DIRECTIVE OF THE EUROPEAN PARLIAMENT AND OF THE COUNCIL on Soil Monitoring and Resilience (Soil Monitoring Law)

Following our attendance of the informal VC of the WPE on 27th July 2023, Ireland has formed initial observations on the Proposal for a Directive of the European Parliament and of the Council on Soil Monitoring and Resilience (Soil Monitoring Law).

Ireland is supportive of addressing the threats to soil health, as set out in the EU Soil Strategy for 2030, and the development of a new Soil Monitoring and Resilience Directive to put in place a comprehensive and coherent monitoring framework that fosters sustainable soil management and the remediation of contaminated sites.

We note that several aspects of the Directive are of clear relevance to Ireland including the reuse of excavated soils, diffuse contamination, soil sealing and land take, soil carbon loss, and regulation/certification of incentivised soil carbon sequestration. Ensuring the sustainable use of soils and improved soil monitoring, soil nutrient management, biodiversity, water, and air quality, as well as soil carbon retention and sequestration, will help strengthen the resilience and the regeneration of our soils.

We must note that the current proposal does present challenges for Ireland, particularly in terms of the timelines for implementation regarding the requirement for proposed Measures to be in place after 4 years of entry into force of the Directive. However, Ireland remains committed to working constructively with the Commission in assisting the formation of the Soil Monitoring and Resilience Directive.

As aforementioned, Ireland broadly welcomes the proposal but will require clarity on some of the detail such as timelines. Many of the assessments which must be considered to define the Measures are not due until 5 years after publication. We anticipate that the above inconsistencies will be resolved over the next 12-24 months.

As has been flagged by many other MS, the other key issue for clarification will be the on-going costs for each MS that will be associated with implementing the Directive.

Finally, we strongly welcome that the impact of this proposal on the public is anticipated to be very positive with regard to soil monitoring, soil health, soil nutrient management, biodiversity, water and air quality, as well as soil carbon retention and sequestration.

FINLAND

Written questions related to proposal for the Soil Monitoring Law

- **Could the Commission please elaborate more how soil districts and monitoring and soil health certificate are related to the proposal on carbon removal certification?**
- **Could the Commission explain linkages between the proposal for the soil monitoring law, proposal for the nature restoration regulation and LULUCF regulation?**

- **Could the Commission please clarify the following:**

  -How the soil descriptors for different aspects of soil degradation in parts I A to B have been chosen?
  -How validated transfer function would be determined?
  -How the descriptors take into account differences in land use types?
  -Have already existing definitions been used, for example definitions used by the IPCC or definitions used in the existing legislation? Are there differences compared to existing definitions?
  -What does holistic soil management in article 10 (2) b mean?

- **According to article 10 Member States need to define sustainable soil management practices 4 years after entry into force of the Directive. In this process soil health assessment included into the article 9 is utilized. There is, however, 5 years time to do the soil health assessment. Could the Commission explain timeline for the implementation of these provisions and how soil health assessment could be utilized in the definition of sustainable soil management practices?**

- **According to the article 6.4 the Commission would need and agreement from the Member States to carry out soil measurements. Could the Commission explain what this means?**

- **Could the Commission explain how risks for human health have been assessed?**

- **Implications on built infrastructure are not evaluated in the proposal. We would like to request more information on this matter.**

- **As regards land take, we would like to receive more information on the article 11, for example point b of the article: compensation of the areas taken into use of infrastructure.**

- **The areas where soil health should be achieved are not defined in the proposal. It has remained unclear whether soil health should be achieved also in the road and railway networks?**

- **Could the Commission explain annual monitoring of land take and soil sealing (Article 6, 7, 8 and annex I D)? How this data would be collected? Would Copernicus monitoring system be used?**

- **Could the Commission explain the requirements and objectives for soil health in artificial built-up areas?**

BELGIUM

questions and comments on the proposal for a Soil Monitoring Law

General comments and questions

Comments

First of all, **BE is pleased that the Commission has been able to be put on the table a legislative proposal on soil health and monitoring** as planned by the new soil strategy, despite the tight timing imposed by the coming end of legislature. **BE will positively support the discussion and adoption process in view of the importance of finally having a European legal framework for soils** allowing for a level playing field in the same way as other environmental resources such as air and water. **Soils play a crucial role** in meeting major challenges such as adaptation to climate change and the mitigation of its effects, food security, loss of biodiversity, floods and droughts control, the biobased circular economy and the zero pollution objective. Without healthy soils, we cannot survive, as they provide numerous ecosystem services.

BE supports the approach envisaged by the proposal for a directive, which is based **on an integrated and sustainable vision of soil quality across all its uses**, which constitutes a **challenge but** is **necessary** to achieve coherent soil management. **BE also welcomes** the **complementarity and synergy with other EU regulations and initiatives** introduced by the directive, which is indeed essential for a relevant and rational implementation. Finally, **BE appreciates the balance found** by the directive **between the normative prescriptions and the flexibility given to the Member States**.

The proposal for a directive is moreover articulated around **two main axes**: on the one hand, **the reinforcement of the monitoring of soil health** across all land uses and the reporting of the associated data in a more harmonized way between Member States, and on the other hand, **the establishment of management measures and actions** in order to preserve, improve and restore soil health.

Reinforced monitoring of all soils of the territory will **imply for BE additional efforts** to be made by the competent authorities insofar as current monitoring is rather targeted on certain uses of the soil (agricultural and forestry) and/or on certain themes (pollution, erosion, decrease in soil organic carbon, …). **However, the guidelines provided by the proposal** for a directive and associated with the implementation of integrated soil health monitoring (sampling sites, soil health descriptors, analysis methods, etc.) **make it possible to sufficiently frame the approach**, **while offering some flexibility to Member States**, taking into account the latest scientific knowledge. **Some elements/definitions will** however **need to be clarified and aligned as much as possible with existing systems** (notion of soil district, definitions of artificial/semi-natural land and land take, thresholds and methods for soil descriptors, evaluation of ecosystem services, notion of public concerned and level of involvement, management of private data, reporting methods, reporting time-interval, etc.), **and particular attention should be paid to the structural budgetary implications of setting up such monitoring** as well as **potential complexification of administrative processes**, be it for authorities or for stakeholders. It will be a matter of concern to ensure that the efforts made for monitoring (and the associated reporting) are balanced with those necessary for the effective implementation of

sustainable soil management practices. Finally, BE notices that **the proposal stays rather limited in its objective to mitigate land take and soil sealing,** whereas it represents one of the most important threat to soil in BE and in many countries of Europe. Recognizing that land planning is covered by the **subsidiarity principle**, BE would **however welcome to further discuss such topic** based on a robust and operational monitoring framework that need to be put in place by the directive.

With regard to **sustainable soil management measures**, the approach proposed by the directive is **generally in line with what is currently being developed in Belgium** (integration of good management practices into the programs and plans concerned, approach based on risk management, development and support of research and advisory system, awareness raising, etc.), which should make it possible to envisage easier adoption and transposition of European provisions. In addition, **the proposal to develop a voluntary soil health certification system for soil owners and managers is welcome** in order to better highlight the interest of implementing such management measures. **However**, the proposal for a directive will **need clarification at certain levels** in order to be able to establish a legal obligation and an operational system that respects as broadly as possible the **principles of environmental liability and polluter-pays** among other principles, while supporting soil managers in the identification and implementation of sustainable practices (level of obligation and responsibility for taking preventive/restorative measures of soil health, distinction between the management of local and diffuse pollution, combination of the objective of having healthy soils with the risk-based approach, recognition of the advice system, etc.). Sufficient budget should be dedicated to allowing for implementation of sustainable soil management practices, knowing that some existing budgets are already under constraints (i.e. CAP).

Questions

General

Concepts and general approaches of the proposal

- Could COM explain how groundwater is to be handled based on the proposal, especially when contamination has to be managed based on the risk-based approach
- Could COM explain why the definition of 'risk' in art 3 (23) is limited to risk from exposure to soil contamination when e.g. erosion can also be approached as a risk of erosion or a risk of muddy floods
- Could COM clarify the interaction between soil districts and the parcel or site level. E.g. 1) how is the management of contaminated sites to be reported at soil district level or 2) what scale is expected for the soil districts if they are to facilitate the implementation of the carbon removal certification (carbon removal certification seems field or project scale as opposed to NUTS1 scale for the soil districts)
- Could COM explain why definitions of artificial/semi-natural/natural land and land take are moving away from existing approaches done at MS/EU level rather linked to land use
- Could COM explain why additional disposals on public involvement are proposed to existing procedures laid down by environmental legislations
- Could COM clarify how the approach for contaminated soils in art 12 to 16 fits into the general approach of soil health of art 6 to 9 and the annexes 1 and 2 and into the objective of healthy soils by 2050. E.g. after a site has been remediated according to the risk-based approach of art 12 and art 15, it might still be 'unhealthy' according to art 9 and thus will never reach the 'healthy soil' status as demanded in the objective
- Could COM clarify how diffuse contamination and background concentration are to be approached based on the proposal
- Could COM clarify the obligation level for implementing sustainable soil management (SSM)

- Could COM clarify how the current proposal will succeed in stepping up efforts to better protect soils, to use soils sustainably and to restore, maintain and enhance soil health, using existing policy provisions such as CAP and the Nitrates Directive, taking into account the findings of the special report of the European Court of Auditors on the EU efforts for sustainable soil management in terms of ambition and sustainable soil management.
- Could COM clarify how the current proposal will succeed in reaching no net land take and the SDG goal of land degradation neutrality

Monitoring and assessment of soil health

- Could COM clarify the level of flexibility given to MS for sampling design and reference value in order to allow for integration of existing systems as much as possible and take into account specificities of given local characteristics (such as land use)
- Could COM clarify if the "one out all out principle" associated to fixed thresholds is combined with a tiered approach allowing for further proportionate and targeted steps to focus on the problematic descriptor(s) identified at the soil district/field level and decrease uncertainties associated with its first assessment (as such assessment may only arise from a mapping/modelling exercise)

Providing technical guidelines and facilitate exchanges of good practices

- The principle to reduce or avoid the 'loss of the capacity of the soil to provide multiple ecosystem services' in case of land take, seems sound but how are MS to implement this, how are they to quantify the ecosystem services provided by soils?
- How does COM intend to organise or facilitate the necessary exchange of good practices and information between MS? Does COM foresee the publication of (technical) guidelines?
- Could COM explain the general soil depth of the different soil monitoring measurements? Does the soil depth differ with land use category? Why are some measurements to be done on a specific soil horizon (for example A-horizon)? The latter generates a lot more work and subjectivity. Could this be avoided?

Giving open access to soil data

- Could COM support MS with a clear, legally underpinned, position on public open access to soil data that is in line with GDPR rules? The current disposals of the directive seem to ask for data to be publicly available at the coordinate level, however the publication of coordinates is often questioned due to GDPR rules. Providing clear legal guidance at European level, indicating which data from the registers and from soil monitoring can/must be made publicly available e.g. via a geodata platform, what the obligations are (and for whom) and what the applicable exceptions are (if relevant) will greatly facilitate the implementation of this directive.
- Could COM support MS with a clear, legally underpinned, position on responsibility when soil data are made publicly available. It is important to avoid that organisations (or their staff), who have the obligation to publish the data, can be held responsible (ground for lawsuits, ground for damages) for incomplete data or data with a low accuracy, as long as the data are published with appropriate notice of the inaccuracy of the data.
- Could COM support MS with legal advice on how to underpin the right to access private properties to take soil samples. As sampling points should be determined using geostatistical methods and sufficiently dense to reach an uncertainty of not more than 5%, access to sampling points cannot depend on the voluntary granting of access. In addition, could COM clarify '*The Member States thus supported should take the necessary legal arrangements to ensure that the Commission can carry out such in-situ soil sampling, including on privately*

owned fields, and in compliance with applicable national or Union legislation.' What is the current legal framework, what basis can be used and what needs to be further elaborated at MS level.

- Could COM clarify how the creation of soil districts (and the related data and knowledge) will facilitate the implementation of the carbon removal certification. There seems to be a difference in scale between the carbon removal activities (field or project scale) and the monitoring at the soil district level.
- We understand that it is important that provisions of this Directive related to access to information and data sharing complement existing Directives and do not create a separate legal regime. However, this directive could be an opportunity to clarify
    - the scope of these directives: which soil data are definitely within the scope (nowadays soil data are often considered not to fit in the INSPIRE data model, and thus not reported), and
    - how to apply the grounds for exception for soil data.

  How can be avoided that the grounds for exceptions in the existing Directives (and their variable interpretation), will make the publication of soil data, as requested, very difficult or even impossible. e.g. publication of contaminated sites at site level or soil health information at company/site level/point level might not be possible due to privacy aspects. Management of contaminated sites

- Could COM clarify if it is expected that MS investigate all potentially contaminated sites despite such pool is evolving through time
- Could COM clarify who is the responsible party that needs to carry out a site-specific assessment and where needed take the necessary measures to bring the risks to an acceptable level", as competent authorities must apply the "polluter pays" principle

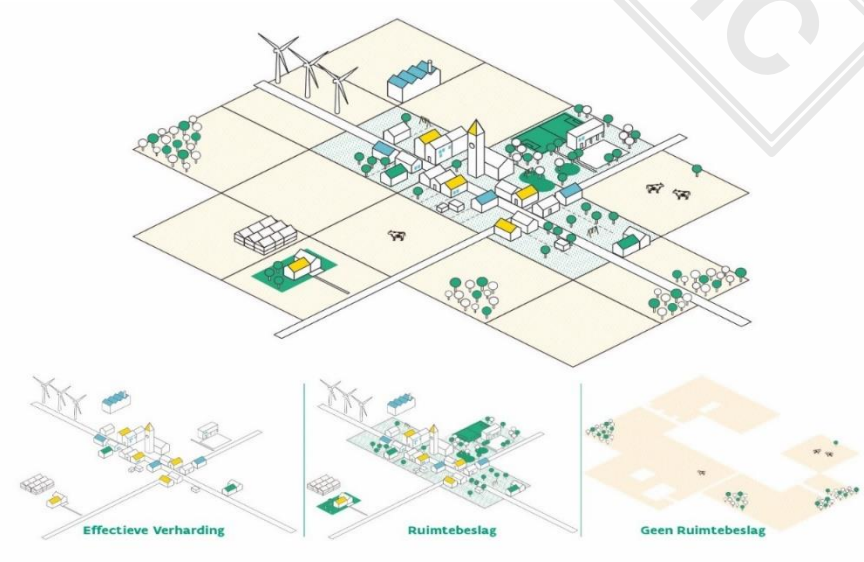
Detailed comments and questions

Article	Comments and questions
Chapter I – General provision	
Article 1 – objective and subject matter	
Article 2 – scope	
Article 3 - definitions	(1) In BE, ground water (GW) is also included in the soil definition, in order to properly undertake soil & groundwater investigations and remediations in a coherent manner (and with explicit reference to water and GW legislations) ; if no reference to GW is made in the EU definition, how will a link be done when it comes to investigation/remediation ? (1) and (12) Soil is situated between the bedrock and the land surface and land is the surface not covered by water. Does this mean that e.g. contamination of riverbeds is excluded from this directive? (2) and (3) Have the terms "ecosystem" and "ecosystem services" been already defined in another legislation? what is exactly meant by "indirect contributions" when defining

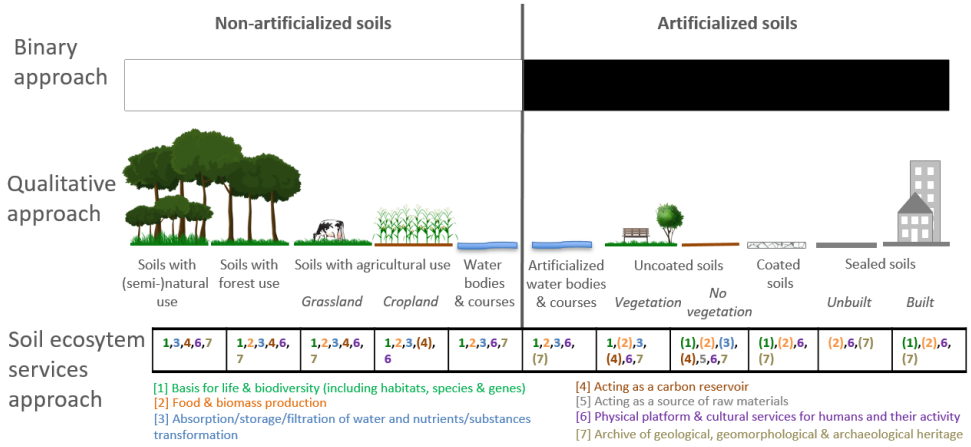
	ecosystem services (e.g.: is biomass production a direct or indirect soil ecosystem service?) (4) Good to have the 3 dimensions for the soil conditions (physical, chemical and biological) and to link it to ecosystem services (5) Sound definition but there will be a need for operational guidelines to assess when some management practices start to impair or become detrimental to soil services (6) The term "quality" used in the definition rather relates to the "conditions" of the soil (if we take into account the "soil health" definition already provided), such that it might be preferable to use the word "conditions" instead of "quality", the latter being often an open door for interpretation (8) « Soil district »: please refer to Article 4 of the Directive (12) to (17) **Those definitions are clearly moving away from the current approaches rather linked to land use such as done within BE** (see previous BE feedback given on the land take working paper circulated in the Soil Expert Group) **or asked by previous EU reporting exercises on land take**[1]… Besides, they are not clear at all (how to make differences between those classes in an operational way?). Would it be possible to stay as much as possible in line with existing data reporting processes (and with a view of easily connected it to current land use reporting within CLC / LULUCF / LUCAS / CLC / INSPIRE / …)? (14) Could COM give some more explanation? Is this e.g. N2000? Or is this really pristine land? (15) 'Semi-natural land' means "*an area where ecological assemblages have been substantially modified in their composition, balance or function by human activities, but maintain potentially high value in terms of biodiversity and the ecosystem services it provides*". Do agricultural soils fit in that category? Or maybe only some of them (e.g. permanent grassland) while others not (e.g. intensive cropland)? In overall, agricultural soils are difficult to be linked to the "land take" process in such classification criteria. Do forest soils fit in the semi-natural land? (15) and (16) If gravel extraction sites are flooded after extraction, they no longer fall under the definition of soil, according to (12). So they change from artificial land to 'no land'. How is this accounted for in the land take monitoring? If clay extraction sites are finished with a layer of soil material after activity, do they become semi-natural land again, i.e. negative land take? (16) and (17) Could COM clarify the exact definition of 'artificial land' and 'land take?' the proposed definition of 'artificial land' seems to restrict this definition to soil sealing, whereas the EEA definition considers urban green areas and sport and leisure facilities as land take. What about private gardens? The proposal generates confusion about the correct meaning of the concept 'land take'. This term now seems to be filled in differently than before in documents from the European Commission and Administration. The new proposed definition of land take as conversion to 'artificial land' seems to restrict this definition to soil sealing, whereas the existing definition considers urban green areas, private gardens and sport and leisure facilities as land take.

[1] Such as (i) guidelines on best practices to limit, mitigate or compensate soil sealing published in 2012 following the 2010 Roadmap to a Resource Efficient Europe (COM (2011) 571 final), (ii) EEA definition used for the 2020 questionnaire addressing geospatial and/or statistical data regarding land take and land consumption to all EIONET NRCs on Land Use and Spatial Planning and further confirmed in 2022 in a specific note linked to the 8th EAP headline indicators, (iii) EU SDG indicator 11 on sustainable cities and communities used by Eurostat, (iv) LULUCF Regulation defining "settlement" and its associated 2006 guidelines, …

BE interpret that there was a move away from defining land take on the basis of (settlement) land use, instead opting for an ecosystem services approach. And thereby the category 'artificial land' seems very close to how 'soil sealing' generally is defined. The added value of this new definition of 'land take' seems very limited. The proposal has no alternative for the loss of the old definition, which had its very practical use in spatial policy. The concept of 'settlement area' is very important for BE as it has been integrated in the different regional strategic spatial policy targets. Besides, it allows for operational spatial assessment, such as illustrated in the following figure (["Ruimtebeslag"] ~ "settlement area", ["Effective verharding"] ~ "sealed area"):



If the intention is to make a stronger link to ecosystem services, then it could be potentially done by adding to the current and usual concept of land take (based on settlement land use) a third dimension of soil quality (as the proposed definition includes ecosystem services) Such approach was already mentioned by BE during previous discussions within the Soil Expert Group on the working paper "land take", e.g. in a figure illustrating a typology developed based on land uses to assess land take and soil sealing, with a try to attribute soil ecosystem services to (non-)artificial areas:



Therefore, BE would like some clarification on the use and implications of the term 'land take' as it is now defined in the proposal for a directive on Soil Monitoring:

	• Is there a real need to change the existing definition of land take (based on settlement area/land use) to the new proposed definition in the Soil Monitoring Law, whereas it is inconsistent with previous definitions set by the European Commission and the EEA and it affects already existing national policies? • Can the concept of 'land take' now be understood as the change (increase or decrease) of merely soil sealing? And therefore not (anymore) as the change in settlement area (based on land use)? • Can it be clarified in the now proposed definition of 'artificial land' what exactly is meant by 'direct source of raw material' and by 'archive for historic patrimony'? … • Does this mean that the European Commission no longer sets a policy objective (or intention) on 'settlement area'? • Will this concept of 'land take' continue to be used consistently within the administrative and policy documents of the European Union? (16) 'Artificial land' means "*land used as a platform for constructions and infrastructure or as a direct source of raw material or as archive for historic patrimony at the expense of the capacity of soils to provide other ecosystem services*". In such definition, do artificial areas correspond to effective areas that are built/covered/raw material sources/archives or rather areas of the cadastral fields having inside their perimeter such kind of features? (17) 'Land take' means "*the conversion of natural and semi-natural land into artificial land*". If agricultural soils don't belong to semi-natural land (see previous comments), then it poses question as the majority of artificialization process (according to BE definitions) does occur at the expense of agricultural soils… This would then mean that conversion of agricultural soils to urban soils would not be counted as "land take"… ! The place of agricultural soils according to the definition proposed in (15) and (17) must be clarified. (19) The way the "public concerned" is defined means that anybody within a territory is included in the public, as soil degradation affects potentially all the territory (except water bodies) … This is not helping to understand who and in which way such public should be involved. Why not using existing consultation procedures (e.g. existing under environmental impact assessment)? Which criteria/procedure should be used to identify such public? (20) 'Soil contamination' means "*the presence of a chemical or substance in the soil in a concentration that may be harmful to human health or the environment*." Unlike an approach based on background concentration, such definition implies that the contamination concept is function of reference/thresholds. However, such references/thresholds may vary across time according to knowledge development on toxicity and ecotoxicity of substances. Therefore, references/thresholds evolving towards stricter levels could be interpreted as a soil degradation at a given place (at unchanged concentration) previously not considered as problematic. Is there any system foreseen to handle such issue? Noting also that such references/thresholds and underlying risks may vary between MS

	The definition does not include the presence of "organisms" as a criteria potentially leading to harmfulness for HH or environment; is there any specific reason? (21) Shouldn't the definition also targets "chemical" (and "organism" if relevant) in addition to "substance" to stay consistent with (20)? (22) Is natural attenuation excluded then from the regeneration activity? This would be inconsistent as "natural attenuation" is cited as a remediation technique in Annex V "Indicative list of RRM" point (b)(e) and as "remediation" definition (26) refers itself to "*regeneration action*"… (23) Why is this definition restricted to soil contamination? What about other soil degradations such as erosion risk, risk of muddy floods, risk of carbon loss, … ? The definition does not cover this, yet "risk" is also used related to erosion in the annex. (25) Will the 'specific precision and accuracy,' for the geographically explicit information to be mapped and localised, be defined somewhere? (26) 'Soil remediation' means "*a regeneration action that reduces, isolates or immobilizes soil contaminants or reduces their concentrations in the soils.*" Back to the issue of "natural attenuation" that would also be excluded from the soil remediation action, as it refers to the "regeneration" definition of (22) Noting that the definition doesn't link the remediation objective according to a given land use (which is usually the case in BE).
Article 4 – soil districts	2. The Soil district concept is still quite unclear, can the Commission provide for an example in order to facilitate the discussions among MS? In particular, when geographically combining the criteria of homogeneity proposed by paragraph 2 (a)-(b)-(c)-(d) in GIS, it may end up as thousands of small polygons distributed in discontinued areas for one "soil district"… Then it is asked to designate one competent authority for each soil district (see article 5)… For example, should we have like an authority in charge of agricultural luvisols in the Atlantic central zone within Wallonia (i.e. nuts 1 level) ? This seems quite difficult to manage within the administration… Could otherwise an option be the definition of one soil district (i.e. at nuts 1 level) in which the soil health assessment would then take into account criteria listed in article 4 paragraph 2 (WRB, climatic conditions, environmental zones, LULC) such that a "table" with several lines (i.e. one line per "homogeneous entity" resulting from the combination of criteria) would be given as the result of the soil health assessment for that soil district ? 2.a. Which version of WRB? If the 2022 version is to be used, how much time will MS have to adapt to this newest version? 2.b. How are we to consider homogeneous land use in defining soil districts? In a region such as Flanders there is a patchwork of uses at a very small scale. This means that in Flanders we have to define very small-scale soil districts?
Article 5 – competent authorities	Given clarifications provided by the Commission for the soil district concept and on the tasks for such responsible competent authorities, BE should have a better view of which relevant authorities should be designated.
Chapter II – Monitoring	

and assessment of soil health	
Article 6 – soil health and land take monitoring framework	4. It should be clearly indicated in the text that, if MS provides agreement to the Commission to carry out soil measurements, such field campaign of the Commission must be done under the supervision of the MS. This should give trust to MS that such exercises are done properly to ensure coherence with existing national/regional sampling campaigns. The way it is now written is that once the agreement given by MS, the commission just does its own campaign without necessarily coordinating further with the concerned MS (this is how it is currently done and this is problematic in several manners). Some further information on the content of the agreement and the procedure should be given as well (or stated to be hand over through Comitology). 6. Concerning the digital soil health portal: Will this portal be publicly accessible? Will it contain indicators or field measurements (including those related to land take)? What will be the level of detail (point, field, …) or the resolution for rasterdata? Is the digital soil health portal included in the EUSO dashboard? The formats or methods for sharing data listed in this part should be discussed within the Comitology. 8. This Comitology procedure should also apply to data referred in paragraph 6 and not only to data referred to in paragraph 7.
Article 7 – soil descriptors, criteria for healthy soil condition, and land take and soil sealing indicators	1 – 2 – 3 - 4 Do the soil descriptors and soil health criteria apply regardless the land use? How is the time issue handled and does it differ by land use (i.e. the response of forest soils to some changes takes longer time than agricultural soils)?
Article 8 – measurements and methodologies	1. The sampling points design referred to in Annex II (i.e. stratified random sampling optimized on the soil health descriptors) does not fit to the existing design of some well-established monitoring schemes in BE. Can alternative designs be used, in order to ensure that historical and current relevant data linked to soil health from MS can still be used? E.g.: soil organic carbon monitoring for agricultural soils in Wallonia is based on the use of georeferenced measurements from routine soil analyses made by farmers under a given period (such that sufficient spatial representativity is reach through the territory), and not from fixed location re-sampled regularly. Can the Commission also provide a practical example of the application of the Bethel algorithm on a given survey? 2. MS should collect, process and analyse data in order to determine (a) - (b) and (c) **at the soil district/homogeneous entities defined based on criteria listed in article 4.2 level** in order to be representative of the situation, and not at the sampling point level which cannot be processed/analysed as such… This is not clear from the current proposed wording. Can the data processing be based on statistical methods not using stratification approach? How to integrate the use of remote sensing methods? 3. See comments on annex II provided further

	5. Can the interval for new soil measurements be diversified according to the descriptor and the methodology used or to the land use? E.g. erosion risk for agricultural soils could be modelled every year using new information on crops and protection measures, that also would fit for land use change or soil sealing. However, carbon content changes that slow over time, that a measurement every 5 years would not show statistically significant differences. Besides, for soils under forest, slow changes occur, such that the current frequency of the Walloon monitoring is rather every 10 years. Also in Flanders, the monitoring frequency for organic carbon stocks and related soil parameters is 10 years. Will monitoring set ups where the monitoring is spread out over several years be allowed? E.g. for an existing soil carbon monitoring network every year one tenth of the locations is sampled and the georeferenced locations are resampled every 10 years.
Article 9 – assessment of the soil health	1. Does it mean that soil health will not be based on descriptors of Part C and D assessment? Noting that the frequency of soil health assessment (i.e. every 5 years) might lead to unchanged situation if no significant changes can be highlighted. 2. Why is soil sealing not taken into account to assess soil health? In many regions soil sealing is the most important soil threat. The "one all out all principle" might be accepted provided that some more detailed assessment is then triggered such as to focus to the problematic(s) descriptor(s) for further investigation/remediation; such tiered approach (i.e. proportional and well-targeted approach) is essential for an acceptation of such principle; it shouldn't be forget that significant parts of the territory might appear publicly as "unhealthy" only due to one descriptor not reaching a given level… 3. Guidelines to assess loss of ecosystem services will be needed, otherwise it might turn out useless… 4. At which scale shall competent authorities identify areas with unhealthy soils? 5. Some time for setting up the voluntary certification scheme should be left, such that this disposal could come within 2 years after transposition 6. Does this mean that the data and assessment will be communicated upon request to the land owners and land managers but not to the general public? What about a land tenant or interested buyers of a land? Why it will not be communicated to the general public?
Chapter III – Sustainable soil management	
Article 10 – sustainable soil management	1. Could the Commission clarify the obligation level for implementing sustainable soil management (SSM)? It is clear that MS must establish lists of positive and negative soil management practices, however where does the responsibility to implement/avoid such practices lie? 3. How will MS know which measures are taken? What is meant by "effectiveness" in practice? When there are no obligations to take measures and there is no obligation to register where which SSM are applied, will it not take a very long time before the effectiveness can be assessed based on the monitoring results?

	Whereas the diffuse contamination is held under the general "soil health" concept (as one of the associated descriptor is the concentration of pollutants :heavy metals as listed by the SML and organics defined by MS), and the restricted definition for contaminated sites (and not soil) in article 3 (10) is intended to allow for the dedicated procedures of investigation/remediation usual to handle point-source pollution, the management of diffuse pollution should however be clarified by the proposal, such that a dedicated mechanism can further be followed by MS. Besides, in view of such mechanism, some discussion around the set-up of a EU early warning system might be considered.
Article 11 – land take mitigation principles	Are the principles of land take voluntary or mandatory ? What is meant by "Compensate as much as possible? Guidelines for ecosystem assessment and associated methods are here again needed. Is it foreseen?
Chapter IV – Contaminated sites	
Article 12 – risk-based approach	4. "*The public concerned shall be given early and effective opportunities to participate in the establishment and concrete application of the risk-based approach.*" Do regular, democratic principles used when creating legislation at MS level fulfil this requirement, or does the Commission think more is needed? What is the added value to target the "public concerned" if the definition of the "public concerned" doesn't actually target any public in particular (see comment above on article 3 (19)?
Article 13 – identification of potentially contaminated sites	2. The list of activities that have to be taken into account is very broad. How broad does the Commission see the implementation? Does every single activity with even a very low chance of serious contamination have to be taken into account, or can MS focus on activities with a relevant chance of serious contamination? 2 (e) Shouldn't "floods" also be accounted for? 2 (g) Slightly modified wording suggestion: "any ***relevant*** information resulting from…" Besides, here comes the question of diffuse pollution as the soil health monitoring might highlight concentration not arising from point-source pollution but from diffuse pollution… In that sense, the extent of such pollution might overcome the concept of "site" which seems not so appropriate for the situation. A dedicated section for diffuse pollution would be clearer and allow for a proper management of such specific pollution (including background levels considerations). 3. Some suggested clearer wording: "*MS shall ensure that all PCS identified according to points 1 and 2 of this article are duly recorded in the register referred to Article 16 by that date*"
Article 14 – investigation of potentially contaminated sites	1. Some suggested clearer wording: "*MS shall ensure that all PCS identified in accordance with Article 13 are subject to soil investigation* ***according to the rules defined in point 2 of this Article***". Indeed, it is not possible to ensure that all PCS will be investigated as this pool evolves through time. It is better to ensure that PCS identified as priority ones are investigated.2 EG: Due to the unstable character of the PCS pool through time, it will be difficult to set a deadline for all PCS investigation… So, better set a deadline to establish the rules for PCS investigation but not for PCS investigation of the entire pool.

Article 15 – risk assessment and management of contaminated sites	Is the commission planning a uniform risk value particularly for human health risk? Is groundwater also covered by the risk assessment? 3. and 4. This article states that "*the competent authority shall carry out a site-specific assessment and where needed shall take the necessary measures to bring the risks to an acceptable level*". How do these actions by the government match with the "polluter pays" principle? Would it not be more logical that the member state ensures that these activities are being carried out by the "responsible party"? 5. A number of factors need to be taken into account when deciding on the risk reduction measure. Should "evolution in soil health" also not be taken into account?
Article 16 – register	1. Clearer wording "… *MS shall, in accordance with paragraph 2, draw up a register of CS and PCS* ***as identified according to article 13 and 14***".
Chapter V – Financing, information to the public and reporting by Member States	
Article 17 – union financing	Do the existing European funding regulations automatically allow all member states to obtain funds for monitoring? Setting an indicative list of EU funding sources would be helpful to understand what is available. Attention should be paid to a well-balanced effort made for monitoring (and the associated reporting) and for the effective implementation of sustainable soil management practices. Some EU budgets for management practices are already under constraints (e.g. CAP).
Article 18 – reporting by MS	Such reporting process should be held and further detailed through comitology in order to ensure proper reporting format and methods. 1. (a) What is meant by the data and results of the soil health monitoring and assessment carried out in accordance with Articles 6 to 9? Does this mean only data and results aggregated for each soil district or also data at XY level? How issue of GDPR will be taken into account if data at XY level have to be reported? 1. (c) (i) How are MS to assess the progress on implementing sustainable soil management principles? Are there examples, best practices, … on how to obtain objective information on the implementation of SSM? 1. (c) (ii) Are the PCS meant to be included in such reporting or not? 1. (d) What is the added value to report to EEA a database already accessible to the public? This would constitute a potential disproportionate effort. Such reporting should limit itself to an hyperlink where all data can be accessed (as suggested in paragraph 2 of the same article) and eventually a summary of the overall situation.
Article 19 – information to the public	1. Will scope and exception grounds according to INSPIRE and PSI be clarified? In practice there is a lot of unclarity. There will also be an issue if XY data are made public. GDPR should

	be taken into account such that no XY data are made available but rather extrapolation of estimations at a given level (leaving flexibility for MS to decide). 2. Will the data be made accessible at XY level or will it be 1 value for each soil district (or homogeneous entity within soil districts)? How issue of GDPR will be taken into account?
Chapter VI – Delegation and committee procedure	
Article 20 – exercise of the delegation	
Article 21 - committee	1. How will that comitology committee be articulated to the Soil Expert Group and other EU networks on soil (EUSO, ESP, …)?
Chapter VII – Final provisions	
Article 22 – access to justice	Such disposal is not so usual to our knowledge; can the commission explain why it is proposed in the SML?
Article 23 – penalties	Such disposal is not so usual to our knowledge; can the commission explain why it is proposed in the SML? What are the actions that could be penalised? and who is affected by these penalties? the member states ?
Article 24 – evaluation and review	Can the commission clarify why no periodicity seems to be defined for the evaluation process? 1 (b) A calendar providing a good overview of all milestones would be helpful to check if there is no incompatibility between various disposals and the first evaluation of the SML
Article 25 – transposition	
Article 26 – entry into force	
Article 27 - addressees	
Annex I – Soil descriptors, criteria for healthy soil condition, and land take and soil sealing indicators	
Part A – soil descriptors with criteria for healthy soil	Salinization: '*land areas directly affected by sea level rise'*: does this include areas where seawater affects soils via the groundwater system?

condition established at Union level	Soil erosion: will the scale and the models (and parameters therein) be specified? Is the value of the criterium to be considered as the sum of all erosion types (water, tillage, harvest, wind)? The resolution must be fine enough in order to be able to model a realistic amount of erosion. This resolution (scale), model and parameters have a large effect on the magnitude of the modelled erosion. A threshold of 2 t ha-1 year-1 is given in the proposal without information about the modelling resolution and parameters used. Erosion in Flanders is for example modelled at a resolution of 5x5m. At this resolution, the threshold of 2 t ha-1 year-1 is unrealistic low. In Wallonia, the current criteria is ≤ 5 t/(ha.yr) of soil loss by diffuse water erosion (criteria based on Panagos et al., 2015) (http://etat.environnement.wallonie.be/contents/indicatorsheets/SOLS%203.html). Up to now, no environmental indicator is assessed for wind or harvest erosion in Wallonia. If moving the threshold from 5 to 2 t/(ha.yr) for diffuse water erosion only, the proportion of the "non healthy" area would raise from 13% (average 2017-2021) to 40% (all areas together). If only considering cropland, first estimations lead to a rise from 57 % (average 2017-2021) to about 90 % (to be checked)… See previous comment on the "one out all out principle". Loss of soil organic carbon: • What about organo-mineral soils? Are they to be considered as mineral soils? • Could the definition of clay be clarified? E.g. when using laser diffraction clay is often referred to as the 0-6 µm whereas when sieving is used 0-2 µm is commonly the clay fraction • Could 'non-managed soils in natural land areas' be clarified? Are woodlands or forests included? • The ratio of 1/13 (=7,7 %) proposed corresponds to the "unfavorable" criteria for average soil type (based on clay content of soils in Wallonia) of the voluntary measure foreseen in the new CAP ("MAEC Sols"). The proposal to have corrective factors applied to the ratio according to soil types seems to be in line with what is done in Wallonia Subsoil compaction: soil texture: according to USDA (0-2, 2-50, 50-2000 µm) or FAO (0-2, 2-63, 63-2000 µm)?
Part B – soil descriptors with criteria for healthy soil condition established at Member States level	Annexe I and II, extractable phosphorus: Olsen method (bicarbonate de sodium) in the proposal, but Lakanen-Ervio method (acétate d'ammonium et EDTA) in the walloon laboratories in charge of agricultural soil analyses, and used for the environmental indicator (http://etat.environnement.wallonie.be/contents/indicatorsheets/SOLS%206.html). Regional average are available for the period 2006-2020 . However, it seems that translation equations exist in the literature (see Steinfurth et al., 2021; https://doi.org/10.1016/j.geoderma.2021.115339). The threshold of 30-50 mg/kg would be likely requiring adaptation. Annexe I and II, heavy metals :

	In Wallonia, the list and the extraction method differs: In the SML proposal: As, Sb, Cd, Co, Cr tot, Cr VI, Cu, Hg, Pb, Ni, Tl, V, Zn. Extraction by a diluted solution of HNO3 (0,43 mol/l) In the Walloon soil decree of 01/03/2018 : As, Cd, Cr tot, Cr VI, Cu, Hg, Ni, Pb, Zn. Extraction using aqua regia (concentrated solution of HNO3 + HCl)
Part C – soil descriptor without criteria	Loss of soil biodiversity: does this mean that when an 'other optional soil descriptor' is selected the soil basal respiration is not to be measured ? or will MS need to do both? Annexe I and II, nitrogen in soil : No data of N in terms of mg/g de sol on the current website of the Walloon State of the Environment Report. Other indicators are used : (http://etat.environnement.wallonie.be/contents/indicatorsheets/SOLS%204.html) Modelled concentrations (EPICgrid model) in nitrates in percolated waters at the bottom of the rooting zone (data 2017-2021) (mg/l) Potentially leaching nitrate (average values for 8 classes of crops, only for soils in vulnerable zone) (kg NO3/ha)
Part D – land take and soil sealing indicators	Annexe I, land take (Wallonia): Evolution of artificial land area in Wallonia (km2) and net annual increase (km2) are available on the website '(http://etat.environnement.wallonie.be/contents/indicatorsheets/TERRIT%202.html). However, the definition of artificial land and land take differs from the one proposed by the SML 15efinition'(see previous comments). A soil sealing indicator (rate of soil sealing, %) is also available but data are quite old (2007) and contains high uncertainties (Imperméabilisation des sols – État de l'environnement wallon (wallonie.be)) ''A fragmentation indicator (optional in the SML proposal) is also available (Jaeger index, ha) but data are old (2007) (http://etat.environnement.wallonie.be/contents/indicatorsheets/TERRIT%203.html). See also previous comments for Flanders.
Annex II – Methodologies	See previous comments made for Annex I
Part A – methodology for determining sampling points	Could COM clarify how a maximum percent error of 5% for the estimation of the area having healthy soil is feasible without having an unrealistic high number of national samples? Could COM clarify why the 'Bethel algorithm is to be used?

Part B – methodology for determining or estimating the values of soil descriptors	Soil erosion rate: Will there be more detailed instructions? E.g. scale (5x5m … 1x1km), how to calculate rainfall erosivity (huge differences between methods) , …. Any instructions on tillage and harvest erosion? Soil water holding capacity: Could the reference be added? Could there be some more information e.g. calculating on a raster (which resolution) or on available monitoring points in the soil district, on a river basin or subbasin scale, …? Nitrogen in soil: why is ISO 11261:1995 for determination of total soil nitrogen using a modified Kjeldahl method preferred over ISO 13878:1998 Soil quality — Determination of total nitrogen content by dry combustion. Could both be used? Soil acidity: the same ISO also provides the method for pH KCl. Why is KCl not included in the proposal? KCl is often used.
Part C – minimum methodological criteria for determining the values of land take and soil sealing indicators	
Annex III – Sustainable soil management principles	
Annex IV – Programmes, plans, targets and measures referred to in article 10	
Annex V – Indicative list of risk reduction measures	
	(2) Are those RRM applicable to diffuse pollution?
Annex VI – Phases and requirements for site-specific risk assessment	
Annex VII – Content of	

register of potentially contaminated sites and contaminated sites	

AUSTRIA

Comments on Soil Monitoring and Resilience Directive

General Comments:

We would like to thank the Presidency for the opportunity to submit first written comments. Soil protection is a very important issue, as fertile soils are the basis of our life. Among other things, climate change can affect soil fertility. Soil protection has therefore been an important issue in Austria for a long time and is well integrated in practice.

The European Commission has now – based on the conclusions drawn on the information and soil data available at EU level – decided to present a new proposal for a Soil Directive. The draft of the Soil Monitoring Directive was examined, in particular to determine whether this proposal could add value to soil protection compared to the already existing activities and regulations or whether it impose excessive administrative and financial burdens.

The forestry and agricultural sectors in particular have considerable reservations about the proposed Directive, both in terms of subsidiarity and content. The question of compliance with subsidiarity and proportionality is currently being examined separately in Austria. In principle, Forestry policy is the responsibility of the Member States.

Soil management, land take and the regulation of contaminated sites are issues that are extensively regulated in several federal and provincial laws in AT. The current proposal requires an increased need for coordination for AT. We therefore ask for your understanding and for sufficient time to submit comments. From the Austrian point of view it would make sense, to discuss Chapter IV Contaminated Sites separately, as this requires a different expertise than for regard to agricultural and forestry soils.

The extent of "unhealthy" soils classified by the EC can at least be questioned based on the limited data available.

In Austria, the proposal for a Soil Monitoring Directive is still under review. It is therefore not yet possible to make a final statement on the proposal. Above that, the proposed text contains numerous ambiguities, which we have tried to address best possible in our statement. It is therefore difficult to assess the general impact of this Directive on land managers, land owners and administrations. We therefore reserve the right to amend and add to our comments and observations in the course of the upcoming discussions.

Soils are often very heterogeneous, even within small areas, which is why both the selected criteria for the definition of soil districts as well as the indicators and threshold values have to be explained and discussed in more detail, e.g. some thresholds are so strict that they seem almost impossible to meet. Furthermore, land in AT (and therefore soils) are mostly privately owned and therefore, unlike air and water, a differentiated approach is needed.

The issue of food security is not sufficiently taken into account in the current proposal, in particular as too far-reaching soil protection requirements may lead to extensification and possibly land use changes.

As far as can be estimated at this stage, the Directive will result in a considerable amount of bureaucracy due to the large number of obligations and too short deadlines for implementation (e.g. definition of soil districts, monitoring, assessment of soil condition, definition of measures, reporting obligations, database). Therefore, the financial and administrative costs associated with the possible implementation of monitoring need to be carefully considered. The possibilities for public participation and public access to court in the event of errors by the competent authorities are considered too extensive. The proposed delegation of powers also needs to be further examined.

National and European regulations, such as the soil protection laws of the federal states in Austria, regulations on agriculture (CAP), fertilisation, plant protection, water protection, air pollution control and recycling management already provide comprehensive protection for soils against possible pollution.

The issue of soil passports was intensively discussed in the Soil Expert Group. In addition, a survey was carried out among the Member States. The EC is asked to explain the results of this questionnaire and how they will be dealt with.

We would be pleased to receive more detailed and technical explanations and look forward to the upcoming in depth discussions on the proposal.

<u>Please find our comments on the individual chapters and articles of the proposal and Part IV of the impact assessment below:</u>

Recital 23:
After the first assessment of the soils, no trend can actually be identified, so a review of the Directive probably only make sense after the second monitoring.
The EC is requested to explain and justify in a comprehensible manner why an evaluation of the Directive is technically necessary already after the first monitoring (survey of the actual situation at the level of the soil district).

Recital 24:
Does the wording of this recital allow for different approaches to monitoring, assessment of soil health and different sustainable soil management practices in the different soil districts?
The EC is asked for clarification, whereby from our point of view a differentiated approach (survey, assessment and development of measures) at soil district level would be preferable.

Recital 31:
The EC is asked to explain the statistical methods used for the selection of sampling points (see also comments on Article 9). Practical examples are requested.

Chapter 1

Article 3:

Para 10 and 20:
The EC is requested to explain the relation and/or differences in between the terms contaminated sites and contaminant, in particular how these relate to the terminology of the Water Framework Directive (WFD, 2000/60/EC; Art. 2(33) definition of “pollution”) and the Industrial Emissions Directive (IED, 2010/75/EU: Art 3.(19) definition of “baseline report”).
The EC is asked for clarification, whether groundwater contamination is also covered by the definition of ‘contaminated site’.

The definition of ‘soil contamination’ refers to harm to human health or the environment. This deviates from most other legal and technical definitions, such as the Water Framework Directive (WFD, and EN ISO 11074 ‘Soil quality – Vocabulary’, which in general relate ‘pollution’ with the aspect of harm (whereas ‘contamination’ is solely related as being of anthropogenic origin).

Para 14 and 15:
The definitions distinguish between natural land and semi natural land, although this distinction does not appear in the text of the Directive.
The EC is asked to explain why this distinction is deemed necessary.

Para 16 and 17 and probably new Para for soil sealing:
Why does the EC not propose a definition of 'soil sealing', especially as the monitoring according to Art. 6 (3) lit. e also proposes sealing as an indicator? Does paragraph 16 'artificial land' correspond to the term 'sealing'?
The EC is requested to provide a separate explanation of the term "land sealing".

In the Austrian Soil Strategy, which is currently being developed, the term "land take" does not correspond to the Austrian understanding of the term "land consumption". Land consumption is defined more broadly in the context of the monitoring systems. Definition of land consumption according to the draft of the Austrian Soil Strategy: "all areas that have been altered and/or built on by human intervention for settlement, transport, recreation, supply and disposal purposes and are thus no longer available for agricultural and/or forestry production and as a natural land, i.e. gardens, parks, sports grounds and roadside green strips also fall under land consumption"). Sealing means the water-impermeable covering of the soil.

Para 16:
Artificial land is defined too restricted (platform for construction and infrastructure). As mentioned above in Austria also home gardens, golf courses or sports fields with meadows are also included under the term land consumption. According to the Directive, these facilities would fall under Para 15 - semi-natural land, which does not fit into the Austrian system. Artificial land should include all settlement areas, traffic areas, leisure and recreation facilities, supply and disposal facilities should be included. An annex should list examples of land uses that meet the definitions. Consideration should be given to the need for an additional definition is needed.
The EC is asked to clarify what happens to renewable energy facilities in this context - are they part of artificial land (e.g. platform for construction and infrastructure) or not? The EC should also explain the difference between soil sealing and land take?

Para 19:
Under "public concerned", no distinction is made between those affected by land degradation (such as land managers) and third parties, such as NGOs. This does not seem to be objectively justified.
The EC is asked to explain its proposed provision or approach in more detail.

Para 22:
The EC is asked to clarify the relation and/or differences between 'regeneration' and 'soil remediation' (Article 3(26)).

Para 26:
The definition of soil remediation should be expanded to the effect that a significant reduction is always assumed. Despite the possibility of e.g. MNA (Monitored Natural Attenuation), "token remediation" should thus be excluded.

Article 4:

Para 2:
It should be clarified that the parameters are options for defining soil districts and that "efforts" to consider them are not obligations. Member States should be given according with the statement to Article 5 the greatest possible freedom in defining "soil districts" with regard to the size of the soil districts and with regard to the different types of land use based on the different competences in the Member State.

Article 5:
In Austria, as in some other Member States there are already different existing authorities responsible for soils, the federal government is responsible for forest soils, whereas the federal states are responsible for agricultural soils. We see it as very problematic that the Member States shall in future have to designate a competent authority for each soil district established in accordance with Article 4, as this undermines the defined national competences and thus the subsidiarity, as well as the already existing authorities and will massively increase the administrative burden. From an Austrian perspective, the benefit in relation to the costs is not evident.

Art. 5 should therefore be adapted to take into account the federal structure of the Member States. This could be done, for example, by deleting the second sentence or by stipulating in the second sentence that the competent authorities for each soil district are to be named ("the competent authorities" instead of "one competent authority").

In this context, reference should be made to Article 4 (2) TEU, according to which the European Union respects the national identities of the Member States "as expressed through their fundamental political and constitutional structures, including regional and local self-government". The EC is asked to provide clarification in this respect.

Chapter 2

Article 6:
In Austria, soil monitoring instruments or monitoring measures already exist at various levels (e.g. forest soil condition inventory, soil condition inventories of the Federal States (Länder), long-term soil observations).
The introduction of a new monitoring system would not only lead to a considerable administrative and financial effort but equally run counter existing and proven systems.
Although the Impact Assessment (p. 64 ff) provides some guidance on how to proceed, the statements made there cannot be read with the same clarity in the Directive.
The monitoring of land take is very vague; in particular with regard to the minimum resolution of the monitoring, the setting of targets and baselines, and as to which types of artificial land cover to be included.

In relation to point 2 of this article the monitoring of land take related to the soil districts to be delineated for soil health does not make sense as homogeneity parameters as given in Article 4 are not of relevance for land take. As land take mainly depends on decisions on community level monitoring should be carried out at an appropriate level.

The EC is therefore requested to provide more detailed explanations and clarification on the "monitoring framework", in particular to what extent it can be harmonised with existing monitoring systems or whether the Directive allows for a differentiated approach at national level for monitoring and assessing soil health and for determining soil management and regeneration practices. Appropriate clarity and legal certainty must be ensured in the text of the Directive.

Art. 6.3. in conjunction with Annex I:
The selection of soil health descriptors raises many technical questions. No parameters should be used that are not applicable due to natural conditions. It is not understandable why monitoring has to be set up for all parameters, not all of them cause problems in Austria, respectively in the entire federal territory (e.g. salinization).
The EC is requested to provide a detailed justification for the selection of the soil health descriptors and the definition of the soil health criteria.

Art. 6.1. – 6.3.:
This article states that Member States shall establish a monitoring framework based on the soil districts and that soil monitoring shall be carried out in every soil district according to the listed criteria. Soil districts are only meaningful if they allow for a specific or differentiated approach to monitoring, assessing soil health and determining soil management and regeneration practices.
The EC is requested to provide further clarification on the content and scope of the monitoring framework.

Art. 6.4.:
This possibility of consent still needs to be thoroughly examined, e.g. also whether it will entail additional costs for the MS. Furthermore, any consent can only be given by the competent authorities and not by the MS in general.
The EC should also clarify which parameters from Annex I will be collected on such sampling plots and by which analytical methods (if different methods are specified by the MS) they will be analysed and how these plots will be integrated into the soil monitoring framework to be defined by the MS (e.g. who determines the specific location, EC or MS?).

Art. 6.6.:
It is unclear what happens to the data collected under to this provision, whether and to whom there are transfer obligations, who has access to it, whether and in what form it is transferred to whom, where and for how long it is stored, what it may be used for, and whether and in what form each use must be documented and communicated to the Member States as data originators. Basically, we see unresolved issues also in connection with data protection aspects.
The EC is asked for clarification.

Article 7:
The soil health descriptors provided for in Article 7 and its Annex I are considered problematic and do not take sufficient account of national or regional conditions.

Art. 7.2.:
The erosion descriptor sets an unrealistically low threshold value of < 2 t per ha and year.
The EC is requested to explain the technical basis for this low value. The EC should also explain how this value could be achieved without land use change. From a technical point of view, this value can only be achieved in certain areas with a land use change (e.g. arable land to grassland).
Member States may adapt the soil descriptors and soil health criteria according to the specifications mentioned in Annex I, Part A, second and third column.
The EC should explain why the soil health criteria for soil erosion cannot be adapted by the Member States.
Certain parameters, such as humus but also nutrient content, can give different results depending on the seasonal sampling pattern.
The EC should clarify how these uncertainties are to be dealt with when interpreting the results.

Art. 7.4.:
The possibility of individual adaptation of soil health criteria is considered positive in principle, but should generally (technically justified) apply to all parameters. The setting of soil health criteria or limit values at national level or the introduction of additional soil health criteria (e.g. for organic pollutants) can have a significant influence on the soil health assessment and lead to low comparability of assessments across Europe. It would be appropriate if the additional parameters were not included in the obligatory and reportable soil health assessment.
The EC is asked to explain how this issue will be addressed.

Article 8:
It is still very unclear to what extent a grid system or a random sample (Bethel method?) should be used, or whether a repetition at the same site should take place or whether a random sample should be selected again. How can existing national monitoring systems be taken into account or integrated from the EC point of view? The explanations given in the Impact Assessment (page 64 ff) do not provide sufficient information on this. To what extent can regeneration measures be implemented based on a sampling result (parcel-specific), or is such a parcel-specific definition not even the intention of the Directive?
The EC is asked to explain in detail the determination of the soil sampling areas (method) and the interpretation of the results. Does the EC have any estimates of how many sampling plots are needed in Austria to meet the requirements of the Directive?

Art. 8.1.:
The EC is asked to explain in detail the determination of soil sampling areas (method).

Art. 8.3.:
This Article needs to be discussed together with the Annex. Member States currently use due to several mostly historical reasons different methods for the investigation of different soil parameters. It is therefore not acceptable that those methods cannot be used anymore in the future unless validated transfer functions are available. It costs not only a lot of time but also a lot of money to determine validated transfer functions for all of the methods, so it would make more sense that the member states can continue to use their well-tested methods, but e.g. have to describe them.

Art. 8.2. - 8.4.:
As already mentioned, the values for determining healthy soils still require detailed discussion.

In combination with Art. 6. and in relation to point 2c) of this article the monitoring of land take does not make sense in relation to the soil districts to be delineated for soil health as homogeneity parameters as given in Article 4 are not relevant for land take. As land take depends mainly on decisions on community level administrative units should be selected as districts for land take.

Other methodological points of criticism for monitoring are the sampling methods, which are not described in detail (e.g. depth level, number of individual samples for a composite sample) and the lack of definition of topsoil and subsoil for compaction measurement in the proposed Directive. Furthermore, individual analytical methods are viewed critically, e.g. the Olsen method for phosphorus determination or the "microwave digestion" method for heavy metals, as they do not correspond to the current Austrian standard. Soil density determination based on storage density (which requires undisturbed sampling) should also be replaced by another, more efficient survey method (e.g. penetrometer) in the field. In this respect, MS should be given maximum freedom of choice regarding methods.
The EC is asked to clarify why and on which basis the chosen methods have been identified.

Art. 8.5.:
An annual update of the value of the land take and soil sealing indicators is deemed disproportionate, an update every 3 years seems sufficient and more adequate. The monitoring system for land use and sealing in AT aims at a 3-year reporting cycle. This is because in AT the necessary baseline (aerial photographs) - for a complete update - is available every 3 years. For many parameters (e.g. heavy metals) the specified monitoring interval of 5 years does not allow for expected changes.
The EC should explain on what basis a five-year monitoring is technically justified and how this is consistent with the selection of sampling areas.

Article 9:
Soil is a very diverse medium, therefore it is not possible to conclude from a single parameter on the overall soil health. Is such a principle applied in other EU Directives?
Without the possibility of adjusting soil descriptor values at national or regional level (soil districts), this principle is deemed very critically and disproportionate.
The EC is asked to clarify whether the interpretation of soil health (setting of soil descriptor values) can differ in different soil districts, e.g. to take into account regional conditions (geogenic background contents)? "
The EC is asked to provide a technical explanation for the choice of the principle "one out - all out" principle.

The result of the assessment according to Annex I C and the indicators according to Annex I D concerning ecosystem services are not included in the evaluation of soil health, but have to be reported to the European Commission. Methods for assessing ecosystem services are still underdeveloped, and different approaches in the MS lead to little comparable data at high cost.
The EC is asked to clarify the objective of this assessment and the methodology of assessing ecosystem services.

Member States may define additional characteristics and indicators for monitoring (Art. 7(5)). These may be the optional characteristics and indicators of Annexes I C and I D (e.g. microbial biomass) or additional characteristics and indicators (e.g. extraneous matter). It is unclear whether these additional features and indicators should also be assessed in terms of ecosystem service loss. The EC is requested to provide a further explanation or clarification in this regard.

Based on the measurement results at the sampling points, the areas representing unhealthy soils should be defined. It does not seem appropriate to classify an entire soil district as healthy or unhealthy as this is unlikely to reflect reality. Due to the inhomogeneity of soils, it may be difficult to accurately delineate unhealthy soils. This also makes it difficult to define the scope of unhealthy soil regeneration practices and will lead to problems of acceptance by land users.

As this is a very fundamental problem of understanding in the application of the Directive, the EC is asked to explain in detail the assessment of soil health and its possible impacts.

Art. 9.2.:
We do see a risk that many soils will not fulfil the cumulative conditions required for healthy soils if the soil descriptors and soil health criteria are set too strictly.

The fundamental question is whether the proposed parameters and thresholds can provide a meaningful systemic approach that fits together? Soil is a matrix much more complex than air and water and any concept of "soil health" is far away from simple.

The properties of soil parameters in terms of their informative value with regard to soil health, their measurability and modelability, but also their ability to be changed by management measures are very different. The relations between parameters are also complex. Therefore, great attention must be given in defining and interpreting thresholds. We would recommend moving the soil descriptor erosion from Part A to Part B of Annex I. The same is recommended for the soil descriptor salinization as not all Member States are affected by salinization (see https://esdac.jrc.ec.europa.eu/public_path//salinisation.png).

Due to the great heterogeneity and the quantity of parameters, which influence the soil quality, it is questionable whether the distinction between healthy and unhealthy soils is accurate, meaningful and necessary. The proposed parameters can only be indicators of healthy soils. In the end, it is about finding a desirable optimum for a set of parameters and to allow Member States sufficient flexibility to define the criteria for healthy soil conditions. A traffic light system might be more appropriate here.

Art. 9.3.:
The aim and consequences of this article are unclear or cannot yet be assessed. This provision is therefore viewed very critically.
At present, it is not conceivable that a meaningful statement on the loss of ecosystem services and the objectives of the LULUCF Regulation can be made based on an analysis of data at the scale level of NUTS II (NUTS II level corresponds to the Federal States (Länder) in Austria.
The EC is requested to explain the objective of this Article and the possible consequences.

Art. 9.4.:
At this point, the publication of data regarding unhealthy soils in each soil district must be examined against the background of proportionality and data protection. This could be burdensome for individual farmers and violate their right to privacy as the assessment mainly relies on soil samples taken at sampling points. We therefore argue that the information requirement should be reduced to the level of the soil district only, i.e. information should be provided on whether there are unhealthy soils in a soil district, an perhaps the percentage of the soil district affected if this is scientifically sound (depending on the representativeness of the sampling points and the changing soil conditions across the soil district).

As public information is in principle adequately guaranteed by the Aarhus Convention, this proposed Directive should not go beyond current obligations. The relevant data protection provisions must also be compatible with the protection of landowners' rights. The last sentence of Article 9.4 should therefore be deleted. See also the comments on Article 19.

Does the EC envisage a detailed delimitation of areas here or "merely" the statistically expected (e.g. percentage rate) proportion of unhealthy/healthy soils in the respective soil district?

Art. 9.5.:
The (mandatory) establishment of a certification system has to be further evaluated. In particular, the added value is at the moment not yet fully recognisable.
On the contrary, "non-certified farms" could be confronted with possible disadvantages without contributory negligence.

The question is to what extent these certificates have a direct benefit for soil protection. The certificate is intended to be used mainly for agricultural and forestry soils (since soil health is of primary importance). It is questionable whether the certificates will be accepted if the costs of sampling and analysis have to be borne by the owners. As the Directive provides for the application of sustainable soil management practices on all land and regeneration practices on unhealthy soils, it is questionable whether the cost of providing a certification system is justified. In the Impact Assessment, the EC assumes small and indirect positive effects. The text of the Directive does not explicitly mention whether the results of the voluntary soil health certificates are included in the definition of areas with unhealthy soils (Art. 9(4)).

The EC is requested to provide more detailed explanations on the certification system. For example, on which data basis these are based (e.g. individual soil testing of farmers or statistical interpretation of the monitoring system). What added value does the EC expect from such a certification system? Will such a certification be temporary and subject to periodic renewal? What form should the market for these certificates take, who should buy them and at what price?

Art. 9.6.:
Does 9.6 in conjunction with 19 require precise (geographically unambiguous) publication of soil data? Isn't the publication already covered sufficiently by the Environmental Information Act?

Chapter 3

Article 10:
Sustainable soil management is already implemented in Austria based on the Common Agricultural Policy (CAP), legal requirements (soil protection laws, forestry law, water law, etc.) and voluntarily or based on advice provided by farmers.
It is therefore important to ensure that already proven systems do not have to be changed by the Directive or render possible incentive systems ineffective.
A further development of the future CAP is seen as the best starting point for the implementation of sustainable soil management practices. It is also important to ensure the full accountability of existing measures.
In addition to the statements made in the first informal videoconference of the Council Working Group, the EC is asked to clarify that the implementation of soil management practices by the MS can be based on voluntary and incentive systems and only needs to be implemented on a mandatory basis if necessary.

The EC is also asked to explain the "degree of obligation" or the extent to which soil health assessment and soil management practices have to be integrated into other programmes, plans and policies and obligations can be derived from them.

Art. 10.1. a):
In addition to the establishment of soil management practices, this also addresses a progressive implementation of regeneration practices on soils assessed as "unhealthy" under Article 9.
The EC is asked to explain the content and scope of this provision in more detail. In particular, whether an obligation can be derived from the chosen wording, and if so, if this obligation concerns (e.g. the MS in which regeneration measures are proposed or the land user in which he has to implement regeneration measures). In this context, the wording in the Impact Assessment Chapter 7 "Preferred Option" is not entirely consistent with the text of the Directive, as it still refers to "programmes of measures" (p. 73).

Art. 10.2.:
The Chambers of Agriculture will play an important role in providing access to impartial and independent advice.
The EC is requested to clarify that the measures regulated under this point can also be carried out by farmers' interest groups.

Article 11:
The Federal States (Länder) expressly point out that the EU has no regulatory powers in the field of spatial planning.

The Federal States (Länder) are aware of the importance of land use and are already taking appropriate measures in this regard at many levels, which to a large extent take up the approach standardised in Article 11. Excessive bureaucracy, especially with inconsequential reporting obligations, is viewed critically.

In this context, reference is also made to the ÖREK 2030 implementation pact "Soil Strategy for Austria".

11.b.:
With regard to the compensation for loss of soil capacity, the state of the art in Europe is very poor. It should therefore be clarified whether compensation shall be carried out directly at the site of impact or somewhere else and if monetary compensation is also valid.

Chapter IV

Austria agrees with the need for a systematic and stepwise approach to the identification, investigation and remediation of contaminated sites and the need for registers. However, all future efforts in contaminated land management should focus on those sites that may actually cause 'unacceptable risks to human health or the environment'. We therefore strongly recommend a separate discussion to clarify the objectives and adapt the terminology and language in Chapter IV.

Article 12:

Art. 12.4.:
AT already has a system in place concerning contaminated sites, a risk-based approach is already in place. From our point of view, it is unclear whether the inclusion of the public concerned in Article 12(4) also applies to already existing systems that are in line with the risk-based approach of the proposal. If so, an exclusion should be added referring to regimes, which are already established at the time of entry into force of the proposed directive.
Generally, it needs to be clarified to which extent regimes that are already in place at time of entry into force of the proposed directive would have to be adjusted.
In AT, there is a special regime for sites that have been contaminated before 1 July 1989 (when the AT Contaminated Sites Remediation Act entered into force) and afterwards. This regulatory system has proven itself and has been established in Austria for a long time. AT is of the opinion that there should be exemptions for such existing and well established regimes in the MS.

Article 13:
The EC is asked to explain whether diffuse soil contamination or geogenic pre-pollution is also subsumed under potentially contaminated sites.
Subparagraphs (e), (f) and (g) in Article 13 (2) are unclear and need to be further specified.

Article 15:
The difference between "unacceptable risks" in paragraph 2 and "significant risks" (see EU Soil Strategy for 2030, Chapter 4.4) should be clarified.

Article 16:
It should be considered that the publication of potentially contaminated sites could lead to uncertainty for the public concerned, therefore, this information should not have to be published.

Article 17:
The EC may wish to consider making specific funds available to MS for monitoring activities and implementation of land management practices.

Chapter V

Article 18:
Excessive reporting obligations should be avoided. A detailed examination of this provision should take place once the content of the Directive has been finalised.
In this context, it should be noted that the deadlines foreseen in the Directive are very ambitious and still need to be discussed.

Art. 18.2.:
The EC is asked to clarify why (additional) permanent access to MS data is required in addition to the mandatory reporting under 18.1.

Art. 18.3:
The above-mentioned deadlines are considered to be very ambitious, as the establishment of a permanent online access for the Commission after 2 years and 3 months at the latest will require a lot of preparatory work, if only to harmonise the existing data of the Federal States (Länder) and the Federation and to integrate them into a common system. Changes in soil health criteria are often only detectable over long periods, which is why the time intervals for mandatory reporting must be further discussed.

Article 19:
In connection with the proposed information to the public in Article 19, the question of accessibility and the extent of existing data arises with regard to the balancing act between data protection and data transparency. This also applies to soil properties that have arisen through no fault of the owner and/or manager.
It should also be noted that the publication of potentially contaminated land - see Article 16 - is seen as critical. This inevitably raises the question of the requirements for reporting potentially contaminated land and the resulting consequences.

Does Article 19(1) and (2) lead to a double publication of the same data on a national/regional platform(s) and an EU data portal? How should Article 19(3) to be understood? Does the information to be transmitted to the EC under Art. 18 also have to be made publicly available in addition?

An obligation to provide information that goes beyond existing regulations (e.g. Aarhus Convention and environmental information laws) is viewed very critically.

Article 9(6) requires Member States to make soil health data available to landowners on request.

Since the amendment of the Environmental Information Act (BGBl. I No. 6/2005) in 2005, which transposed the EU Environmental Information Directive and thus also part of the Aarhus Convention into national law at the federal level and thus extended the public's access to environmental information, this provision has become excessive. The condition of environmental components, including soil as such (§ 2 no. 1), was explicitly listed, so there is no need to standardise such an obligation of the Member States in the current proposal for a Directive.
The EC should explain why a further regulation on the already existing right of access to environmental information is considered necessary.

Chapter 6

Article 20:
Article 20 of the draft Directive seeks to empower the European Commission to adopt delegated acts to amend Articles 8, 10, 15 and 16. According to Art. 290 (1) TFEU, however, the power to adopt delegated acts can only be granted if it concerns exclusively non-essential provisions. In this case, however, amending measurement methods laid down in Art. 8 by delegated act could indirectly affect the measurement methods contained in Annex II or the principles of sustainable soil management set out in Art. 10. This delegation of power should therefore be limited to non-essential provisions only, in order to effectively avoid any overstepping of powers and to provide legal clarity on the indirect possibility of amending essential standards.

Chapter 7

Article 22:
The purpose of this Article is to ensure that members of the public who wish to challenge the implementation of this Directive have access to a judicial review procedure. This obligation already follows from Art. 9(3) of the Aarhus Convention, which provides for legal protection in relation to requests for environmental information (para. 1), legal protection for members of the public concerned against decisions in public participation procedures (para. 2) and legal protection against acts and omissions by private persons and public authorities (para. 3). The current jurisprudence of the Aarhus Convention itself therefore already provides sufficient legal protection, so that Art. 22 of the draft is deemed unnecessary to prevent double legislation. This is particularly the case as the Directive does not lay down any concrete binding targets, apart from monitoring measures, which could be challenged in court. Should it be possible to sue for the self-imposed measures of the Member States, this possibility of taking legal action would be seen as an obstacle to the achievement of the objectives, as the Member States would experience a significantly higher threshold for self-commitment as a result of this power. We therefore rate Article (22) in the Directive as a duplication.

Article 23:
Art. 23 provides that Member States shall lay down the rules on penalties applicable to infringements of the national provisions adopted pursuant to the Directive. These penalties shall be effective, proportionate and dissuasive.

Line 2 of the Article is still being legally examined with regard to compatibility with subsidiarity.

The draft also provides that the fine must deprive the person responsible for the infringement of the economic benefit gained from it. However, this provision will create considerable effort in enforcement. In many cases, it is unclear whether the pecuniary advantage exists, and if so, what it is and how it can be quantified would have to be determined by experts in each individual case. The reference to turnover is considered sufficient here. Furthermore, this provision is incompatible with the principle of proportionality, as it does not provide for any leeway for Member States with regard to the penalties to be imposed and sets far too narrow guidelines for national sanctions.

This provision needs to be revised in order to comply with the principle of proportionality and to leave Member States sufficient leeway in the national implementation of the Directive with regard to the imposition of penalties (type and amount).

The EC is requested to explain in more detail, which penalties for which conflicts are at stake, as the Directive does not impose any obligations. The Directive is primarily addressed to the Member States to take appropriate monitoring measures, assessments, publications, etc.

Article 24:
According to Art. 24 requires the EC to carry out a first evaluation of the Directive after six years. The purpose of this evaluation is to assess the progress made towards achieving the objectives, with view to improving the provisions in order to achieve healthy soils, if necessary. The key findings will to be presented by the EC in a report to the European Parliament, the Council, the Economic and Social Committee and the Committee of the Regions.

An evaluation already after six years is deemed practically unrealistic, as transposition into national law can take up to two years. Six years after entry into force, only a baseline situation can be established, but the effects of the provisions to be implemented by the Directive cannot (yet) be measured or evaluated. In order to be able to sensibly carry out initial adaptations of the provisions, a longer period of time is required in order to be able to draw conclusions for the adaptation of the Directive from the actual values collected after a total of six years.

Annexes:
The Annexes are a very important part of the Directive, because what is defined here, together with the "one out all out" principle, has a decisive influence on what is to be understood by healthy soil. Why has this rather complicated distinction been introduced according to the criteria in the Annex? In principle, Member States should be able to decide on the criteria for all indicators themselves.
In general, it should be possible to assume that the EC has consulted all relevant scientific studies and expert opinions for the preparation of the Annexes.
Therefore, we would like to ask the EC to explain exactly on which basis (e.g. scientific studies) the indicators and the threshold values have been selected, as the Austrian soil experts have already expressed many questions and concerns about the content of the Annexes.
We believe there is an urgent need to discuss these technical proposals (e.g. indicators, thresholds, methods, exclusion of areas from achieving the related criterion ...) on soil experts' level (e.g. with the experts from EJP Soil). Otherwise, detected data of different locations run the risk of incomparableness.

In any case, at the end of the discussions there should be achieved a result that is reasonable, technically comprehensible and feasible with reasonable means in terms of assessing soil health. In order to achieve meaningful monitoring, it is also important to consider which soil tests are appropriate for which soils at what time. For example, it is questionable whether carbon analysis every 5 years is useful. It is also questionable, for example, whether all soils really need to be examined for their salinity. In general, it is questionable whether a single value can really be used for the classification as healthy or unhealthy for such a complex topic as soil health. It would probably make much more sense to provide for gradations or certain ranges within which a value should optimally lie.

Specific comments on Annex I (Descriptors):
In principle, the indicators, but especially their thresholds, should be defined at the national level, taking into account regional conditions and with technical justification.
In any case, the values should be set in such a way that it is possible to achieve the targets.

It needs to be clarified whether the criteria in Annex I apply only to non-contaminated soils, while a risk-based approach applies to soils at (potentially) contaminated sites.
According to the proposal, a soil is healthy if it meets with the criteria of Annex I, including the "generic" criteria to be defined by Member States for inorganic contaminants. On the other hand, Article 12(1) and 15(4) provide for risk-based measures to be taken by MS, referring to an acceptable level of risk to human health and the environment.

Annex I

Part A
Criteria for a healthy soil condition must be adaptable to regional conditions.

Soil erosion:
The term 'soil erosion rate estimation' implies that the erosion rate is modelled rather than measured. The factors to be considered for the estimation are given for water and wind erosion, but not for harvest and tillage erosion. Furthermore, the use of different models would lead to different results, which may not be comparable between Member States. As the factors to be considered for this soil descriptor are very different between Member States, the criterion value should not be set at Union level.

The proposed limit 2 t/ha/yr for tolerable soil erosion (incl. all types of erosion) is very arbitrary, very low and will be a problem especially for Member States with a topography like Austria. In Addition, there is little data or estimates available for wind erosion or erosion from harvesting. How does the European Commission envisage erosion monitoring/modelling, which should then include and combine all types of erosion? As mentioned above due to the great heterogeneity of the situation in the Member States it should be possible to deviate from the limit value for erosion if this is justified. It should also be borne in mind that on farmland where agricultural practices are applied in order to reduce erosion, the erosion actually recorded is significantly lower than on other plots (Confer CAP evaluation).

Sub Soil Compaction:
Soils can be well classified according to their susceptibility to compaction based on their nature. However, whether compaction is actually present on an area has to be checked on a case-by-case basis, as each plot is managed differently (e.g. in terms of soil cultivation, crop rotation ...). It is not yet possible to assess to what extent monitoring and extrapolation is possible and useful.

Loss of soil organic carbon:
Mineral soils
The SOC to clay ratio is probably not a good indicator of soil C "undersaturation" according to latest findings (Begill, Neha, Axel Don, and Christopher Poeplau. "No detectable upper limit of mineral-associated organic carbon in temperate agricultural soils." Global Change Biology (2023)). Also, the publication "Poeplau and Don (2023): A simple soil organic carbon level metric beyond the organic carbon-to-clay ratio" opines that this SOC/clay ratio is not an appropriate SOC metric because "degraded" soils increase exponentially with clay content and the metric is partially insensitive to change.

There is also proven evidence that humus accumulation is faster on sandy, low-yielding soils than on humus-saturated clay soils. According to a soil fertility report from 2010, higher humus contents were found in the "clay-poor" Waldviertel compared to the Apenvorland and northeastern lowland and hill country [Evaluation of ÖPUL Agrar - environmental measures with regard to parameters of soil fertility, AGES 2010]

The EC is requested to clarify why this indicator was chosen and how much flexibility the Member State has to adapt the soil health criteria.

Part B
Extractable phosphorus:
There are more than 10 different methods in Europe (Jordan-Meille et al., 2012), in Austria and Germany, for example, the CAL method is currently used. In any case, the values would have to be adapted to the country methods of the MS. The maximum levels should be set for a specific method and should not have to be generally in the range of 30-50 mg/kg.

Soil contamination:
With regard to organic pollutants, a coordinated approach across Europe would be appropriate to enable comparable soil health assessments in the Member States.

Specific Comments to Annex II (Methods)
In principle, national methods that have been tested and used for many years should be preferred for soil investigations in order to maintain continuity. The Directive should therefore interfere as little as possible in the choice of methods.

In particular, the following points should be highlighted:

- Why is it necessary to measure the pH value twice, once in water and once in calcium chloride solution, when the standard ÖNORM EN ISO 10390:2022 optionally lists three methods for determination?

- In the case of basal respiration, one method EN ISO 16072:2011 (determination of O_2 uptake by means of electrolytic O_2 generation) must be specified, otherwise the results are again not comparable with each other. Why is the method not specified for basal respiration?
- For the determination of soluble P, the method "Olsen P" is specified. This also seems to be the basis for the value range in which a maximum value is to be determined. However, the CAL method used as standard in Austria results in other P values. A conversion is difficult. The value range 30 - 50 mg/kg is thus not comparable with the classification of the Austrian guideline for proper fertilisation.
- The specified laboratory method for measuring the "Soil water holding capacity" also requires sampling of undisturbed soil, which requires additional sampling effort. Sampling should preferably be carried out during the wet season, which is a time-limiting factor. Currently, this analysis is only carried out by a few laboratories.
- No sampling methods are specified. In addition to the analytical methods used, the sampling method (PN depth, number of individual samples, etc.) can have an influence on the results. To ensure comparability, certain sampling criteria should be defined.

Impact Assessment Part 4:

The assessment of soil conditions in the MS based on LUCAS or other EU data, which have not been coordinated with or approved by the MS, must be questioned in terms of representativeness and significance. The results of the Austrian project LUCASSA, which was carried out in parallel to LUCAS, have shown that the LUCAS results due to several reasons cannot be extrapolated to a specific region or to the country. It is therefore even more worrying that these figures are being used in the Impact Assessment for a kind of an evaluation of the soil situation in the Member States.

This implies that the baseline assessment of the "health status" of soils by MS is unlikely to match with that of the EC.

PORTUGAL

General comments

The current proposal for a Soil Monitoring Law Directive creates the momentum for Member States to mainstream soil into agricultural and environmental policies, particularly when the EU law is shifting to achieve the sustainable development goals of the 2030 Agenda namely to reach climate neutrality by 2050.

The proposed Directive also accounts for some flexibility to accommodate national and regional circumstances and provides the possibility of adding to a monitoring framework, specific national indicators that can be defined beyond the mandatory ones.

It is cautious in proposing a step-by-step approach, foreseeing, in a first phase, the knowledge to be acquired on soil health with harmonised and comprehensive monitoring throughout the EU.

It aims to establish a methodology for assessing soil health, as well as an intervention strategy for achieving healthy soils by 2050. The possibility is also given to each Member State to amplify its ambition.

By the end of this process, soil, water, and air will be equally protected by the European Legal Framework. This is particularly relevant when it comes to aid decision making and define strategies to be implemented to protect soil health and, in doing so, protect the other two resources.

DIRECTIVE	THEME	COMMENTS
Article 2 - Scope	Scope	No reference is made to the outermost regions. Considering their specific geographical location and the related difficulties/specificities, are any special/exceptional adjustments expected?
Article 3 - Definitions	Definitions	For the sake of clarity, we propose adding the definition of artificialization with the maximum of detail.
	26. Definition of soil remediation	(26) *Soil remediation means a regeneration action that reduces, isolates, or immobilizes contaminant concentrations in the soil.* It's important to ensure that the calculated risk is acceptable for human health and the environment.
Article 4 – Soil districts	Districts definition	We agree that the Member States should establish soil districts, given the territorial specificity of each country. In Portugal, there are considerable regional differences in soil and climatic conditions, as well as farming systems that must be considered when defining the soil unit. So, we must go beyond NUTS II to define soil districts. To achieve the proposed target a very large number of "districts" would have to be established, which would create a very high administrative burden and a high number of soil health monitoring points to be defined for each district, considering the proposed statistical representativeness criteria. On the other hand, given the difficulty of establishing totally homogeneous "soil districts", especially in terms of soil typology, it is difficult to apply realistic thresholds for each district. In our perspective it still requires further scientific support and baseline data to determine it, which we currently don´t have. Future discussion is needed to find the best compromise between what is feasible and what would be the best delimitation in terms of scientific evidence.

		Also, at national level and particularly on “soil pollution/prevention”, we consider a combination of land division (registered parcel/plot/site limit) with the approved or foreseen soil/land use as defined.
Article 5 – Competent authorities	“*Member States shall designate one competent authority for each soil district established in accordance with Article 4*”	We foresee difficulties in this designation at a regional/district level. The competences and the boundaries of these authorities should be object of further clarification and discussion.
Article 8 – Measurements and methodologies	1 & 2. Assessment of land take and soil sealing	(1 & 2) The use of data sources from Member States should be allowed, as long as they ensure estimates of equal or greater accuracy than LUCAS. Usually, sources such as cadastral data and land cover/land use maps have full coverage and avoid estimation based on point samples, such as that provided by LUCAS.
	5. Frequency of assessment of land take and soil sealing indicators	(5) We believe that the measurements should be performed every three years (i.e., a different frequency than that currently proposed: at least once a year). We consider that the changes in land cover/land use comprised by land take and soil sealing are not significant in short periods, namely because they have been decreasing in some countries in recent years.
	5. New soil measurements	(5) New soil measurements within 5 years frequency requires a great effort/resources from Member States, considering that LUCAS provides up to 20% of the sampling. We foresee the need for new funding programs to implement monitoring.
Article 9 - Assessment of the soil health	3. Values for the soil descriptors	The quantification of the loss of ecosystem services due to land take and soil sealing is considered optional in part D of Annex I, which seems inconsistent with Article 9 (paragraph 3) of the proposal, which states that "Member States shall analyse the values of land take and soil sealing indicators (...) and assess their impact on the loss of ecosystem services and the objectives and targets set out in Regulation (EU) 2018/841".

Article 10 – Sustainable soil management	1(a). Defining sustainable soil management	1(a). This task is highly demanding to MS, requiring previous evaluation and definition of regeneration practices towards non-healthy soils. This is of great complexity and requires legal accommodation in terms of spatial planning laws, harmonization with strategic plans and other programs.
	1(b). Defining soil management practices	1(b). We seek further clarification on the gradual implementation of the soil management practices.
Article 15 - Risk assessment and management of contaminated sites		The management of contaminated sites and the identification/investigation of potentially contaminated sites requires a great effort/resources from Member States. We foresee the need for new funding programs to implement these assessments.
	1.	Please see comments regarding annex VI.
	Annex I –soil descriptors, criteria for healthy soils…	
PART A		
	Soil loss threshold	It would be beneficial to consider the regional specifies of Member States. The threshold of 2 t/ha per year is very high for the Mediterranean environment, because the soil formation rate is also slower. Therefore, we propose the maximum value of 1 t/ha year.
PART C		
	Loss of Soil Biodiversity	The indicator for biodiversity loss is the soil basal respiration, however, it only measures abundance. At least one more parameter for measuring biodiversity should be mandatory.
	Annex VI – Phases and requirement for site-specific risk assessment 1.	For EU harmonized risk assessment methodology, regarding the identification of contaminants present at the site, we suggest including at least the soil descriptor - concentration of heavy metals and organic contaminants, included in Annex II Part B.

SWEDEN

Written comments

Following the call for submitting questions and comments and the exchange at the WPE on 27 July 2023, Sweden would like to put forward the following comments and questions on the Commission proposal on Soil Monitoring and Resilience (Soil Monitoring Law). SE is still analysing the proposal and has a general scrutiny reservation.

SE consider soil as an important resource that needs to be protected and that is threatened in places, to the detriment of climate, biodiversity, human health, food production and circular economy. The many ecosystem-services soil can provide need to be maintained. As an example, healthy soils improve the ability of soils to function as a carbon sink and contributes to the long-term production of food and forest products.

Nonetheless, the Swedish government is hesitant about the need for common Union-legislation.

SE is concerned that this proposal may incur disproportionate costs in relation to its benefits. It is important that the proposal for a soil health monitoring directive gives a clear added value and that it enables cost-effective implementation with enough flexibility to make national and regional adjustments. It is for example important that a proposal does not impose on the distribution of powers in relation to physical planning and that local self-government and the municipal planning monopoly is respected. It is important that a proposal do not hinder a further expansion of housing and other necessary community development and takes into account the frames soil and nature types are setting. SE recognises the Commission's intention to create a flexible proposal but observes that certain requirements seem unnecessarily or disproportionally rigid, particularly concerning monitoring and the descriptors for soil health. SE seeks clarification from the Commission on if and how a risk-based approach for monitoring of soil health could have been incorporated in the proposal? This since such an approach could be a way of reducing the administrative burden and improving the cost-effectiveness of the proposal.

SE observes that the proposed directive and the knowledge and the assessments that it is founded on mainly focuses on soil health issues in agriculture. Sweden's total agricultural area is around seven percent, with around ten times more forested than agricultural land. Overall, the proposal needs to be more flexible to be relevant for forest conditions both in terms of descriptors and acceptable values as well as the time between recurring samplings.

It's also very important that the proposal harmonizes with other EU-directives and regulations.

Soil health descriptors and soil districts

Some initial comments and requests for clarification are outlined below.

Scale of the monitoring framework

SE would like a clarification on the number of soil sampling points and the scope of the monitoring framework, as well as on how the proposal will consider vast areas of e.g. forest and mountains within the monitoring framework. SE sees a general need for flexibility and possibilities for differentiation in terms of scale, methods and number of samples. The scale of this framework and the connection between soil health assessments and potential restoration measures at a later stage is unclear. According to the Commission's impact assessment, a total of 216 000 soil samples would be sufficient to cover the surface of Europe, but to successfully utilise soil health assessments to determine the need for relevant local measures, the sampling density would need to be very much higher, to a higher cost. Therefore, the question is how this proposed sampling density will relate to potential soil health improvement activities. SE would also like a clarification on why monitoring should be carried out in nature types where no actions will be available for changes, such as semi-natural pastures.

Soil districts

SE is concerned that the proposed soil districts might be difficult to establish and that the costs will be high, especially due to large areas of forest and mountains and the low number of inhabitants per square kilometre.

Exemptions for military areas

SE sees a risk that the proposal may prevent the expansion of total defence. SE therefore sees a need for both exemption of military areas used for military defence (training and exercise areas) and exemption for the military and civil defence areas from soil districts and soil monitoring requirements. The proposal contains several articles stating that public access to data on soil health and contaminated sites will be required. This includes data (national data as well as data collected by European agencies) to be included in the EEA soil portal, and data included in the registry for contaminated sites. These requirements mean that military areas need to be exempted from the monitoring requirements, as such data cannot be made publicly available.

Descriptors

SE questions the need for monitoring all descriptors in all soil districts. We see a need for added flexibility not to monitor descriptors that can, a priori, be considered irrelevant within a soil district. An example for Swedish conditions would be salinisation, which does not constitute a threat to soil health apart from a few areas, where this parameter could be included. Such flexibility would help establish a less rigid and more widely accepted monitoring framework at a lower cost.

Differentiation of the monitoring requirements according to relevance

The proposed descriptors are primarily relevant for assessment of soil health on agricultural land and are, at least partially, not well suited to forest conditions. Also, some of the descriptors for agricultural soils are badly suited to Swedish conditions. An example is the

descriptor for loss of soil organic carbon. The proposed criterion for this parameter would mean that vast areas of highly fertile, but clay rich, Swedish soils would be subject to considerable efforts to improve soil organic carbon, which would not serve soil health purposes. We would welcome the possibility of a further discussion on flexibility for the parameters to suit Swedish conditions.

Need for exemption due to naturally occurring background concentrations and diffuse deposition

SE seeks clarification on whether exemptions from the soil health assessments will be made for naturally occurring high concentrations of substances when setting the intervals for these parameters. Exemption of such areas are mentioned in the impact assessment, but not in Annex I to the proposal. SE considers this matter to be of high importance since there is a risk that large areas of soil are classified as unhealthy where in fact natural conditions are the cause. This may complicate soil health assessment, assessments of contaminated sites as well as land development. This applies also to diffuse deposition of airborne substances, especially in forest soils.

The role of LUCAS in the monitoring framework

LUCAS sampling is already performed in member states without a legal basis. SE would like to understand the consequences of not entering a legal agreement regarding LUCAS, and whether this would in fact mean that LUCAS activities are ceased in this member state.

Management of contaminated sites

SE would like clarification on how meeting the soil health requirements in terms of descriptors will be evaluated against meeting the risk reduction criteria. Contaminated sites are part of the soil districts, but it is not clear how the assessment of contaminated sites relates to the assessment of soil health in the soil districts. Where risk reduction measures are applied which do not aim to reduce the level of contamination, a risk to soil health would remain for those sampling points represented by the contaminated site. SE also seeks clarification whether general requirements for the remediation of contaminated land will apply in cases with ongoing polluting activities. SE questions the need for this, unless there are reasons for remediation according to the supervisory authority.

Sustainable soil management

SE observes the possibility of positive synergies with for example the nitrate directive, the nature restoration law, the water framework directive and LULUCF. At the same time, several of the principles for sustainable soil management coincide with similar principles within other legislative acts and directives. SE seeks clarification about where the differences are that motivates this concurrence, especially as regards the Good agricultural and environmental conditions (GAEC) described in Annex II of Council Regulation No 1306/2013. Possible relevant actions concerning sustainable agriculture are already introduced by the common agricultural policy and action plans within the Water frame

directive and the Nitrate directive. It is important to ensure a clear added value of the proposal and to avoid overlap between different regulations.

SE considers the sustainable soil management principles to be more relevant for agriculture than for forestry and other activities. SE therefore sees a risk that the impact assessment underestimates the national current and future costs for society in relation to adjustments to sustainable soil management principles.

Stage 2 and potential future requirements for soil restoration measures
The proposal states that measures regarding restoration of soil health may be required following the Commission's review of soil health data, six years after the directive is adopted. SE would like the Commission to clarify how this process will be carried out. It is imperative that the member states have a part in this process and that other legislation and established action plans should be taken into consideration.

Soil health certificates
SE seeks clarification on how voluntary soil health certificates are meant to be used for different land uses. For contaminated sites, the information on the certificates could fill the purpose of retaining information on risk reduction measures for the future. SE questions the added value of soil health certification for other land uses, such as forestry, agriculture or natural land, in particular considering Sweden's geography and population distribution.

Penalties
SE seeks clarification on whether the penalties in article 23 should be interpreted as administrative financial penalties or criminal penalties (or both). The drafted article 23 (2) designates turnover as the basis for calculating fines, which is not compatible with the Swedish criminal justice system. SE identifies a number of potential issues related to article 23 and would like to see a revision of the article in line with the wordings of the agreed general approach of the IED.

DENMARK September 15th 2023

Questions on the proposal for a Directive on Soil Monitoring and Resilience (Soil Monitoring Law).

Comments and proposals following the informal VC of the WPE on 27 July 2023.

Comments for the introduction and the preambles:

P. 13: "(…) *it is proposed that the Commission will carry out an analysis (…). This analysis will be based on exchanges with the Member States and interested parties, and will take into account the conclusions of the assessment of soil health, the progress on sustainable soil management and the advancement of knowledge on the criteria for the descriptors of soil health.*"

Comment: It is unclear how the "*progress on sustainable soil management*" should be assessed as well as the administrative burden for MS. How should MS evaluate the development of sustainable land-use and soil management practices? Will MS be obliged to carry out a baseline for this parameter before the directive enters into force, in order to document the progress on sustainable soil management?

P. 13: "*To further reduce the administrative burden, the proposal does not require Member States to create any new programs of measures for sustainable soil management or regeneration. In addition, it draws as much as possible on digital and remote sensing solutions.*"

Comment: According to Denmark's initial assessment of the proposal, many of the "criteria for healthy soil condition" defined in Annex I (and the methods in Annex II) cannot be measured with remote sensing but only with soil samples. Can the Commission please elaborate on which of the parameters should be measured with remote sensing? It would be helpful to specify in Annex II, the method overview, where MS are expected to apply "remote sensing solutions".

P. 22-23 (24) on Soil districts "*There should be a minimum number of soil districts in each Member State taking into account the size of the Member State. This minimum number of soil districts for each Member State shall correspond to the number of NUTS 1 territorial units established in Regulation (EC) No 1059/2003 of the European Parliament and of the Council.*"

Comment: Can the Commission elaborate on the definition and purpose of soil districts? In the preambles, it is stated that the minimum number soil districts shall correspond to the number of NUTS 1. But in article 4, it is also stated that MS shall seek homogeneity on four parameters including soil type within each soil district. NUTS are geographical divisions, but soil types and other parameters can vary substantially within geographical areas. The COM may also elaborate on how the construction and number of soil districts can impact the amount of soil sampling points needed to meet the requirement of a maximum percent error of 5 percent.

P. 23 (28) on certification "*in order to create incentives, Member States should set up mechanisms to recognize the efforts of landowners and land managers to maintain the soil in healthy condition, including in the form of soil health certification complementary to the Union regulatory framework for carbon removals (…)*"

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Comment: The Commission's proposal on a regulatory framework for certification of carbon removals has not yet been adopted. Furthermore, methods and procedures for certification will be established in delegated and implementing acts after the regulation enters into force. It would be helpful to learn more about the Commission's expectations on how such a voluntary soil health certification framework should be established and monitored in coherence with the carbon removal certification.

P. 23 (29): *"Some soils have special characteristics (…). Those characteristics should be taken into account in the context of the definition of healthy soils and the requirements to achieve healthy soils condition."*

Comment: The Commission is requested to elaborate on *how* soils "with special characteristics should be taken into account".

P. 24 (32) "(…) *For that purpose, the LUCAS Programme shall be enhanced and upgraded to fully align it with the specific quality requirements to be met for the purpose of this Directive."*

Comment: The Commission is requested to elaborate on the directive's impact on the LUCAS Programme. It is not clear whether an enhancement and an upgrade of the LUCAS Programme would entail more or different monitoring parameters, or an increase in the number of soil samples?

P. 24 (34) *"(…) the Commission should establish a digital soil health data portal (…)"*

Comment:
Can the Commission elaborate on whether the data platform will contain effects of "sustainable soil management practices" or merely focus on current soil health data and statuses?

P. 26 (40) "(…) *in particular its living labs and activities to support soil monitoring, soil education and citizen engagement."*

Comment: Can the Commission elaborate on whether living labs are expected to "support soil monitoring"? Will the Commission publish the latest results from the living labs and lighthouses on a joint platform?

Comments on articles:

Chapter	Article	Questions and comments
1 - General provisions	3 (1)	'Soil' is defined in the proposal as the top layer of the Earth's crust situated between the bedrock and the land surface. With this definition of soil, the vertical extent and level of monitoring can be massive depending on MS geographical position. Will the Commission (COM) consider changing the definition to the top layer of intact soil that has not been affected by human or cultural (anthropogenic) activities, and the land surface – or explain why not? Sediments or glacial deposits are usually and geologically not considered "bedrock", but still form the substrate from which soil is formed. COM may consider including sediments etc. in the definition of substrates for soil formation, similar to "bedrock".
	3 (2)	Funghi represent an important part of the living components of soil ecosystems. Are funghi covered by the term "micro-organism"?

	3 (3)	COM may consider including "environmental" benefits apart from economic, social and cultural benefits, when describing ecosystem services.
	3 (5)	Is the word "enhance" to be understood quantitatively or qualitatively or both? COM should consider that an increase in ecosystem services does not necessarily support an increase in soil health.
	3 (10)	What is meant by "point-source anthropogenic activities". Is it activities causing emissions and a diffuse pollution to a large, but delineated area (proximity pollution) or solely the activities e.g. on an industrial site and the resulting on-site soil contamination on the industrial site? What is COM's definition of "potentially contaminated sites" as used in art. 12?
	3 (11)	Shouldn't it be "and/or" , when physical, chemical "and" biological characteristics are listed?
	3 (13)	Physical "and/or" biological cover?
	3 (14)	How is "substantially modified" to be understood? What is considered "primary ecological functions"?
	3 (15)	What is meant by "ecological assemblages"?
	3 (14-16)	Should it generally be "soil" instead of "land" in all these definitions?
	3 (19)	A definition of "soil degradation" is needed, e.g. as the contrary to "regeneration" cf. 3 (22), (where "degraded" however is used already and also lacks a definition)?
	3 (20)	""soil contamination" means the presence of a chemical or substance in the soil in a concentration that may be harmful to human health or the environment". Are naturally high concentrations of chemical substances, e.g. cadmium or other natural occurring metal, considered soil contamination or does the concentration have to be caused by human anthropogenic activity to be considered soil contamination? What is the difference between "chemical" and "substance" – why are both needed?
	3 (21)	In relation to 3 (20) it seems like a circular definition of "contaminant". Are naturally high concentrations of a substance in soil considered a contaminant or does the contaminant have to be deposited as a result of human anthropogenic activities?
	3 (25)	"information" should be deleted, as it does not define "geographically explicit". Consider replacing "it" with "the information".
	3 (26)	Does the definition of "soil remediation" also apply to occurrences of naturally high concentrations/background values or diffuse pollution of chemical substances considered as soil contamination or does "soil remediation" measures only apply to point-source pollution caused by human or industrial activity on delineated areas?
	4	What is the overall purpose of the soil districts? The proposed geographical division of districts by NUTS1 may conflict if MS are to implement the parameters given in article 4. Also, the purpose and benefits of having soil districts is unclear when it is not reflected in the criteria presented in Annex I. It would be relevant to be able to modify the criteria depending on the biogeophysical and climatic conditions, as it is broadly outlined in Article 4, to define the soil districts.

	4 (2)	Is it possible to use national soil type systems when defining soil districts as an alternative to (a) the World Reference Base for Soil Resources (FAO)?
2 - Monitoring and assessment of soil health	6	"*MS shall monitor soil health and land take in each soil district*". Soil districts are not reflected in the methodology described in Annexes I and II. The Commission is requested to elaborate on the obligations laid out in article 6 and why it is relevant to monitor within soil districts as per se. "*The Commission shall, subject to agreement from Member States concerned, carry out regular soil measurements on soil samples taken in-situ (…)*": it is unclear whether this corresponds to the already existing collection of data that takes place under "LUCAS", or whether it is a new initiative and thus additional data that can be pooled with LUCAS data and nationally generated data? It is unclear what 6.6(c) "*relevant soil remote sensing data and products*" entails. Reference is made to article 6.5, but this also does not specify what data is referred to. 6.6 (a) refers to Article 8(2) which contains data regarding land take and soil sealing, so it is unclear what additional data is referred to in this 6.6(c)?
	7	Is it correctly understood that the descriptors presented in Annex I part C and D are optional for MS to monitor? Will data related to land take and soil sealing be optional for MS to report? It seems that the proposal does not include any definite requirements for MS to report land take data, since land take only appears in part D which is referred to in art 7(5) as optional.
	8	How does the directive ensure that no additional monitoring requirements are imposed on MS compared to the existing obligations following Regulation 2018/1999, Annex V, Part 3 "Methodologies for monitoring and reporting in the LULUCF sector"?
	9(2)	Is "unhealthy" soil to be understood as "degraded soil"? Does soil health status have to be assessed at soil district level or per monitoring point?
	9(4)	Do all soils at all monitoring points within a soil district have to comply to all quality/health parameters, set in the annex I in order to be considered "healthy"? What is meant by "areas in each soil district" – do districts have to be subdivided and monitoring stations be assigned to certain "sub-districts", to which they are considered representative for?
	9 (5)	Which obligations will Member States have in setting up a voluntary certification system for healthy soils? And how will this certification framework interact with the certification framework for carbon removals?
3 - Sustainable soil management	10	It may be difficult to monitor short-term effects of management on the soil health parameters, and therefore difficult to fulfill the requirements on sustainable soil management. Does the Commission expect the living labs to contribute to the implementation of these requirements (art. 10(1,2,3), and if so, how?

4 - Contaminated sites	12	Does Chapter 4 only apply to point-source contamination caused by on-site contamination opposed to diffuse pollution/proximity pollution caused by e.g. "point-source anthropogenic activities", transport, transboundary airborne emissions or agricultural spreading on large areas (slurry, manure, mineral fertilizers, sludge pesticides etc.)? How does the rules laid out in chapter 4 interact with EU regulation on industrial emissions and use of substances for improving agricultural soil that is adopted to prevent contamination and risk for human health and the environment?
	12 (1)	To what extent are MS expected to manage "potentially contaminated sites"? Does 12(1) contradict 12 (2 c) if potentially contaminated sites are not to be managed?
	12 (2)	Does the phrase "Member *States shall establish a risk-based approach*" mean that within 4 years, member states should have a established an administrative basis for a risk-based approach (12 2. (a)-(c)? If yes, how does that correlate with the time frame for drawing up a register within same timeframe (art. 16 1.-2., Annex VII) and the timeframe of 7 years for registering potentially contaminated sites (art. 13 3.)? Is the COM of the opinion that the polluter-pays principle should come before a risk-based approach? For information, in Denmark it is estimated that app. 20.000 sites (excl. PFAS sites) still need to be registered after 30 years of registering potentially contaminated sites. Today app. 40.000 potentially contaminated and contaminated sites are registered.
	13 (1)	How does the systematic and active identification of *"all sites"* and evidence from "*all available means*" interact with a risk-based approached to the identification of potentially contaminated sites (art. 12 2. (a))? Does this step in identifying potentially contaminated sites include a full report on environmental and historical research, past industrial incidents and accidents, environmental permits, and notifications by the public or authorities?
	13 (2) (a)-(g)	Guidance on minimum limits is needed e.g. in regards to minor oil-spills from cars in driveways or instances where the polluter-pays principle does not apply. Does COM intend to provide guidelines? Are the criteria in prioritized order? How does COM relate the criteria 13 2. (e)-(g) with a risk-based approach (art. 12 2. (a)), and how does COM limit the scope of the criteria in art. 13 2. (e)-(g)? Shall the criteria in art. 13 2. (e)-(g) be viewed as a sub-criterion under the criterion in art. 13 2. (a)?
	14 (1)	How is the level of investigation defined since it is stated that "*all potentially contaminated sites identified in accordance with Article 13 are subject to soil investigation*"? Is historical research and the identification of potentially contaminated sites sufficient to exclude an identified site (acc. Art. 13) from further investigation (fieldwork, soil-sampling) and how does it interact with a risk-based approach (art. 12)? Should all potentially contaminated sites be investigated or only those that are assessed to pose a risk e.g. to human health, surface water, groundwater or protected nature?
	14 (3)	Will COM illustrate by examples what is meant by "specific events" and how does this paragraph interact with the polluter-pays principle?

	15	After 30 years of registration and investigation of historical contaminated sites (a risk-based approach) in Denmark, the task of investigating potentially contaminated and remediating contaminated sites (applies to point source pollution, not diffuse or proximity pollution) under the current financial situation is predicted to last until at least year 2084, while monitoring the effects of preventive measures and operating technical facilities would last even longer. With time new knowledge and pollutants will emerge, e.gPFAS contaminated sites, and will add to the complexity of reaching an end to the task at hand. To advance the task additional financing will be needed on a yearly basis. What financing possibilities will COM make available for MS to advance the task?
	15 (3-5)	How does the responsibilities of the competent authorities interact with the polluter-pays principle?
	16 (5)	What is the timeframe for COM to adopt implementing acts establishing the format of the register?

Comments on annexes:

Annex	**Article**	**Questions and comments**
I – Soil descriptors	Part A	It is suggested to consider a method that, to a greater extent, will allow MS or soil districts to monitor the most relevant soil descriptors. This is given the argument that some parameters/descriptors do not pose a risk/relevance in the respective MS or within soil districts. Furthermore, COM is encouraged to consider diversified criteria that reflect the respective geophysical and climatic conditions of the MS. How should cities etc. be considered in the long-term vision that *all* soils must be in a healthy condition by 2050? In Annex I, Part A, under the column "Land areas that shall be excluded from achieving the related criterion" cities etc. are not mentioned. But one must assume that it is not possible to achieve "healthy soil" (which meets the Annex I criteria), in e.g. cities under buildings and asphalt etc. that are subject to soil sealing. Potentially, the only way to achieve healthy soils here would be by "reverse land take", but is this desirable? Should these areas be written in the annex as excluded areas from the criteria? How are “badlands” and “significant disaster risk” defined/to be understood?
	Part B	As noted in relation to part A, criteria should consider the respective geophysical and climatic conditions of the MS. In regards to the descriptor *soil contamination:* - Does the health criterion need to be set according to the current land use status for the geographical site of the sampling point? - Should MS set criteria for soil used for agriculture and the transfer of contaminants to plants, transfer of contaminants to drinking water, transfer of contaminants children etc., since there is no exclusion of land areas? - Will the monitoring apply to diffuse pollution or also point source contamination, since there is no land area exclusion?

		- Will COM provide guidance on how the text in the column "Criteria for healthy soil condition" should be understood and used when establishing criteria for healthy soils?
	Part C	What about approved/certified pesticides and regular fertilizers (both chemical and organic) – they could be interpreted as "substances that may harm human health or the environment"
	Part D	The methodology for monitoring land take is not clearly defined. Should it be monitored with the satellite measurements (LUCAS Copernicus)? Could be clarified.
II – Methodologies	Part A	The low uncertainty ("*maximum error of 5% for the estimation of the area having healthy soils*") could potentially result in an unnecessarily high number of sampling points and consequently high costs for MS. Must soil sampling be used or can modeled assumptions of the soil parameters be used/ include the use of extrapolated data? The Commission is requested to elaborate on the methodology for determining sampling points. When must the soil samples be taken? May soil data (meeting the methodology listed in Annex I) which is collected before the directive enters into force be used to carry out the soil monitoring? Or should new samples be taken? Can soil sampling be distributed over the years or should they all be sampled in one specific year before reporting?
	Part B	In regards to the descriptor *soil contamination,* COM does not include relevant methods for measuring heavy metals in soil contamination which can hinder data comparison between MS.
III – Sustainable soil management principles	–	What is the purpose of the suggested principles in this proposal? The Commission is requested to specify how MS are supposed to apply the principles. (h) Should trees not be included as plants? (g) Why are forest soils excluded – does it not make sense to maintain landscape features on hilly/mountainous sites, which often are covered by forest? (l) What type "(soil) functions" is referred to?

CZECH REPUBLIC

Comments on the Proposal for a Directive of the European Parliament and of the Council on Soil Monitoring and Resilience (Soil Monitoring Law)

14 September 2023

Main comments:

Scope of the directive

Under Article 2, the directive is supposed to apply to all soils in the territory of Member States. Similar result arises from definitions of "soil" combined with definition of "land", which is defined as follows – *"'land' means the surface of the Earth that is not covered by water."* Therefore, soil health is supposed to be monitored (Article 6(2)) in case of all soils under the surface of the Earth except for the surface that is covered by water.

Such a scope also applies to soils under the land that has already been object to land take, including the land with sealed soil. However, we do not agree that the soil health monitoring obligation should also apply to sealed soils. The reasons for exclusion of sealed soils from monitoring of soil health are following:

- The objective of the directive proposal is to achieve healthy soils by 2050 so that the soil can supply multiple ecosystem services. However, sealed soil lacks basic ecosystem value and supplies no or very little ecosystem services, as stated in communication "EU Soil Strategy for 2030" (COM (2021) 699 final) of 17 November 2021 (sub-chapter 3.2.2). Therefore, the health of sealed soil is of (almost) no relevance with regard to meeting the objective under Article 1.
- Measurement of soil health in sense of Article 8(2) in case of sealed soil, as well as implementation of regeneration practices on unhealthy soils that are sealed, would be (with regard to current state of technological progress) difficult to realize, if not impossible.

We understand that land with sealed soil cannot be excluded from the definition of "land" in view of "artificial land" definition, nevertheless we believe that once the definition of "soil sealing" is included into Article 3 (see the comment below), Article 4(1) could be modified in the way that soil districts are not established on the land with sealed soil. As a result, the obligation to monitor soil health and land take (which, by definition, cannot happen on land with sealed soil, because such land has already been taken) under Article 6(2) would not apply to land with sealed soil.

In case that aforementioned proposition would be found inappropriate, we propose that land with sealed soil to be included into soil districts, however as a separate district. Then Article 6(2) could state that soil health and land take shall be monitored in each soil district, nevertheless for the purposes of monitoring of soil health the district containing land with sealed soil would be excluded. That would probably have an impact into minimal number of soil districts under Article 4(1), that would newly have to be calculated as follows: number of NUTS 1 + 1.

Emphasis on flexibility and subsidiarity – soil descriptors

We understand Article 9(1) in the way that the soil health is determined by values of soil descriptors under Part A and B of Annex I. In case that one single value of these soil descriptors is not met, soil is considered unhealthy under Article 9(2) – so called "one out – all out" principle.

Firstly, the Czech Republic does not consider the "one out - all out" principle appropriate, as it represents a legal fiction (and a strict one) rather than an objective assessment of soil health. The Czech Republic demands clarification why Commission has chosen this principle, instead of for instance majority principle (majority of soil descriptors' values are not met, and hence soil is considered unhealthy).

Secondly, the Czech Republic is of the opinion that the monitoring of some soil descriptors enumerated in Part A and B of Annex I (e.g. electrical conductivity to determine salinization) may represent an excessive administrative and financial burden for Member States. For this reason, the Czech Republic proposes to examine whether all soil descriptors enumerated in Part A and B of Annex I are necessary to determine soil health and whether their monitoring is proportionate to the objective of the directive.

Similarly to paragraph above, the Czech Republic proposes to examine whether it is necessary to monitor the descriptors enumerated in Part A and B of Annex I in case of all soil types, among which there is a great variability in terms of soil degradation aspects (e.g. forest soils in the Czech Republic are not threatened by soil salinization or soil erosion). Targeting the soil descriptors to specific soil types would result in significant cost savings.

Finally, the Czech Republic proposes that the values of soil descriptors under Part A of Annex I be set at national level (instead of EU level), since values of these soil descriptors are supposed to reflect specific characteristics of the territory concerned, including soil and climatic conditions, existing agricultural conditions, farming practices, size and structure of undertakings, land use and other specifics. We are aware that "EU Soil Strategy for 2030" states: "*While there is a big variety in the EU, soils also present a set of common characteristics. This makes it possible to define common ranges or thresholds beyond which soils cannot be considered healthy anymore.*" However we would like to put emphasis on wording "common ranges or thresholds" which, in our opinion, does not imply setting of strict values that cannot be exceeded. We are convinced that the approach proposed by the Czech Republic is fully compliant with subsidiarity principle and in addition to that it softens the eventual harshness of "one out – all out" principle.

Emphasis on flexibility and subsidiarity – monitoring of soil health

The Czech Republic prefers to make maximum use of monitoring systems already existing at national level (monitoring of agricultural land and forest land) instead of introducing new systems. It hopes that implementing act under Article 6(8) will give Member States enough flexibility to do so.

Moreover, the Czech Republic suggests considering the fact that different soil types have different dynamics of development (e.g. characteristics of forest soils have a high inertia, and therefore the measurement of soil health every 5 years is, in this case, unnecessarily frequent). For this reason, it would be appropriate and cost-effective to differentiate the measurement period under Article 8(5) according to the different soil types.

Soil erosion

The Czech Republic strongly disagrees with determination of the permissible soil erosion rate at 2 t/ha/year.

The value of 2 t/ha/year is evidently based on the map of agricultural areas in Europe under erosion risk. This map is in stark contrast to more detailed maps of current soil loss made at national level, which were processed using locally adjusted methods and based on the most locally up-to-date input data. Although the map is useful when comparing the intensity of erosion between individual regions, it is completely misleading on a national scale. As for chosen methodology, the Czech Republic sees as problematic the inclusion of all relevant erosion processes, such as erosion by water, wind, harvest and tillage, especially if this assessment were to be carried out within the Czech Republic as a whole.

The Czech Republic further objects that it is not clear for which land type the value of the soil erosion rate is intended (if all soil districts are to meet the given value, or if it is an average value for the entire Czech Republic). With regard to the text mentioned above, it is impossible to assess what effects the given value of the soil descriptor could have e.g. on agricultural production. The Czech Republic therefore calls on the Commission to determine the exact calculation methodology, especially with regard to the input data.

Definition of "soil sealing"

The term "soil sealing" is used extensively in the text of the directive proposal, often side by side with the term "land take". But unlike "land take", the term "soil sealing" is not defined in Article 3 and it is not entirely clear to what extent it differs. The general understanding of the term "soil sealing" is following – a form of land take where the surface is covered with impermeable material (mostly for the purpose of construction and infrastructure). We believe that Article 3(16) would have to be modified if the definition of "soil sealing" were included into Article 3.

Land takes issue

The Czech Republic perceives the unbalanced nature of the directive proposal. On the one hand, the proposal contains a very extensive regulation of soil quality protection, which goes far beyond the existing national regulation. On the other, the issue of area-based soil protection (against land takes and soil sealing) is dealt with in a single provision, even though land take is probably the highest form of soil degradation, which in some cases (especially in the case of soil sealing) results in the permanent loss of soil productive and non-productive functions.

The Czech Republic notes that the directive proposal has largely abandoned the implementation of the EU Soil Strategy for 2030, as regards the objectives of area-based soil protection or certain principles expressed there. The directive proposal does not include the objective to achieve no net land take by 2050, although the EU Soil Strategy for 2030 explicitly mentions it in Chapter 2 and stipulates that the future legislative proposal will enable this objective. Likewise, the Czech Republic assumes that the EU Soil Strategy for 2030 in the extent of land take hierarchy was not fully reflected in Article 11.

For that reason, the Czech Republic proposes following modifications:

"Article 1

Objective and Subject matter

1. *The objective of the Directive is to put in place a solid and coherent soil monitoring framework for all soils across the EU and to continuously improve soil health in the Union with the view to achieve healthy soils by 2050 and maintain soils in healthy condition, so that they can supply multiple ecosystem services at a scale sufficient to meet environmental, societal and economic needs, prevent and mitigate the impacts of climate change and biodiversity loss, increase the resilience against natural disasters and for food security and that soil contamination is reduced to levels no longer considered harmful to human health and the environment.* ***The Directive also establishes a framework for achieving the objective of no net land take by 2050.***

2. *This Directive lays down measures on:*

   (a) monitoring and assessment of soil health;

   (b) sustainable soil management;

   (c) contaminated sites."

– – – – –

"Article 11

Land take mitigation principles

Member States shall ensure that the following principles ***of land take hierarchy*** *are respected* ~~*in case of land take*~~*:*

(aa) avoid land take and soil sealing as much as possible and preferably use land with sealed soil;

(a) *avoid or reduce as much as* ~~*technically and economically*~~ *possible the loss of the capacity of the soil to provide multiple ecosystem services, including food production, by:*

   (i) reducing the area affected by the land take ~~*to the extent*~~ ***as much as*** *possible and*

   (ii) selecting areas where the loss of ecosystem services would be ~~*minimized*~~ ***minimal*** *and*

   (iii) performing the land take in a way that minimizes the negative impact on soil ***and***

   (iv) performing the land take in a way that minimizes the negative impact on soil management by soil managers and

   (v) prefering time-limited land take and performing land rehabilitation upon the termination of the land take so that the soil would regain its capacity to provide ecosystem services;

(b) compensate as much as possible the loss of soil capacity to provide multiple ecosystem services."

Note: New letter (aa) in Article 11 combines step 1 and 2 of the land take hierarchy presented by EU Soil Strategy for 2030. Term "technically and economically" used in letter (a) unduly weakens the message of the letter (a), and therefore we propose its deletion. We further propose to replace the term "to the extent" in letter (a) point (i) by "as much as possible", which is much clearer. As for letter (a) point (ii), we propose to replace the term "minimized" with term "minimal", because it corresponds more to the idea that soil providing less ecosystem services should be preferentially taken. We admit that newly proposed point (iv) in letter (a) does not arise from EU Soil Strategy for 2030, however we consider this as one of the key principles in area-based soil protection and as a friendly gesture towards soil managers, and this is why we propose to include it into letter (a). Finally, point (v) in letter (a) represents another important principle of area-based soil protection that was derived from the need to reuse excavated soils mentioned in sub-chapter 3.2.1. of EU Soil Strategy for 2030.

In relation to modifications mentioned above, definitions of "reverse land take" and "net land take" would need to be transferred from introductory paragraph in Annex I to Article 3 among other definitions. Furthermore, definition of the term "rehabilitation" would need to be included. We propose the following: *„rehabilitation" means the treatment of the land in such a way as to restore the land to a satisfactory state, with particular regard to soil quality, wild life, natural habitats, freshwater systems, landscape and appropriate beneficial uses.* This definition was derived from the definition contained in Article 3(20) of the Directive 2006/21/EC on the management of waste from extractive industries.

<u>Implementation costs to be minimised</u>
The Czech Republic assumes that in all areas targeted by the directive (in particular the determination of soil districts, soil health and land take monitoring and regeneration practices), it will be possible and desirable to use, develop or build on already established instruments to the maximum extent.

Furthermore, the Czech Republic finds the wording of Article 17 a slightly too vague, that is why it suggests clarification of the provision in terms of extent of financial participation by the EU. Moreover, the Czech Republic proposes to expand the exhaustive list of co-financed activities under Article 17, either by changing the exhaustive list to a demonstrative list, or by inclusion of new institutions, e.g. management of contaminated sites under Article 15.

<u>Potentially contaminated sites</u>
The Czech Republic proposes that the identification of potentially contaminated sites under Article 13(2) letter (a) should only be carried out for actively operated potentially contaminating risk activities, the typology of which being laid down by Member States pursuant to Article 13(2), penultimate sentence.

Several problems would arise if Member States were to identify potentially contaminated sites that are not currently in operation. First of all, no provision in the directive proposal states clearly how deep into history a Member state should go in its search, and even if it did, such determination of a specific threshold year would be purely arbitrary. As a result, an obligation that broad of tracking down of currently unoperated potentially contaminated sites implies the need to conduct historical research at all levels of public administration, which would,

according to the Czech Republic, place an undue burden on public administration staff and potentially jeopardize the performance of remaining public administration tasks.

Methodology

The Czech Republic sees major shortcomings in methods enumerated in Annex II, in particular, some of these methods seem to be outdated. The ISO standards referred to include the year of publication, while some of these standards are very old. The Czech Republic proposes that the relevant standard should be referred to without a specific year, and as a result up-to-date version of the standard would apply.

More specifically:

- Soil organic carbon – the Czech Republic proposes to include a method under "EN ISO 17184 Soil quality - Determination of carbon and nitrogen by near-infrared spectrometry (NIRS)" and proposes to report the result as a percentage.
- Extractable phosphorus – the Czech Republic proposes to replace method P-Olsen with the more economical, time-saving and environmentally friendly Mehlich 3 method, with reference to the GLOSOLAN standard operating procedure.
- Concentration of heavy metals in soil – the Czech Republic states that the chosen method (0,43M HNO3) does not set limit values for concentrations of individual elements, furthermore this method is not intended for the determination of Cr(VI) concentrations.
- Nitrogen in soil – it is essential to consider what are the benefits the monitoring of this indicator. The method set out in Annex II determines the total nitrogen, which testifies about the organic matter content of the soil, not, for example, about excessive fertilisation. It is more appropriate to use the mineral nitrogen content as an indicator of over-fertilisation, but this indicator is highly variable over time and its determination at five-year intervals does not make sense.

  Moreover, apart from phosphorus and nitrogen, the contents of the main nutrients are not monitored at all (in terms of excess), although this is an important indicator for forest management. Finally, the Czech Republic does not consider the chosen method (Kjeldahl method) to be environmentally friendly. It should therefore be replaced by the dry combustion method (a recognised elemental analysis according to ISO 13878) or NIRS.

Other comments:

Voluntary soil health certification

Article 9(5) established the institution of voluntary soil health certification. However, this provision does not clearly state which bodies are to carry out this certification or what use the voluntary certification is to have. In addition to that, the aforementioned article does not contain information on how this certification is to be financed (does voluntary soil health certification represent an instrument of TEST YOUR SOIL FOR FREE initiative mentioned in sub-chapter 4.1. of EU Soil Strategy for 2030?). This is why the Czech Republic proposes to elaborate the article and to clarify the purpose and setting of the institution.

Article 9(6) of the directive proposal

The Czech Republic is persuaded that Article 9(6) imposes on Member States an unnecessary administrative burden. Reading Article 6(6) and 6(7), the digital soil health data portal is supposed to contain all the information related to soil health and such information is accessible to general public. For this reason, we suggest deleting Article 9(6).

Transposition period

The Czech Republic has reservations about the length of the transposition period set in Article 25(1). Directive proposal brings the protection of soils to a completely new level, and even though the Czech Republic has already established protection of agricultural and forest lands in terms of soil quality protection and protection against land takes as well as soil monitoring systems, the transposition of the directive would result in reconfiguration of entire system in place. Having regard to the need to perform significant changes in national legislation and strategic plans arising from the Common Agricultural Policy, the transposition period of 2 years seems insufficient and the Czech Republic therefore proposes to extend this period to at least 3 years.

Sustainable soil management principles

The Czech Republic proposes a more flexible wording in Annex III, replacing the word "shall" in the introductory sentence with "may". This is justified by the fact that principles in Annex III are mostly aiming at the management of agricultural land, but these are much less applicable to the management of forest land, which vary significantly across the EU. In addition, the Czech Republic proposes replacing the word "avoid" in the letter (a) in Annex III with "minimize", because it would be very difficult in the context of the Czech Republic to achieve the state that soils are not without vegetation cover at any point throughout their management. Last but not the least, the Czech Republic proposes to harmonize the wording of sustainable soil management principles with wording of established practices in the framework of the Common Agricultural Policy or environmentally-friendly practices used in case of labelled interventions.

Synergies with other legislation

In view of the legislation being adopted at the EU level, the Czech Republic needs to clarify synergies between the directive proposal, proposal for a regulation of the European parliament and of the Council establishing a Union certification framework for carbon removals, proposal for a regulation of the European parliament and of the Council on nature restoration, and the revision of the directive (EU) 2018/2001 (as far as renewables acceleration area is concerned).

Moreover the Czech Republic needs a clarification of whether the soil descriptor "loss of soil organic carbon" is interlinked with the Regulation (EU) 2018/841 of the European Parliament and of the Council.

Council of the European Union
General Secretariat

Interinstitutional files:
2023/0232 (COD)

Brussels, 18 September 2023

WK 11669/2023 INIT

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CONTRIBUTION

From: To:	General Secretariat of the Council Working Party on the Environment
N° Cion doc.:	ST 11566/23 + ADD 1
Subject:	Soil Monitoring Law Directive: Follow up to the informal VC of the WPE on 27 July 2023 - comments from delegations

Following the above WPE meeting and the call for comments (WK 10383/23 INIT), delegations will find attached comments from BE, CZ, DK, IE, LV, LT, NL, AT, PT, SK, FI and SE.

SLOVAK REPUBLIC

Comments on the Proposal for a DIRECTIVE OF THE EUROPEAN PARLIAMENT AND OF THE COUNCIL on Soil Monitoring and Resilience (Soil Monitoring Law)

15 September 2023

Slovakia welcomes the proposal by the European Commission and we would like to use this opportunity to provide our preliminary views, comments and questions following the initial presentation by the Commission in the WPE on 27 July 2023.

The proposal is a qualitative shift in the perception of land as a natural resource and moves the discussion on the protection and use of land to a new level. We are of the opinion that there is a strong need for harmonization of rules and data on the European level. However, the proposed text contains several aspects that require further clarification:

1) We have concerns about **the requirement to limit soil erosion to 2 tons per hectare**. This would require profound changes in the structure of land use, which would significantly affect the agricultural sector in Slovakia. According to our data, the application of this requirement would lead to a significant limitation of agricultural activity on more than 30% of the cultivated area. This requirement can also be considered relatively strict, for example, compared to the approach to soil contamination, where the determination of limit values is left to individual MS. Likewise, it is necessary to point out that the rate of soil erosion is significantly influenced by natural factors such as the inclination of the terrain and the length of the slopes, the intensity of precipitation and soil properties (soil texture and soil type) that are specific to individual MS and which MS cannot influence in any way. Therefore, the proposed approach creates unequal conditions for individual MS in achieving the "healthy soil" criteria, and MS with soils naturally more at risk of erosion must make greater efforts to compensate for this risk and implement measures that will affect soil management to a greater extent.

2) **The creation and functioning of soil districts**: we believe the proposal defines them very broadly, so clarification is needed to ensure that monitoring results are representative and data are comparable between MS.

3) Similarly, **the criteria for creating a network of monitoring points for soil sampling**, necessary to achieve the required spatial reliability of the results, will require clarification/explanation. The current national network of monitoring is insufficient, moreover, it only covers agricultural land.

4) **5 – year periodicity of soil properties monitoring for all soils.** Regarding the periodicity of soil monitoring, we consider it necessary to point out the significantly different conditions for monitoring agricultural and forest soils, which should also be taken into account in the periodicity of monitoring. The properties of agricultural land are influenced by its regular cultivation and annual rotation of crops, which is reflected in their variability in time and space, which is significantly higher compared to forest soils. Therefore, we consider it expedient and economical to introduce a longer periodicity of monitoring for some parameters (for example, when monitoring the content of organic carbon in the soil) for forest soils.

5) Attention should also be paid to **the issue of land take and soil sealing monitoring**. As it has emerged from the previous discussions at the "expert group", the individual MS perceive this issue differently, which is related to national specificities in the land register (e.g. in the Slovak Republic, the inclusion of a plot of land is a binding cadastre data that cannot be changed arbitrarily, and the area of agricultural and forest land is relatively strictly protected by the relevant laws).

6) The proposed **4-year period for the realisation of the first measurements is too ambitious.** The implementation of the Directive will require the creation of large-scale initiatives at the national level aimed at the definition of soil districts, the design of a monitoring network for sampling and its verification in the field, as well as the design of indicators at the national level and methods for their determination, etc. Last but not least, it will be necessary to adopt the necessary legislative changes. The introduction of many measures will certainly be preceded by an expert discussion, as the directive deals with some relatively new areas of problems on which there is currently no expert consensus. It can also be assumed that an intense polemical discussion on the part of owners and users (mainly) of agricultural land, which will be affected by the implementation of the directive, will require a substantial time frame.

7) We believe that **the criteria mentioned in Annex II and the issue of penalties** will require further explanation.

8) Last but not least, we would like to emphasize that the introduction of de facto full-scale soil health monitoring (not only agricultural, but also forest and urban) as well as the creation of a register of contaminated sites will require **significant financial and administrative costs**, which are currently difficult to estimate in terms of their cost.
