

Public Consultation on a possible EU Soil Health Law for protecting, sustainably managing and restoring EU soils

Fields marked with * are mandatory.

Introduction

[The EU Soil Strategy for 2030](#) 'Reaping the benefits of healthy soils for people, food, nature and climate' envisages that all soils in the EU should be in a healthy condition by 2050 and that the protection, sustainable use and restoration of soil should become the norm. The Strategy announces that the Commission will table a new legislative proposal on soil health to ensure the same level of protection to soil that exists for water, the marine environment and air in the EU. Such a legislative initiative will be based on an impact assessment, including a subsidiarity check, and fully respect the better regulation requirements and the competences of Member States.

Soil has mainly been associated with food production, but healthy soils are vital for life on Earth and are an ecosystem delivering many other crucial services, such as energy and raw materials, carbon sequestration, water purification and infiltration. Healthy soils sustain many sectors of the economy, well beyond individual parcels of land, be they privately or publicly owned. Soil is an extremely complex, variable and living medium, hosting more than 25% of all biodiversity on the planet and being the foundation of the food chain. This fragile layer of a few centimetres will need to feed and filter drinking water fit for consumption for a global population of nearly 10 billion people by 2050.

As the largest terrestrial carbon pool on the planet, healthy soils are instrumental for climate adaptation and mitigation and are a key enabler to achieve the objectives of the [European Green Deal](#) such as climate neutrality, zero pollution, sustainable food systems and a resilient environment.

However, land and soil are subject to severe degradation processes: 60-70% of soil ecosystems in the EU are estimated to be unhealthy and suffering from continuing degradation resulting in reduced provision of ecosystem services. Soil erosion, soil sealing (i.e. covering soils by concrete or other impermeable material), waste of excavated soils, soil compaction (i.e. compression of the soil, preventing water to infiltrate in soil), diffuse and local soil contamination, salinisation and peatland drainage are the main drivers of land and soil degradation. Most of these drivers are not projected to change favourably in the coming years due to climate change and unsustainable soil management, leading to a further reduction in the provision of ecosystem services.

The drivers and impacts of soil degradation know no borders. An uneven and fragmented response by Member States to tackle soil degradation has led to an uneven playing field for economic operators who have to operate under different rules on soil protection while competing in the same market. The fragmented response has also prevented the halt of soil degradation in the EU and its effective restoration.

To address transboundary impacts of soil degradation, secure equal market conditions, promote policy coherence at EU and national level and thus **be able to achieve the EU goals on climate change, biodiversity, food security and safety, and water protection, the Commission is working to table a dedicated legislative proposal on soil health by 2023.**

Guidance on the questionnaire

This consultation is open to all to provide input to help the Commission prepare its initiative on soil and land protection, sustainable management and restoration, as described in the EU Soil Strategy for 2030.

To ensure a broad feedback, the questionnaire is divided into two parts. The first part (up to q. 13) is more general and intended for everyone, while the second part (from q. 14 to q. 21) is aimed at stakeholders with some expertise on the subject. The first part of the questionnaire may be submitted without the need to complete also the second 'expert' part.

The estimated time for completion is 10 minutes for the first part and a total of 25 minutes if the second part is also completed.

Please read [the privacy statement](#) on how personal data associated with your contribution will be processed.

All the responses to this consultation will be assessed and reported in the Commission's impact assessment of the Soil Health Law. We will also produce a stand-alone summary of the results of the consultation.

Thank you for taking part in this consultation.

About you

Text

* Language of my contribution

- Bulgarian
- Croatian
- Czech
- Danish
- Dutch
- English
- Estonian

- Finnish
- French
- German
- Greek
- Hungarian
- Irish
- Italian
- Latvian
- Lithuanian
- Maltese
- Polish
- Portuguese
- Romanian
- Slovak
- Slovenian
- Spanish
- Swedish

* First name

Kayla

* Surname

Cohen

* Email (this won't be published)

kayla@carbongap.org

* I am giving my contribution as

- Academic/research institution
- Business association
- Company/business organisation
- Consumer organisation
- EU citizen
- Environmental organisation
- Non-EU citizen

- Non-governmental organisation (NGO)
- Public authority
- Trade union
- Other

* Please indicate the sector you are active in

- Agriculture
- Agro-industry (chemical inputs, seeds, machinery)
- Bio-technology
- Construction, urban planning & development
- Disaster prevention
- Education
- Energy (electricity, gas and water)
- Environment & nature protection
- Financial business (bank, insurance, etc.)
- Food/beverage industry
- Forestry and hunting
- Health and social work
- Mining and quarrying
- Soil remediation
- Tourism/recreation
- Waste & waste recycling
- Other

Please indicate the other sector

50 character(s) maximum

Carbon Removal

* Organisation name

255 character(s) maximum

Carbon Gap

* Organisation size

- Micro (1 to 9 employees)
- Small (10 to 49 employees)

- Medium (50 to 249 employees)
- Large (250 or more)

Transparency register number

255 character(s) maximum

Check if your organisation is on the [transparency register](#). It's a voluntary database for organisations seeking to influence EU decision-making.

*Country of origin

Please add your country of origin, or that of your organisation.

This list does not represent the official position of the European institutions with regard to the legal status or policy of the entities mentioned. It is a harmonisation of often divergent lists and practices.

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| <input type="radio"/> Afghanistan | <input type="radio"/> Djibouti | <input type="radio"/> Libya | <input type="radio"/> Saint Martin |
| <input type="radio"/> Åland Islands | <input type="radio"/> Dominica | <input type="radio"/> Liechtenstein | <input type="radio"/> Saint Pierre and Miquelon |
| <input type="radio"/> Albania | <input type="radio"/> Dominican Republic | <input type="radio"/> Lithuania | <input type="radio"/> Saint Vincent and the Grenadines |
| <input type="radio"/> Algeria | <input type="radio"/> Ecuador | <input type="radio"/> Luxembourg | <input type="radio"/> Samoa |
| <input type="radio"/> American Samoa | <input type="radio"/> Egypt | <input type="radio"/> Macau | <input type="radio"/> San Marino |
| <input type="radio"/> Andorra | <input type="radio"/> El Salvador | <input type="radio"/> Madagascar | <input type="radio"/> São Tomé and Príncipe |
| <input type="radio"/> Angola | <input type="radio"/> Equatorial Guinea | <input type="radio"/> Malawi | <input type="radio"/> Saudi Arabia |
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| <input type="radio"/> Australia | <input type="radio"/> Fiji | <input type="radio"/> Mauritania | <input type="radio"/> Slovakia |
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| <input type="radio"/> Azerbaijan | <input type="radio"/> France | <input type="radio"/> Mayotte | <input type="radio"/> Solomon Islands |
| <input type="radio"/> Bahamas | <input type="radio"/> French Guiana | <input type="radio"/> Mexico | <input type="radio"/> Somalia |
| <input type="radio"/> Bahrain | <input type="radio"/> French Polynesia | <input type="radio"/> Micronesia | <input type="radio"/> South Africa |
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Bangladesh	French Southern and Antarctic Lands	Moldova	South Georgia and the South Sandwich Islands
<input type="radio"/> Barbados	<input type="radio"/> Gabon	<input type="radio"/> Monaco	<input type="radio"/> South Korea
<input type="radio"/> Belarus	<input type="radio"/> Georgia	<input type="radio"/> Mongolia	<input type="radio"/> South Sudan
<input type="radio"/> Belgium	<input type="radio"/> Germany	<input type="radio"/> Montenegro	<input type="radio"/> Spain
<input type="radio"/> Belize	<input type="radio"/> Ghana	<input type="radio"/> Montserrat	<input type="radio"/> Sri Lanka
<input type="radio"/> Benin	<input type="radio"/> Gibraltar	<input type="radio"/> Morocco	<input type="radio"/> Sudan
<input type="radio"/> Bermuda	<input type="radio"/> Greece	<input type="radio"/> Mozambique	<input type="radio"/> Suriname
<input type="radio"/> Bhutan	<input type="radio"/> Greenland	<input type="radio"/> Myanmar/Burma	<input type="radio"/> Svalbard and Jan Mayen
<input type="radio"/> Bolivia	<input type="radio"/> Grenada	<input type="radio"/> Namibia	<input type="radio"/> Sweden
<input type="radio"/> Bonaire Saint Eustatius and Saba	<input type="radio"/> Guadeloupe	<input type="radio"/> Nauru	<input type="radio"/> Switzerland
<input type="radio"/> Bosnia and Herzegovina	<input type="radio"/> Guam	<input type="radio"/> Nepal	<input type="radio"/> Syria
<input type="radio"/> Botswana	<input type="radio"/> Guatemala	<input type="radio"/> Netherlands	<input type="radio"/> Taiwan
<input type="radio"/> Bouvet Island	<input type="radio"/> Guernsey	<input type="radio"/> New Caledonia	<input type="radio"/> Tajikistan
<input type="radio"/> Brazil	<input type="radio"/> Guinea	<input type="radio"/> New Zealand	<input type="radio"/> Tanzania
<input type="radio"/> British Indian Ocean Territory	<input type="radio"/> Guinea-Bissau	<input type="radio"/> Nicaragua	<input type="radio"/> Thailand
<input type="radio"/> British Virgin Islands	<input type="radio"/> Guyana	<input type="radio"/> Niger	<input type="radio"/> The Gambia
<input type="radio"/> Brunei	<input type="radio"/> Haiti	<input type="radio"/> Nigeria	<input type="radio"/> Timor-Leste
<input type="radio"/> Bulgaria	<input type="radio"/> Heard Island and McDonald Islands	<input type="radio"/> Niue	<input type="radio"/> Togo
<input type="radio"/> Burkina Faso	<input type="radio"/> Honduras	<input type="radio"/> Norfolk Island	<input type="radio"/> Tokelau
<input type="radio"/> Burundi	<input type="radio"/> Hong Kong	<input type="radio"/> Northern Mariana Islands	<input type="radio"/> Tonga
<input type="radio"/> Cambodia	<input type="radio"/> Hungary	<input type="radio"/> North Korea	<input type="radio"/> Trinidad and Tobago
<input type="radio"/> Cameroon	<input type="radio"/> Iceland	<input type="radio"/> North Macedonia	<input type="radio"/> Tunisia
<input type="radio"/> Canada	<input type="radio"/> India	<input type="radio"/> Norway	<input type="radio"/> Turkey
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- Cape Verde
- Cayman Islands
- Central African Republic
- Chad
- Chile
- China
- Christmas Island
- Clipperton
- Cocos (Keeling) Islands
- Colombia
- Comoros
- Congo
- Cook Islands
- Costa Rica
- Côte d'Ivoire
- Croatia
- Cuba
- Curaçao
- Cyprus
- Czechia
- Democratic Republic of the Congo
- Denmark
- Indonesia
- Iran
- Iraq
- Ireland
- Isle of Man
- Israel
- Italy
- Jamaica
- Japan
- Jersey
- Jordan
- Kazakhstan
- Kenya
- Kiribati
- Kosovo
- Kuwait
- Kyrgyzstan
- Laos
- Latvia
- Lebanon
- Lesotho
- Liberia
- Oman
- Pakistan
- Palau
- Palestine
- Panama
- Papua New Guinea
- Paraguay
- Peru
- Philippines
- Pitcairn Islands
- Poland
- Portugal
- Puerto Rico
- Qatar
- Réunion
- Romania
- Russia
- Rwanda
- Saint Barthélemy
- Saint Helena
- Ascension and Tristan da Cunha
- Saint Kitts and Nevis
- Saint Lucia
- Turkmenistan
- Turks and Caicos Islands
- Tuvalu
- Uganda
- Ukraine
- United Arab Emirates
- United Kingdom
- United States
- United States Minor Outlying Islands
- Uruguay
- US Virgin Islands
- Uzbekistan
- Vanuatu
- Vatican City
- Venezuela
- Vietnam
- Wallis and Futuna
- Western Sahara
- Yemen
- Zambia
- Zimbabwe

The Commission will publish all contributions to this public consultation. You can choose whether you would prefer to have your details published or to remain anonymous when your contribution is published. **For the purpose of transparency, the type of respondent (for example, 'business association, 'consumer association', 'EU citizen') country of origin, organisation name and size, and its**

transparency register number, are always published. Your e-mail address will never be published.

Opt in to select the privacy option that best suits you. Privacy options default based on the type of respondent selected

* Contribution publication privacy settings

The Commission will publish the responses to this public consultation. You can choose whether you would like your details to be made public or to remain anonymous.

Anonymous

Only organisation details are published: The type of respondent that you responded to this consultation as, the name of the organisation on whose behalf you reply as well as its transparency number, its size, its country of origin and your contribution will be published as received. Your name will not be published. Please do not include any personal data in the contribution itself if you want to remain anonymous.

Public

Organisation details and respondent details are published: The type of respondent that you responded to this consultation as, the name of the organisation on whose behalf you reply as well as its transparency number, its size, its country of origin and your contribution will be published. Your name will also be published.

I agree with the [personal data protection provisions](#)

I. part

Question 1:

Please rank the importance of addressing the following issues at EU level:

	Very important	Important	Of limited importance	Not at all important	I don't know / no opinion
* Protection of soil health	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
* Sustainable use of soils	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
* Soil restoration, including remediation of contaminated sites	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Question 2:

Please rank the importance of the following drivers of the degradation of soils:

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	Very important	Important	Of limited importance	Not at all important	I don't know / no opinion
* Climate change, drought, extreme weather events	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
* Unsustainable soil management and intensification of agricultural and forestry practices (e.g. mono-cropping and intensive livestock production)	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
* Industrial activities, unsustainable waste management and energy production	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
* Improper water management, reuse and irrigation	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
* Overexploitation and consumption of natural resources	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
* Soil sealing and land take for infrastructure and construction (e.g. buildings, roads and railways, parking lots, airports)	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
* Other land-use changes such as conversion of natural grasslands and forests into arable land	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Other [please specify]:

Text of 10 to 100 characters will be accepted

*** Question 3:**

In your opinion, are the causes of soil and land degradation sufficiently addressed a
t EU level:

- Sufficiently
- Not enough
- Not at all
- I don't know / no opinion

* In your opinion, are the causes of soil and land degradation sufficiently addressed a
t national level:

- Sufficiently
-

- Not enough
- Not at all
- I don't know / no opinion

Question 4:

Although soils are often associated with agricultural use of soil, they are part of every terrestrial ecosystem and their health is crucial for the environment and the provision of many ecosystem services.

Which types of soil use should be addressed by the initiative:

	Totally agree	Somewhat agree	Somewhat disagree	Totally disagree	I don't know / no opinion
* All types of soil uses should be addressed	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
* Agricultural soils	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
* Artificial and built areas	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
* Industrial soils	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
* Forest soils	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
* Wetlands	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Other [please specify]:

Text of 10 to 500 characters will be accepted

The full range of soil uses and types should be accounted for under the Soil Health Law. Above and beyond a horizontal framework, specific standards and approaches should be introduced that acknowledge the inherent and functional differences across soil uses and types. Given the potential for Agricultural soils and wetlands to either serve as a relatively large sink or source of carbon, the EU should take special considerations when setting baseline health standards for these soil uses.

Different policy options will be assessed to reach healthy soils in the EU by 2050. The following **questions 5-13 address different measures that will be considered in the impact assessment.**

*** Question 5:**

According to the EU Soil Strategy, soils are healthy when they are in good chemical, biological and physical condition, and thus able to continuously provide as many ecosystem services as possible.

In your view, should the future EU Soil Health Law set legal obligations for Member States to achieve healthy soils by 2050:



- Totally agree
- Somewhat agree
- Somewhat disagree
- Totally disagree
- I don't know / no opinion / not applicable

*** Question 6:**

Soil health depends on its management and land use changes. Indeed, a sustainable use requires care and effort, and transitioning from unsustainable to sustainable use can be difficult. Notwithstanding the current efforts to promote a sustainable use of soil, urban, industrial, forest and agricultural soils are still under continuous degradation.

Do you agree that there should be a legal obligation for Member States to set requirements for the sustainable use of soil so that its capacity to produce food, filtrate water, host and support biodiversity, store carbon etc. is not hampered:

- Totally agree
- Somewhat agree
- Somewhat disagree
- Totally disagree
- I don't know / no opinion / not applicable

*** Question 7:**

Measurements and monitoring of soil health and threats are incomplete. Improved soil monitoring across Europe is needed to develop early warnings of exceedances of critical thresholds and to guide sustainable soil management.

Do you agree that there should be legal obligations for Member States to monitor soil health in their national territory and report on it:

- Totally agree
- Somewhat agree
- Somewhat disagree
- Totally disagree
- I don't know / no opinion / not applicable

*** Question 8:**

In the EU, it is estimated that 2.8 million sites may have been potentially

contaminated by polluting activities. The EU already has some legal tools such as [the Industrial Emissions Directive](#) and [the Environmental Liability Directive](#) with provisions on soil investigation and remediation, but their scope is rather on prevention, limited in time and to specific risk activities.

Do you agree that there should be legal obligations for Member States to identify contaminated sites that pose a significant risk to human health and the environment:

- Totally agree
- Somewhat agree
- Somewhat disagree
- Totally disagree
- I don't know / no opinion / not applicable

* Do you agree that there should be legal obligations for Member States to remediate those contaminated sites:

- Totally agree
- Somewhat agree
- Somewhat disagree
- Totally disagree
- I don't know / no opinion / not applicable

*** Question 9:**

Should the information and environmental data from a registry of contaminated sites be publicly available:

- Totally agree
- Somewhat agree, i.e. only under specific conditions
- Somewhat disagree, i.e. only under specific conditions
- Totally disagree
- I don't know / no opinion / not applicable

*** Question 10:**

[Land take](#) has been defined by the European Environment Agency as the loss of agricultural, forest and other semi-natural and natural land to urban and other

artificial land development. The EU has an objective to achieve a state of no net land take by 2050. Net land take is the difference between land take and land recultivation.

Do you agree that the legal proposal should include obligations for Member States to monitor and report on the progress towards the EU objective of “no net land take” by 2050:

- Totally agree
- Somewhat agree
- Somewhat disagree
- Totally disagree
- I don't know / no opinion / not applicable

*** Question 11:**

Soil health is very relevant for farmers, foresters and landowners in general, but also for investors, public authorities and businesses. As a way of creating a bigger awareness of the state of soils, some Member States have developed certificates of soil health. In some cases, these have to be provided during land transactions to adequately inform the buyer on soil status, similar to a certificate of energy performance that provides information on the energy efficiency of a house when selling it.

Do you agree that there should be legal obligations for Member States to set mechanism informing the buyer about the health of the soil when land is sold:

- Totally agree
- Somewhat agree
- Somewhat disagree
- Totally disagree
- I don't know / no opinion / not applicable

If you agree, how should the buyer be informed?

- With an official and mandatory “certificate” on soil health
- By consulting a website with official soil health information on all land parcels
- Through a declaration of honour from the seller or lessor
- Other

Question 12:

When a new building or infrastructure is built, and soils are excavated for this purpose, in many cases these excavated soils are clean and fertile and can be reused in the same or another appropriate location. In 2018, more than 530 million tonnes of excavated soils in EU were generated and reported as waste. In order to improve the safe recycling of healthy soils, several measures can be envisaged. To keep separate contaminated soil from clean soil, these streams have to be monitored more closely throughout the value chain, with traceability and quality control from the excavation site up to the receiving end.

In your view, which measures for ensuring the safe transportation, treatment, or reuse of excavated soils should be considered by the initiative:

	Totally agree	Somewhat agree	Somewhat disagree	Totally disagree	I don't know/ no opinion
* Obligation for Member States to create a soil passport for excavated soil (a passport that accompanies the soil shipment and allows to properly plan the end destination of that soil)	<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
* Mandatory notification of each transport of soil	<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
* An EU target for the reuse of excavated soil	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
* Quality standards for the reuse of soil	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
* Intermediary organizations that trace and register the movements of excavated soils	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input checked="" type="radio"/>

Other [please specify]:

Text of 10 to 500 characters will be accepted

Question 13:

Please rank the importance you attribute to the different provisions for achieving healthy soils in the EU by 2050 described in the questions 5-12:

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	Very important	Important	Of limited importance	Not at all important	I don't know / no opinion
* Obligation of results for Member States to achieve healthy soils (see question 5)	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
* Mandatory requirements for the sustainable management of soil (see question 6)	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
* Obligation for Member States on Soil health monitoring and reporting (see question 7)	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
* Obligation to identify contaminated sites (see question 8)	<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
* Obligation to remediate contaminated sites (see question 8)	<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
* Public access to data on contaminated sites (see question 9)	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
* Mandatory Member States' reporting on progress towards no net land take (see question 10)	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
* Legal obligation to inform the buyer of a land on soil health (soil health certificates) (see question 11)	<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
* Legal obligation for a soil passport for excavated soils (see question 12)	<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

If you wish to make other comments including on whether there are additional issues to be tackled or approaches to be taken, please list and describe them here:

Text of 10 to 1000 characters will be accepted

Additional approaches include provisions related to the removal of barriers for land users and owners, as well as the creation of incentives that promote healthy soils. The EU should, to the extent possible, remove barriers for farmers to conduct soil health tests and to build soil carbon. Carbon Gap supports the idea, put forward by the European Commission, to establish "Test Your Soil For Free" programs. These would help level the playing field across farming operations of various economic and organisational capacities. These tests must include soil carbon measurements - a key indicator of soil health. Soil health testing can be expensive, complicated and time-intensive - all barriers the EU can help land users overcome. Similarly, land users may be supported in their endeavours to build soil carbon through subsidising biochar and other carbon-rich substances. The EU should also consider designating "Soil Protected Areas" where in soil health must be maintained or enhanced.

Do you want to also provide input on the questions of a more technical nature where expertise in soil or related fields may be useful?

- Yes
- No

II. part

Question 14:

Due to the enormous variability of soils across Europe, the definition of healthy soils with parameters and indicators must consider intrinsic characteristics of soil and land use together with characteristics sensitive to management practices. In your opinion, which of these indicators are most effective to assess soil health:

<i>Chemical conditions -</i> Indicators:	Very effective	Reasonably effective	Partially ineffective	Very ineffective	I don't know / no opinion / not applicable
* Acidification/Basification	<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
* Non-optimal soil organic carbon levels in mineral soils	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
* Nutrient losses	<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
* Exceedance pollutants	<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

B.

<i>Physical conditions - Indicators:</i>	Very effective	Reasonably effective	Partially ineffective	Very ineffective	I don't know / no opinion / not applicable
* Critical soil loss (wind)	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
* Critical soil loss (water)	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
* Sealing	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
* Topsoil compaction	<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
* Subsurface compaction	<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

C.

<i>Water-related indicators - Indicators:</i>	Very effective	Reasonably effective	Partially ineffective	Very ineffective	I don't know / no opinion / not applicable
* Water holding capacity	<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
* Soil moisture deficit	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
* Permafrost	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

D.

<i>Biological conditions - Indicators:</i>	Very effective	Reasonably effective	Partially ineffective	Very ineffective	I don't know / no opinion / not applicable
* Microbial biomass	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
* Abundance and diversity of earthworms	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
* Fungal Metrics	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Other [please specify]:

Text of 10 to 1000 characters will be accepted

In addition to measuring non-optimal soil organic carbon levels in mineral soils, soil carbon indicators should be captured for organic soils and, indeed, across all soil types and uses irrespective of initial carbon levels. This is because carbon content is a key soil health indicator across all soil uses and types, and to neglect measuring soil carbon in organic soils would be to neglect the possibility of carbon levels declining in these

soils. Although there is no universally agreed upon soil health criteria, many tests include at least two soil carbon indicators, which Carbon Gap would encourage the EU to consider, alongside all other key indicators. These list: soil organic matter and active carbon. Soil organic matter is an especially powerful indicator because it can provide an insight into several other aspects of soil health, including water holding capacity. Finally, the EU should consider the efficacy of Aggregate Stability as a biological indicator of soil health.

*** Question 15:**

In your view, in order to reach healthy soils in the EU, at which spatial level should Member States be required to assess and monitor soil health with the understanding that they can also choose to be more detailed? (*more than one choice possible*)

- At national level
- At regional level
- At local administrative level
- At the landscape level
- At the level of a zone homogeneous for pedo-climatic conditions and use
- At the level of a zone homogeneous for pedo-climatic conditions (whatever the land use)
- At field/parcel level
- I don't know / no opinion
- Other

Question 16:

In your view, how do you rank the effectiveness of the following measures in helping to ensure sustainable soil management (SSM) practices across different economic sectors:

	Very effective	Reasonably effective	Partially ineffective	Very ineffective	I don't know / no opinion / not applicable
* EU setting minimum mandatory standards for SSM	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
* Member States setting minimum mandatory standards for SSM	<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
* Making EU subsidies conditional on applying SSM practices	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

* Eliminating any EU subsidy that would support unsustainable soil management practices	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
* Member States funding awareness-raising campaigns on the importance of soils in general and of the positive effects of SSM	<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
* Member States funding SSM training for farmers and farm advisory services	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
* Creating networks, collecting and disseminating good practices and success stories	<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
* Provide platforms for promoting SSM practices (e.g. lighthouses, living labs)	<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Other [please specify]:

Text of 10 to 1000 characters will be accepted

To clarify, it is crucial that the EU set minimum mandatory standards for SSM, upon which Member States may then be allowed to build upon by setting more ambitious and context-specific soil health standards. Platforms or networks for sharing SSM best practices are potentially effective complements to - but not substitutes for - dedicated Member State funding SSM training for farmers and farm advisory services.

Question 17:

The European Commission has set a target for the reduction of nutrient losses by at least 50% (resulting in the reduction of use of fertilizers by at least 20%) by 2030 while ensuring no deterioration in soil fertility.

How would you rank the effectiveness of the following measures in achieving the 50% reduction of nutrient losses by 2030:

	Very effective	Reasonably effective	Partially ineffective	Very ineffective	I don't know / no opinion / not applicable
* Advisory services for farmers	<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
* Recommendations to Member States on nutrient management	<input type="radio"/>	<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>
* Action plan at EU level	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

* National/regional action plans	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
* Legally binding fertilisation rates for the main crops, adapted to regional pedo-climatic conditions	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
* Legally binding targets at EU level	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
* Legally binding targets at national /regional level	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
* Continue funding research and innovation actions to address safe and environmentally sound solutions	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Other [please specify]:

Text of 10 to 500 characters will be accepted

Advisory measures, recommendations, and action plans (either at the EU or national level) are useful and necessary tools to achieve 50% reduction of nutrient losses by 2030. However, these are insufficient without a binding framework and targets at the EU level.

Question 18:

Do you consider the following measures related to soil contamination should be included in the Soil Health Law:

	Totally agree	Somewhat agree	Somewhat disagree	Totally disagree	I don't know / no opinion / not applicable
* Base the risk assessment of potentially contaminated sites on current and planned use	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input checked="" type="radio"/>
* Harmonise at EU level the threshold values for contaminants that would trigger a risk assessment	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
* Harmonise at EU level the criteria for a "significant risk" that would consider a site as contaminated	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
* Establish mechanisms to prioritise action for sites with highest risk	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
* Establish a hierarchy of remediation actions at EU level (decontamination, containment, capping, landfilling, etc.) that should	<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

be considered to remediate contaminated sites					
* Set binding intermediate targets between now and 2050 for the identification, registration and remediation of contaminated sites	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Only under specific conditions [please indicate which specific conditions]:

Text of 10 to 1000 characters will be accepted

Other measures [please specify]:

Text of 10 to 500 characters will be accepted

*** Question 19:**

Do you agree that Member States should be required, within a legally-binding time frame, to establish and implement a national plan to remediate sites that represent a significant risk to human health or the environment:

- Totally agree
- Somewhat agree
- Somewhat disagree
- Totally disagree
- Only under specific condition
- I don't know / no opinion / not applicable

Question 20:

Which aspects should Member States report on in relation to the 2050 target on 'no net land take':

Aspects to be monitored:	Totally agree	Somewhat agree	Somewhat disagree	Totally disagree	I don't know / no opinion / not applicable
* Soil sealing	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
* Land take	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
* Land recycling	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
* Land fragmentation	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

B.

Specific land use changes to be monitored:	Totally agree	Somewhat agree	Somewhat disagree	Totally disagree	I don't know / no opinion / not applicable
* Soil consumed for commercial activities and logistic hubs	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
* Soil consumed for renewable energies	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
* Soil consumed for "carbon-consuming" surfaces such as airports, roads, carbon mines	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

C.

Consequences of land take to be monitored:	Totally agree	Somewhat agree	Somewhat disagree	Totally disagree	I don't know / no opinion / not applicable
* Quantification of loss of ecosystem services following land take	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
* Monetary value of soil for public interest lost from land take	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
* Off-site environmental degradation related to land take (rivers affected by modified trends, floods, etc.)	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

D.

Actions taken:	Totally agree	Somewhat agree	Somewhat disagree	Totally disagree	I don't know / no opinion / not applicable
* Progress in implementing the land take hierarchy	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
* Progress in national legal actions taken	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
* Progress in voluntary actions taken	<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Only under specific conditions [please indicate which specific conditions]:

Text of 10 to 1000 characters will be accepted

Other aspects [please specify]:

Text of 10 to 500 characters will be accepted

Question 21:

How would you rank the effectiveness of the following measure for ensuring the safe transportation, treatment, or reuse of excavated soils:

	Very effective	Reasonably effective	Partially ineffective	Very ineffective	I don't know / no opinion / not applicable
* Obligation for Member States to create a soil passport for excavated soil (a passport that accompanies the soil shipment and allows to properly plan the end destination of that soils)	<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
* Mandatory notification of each transport of soil	<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
* An EU target for the reuse of excavated soil	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
* Quality standards for the reuse of soil	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
* Intermediary organizations that trace and register the movements of excavated soils	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input checked="" type="radio"/>

Other [please specify]:

Text of 10 to 500 characters will be accepted

Do you want to add any other suggestions/opinions?

Text of 10 to 1000 characters will be accepted

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