European Parliament
2019-2024

Committee on Agriculture and Rural Development

2023/0232(COD)

6.12.2023

AMENDMENTS
632 - 700

Draft opinion
Maria Noichl
(PE754.699v01-00)

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

Proposal for a directive
(COM(2023)416 – C9-0234/2023 – 2023/0232(COD))

Amendment 632
Martin Hlaváček

Proposal for a directive
Annex I – paragraph 1 – introductory part

Text proposed by the Commission	*Amendment*
For the purposes of this Annex, the following definitions shall apply	For the purposes of this Annex, the following definitions shall apply ***Since I was not able to amend specific part I will just make note here:*** ***Part A: soil descriptors with criteria for healthy soil condition established at Union level should be in Part B: soil descriptors with criteria for healthy soil condition established at Member States level.***

Or. en

Amendment 633
Jan Huitema, Emma Wiesner, Atidzhe Alieva-Veli

Proposal for a directive
Annex I – paragraph 1 a (new)

Text proposed by the Commission	*Amendment*
	Member States may exclude the soil descriptors relating to the nutrient content in soils from Part B and Part C from this annex, considering that Directive 2000/60/EC and Directive 91/676/EEC are already targeted at the sustainable management of nutrients.

Or. en

Amendment 634
Sarah Wiener

Proposal for a directive

Annex I – Part A

Text proposed by the Commission

Aspect of soil degradation	Soil descriptor	Criteria for healthy soil condition		Land areas that shall be excluded from achieving the related criterion
Part A: soil descriptors with criteria for healthy soil condition established at Union level				
Salinization	Electrical Conductivity (deci-Siemens per meter)	< 4 dS m^{-1} when using saturated soil paste extract (eEC) measurement method, or equivalent criterion if using another measurement method		Naturally saline land areas; Land areas directly affected by sea level rise
Soil erosion	Soil erosion rate (tonnes per hectare per year)	≤ 2 t ha^{-1} y^{-1}		Badlands and other unmanaged natural land areas, except if they represent a significant disaster risk
Loss of soil organic carbon	Soil Organic Carbon (SOC) concentration (g per kg)	- For organic soils: respect targets set for such soils at national level in accordance with Article 4.1, 4.2, 9.4 of Regulation (EU) …/…[+]		No exclusion
		- For mineral soils: SOC/Clay ratio > 1/13; Member States may apply a corrective factor where specific soil types or climatic conditions justify it, taking into account the actual SOC content in permanent grasslands.		Non-managed soils in natural land areas
Subsoil compaction	Bulk density in subsoil (upper part of B or E horizon1); Member States may replace this descriptor with an equivalent	Soil texture[2]	range	Non-managed soils in natural land areas
		sand, loamy sand, sandy loam, loam	<1.80	
		Sandy clay loam, loam, clay loam, silt, silt loam	<1.75	
		silt loam, silty	<1.65	

parameter (g per cm3)	clay loam	
	Sandy clay, silty clay, clay loam with 35-45% clay	<1.58
	Clay	<1.47
	In case a Member State replaces the soil descriptor “bulk density in subsoil” with an equivalent parameter, it shall adopt a criterion for healthy soil condition for the chosen soil descriptor that is equivalent to the criterion set for “bulk density in subsoil”.	

[+] OP : please insert in the text the number of Regulation on nature restoration contained in document COM(2022) 304

[1] As defined in the FAO Guidelines for Soil Description, Chapter 5 (https://www.fao.org/3/a0541e/a0541e.pdf)

[2] As defined in Arshad, M.A., B. Lowery, and B. Grossman. 1996. Physical tests for monitoring soil quality. p.123- 142. In: J.W. Doran and A.J. Jones (eds.) Methods for assessing soil quality. Soil Sci. Soc. Am. Spec. Publ. 49. SSSA, Madison, WI.

Amendment

Aspect of soil degradation	Soil descriptor	Criteria for healthy soil condition	Land areas that shall be excluded from achieving the related criterion
Part A: soil descriptors with criteria for healthy soil condition established at Union level			
Salinization	Electrical Conductivity (deci-Siemens per meter)	< 4 dS m−1 when using saturated soil paste extract (eEC) measurement method, or equivalent criterion if using another measurement method	Naturally saline land areas; Land areas directly affected by sea level rise
Soil erosion	Soil erosion rate (tonnes per hectare per year)	≤ 2 t ha^{-1} y^{-1}	Badlands and other unmanaged natural land areas, except if they represent a significant disaster risk

Soil contamination	***Concentrations of an EU priority list of pollutants[3]; heavy metals, pesticides, microplastics, veterinary products, pharmaceuticals, antimicrobials, POPs, PFAS, PAHs, polychlorinated biphenyls, PCBs, mineral oil, VOCs and contaminants of emerging concern***	***Reasonable assurance, obtained from soil point sampling, identification and investigation of contaminated sites and any other relevant information, that no unacceptable risk for human health and the environment from soil contamination exists.*** ***Use of |SAIO regulation data[4] and Total Applied Toxicity (TAT) indicator[5]***	***No exclusion***
Loss of soil organic carbon	Soil Organic Carbon (SOC) concentration (g per kg)	- For organic soils: respect targets set for such soils at national level in accordance with Article 4.1, 4.2, 9.4 of Regulation (EU) …/…[+]	No exclusion
		- For mineral soils: SOC/Clay ratio > 1/13; Member States may apply a corrective factor where specific soil types or climatic conditions justify it, taking into account the actual SOC content in permanent grasslands.	Non-managed soils in natural land areas

Subsoil compaction	Bulk density in subsoil (upper part of B or E horizon[6]); Member States may replace this descriptor with an equivalent parameter (g per cm^3)	Soil texture[7]	range	Non-managed soils in natural land areas
		sand, loamy sand, sandy loam, loam	<1.80	
		Sandy clay loam, loam, clay loam, silt, silt loam	<1.75	
		silt loam, silty clay loam	<1.65	
		Sandy clay, silty clay, clay loam with 35-45% clay	<1.58	
		Clay	<1.47	
		In case a Member State replaces the soil descriptor "bulk density in subsoil" with an equivalent parameter, it shall adopt a criterion for healthy soil condition for the chosen soil descriptor that is equivalent to the criterion set for "bulk density in subsoil".		

[3] e.g. new indicator mentioned in the latest research of the EU Sprint project (Silva et al., 2023) https://www.sciencedirect.com/science/article/pii/S0160412023005536?via%3Dihub

[4] Statistics on Agricultural Inputs and Outputs Regulation 2022/2379

[5] https://pubs.acs.org/doi/epdf/10.1021/acs.est.2c07251

[+] OP : please insert in the text the number of Regulation on nature restoration contained in document COM(2022) 304

[6] As defined in the FAO Guidelines for Soil Description, Chapter 5 (https://www.fao.org/3/a0541e/a0541e.pdf)

[7] As defined in Arshad, M.A., B. Lowery, and B. Grossman. 1996. Physical tests for monitoring soil quality. p.123- 142. In: J.W. Doran and A.J. Jones (eds.) Methods for assessing soil quality. Soil Sci. Soc. Am. Spec. Publ. 49. SSSA, Madison, WI.

Or. en

Amendment 635
Maria Noichl

Proposal for a directive
Annex I – Part A

Text proposed by the Commission

Aspect of soil degradation	Soil descriptor	Criteria for healthy soil condition	Land areas that shall be excluded from achieving the related criterion
Part A: soil descriptors with criteria for healthy soil condition established at Union level			
Salinization	Electrical Conductivity (deci-Siemens per meter)	< 4 dS m^{-1} when using saturated soil paste extract (eEC) measurement method, or equivalent criterion if using another measurement method	Naturally saline land areas; Land areas directly affected by sea level rise
Soil erosion	Soil erosion rate (tonnes per hectare per year)	≤ 2 t ha^{-1} y^{-1}	Badlands and other unmanaged natural land areas, except if they represent a significant disaster risk
Loss of soil organic carbon	Soil Organic Carbon (SOC) concentration (g per kg)	- For organic soils: respect targets set for such soils at national level in accordance with Article 4.1, 4.2, 9.4 of Regulation (EU) …/…[+]	No exclusion
		- For mineral soils: SOC/Clay ratio > 1/13; Member States may apply a corrective factor where specific soil types or climatic conditions justify it, taking into account the actual SOC content in permanent grasslands.	Non-managed soils in natural land areas
Subsoil compaction	Bulk density in subsoil (upper part of B or E horizon[1]); Member States may replace this	Soil texture[2] / range sand, loamy sand, sandy loam, loam: <1.80 Sandy clay loam, loam, clay loam, silt, silt: <1.75	Non-managed soils in natural land areas

	descriptor with an equivalent parameter (g per cm3)	loam	
		silt loam, silty clay loam	<1.65
		Sandy clay, silty clay, clay loam with 35-45% clay	<1.58
		Clay	<1.47
		In case a Member State replaces the soil descriptor “bulk density in subsoil” with an equivalent parameter, it shall adopt a criterion for healthy soil condition for the chosen soil descriptor that is equivalent to the criterion set for “bulk density in subsoil”.	

[+] OP : please insert in the text the number of Regulation on nature restoration contained in document COM(2022) 304

[1] As defined in the FAO Guidelines for Soil Description, Chapter 5 (https://www.fao.org/3/a0541e/a0541e.pdf)

[2] As defined in Arshad, M.A., B. Lowery, and B. Grossman. 1996. Physical tests for monitoring soil quality. p.123- 142. In: J.W. Doran and A.J. Jones (eds.) Methods for assessing soil quality. Soil Sci. Soc. Am. Spec. Publ. 49. SSSA, Madison, WI.

Amendment

Aspect of soil degradation	Soil descriptor	Criteria for healthy soil condition	Land areas that shall be excluded from achieving the related criterion
Part A: soil descriptors with criteria for healthy soil condition established at Union level			
Salinization	Electrical Conductivity (deci-Siemens per meter)	< 4 dS m−1 when using saturated soil paste extract (eEC) measurement method, or equivalent criterion if using another measurement method	Naturally saline land areas; Land areas directly affected by sea level rise

Soil erosion	Soil erosion rate (tonnes per hectare per year)	≤ 2 t ha^{-1} y^{-1}		Badlands and other unmanaged natural land areas, except if they represent a significant disaster risk
Loss of soil organic carbon	Soil Organic Carbon (SOC) concentration (g per kg)	- For organic soils: respect targets set for such soils at national level in accordance with Article 4.1, 4.2, 9.4 of Regulation (EU) …/…[+]		No exclusion
		- For mineral soils: SOC/Clay ratio > 1/13; Member States may apply a corrective factor where specific soil types or climatic conditions justify it, taking into account the actual SOC content in permanent grasslands.		Non-managed soils in natural land areas
Subsoil compaction	Bulk density in subsoil (upper part of B or E horizon[1]); Member States may replace this descriptor with an equivalent parameter (g per cm^3)	Soil texture[2]	range	Non-managed soils in natural land areas
		sand, loamy sand, sandy loam, loam	<1.80	
		Sandy clay loam, loam, clay loam, silt, silt loam	<1.75	
		silt loam, silty clay loam	<1.65	
		Sandy clay, silty clay, clay loam with 35-45% clay	<1.58	
		Clay	<1.47	

		In case a Member State replaces the soil descriptor “bulk density in subsoil” with an equivalent parameter, it shall adopt a criterion for healthy soil condition for the chosen soil descriptor that is equivalent to the criterion set for “bulk density in subsoil”.	
Contamination from microplastics	***Presence of microplastics in agricultural land***	***< 0,1 % of microplastics in soil by mass***	***Non managed soils in agricultural areas***

[+] OP : please insert in the text the number of Regulation on nature restoration contained in document COM(2022) 304

[1] As defined in the FAO Guidelines for Soil Description, Chapter 5 (https://www.fao.org/3/a0541e/a0541e.pdf)

[2] As defined in Arshad, M.A., B. Lowery, and B. Grossman. 1996. Physical tests for monitoring soil quality. p.123- 142. In: J.W. Doran and A.J. Jones (eds.) Methods for assessing soil quality. Soil Sci. Soc. Am. Spec. Publ. 49. SSSA, Madison, WI.

Or. en

Amendment 636
Elsi Katainen

Proposal for a directive
Annex I – Part A

Text proposed by the Commission

Aspect of soil degradation	Soil descriptor	Criteria for healthy soil condition	Land areas that shall be excluded from achieving the related criterion
Part A: soil descriptors with criteria for healthy soil condition established at Union level			
Salinization	Electrical Conductivity (deci-Siemens per meter)	< 4 dS m^{-1} when using saturated soil paste extract (eEC) measurement method, or equivalent criterion if using another measurement method	Naturally saline land areas; Land areas directly affected by sea level rise

Soil erosion	Soil erosion rate (tonnes per hectare per year)	≤ 2 t ha^{-1} y^{-1}		Badlands and other unmanaged natural land areas, except if they represent a significant disaster risk
Loss of soil organic carbon	Soil Organic Carbon (SOC) concentration (g per kg)	- For organic soils: ***respect targets set for such soils at national level in accordance with Articles 4(1), 4(2), 9(4) of Regulation (EU) …/…***[+]		No exclusion
		- For mineral soils: ***SOC/Clay ratio > 1/13;***		Non-managed soils in natural land areas
		Member States ***may apply*** a corrective factor where specific soil types or climatic conditions justify it, taking into account ***the actual*** SOC content ***in permanent grasslands***.		
Subsoil compaction	Bulk density in subsoil (upper part of B or E horizon1); Member States may replace this descriptor with an equivalent parameter (g per cm3)	Soil texture[2]	range	Non-managed soils in natural land areas
		sand, loamy sand, sandy loam, loam	<1.80	
		Sandy clay loam, loam, clay loam, silt, silt loam	<1.75	
		silt loam, silty clay loam	<1.65	
		Sandy clay, silty clay, clay loam with 35-45% clay	<1.58	
		Clay	<1.47	
		In case a Member State replaces the soil descriptor "bulk density in subsoil" with an equivalent parameter, it shall adopt a criterion for healthy soil condition for the chosen soil descriptor that is equivalent to the criterion set for "bulk density in subsoil".		

[+] OP : please insert in the text the number of Regulation on nature restoration contained in document COM(2022) 304

[1] As defined in the FAO Guidelines for Soil Description, Chapter 5 (https://www.fao.org/3/a0541e/a0541e.pdf)

[2] As defined in Arshad, M.A., B. Lowery, and B. Grossman. 1996. Physical tests for monitoring soil quality. p.123- 142. In: J.W. Doran and A.J. Jones (eds.) Methods for assessing soil quality. Soil Sci. Soc. Am. Spec. Publ. 49. SSSA, Madison, WI.

Amendment

Aspect of soil degradation	Soil descriptor	Criteria for healthy soil condition	Land areas that shall be excluded from achieving the related criterion
Part A: soil descriptors with criteria for healthy soil condition established at Union level			
Salinization	Electrical Conductivity (deci-Siemens per meter)	< 4 dS m−1 when using saturated soil paste extract (eEC) measurement method, or equivalent criterion if using another measurement method	Naturally saline land areas; Land areas directly affected by sea level rise
Soil erosion	Soil erosion rate (tonnes per hectare per year)	≤ 2 t ha^{-1} y^{-1}	Badlands and other unmanaged natural land areas, except if they represent a significant disaster risk
Loss of soil organic carbon	Soil Organic Carbon (SOC) concentration (g per kg)	- For organic soils: ***Member State shall set the indicator for monitoring nationally***	No exclusion
		- For mineral soils: Member States ***shall monitor*** a corrective factor where specific soil types or climatic conditions justify it, taking into account the actual SOC content in permanent grasslands.	Non-managed soils in natural land areas

Subsoil compaction	Bulk density in subsoil (upper part of B or E horizon[6]); Member States may replace this descriptor with an equivalent parameter (g per cm^3)	Soil texture[7]	range	Non-managed soils in natural land areas
		sand, loamy sand, sandy loam, loam	<1.80	
		Sandy clay loam, loam, clay loam, silt, silt loam	<1.75	
		silt loam, silty clay loam	<1.65	
		Sandy clay, silty clay, clay loam with 35-45% clay	<1.58	
		Clay	<1.47	
		In case a Member State replaces the soil descriptor “bulk density in subsoil” with an equivalent parameter, it shall adopt a criterion for healthy soil condition for the chosen soil descriptor that is equivalent to the criterion set for “bulk density in subsoil”.		

[6] As defined in the FAO Guidelines for Soil Description, Chapter 5 (https://www.fao.org/3/a0541e/a0541e.pdf)

[7] As defined in Arshad, M.A., B. Lowery, and B. Grossman. 1996. Physical tests for monitoring soil quality. p.123- 142. In: J.W. Doran and A.J. Jones (eds.) Methods for assessing soil quality. Soil Sci. Soc. Am. Spec. Publ. 49. SSSA, Madison, WI.

Or. en

Amendment 637
Annie Schreijer-Pierik

Proposal for a directive
Annex I – Part A

Text proposed by the Commission

Aspect of soil degradation	Soil descriptor	Criteria for healthy soil condition	Land areas that shall be excluded from achieving the related criterion
Part A: soil descriptors with criteria for healthy soil condition established at Union level			
Salinization	Electrical Conductivity (deci-Siemens per meter)	< 4 dS m^{-1} when using saturated soil paste extract (eEC) measurement method, or equivalent criterion if using another measurement method	Naturally saline land areas; Land areas directly affected by sea level rise
Soil erosion	Soil erosion rate (tonnes per hectare per year)	≤ 2 t ha^{-1} y^{-1}	Badlands and other unmanaged natural land areas, except if they represent a significant disaster risk
Loss of soil organic carbon	Soil Organic Carbon (SOC) concentration (g per kg)	- For organic soils: respect targets set for such soils at national level in accordance with Article 4.1, 4.2, 9.4 of Regulation (EU) …/…[+]	No exclusion
		- For mineral soils: SOC/Clay ratio ***> 1/13***;	Non-managed soils in natural land areas
		Member States may apply a corrective factor where specific soil types or climatic conditions justify it, taking into account the actual SOC content in permanent grasslands.	
Subsoil compaction	Bulk density in subsoil (upper part of B or E horizon[1]); Member States may replace this descriptor with an equivalent parameter (g per cm3)	Soil texture[2] — range sand, loamy sand, sandy loam, loam — <1.80 Sandy clay loam, loam, clay loam, silt, silt loam — <1.75 silt loam, silty clay loam — <1.65 Sandy clay, silty clay, clay loam with 35-45% clay — <1.58	Non-managed soils in natural land areas

Clay	<1.47	
	In case a Member State replaces the soil descriptor "bulk density in subsoil" with an equivalent parameter, it shall adopt a criterion for healthy soil condition for the chosen soil descriptor that is equivalent to the criterion set for "bulk density in subsoil".	

[+] OP : please insert in the text the number of Regulation on nature restoration contained in document COM(2022) 304

[1] As defined in the FAO Guidelines for Soil Description, Chapter 5 (https://www.fao.org/3/a0541e/a0541e.pdf)

[2] As defined in Arshad, M.A., B. Lowery, and B. Grossman. 1996. Physical tests for monitoring soil quality. p.123- 142. In: J.W. Doran and A.J. Jones (eds.) Methods for assessing soil quality. Soil Sci. Soc. Am. Spec. Publ. 49. SSSA, Madison, WI.

Amendment

Aspect of soil degradation	Soil descriptor	Criteria for healthy soil condition	Land areas that shall be excluded from achieving the related criterion
Part A: soil descriptors with criteria for healthy soil condition established at Union level			
Salinization	Electrical Conductivity (deci-Siemens per meter)	< 4 dS m−1 when using saturated soil paste extract (eEC) measurement method, or equivalent criterion if using another measurement method	Naturally saline land areas; Land areas directly affected by sea level rise
Soil erosion	Soil erosion rate (tonnes per hectare per year)	≤ 2 t ha^{-1} y^{-1}	Badlands and other unmanaged natural land areas, except if they represent a significant disaster risk

Loss of soil organic carbon	Soil Organic Carbon (SOC) concentration (g per kg)	- For organic soils: respect targets set for such soils at national level in accordance with Article 4.1, 4.2, 9.4 of Regulation (EU) …/…[+]		No exclusion
		- For mineral soils: SOC/Clay ratio ***to be set by the Member State taking into account local conditions***;		Non-managed soils in natural land areas
		Member States may apply a corrective factor where specific soil types or climatic conditions justify it, taking into account the actual SOC content in permanent grasslands.		
Subsoil compaction	Bulk density in subsoil (upper part of B or E horizon[1]); Member States may replace this descriptor with an equivalent parameter (g per cm^3)	Soil texture[2]	range	Non-managed soils in natural land areas
		sand, loamy sand, sandy loam, loam	<1.80	
		Sandy clay loam, loam, clay loam, silt, silt loam	<1.75	
		silt loam, silty clay loam	<1.65	
		Sandy clay, silty clay, clay loam with 35-45% clay	<1.58	
		Clay	<1.47	

		In case a Member State replaces the soil descriptor “bulk density in subsoil” with an equivalent parameter, it shall adopt a criterion for healthy soil condition for the chosen soil descriptor that is equivalent to the criterion set for “bulk density in subsoil”.	

[+] OP : please insert in the text the number of Regulation on nature restoration contained in document COM(2022) 304

[1] As defined in the FAO Guidelines for Soil Description, Chapter 5 (https://www.fao.org/3/a0541e/a0541e.pdf)

[2] As defined in Arshad, M.A., B. Lowery, and B. Grossman. 1996. Physical tests for monitoring soil quality. p.123- 142. In: J.W. Doran and A.J. Jones (eds.) Methods for assessing soil quality. Soil Sci. Soc. Am. Spec. Publ. 49. SSSA, Madison, WI.

Or. en

Amendment 638
Bert-Jan Ruissen

Proposal for a directive
Annex I – Part A

Text proposed by the Commission

Aspect of soil degradation	Soil descriptor	Criteria for healthy soil condition	Land areas that shall be excluded from achieving the related criterion
Part A: soil descriptors with criteria for healthy soil condition established at Union level			
Salinization	Electrical Conductivity (deci-Siemens per meter)	< 4 dS m^{-1} when using saturated soil paste extract (eEC) measurement method, or equivalent criterion if using another measurement method	Naturally saline land areas; Land areas directly affected by sea level rise
Soil erosion	Soil erosion rate (tonnes per hectare per year)	≤ 2 t ha^{-1} y^{-1}	Badlands and other unmanaged natural land areas, except if they represent a significant disaster risk

Loss of soil organic carbon	Soil Organic Carbon (SOC) concentration (g per kg)	- For organic soils: respect targets set for such soils at national level in accordance with Article 4.1, 4.2, 9.4 of Regulation (EU) …/…[+]		No exclusion
		- ***For mineral soils: SOC/Clay ratio > 1/13;***		***Non-managed soils in natural land areas***
		Member States may apply a corrective factor where specific soil types or climatic conditions justify it, taking into account the actual SOC content in permanent grasslands.		
Subsoil compaction	Bulk density in subsoil (upper part of B or E horizon[1]); Member States may replace this descriptor with an equivalent parameter (g per cm3)	Soil texture[2]	range	Non-managed soils in natural land areas
		sand, loamy sand, sandy loam, loam	<1.80	
		Sandy clay loam, loam, clay loam, silt, silt loam	<1.75	
		silt loam, silty clay loam	<1.65	
		Sandy clay, silty clay, clay loam with 35-45% clay	<1.58	
		Clay	<1.47	
		In case a Member State replaces the soil descriptor “bulk density in subsoil” with an equivalent parameter, it shall adopt a criterion for healthy soil condition for the chosen soil descriptor that is equivalent to the criterion set for “bulk density in subsoil”.		

[+] OP : please insert in the text the number of Regulation on nature restoration contained in document COM(2022) 304

[1] As defined in the FAO Guidelines for Soil Description, Chapter 5

(https://www.fao.org/3/a0541e/a0541e.pdf)

[2] As defined in Arshad, M.A., B. Lowery, and B. Grossman. 1996. Physical tests for monitoring soil quality. p.123- 142. In: J.W. Doran and A.J. Jones (eds.) Methods for assessing soil quality. Soil Sci. Soc. Am. Spec. Publ. 49. SSSA, Madison, WI.

Amendment

Aspect of soil degradation	Soil descriptor	Criteria for healthy soil condition		Land areas that shall be excluded from achieving the related criterion
Part A: soil descriptors with criteria for healthy soil condition established at Union level				
Salinization	Electrical Conductivity (deci-Siemens per meter)	< 4 dS m−1 when using saturated soil paste extract (eEC) measurement method, or equivalent criterion if using another measurement method		Naturally saline land areas; Land areas directly affected by sea level rise
Soil erosion	Soil erosion rate (tonnes per hectare per year)	≤ 2 t ha^{-1} y^{-1}		Badlands and other unmanaged natural land areas, except if they represent a significant disaster risk
Loss of soil organic carbon	Soil Organic Carbon (SOC) concentration (g per kg)	- For organic soils: respect targets set for such soils at national level in accordance with Article 4.1, 4.2, 9.4 of Regulation (EU) …/…[+]		No exclusion
		deleted		***deleted***
		deleted		
Subsoil compaction	Bulk density in subsoil (upper part of B or E horizon[1]); Member States may replace this descriptor with an equivalent parameter (g	Soil texture[2]	range	Non-managed soils in natural land areas
		sand, loamy sand, sandy loam, loam	<1.80	
		Sandy clay loam, loam, clay loam, silt, silt loam	<1.75	
		silt loam, silty	<1.65	

per cm^3)	clay loam	
	Sandy clay, silty clay, clay loam with 35-45% clay	<1.58
	Clay	<1.47
	In case a Member State replaces the soil descriptor “bulk density in subsoil” with an equivalent parameter, it shall adopt a criterion for healthy soil condition for the chosen soil descriptor that is equivalent to the criterion set for “bulk density in subsoil”.	

+ OP : please insert in the text the number of Regulation on nature restoration contained in document COM(2022) 304

[1] As defined in the FAO Guidelines for Soil Description, Chapter 5 (https://www.fao.org/3/a0541e/a0541e.pdf)

[2] As defined in Arshad, M.A., B. Lowery, and B. Grossman. 1996. Physical tests for monitoring soil quality. p.123- 142. In: J.W. Doran and A.J. Jones (eds.) Methods for assessing soil quality. Soil Sci. Soc. Am. Spec. Publ. 49. SSSA, Madison, WI.

Or. en

Justification

In many contexts, a SOC/clay ratio does not sufficiently give info on the carbon content in all soils. This linear relationship is not true for all soils. Over a certain clay content, the carbon content can be on a good level even though the SOC/clay ration is not fulfilled.

Amendment 639
Daniela Rondinelli

Proposal for a directive
Annex I – Part A

Text proposed by the Commission

Aspect of soil degradation	Soil descriptor	Criteria for healthy soil condition	Land areas that shall be excluded from achieving the related criterion

Part A: soil descriptors with criteria for healthy soil condition established at Union level

Salinisation	Electrical Conductivity (deci-Siemens per meter)	< 4 dS m−1 when using saturated soil paste extract (eEC) measurement method, or equivalent criterion if using another measurement method		Naturally saline land areas; Land areas directly affected by sea level rise
Soil erosion	Soil erosion rate (tonnes per hectare per year)	≤ 2 t ha^{-1} y^{-1}		Badlands and other unmanaged natural land areas, except if they represent a significant disaster risk
Loss of soil organic carbon	***Soil Organic Carbon (SOC) concentration (g per kg)***	***— For organic soils: respect targets set for such soils at national level in accordance with Article 4.1, 4.2, 9.4 of Regulation (EU) …/…***		***No exclusion***
		— For mineral soils: SOC/Clay ratio > 1/13;		***Non-managed soils in natural land areas***
		Member States may apply a corrective factor where specific soil types or climatic conditions justify it, taking into account the actual SOC content in permanent grasslands.		
Subsoil compaction	Bulk density in subsoil (upper part of B or E horizon[1]); Member States may replace this descriptor with an equivalent parameter (g per cm^3)	Soil texture[2]	range	Non-managed soils in natural land areas
		sand, loamy sand, sandy loam, loam	<1.80	
		Sandy clay loam, loam, clay loam, silt, silt loam	<1.75	
		silt loam, silty clay loam	<1.65	
		Sandy clay, silty clay, clay loam with 35-45% clay	<1.58	
		Clay	<1.47	

		In case a Member State replaces the soil descriptor "bulk density in subsoil" with an equivalent parameter, it shall adopt a criterion for healthy soil condition for the chosen soil descriptor that is equivalent to the criterion set for "bulk density in subsoil".	

[+] OP: please insert in the text the number of Regulation on nature restoration contained in document COM(2022) 304

[1] As defined in the FAO Guidelines for Soil Description, Chapter 5 (https://www.fao.org/3/a0541e/a0541e.pdf)

[2] As defined in Arshad, M.A., B. Lowery, and B. Grossman. 1996. *Physical tests for monitoring soil quality*. p.123- 142. In: J.W. Doran and A.J. Jones (eds.) *Methods for assessing soil quality*. Soil Sci. Soc. Am. Spec. Publ. 49. SSSA, Madison, WI.

Amendment

Aspect of soil degradation	Soil descriptor	Criteria for healthy soil condition	Land areas that shall be excluded from achieving the related criterion
Part A: soil descriptors with criteria for healthy soil condition established at Union level			
Salinisation	Electrical Conductivity (deci-Siemens per meter)	< 4 dS m−1 when using saturated soil paste extract (eEC) measurement method, or equivalent criterion if using another measurement method	Naturally saline land areas; Land areas directly affected by sea level rise
Soil erosion	Soil erosion rate (tonnes per hectare per year)	≤ 2 t ha^{-1} y^{-1}	Badlands and other unmanaged natural land areas, except if they represent a significant disaster risk
		≤ 10 t ha^{-1} y^{-1} for agricultural areas, but Member States are free to impose stricter limits	
deleted	***deleted***	***deleted***	***deleted***
		deleted	***deleted***

deleted

Subsoil compaction	Bulk density in subsoil (upper part of B or E horizon[1]); Member States may replace this descriptor with an equivalent parameter (g per cm^3)	Soil texture[2]	Range	Non-managed soils in natural land areas
		Sand, loamy sand, sandy loam, loam	<1.80	
		Sandy clay loam, loam, clay loam, silt, silt loam	<1.75	
		Silt loam, silty clay loam	<1.65	
		Sandy clay, silty clay, clay loam with 35-45% clay	<1.58	
		Clay	<1.47	
		In case a Member State replaces the soil descriptor 'bulk density in subsoil' with an equivalent parameter, it shall adopt a criterion for healthy soil condition for the chosen soil descriptor that is equivalent to the criterion set for 'bulk density in subsoil'.		

[1] As defined in the FAO Guidelines for Soil Description, Chapter 5 (https://www.fao.org/3/a0541e/a0541e.pdf)

[2] As defined in Arshad, M.A., B. Lowery, and B. Grossman. 1996. *Physical tests for monitoring soil quality*. p.123- 142. In: J.W. Doran and A.J. Jones (eds.) *Methods for assessing soil quality*. Soil Sci. Soc. Am. Spec. Publ. 49. SSSA, Madison, WI.

Or. it

Amendment 640
Sarah Wiener

Proposal for a directive
Annex I – Part B

Text proposed by the Commission

Part B: soil descriptors with criteria for healthy soil condition established at Member States level

Excess nutrient content in soil	Extractable phosphorus (mg per kg)	< “maximum value”;The “maximum value” shall be laid down by the Member State within the range 30-50 mg kg^{-1}	No exclusion
Soil contamination	- concentration of heavy metals in soil: As, Sb, Cd, Co, Cr (total), Cr (VI), Cu, Hg, Pb, Ni, Tl, V, Zn (µg per kg)	Reasonable assurance, obtained from soil point sampling, identification and investigation of contaminated sites and any other relevant information, that no unacceptable risk for human health and the environment from soil contamination exists. Habitats with naturally high concentration of heavy metals that are included in Annex I of Council Directive 92/43/EEC[1] shall remain protected.	No exclusion
	- concentration of a selection of organic contaminants established by Member States and taking into account existing concentration limits e.g. for water quality and air emissions in Union legislation		

Reduction of soil capacity to retain water	Soil water holding capacity of the soil sample (% of volume of water / volume of saturated soil)	The estimated value for the total water holding capacity of a soil district by river basin or subbasin is above the minimal threshold. The minimal threshold shall be set (in tonnes) by the Member State at soil district and river basin or subbasin level at such a value that the impacts of floodings following intense rain events or of periods of low soil moisture due to drought events are mitigated.	No exclusion

[1] Council Directive 92/43/EEC of 21 May 1992 on the conservation of natural habitats and of wild fauna and flora (OJ L 206, 22.7.1992, p. 7).

Amendment

Part B: soil descriptors with criteria for healthy soil condition established at Member States level

Excess nutrient content in soil	Extractable phosphorus (mg per kg)	< "maximum value"; The "maximum value" shall be laid down by the Member State within the range 30-50 mg kg^{-1}	No exclusion
Soil contamination	- concentration of heavy metals in soil: As, Sb, Cd, Co, Cr (total), Cr (VI), Cu, Hg, Pb, Ni, Tl, V, Zn (µg per kg)	Reasonable assurance, obtained from soil point sampling, identification and investigation of contaminated sites and any other relevant information, that no unacceptable risk for human health and the environment from soil contamination exists.	No exclusion
	- concentration of ***contaminants with high priority in soil as***		

established at EU level by [2 years after entry into force of this directive]; a selection of organic ***and inorganic*** contaminants established by Member States, ***including (POP) contaminants regulated by Regulation (EU) No 2019/1021*** and taking into account existing concentration limits e.g. for water quality and air emissions in Union legislation.

- ***Accumulation of contaminants should not occur***
- ***concentration of pesticide and biodcide resdiues (priority pesticides for cumulative assessment)***
- ***concentration of PFAS (Per- and polyfluoroalkyl substances)***
- ***concentration of microplastics***
- ***concentration of pharmaceutical and veterinary products***
- ***substances of emerging***

	concern		
		Habitats with naturally high concentration of heavy metals that are included in Annex I of Council Directive 92/43/EEC[1] shall remain protected.	
		Use of |SAIO regulation data[2] and Total Applied Toxicity (TAT) indicator	

[1] Council Directive 92/43/EEC of 21 May 1992 on the conservation of natural habitats and of wild fauna and flora (OJ L 206, 22.7.1992, p. 7).

[2] Regulation (EU) 2022/2379 on Statistics on Agricultural Inputs and Outputs

Or. en

Amendment 641
Petros Kokkalis

Proposal for a directive
Annex I – Part B

Text proposed by the Commission

Part B: soil descriptors with criteria for healthy soil condition established at Member States level

Excess nutrient content in soil	Extractable phosphorus (mg per kg)	< "maximum value"; The "maximum value" shall be laid down by the Member State within the range 30-50 mg kg^{-1}	No exclusion
Soil contamination	- concentration of heavy metals in soil: As, Sb, Cd, Co, Cr (total), Cr (VI), Cu, Hg, Pb, Ni, Tl, V, Zn (µg per kg)	Reasonable assurance, obtained from soil point sampling, identification and investigation of contaminated sites and any other relevant information, that no unacceptable risk for human health and the environment from soil	No exclusion

		contamination exists.	
	- concentration of a selection of organic contaminants established by Member States and taking into account existing concentration limits e.g. for water quality and air emissions in Union legislation	Habitats with naturally high concentration of heavy metals that are included in Annex I of Council Directive 92/43/EEC[3] shall remain protected.	
Reduction of soil capacity to retain water	Soil water holding capacity of the soil sample (% of volume of water / volume of saturated soil)	The estimated value for the total water holding capacity of a soil district by river basin or subbasin is above the minimal threshold. The minimal threshold shall be set (in tonnes) by the Member State at soil district and river basin or subbasin level at such a value that the impacts of floodings following intense rain events or of periods of low soil moisture due to drought events are mitigated.	No exclusion

[3] Council Directive 92/43/EEC of 21 May 1992 on the conservation of natural habitats and of wild fauna and flora (OJ L 206, 22.7.1992, p. 7).

Amendment

Part B: soil descriptors with criteria for healthy soil condition established at Member States level

Excess nutrient content in soil	Extractable phosphorus (mg per kg)	< "maximum value"; The "maximum value" shall be laid down by the Member State within the range 30-50 mg kg^{-1}	No exclusion
Soil contamination	- concentration of heavy metals in soil: As, Sb, Cd, Co, Cr (total), Cr (VI), Cu, Hg, Pb, Ni, Tl, V, Zn (µg per kg)	Reasonable assurance, obtained from soil point sampling, identification and investigation of contaminated sites and any other relevant information, that no unacceptable risk for human health and the environment from soil contamination exists.	No exclusion
	- concentration of a selection of organic contaminants established by Member States and taking into account existing concentration limits e.g. for water quality and air emissions in Union	Habitats with naturally high concentration of heavy metals that are included in Annex I of Council Directive 92/43/EEC[3] shall remain protected.	

	legislation		
Reduction of soil capacity to retain water	Soil water holding capacity of the soil sample (% of volume of water / volume of saturated soil)	The estimated value for the total water holding capacity of a soil district by river basin or subbasin is above the minimal threshold.	No exclusion
	- ***Concentrations of active substances of plant protection products and biocides***	The minimal threshold shall be set (in tonnes) by the Member State at soil district and river basin or subbasin level at such a value that the impacts of floodings following intense rain events or of periods of low soil moisture due to drought events are mitigated.	
	- ***Concentration of veterinary products residues***		

[3] Council Directive 92/43/EEC of 21 May 1992 on the conservation of natural habitats and of wild fauna and flora (OJ L 206, 22.7.1992, p. 7).

Or. en

Amendment 642
Elsi Katainen

Proposal for a directive
Annex I – Part B

Text proposed by the Commission

Part B: soil descriptors with criteria for healthy soil condition established at Member States level

Excess nutrient content in soil	Extractable phosphorus (mg per kg)	< “maximum value”;The “maximum value” shall be laid down by the Member State within the range 30-50 mg kg^{-1}	No exclusion
Soil contamination	- concentration of heavy metals in soil: As, Sb, Cd, Co, Cr (total), Cr (VI), Cu, Hg, Pb, Ni, Tl, V, Zn (µg per kg)	Reasonable assurance, obtained from soil point sampling, identification and investigation of contaminated sites and any other relevant information, that no unacceptable risk for human health and the environment from soil contamination exists.	No exclusion
	- concentration of a selection of organic contaminants established by Member States and taking into account existing concentration limits e.g. for water quality and air emissions in Union legislation	Habitats with naturally high concentration of heavy metals that are included in Annex I of Council Directive 92/43/EEC[1] shall remain protected.	
Reduction of soil capacity to retain water	Soil water holding capacity of the soil sample (% of volume of water / volume of saturated soil)	The estimated value for the total water holding capacity of a soil district by river basin or subbasin is above the minimal threshold. The minimal threshold shall be set (in tonnes) by the Member State at soil district and river basin or subbasin level at such a value that the impacts of floodings following intense rain events or of periods of low soil moisture due to drought events are mitigated.	No exclusion

[1] Council Directive 92/43/EEC of 21 May 1992 on the conservation of natural habitats and of wild fauna and flora (OJ L 206, 22.7.1992, p. 7).

Amendment

Part B: soil descriptors with criteria for healthy soil condition established at Member States level

Excess nutrient content in soil	Extractable phosphorus (mg per kg)	< "maximum value"; The "maximum value" shall be laid down by the Member State within the range 30-50 mg kg^{-1} ***or within the range of 30-50 mL/L if using acidic ammonium acetate solution***	No exclusion
Soil contamination	- concentration of heavy metals in soil: As, Sb, Cd, Co, Cr (total), Cr (VI), Cu, Hg, Pb, Ni, Tl, V, Zn (µg per kg)	Reasonable assurance, obtained from soil point sampling, identification and investigation of contaminated sites and any other relevant information, that no unacceptable risk for human health and the environment from soil contamination exists.	No exclusion
	- concentration of a selection of organic contaminants established by Member States and taking into account existing concentration limits e.g. for water quality and air emissions in Union legislation	Habitats with naturally high concentration of heavy metals that are included in Annex I of Council Directive 92/43/EEC[1] shall remain protected.	

[1] Council Directive 92/43/EEC of 21 May 1992 on the conservation of natural habitats and of wild fauna and flora (OJ L 206, 22.7.1992, p. 7).

Or. en

Justification

Different soil types have different needs. Too specified monitoring framework takes better into account different soil types and needs, taking into account the current monitoring frameworks.

Amendment 643
Maria Noichl

Proposal for a directive
Annex I – Part B

Text proposed by the Commission

Part B: soil descriptors with criteria for healthy soil condition established at Member States level

Excess nutrient content in soil	Extractable phosphorus (mg per kg)	< "maximum value"; The "maximum value" shall be laid down by the Member State within the range 30-50 mg kg^{-1}	No exclusion
Soil contamination	- concentration of heavy metals in soil: As, Sb, Cd, Co, Cr (total), Cr (VI), Cu, Hg, Pb, Ni, Tl, V, Zn (µg per kg)	Reasonable assurance, obtained from soil point sampling, identification and investigation of contaminated sites and any other relevant information, that no unacceptable risk for human health and the environment from soil contamination exists.	No exclusion
	- concentration of a selection of organic contaminants established by Member States and taking into account existing concentration limits e.g. for water quality and air	Habitats with naturally high concentration of heavy metals that are included in Annex I of Council Directive 92/43/EEC[3] shall remain protected.	

	emissions in Union legislation		
Reduction of soil capacity to retain water	Soil water holding capacity of the soil sample (% of volume of water / volume of saturated soil)	The estimated value for the total water holding capacity of a soil district by river basin or subbasin is above the minimal threshold. The minimal threshold shall be set (in tonnes) by the Member State at soil district and river basin or subbasin level at such a value that the impacts of floodings following intense rain events or of periods of low soil moisture due to drought events are mitigated.	No exclusion

[3] Council Directive 92/43/EEC of 21 May 1992 on the conservation of natural habitats and of wild fauna and flora (OJ L 206, 22.7.1992, p. 7).

Amendment

Part B: soil descriptors with criteria for healthy soil condition established at Member States level

Excess nutrient content in soil	Extractable phosphorus (mg per kg)	< “maximum value”; The “maximum value” shall be laid down by the Member State within the range 30-50 mg kg^{-1}	No exclusion
Soil contamination	- concentration of heavy metals in soil: As, Sb, Cd, Co, Cr (total), Cr (VI), Cu, Hg,	Reasonable assurance, obtained from soil point sampling, identification and investigation of contaminated sites and any other relevant information, that no	No exclusion

	Pb, Ni, Tl, V, Zn (µg per kg)	unacceptable risk for human health and the environment from soil contamination exists.	
	- concentration of a selection of organic contaminants established by Member States and taking into account existing concentration limits e.g. for water quality and air emissions in Union legislation	Habitats with naturally high concentration of heavy metals that are included in Annex I of Council Directive 92/43/EEC[3] shall remain protected.	
		Concentration of active substances of synthetic pesticides, including their metabolites and derivates (all approved and previously approved pesticides in the Union)	
Reduction of soil capacity to retain water	Soil water holding capacity of the soil sample (% of volume of water / volume of saturated soil)	The estimated value for the total water holding capacity of a soil district by river basin or subbasin is above the minimal threshold. The minimal threshold shall be set (in tonnes) by the Member State at soil district and river basin or subbasin level at such a value that the impacts of floodings following intense rain events or of periods of low soil moisture due to drought events are	No exclusion

mitigated.

Application rate synthetic fertilizer	*Mineral nitrogen (kg ha^{-1})*	*Frequency of surpassing threshold of 50mg Nitrate L^{-1} according to Directive 91/676/EEC[3a]*

[3] Council Directive 92/43/EEC of 21 May 1992 on the conservation of natural habitats and of wild fauna and flora (OJ L 206, 22.7.1992, p. 7).
[3a] Council Directive 91/976/EEC of 12 December 1991 concerning the protection of waters against pollution caused by nitrates from agricultural sources (OJ L 375? 31.12.1991, p.1-8).

Or. en

Amendment 644
Annie Schreijer-Pierik

Proposal for a directive
Annex I – Part B

Text proposed by the Commission

Part B: soil descriptors with criteria for healthy soil condition established at Member States level

Excess nutrient content in soil	Extractable phosphorus (mg per kg)	< "***maximum*** value"; The "***maximum*** value" shall be laid down by the Member State ***within the range 30-50 mg kg^{-1}***	No exclusion
Soil contamination	- concentration of heavy metals in soil: As, Sb, Cd, Co, Cr (total), Cr (VI), Cu, Hg, Pb, Ni, Tl, V, Zn (µg per kg)	Reasonable assurance, obtained from soil point sampling, identification and investigation of contaminated sites and any other relevant information, that no unacceptable risk for human health and the environment from soil contamination exists.	No exclusion

	- concentration of a selection of organic contaminants established by Member States and taking into account existing concentration limits e.g. for water quality and air emissions in Union legislation	Habitats with naturally high concentration of heavy metals that are included in Annex I of Council Directive 92/43/EEC[3] shall remain protected.	
Reduction of soil capacity to retain water	Soil water holding capacity of the soil sample (% of volume of water / volume of saturated soil)	The estimated value for the total water holding capacity of a soil district by river basin or subbasin is above the minimal threshold. The minimal threshold shall be set (in tonnes) by the Member State at soil district and river basin or subbasin level at such a value that the impacts of floodings following intense rain events or of periods of low soil moisture due to drought events are mitigated.	No exclusion

[3] Council Directive 92/43/EEC of 21 May 1992 on the conservation of natural habitats and of wild fauna and flora (OJ L 206, 22.7.1992, p. 7).

Amendment

Part B: soil descriptors with criteria for healthy soil condition established at Member States level

Excess nutrient	Extractable phosphorus (mg	< "***minimum*** value"; The "***minimum*** value" shall be laid down by	No exclusion

content in soil	per kg)	the Member State	
Soil contaminatio n	concentration of heavy metals in soil: As, Sb, Cd, Co, Cr (total), Cr (VI), Cu, Hg, Pb, Ni, Tl, V, Zn (µg per kg)	Reasonable assurance, obtained from soil point sampling, identification and investigation of contaminated sites and any other relevant information, that no unacceptable risk for human health and the environment from soil contamination exists.	No exclusion
	concentration of a selection of organic contaminants established by Member States and taking into account existing concentration limits e.g. for water quality and air emissions in Union legislation	Habitats with naturally high concentration of heavy metals that are included in Annex I of Council Directive 92/43/EEC[3] shall remain protected.	
Reduction of soil capacity to retain water	Soil water holding capacity of the soil sample (% of volume of water / volume of saturated soil)	The estimated value for the total water holding capacity of a soil district by river basin or subbasin is above the minimal threshold. The minimal threshold shall be set (in tonnes) by the Member State at soil district and river basin or subbasin level at such a value that the impacts of floodings following intense rain events or of periods of low soil moisture due to drought events are mitigated.	No exclusion

[3] Council Directive 92/43/EEC of 21 May 1992 on the conservation of natural habitats and of wild

fauna and flora (OJ L 206, 22.7.1992, p. 7).

Or. en

Amendment 645
Nicola Procaccini

Proposal for a directive
Annex I – Part B

Text proposed by the Commission

Part B: soil descriptors with criteria for healthy soil condition established at Member States level

Excess nutrient content in soil	Extractable phosphorus (mg per kg)	***< "maximum value"; The*** "***maximum*** value" shall be laid down by the Member State ***within the range 30-50 mg kg^{-1}***	No exclusion
Soil contamination	- concentration of heavy metals in soil: As, Sb, Cd, Co, Cr (total), Cr (VI), Cu, Hg, Pb, Ni, Tl, V, Zn (µg per kg)	Reasonable assurance, obtained from soil point sampling, identification and investigation of contaminated sites and any other relevant information, that no unacceptable risk for human health and the environment from soil contamination exists.	No exclusion
	- concentration of a selection of organic contaminants established by Member States and taking into account existing concentration limits e.g. for water quality and air emissions in Union	Habitats with naturally high concentration of heavy metals that are included in Annex I of Council Directive 92/43/EEC[3] shall remain protected.	

legislation

Reduction of soil capacity to retain water	Soil water holding capacity of the soil sample (% of volume of water / volume of saturated soil)	The estimated value for the total water holding capacity of a soil district by river basin or subbasin is above the minimal threshold. The minimal threshold shall be set (in tonnes) by the Member State at soil district and river basin or subbasin level at such a value that the impacts of floodings following intense rain events or of periods of low soil moisture due to drought events are mitigated.	No exclusion

[3] Council Directive 92/43/EEC of 21 May 1992 on the conservation of natural habitats and of wild fauna and flora (OJ L 206, 22.7.1992, p. 7).

Amendment

Part B: soil descriptors with criteria for healthy soil condition established at Member States level

Excess nutrient content in soil	Extractable phosphorus (mg per kg)	"***minimum*** value" shall be laid down by the Member State	No exclusion
Soil contaminatio n	concentration of heavy metals in soil: As, Sb, Cd, Co, Cr (total), Cr (VI), Cu, Hg, Pb, Ni, Tl, V, Zn (µg per kg)	Reasonable assurance, obtained from soil point sampling, identification and investigation of contaminated sites and any other relevant information, that no unacceptable risk for human health and the environment from soil	No exclusion

		contamination exists.	
	concentration of a selection of organic contaminants established by Member States and taking into account existing concentration limits e.g. for water quality and air emissions in Union legislation	Habitats with naturally high concentration of heavy metals that are included in Annex I of Council Directive 92/43/EEC[3] shall remain protected.	
Reduction of soil capacity to retain water	Soil water holding capacity of the soil sample (% of volume of water / volume of saturated soil)	The estimated value for the total water holding capacity of a soil district by river basin or subbasin is above the minimal threshold. The minimal threshold shall be set (in tonnes) by the Member State at soil district and river basin or subbasin level at such a value that the impacts of floodings following intense rain events or of periods of low soil moisture due to drought events are mitigated.	No exclusion

[3] Council Directive 92/43/EEC of 21 May 1992 on the conservation of natural habitats and of wild fauna and flora (OJ L 206, 22.7.1992, p. 7).

Or. en

Amendment 646
Jan Huitema

Proposal for a directive
Annex I – Part B

Text proposed by the Commission

Part B: soil descriptors with criteria for healthy soil condition established at Member States level

Excess nutrient content in soil	***Extractable phosphorus (mg per kg)***	***"maximum value"; The "maximum value" shall be laid down by the Member State within the range 30-50 mg kg^{-1}***	***No exclusion***
Soil contamination	- concentration of heavy metals in soil: As, Sb, Cd, Co, Cr (total), Cr (VI), Cu, Hg, Pb, Ni, Tl, V, Zn (µg per kg)	Reasonable assurance, obtained from soil point sampling, identification and investigation of contaminated sites and any other relevant information, that no unacceptable risk for human health and the environment from soil contamination exists.	No exclusion
	- concentration of a selection of organic contaminants established by Member States and taking into account existing concentration limits e.g. for water quality and air emissions in Union legislation	Habitats with naturally high concentration of heavy metals that are included in Annex I of Council Directive 92/43/EEC[3] shall remain protected.	
Reduction of soil capacity to retain water	Soil water holding capacity of the soil sample (% of volume of water / volume of saturated soil)	The estimated value for the total water holding capacity of a soil district by river basin or subbasin is above the minimal threshold.	No exclusion

		The minimal threshold shall be set (in tonnes) by the Member State at soil district and river basin or subbasin level at such a value that the impacts of floodings following intense rain events or of periods of low soil moisture due to drought events are mitigated.	

[3] Council Directive 92/43/EEC of 21 May 1992 on the conservation of natural habitats and of wild fauna and flora (OJ L 206, 22.7.1992, p. 7).

Amendment

Part B: soil descriptors with criteria for healthy soil condition established at Member States level

deleted	***deleted***	***deleted***	***deleted***
Soil contamination	concentration of heavy metals in soil: As, Sb, Cd, Co, Cr (total), Cr (VI), Cu, Hg, Pb, Ni, Tl, V, Zn (µg per kg)	Reasonable assurance, obtained from soil point sampling, identification and investigation of contaminated sites and any other relevant information, that no unacceptable risk for human health and the environment from soil contamination exists.	No exclusion
	concentration of a selection of organic contaminants established by Member States and taking into account existing concentration limits e.g. for water quality and air emissions in	Habitats with naturally high concentration of heavy metals that are included in Annex I of Council Directive 92/43/EEC[3] shall remain protected.	

	Union legislation		
Reduction of soil capacity to retain water	Soil water holding capacity of the soil sample (% of volume of water / volume of saturated soil)	The estimated value for the total water holding capacity of a soil district by river basin or subbasin is above the minimal threshold. The minimal threshold shall be set (in tonnes) by the Member State at soil district and river basin or subbasin level at such a value that the impacts of floodings following intense rain events or of periods of low soil moisture due to drought events are mitigated.	No exclusion

[3] Council Directive 92/43/EEC of 21 May 1992 on the conservation of natural habitats and of wild fauna and flora (OJ L 206, 22.7.1992, p. 7).

Or. en

Justification

The phosphorus levels of soil do not have negative effects on the soil ecology, agricultural productivity or human health. The only possible negative effect of high phosphorus levels is regarding water quality. However, water quality is already monitored and regulated under the Water Framework Directive and the Nitrates Directive. The indicators regarding phosphorus and nitrogen are therefore out of scope of this regulation and should be deleted.

Amendment 647
Bert-Jan Ruissen

Proposal for a directive
Annex I – Part B

Text proposed by the Commission

Part B: soil descriptors with criteria for healthy soil condition established at Member States level

Excess nutrient content in soil	Extractable phosphorus (mg per kg)	***< "maximum value"; The "maximum value" shall be laid down by the Member State within the range 30-50 mg kg^{-1}***	No exclusion
Soil contamination	- concentration of heavy metals in soil: As, Sb, Cd, Co, Cr (total), Cr (VI), Cu, Hg, Pb, Ni, Tl, V, Zn (µg per kg)	Reasonable assurance, obtained from soil point sampling, identification and investigation of contaminated sites and any other relevant information, that no unacceptable risk for human health and the environment from soil contamination exists.	No exclusion
	- concentration of a selection of organic contaminants established by Member States and taking into account existing concentration limits e.g. for water quality and air emissions in Union legislation	Habitats with naturally high concentration of heavy metals that are included in Annex I of Council Directive 92/43/EEC[3] shall remain protected.	
Reduction of soil capacity to retain water	Soil water holding capacity of the soil sample (% of volume of water / volume of saturated soil)	The estimated value for the total water holding capacity of a soil district by river basin or subbasin is above the minimal threshold. The minimal threshold shall be set (in tonnes) by the Member State at soil district and river basin or subbasin level at such a value that the impacts of floodings following intense rain	No exclusion

		events or of periods of low soil moisture due to drought events are mitigated.	

[3] Council Directive 92/43/EEC of 21 May 1992 on the conservation of natural habitats and of wild fauna and flora (OJ L 206, 22.7.1992, p. 7).

Amendment

Part B: soil descriptors with criteria for healthy soil condition established at Member States level

Excess nutrient content in soil	Extractable phosphorus (mg per kg)	***deleted***	No exclusion
Soil contaminatio n	concentration of heavy metals in soil: As, Sb, Cd, Co, Cr (total), Cr (VI), Cu, Hg, Pb, Ni, Tl, V, Zn (µg per kg)	Reasonable assurance, obtained from soil point sampling, identification and investigation of contaminated sites and any other relevant information, that no unacceptable risk for human health and the environment from soil contamination exists.	No exclusion
	concentration of a selection of organic contaminants established by Member States and taking into account existing concentration limits e.g. for water quality and air emissions in Union legislation	Habitats with naturally high concentration of heavy metals that are included in Annex I of Council Directive 92/43/EEC[3] shall remain protected.	
Reduction of soil capacity to retain water	Soil water holding capacity of the soil sample (% of	The estimated value for the total water holding capacity of a soil district by river basin or	No exclusion

volume of water / volume of saturated soil)	subbasin is above the minimal threshold. The minimal threshold shall be set (in tonnes) by the Member State at soil district and river basin or subbasin level at such a value that the impacts of floodings following intense rain events or of periods of low soil moisture due to drought events are mitigated.

[3] Council Directive 92/43/EEC of 21 May 1992 on the conservation of natural habitats and of wild fauna and flora (OJ L 206, 22.7.1992, p. 7).

Or. en

Justification

Healthy soil criteria should include a minimum phosphorus level. Without adequate phosphorus supply, plant health and crop productivity are hampered. The reference method does not take into account specificities of soil types.

Amendment 648
Petros Kokkalis

Proposal for a directive
Annex I – Part C

Text proposed by the Commission

Part C: soil descriptors without criteria

Aspect of soil degradation	Soil descriptor
Excess nutrient content in soil	Nitrogen in soil (mg g^{-1})
Acidification	Soil acidity (pH)
Topsoil compaction	Bulk density in topsoil (A-horizon[1]) (g cm^{-3})

Loss of soil biodiversity	***Soil basal respiration (mm^3 O_2 g^{-1} hr^{-1}) in dry soil*** Member States ***may*** also select other optional soil descriptors for biodiversity such as: - metabarcoding of bacteria, fungi, protists and animals; - abundance and diversity of nematodes; - microbial biomass; - abundance and diversity of earthworms (in cropland); - invasive alien species and plant pests

[1] As defined in the FAO Guidelines for Soil Description, Chapter 5 (https://www.fao.org/3/a0541e/a0541e.pdf)

Amendment

Part C: soil descriptors without criteria

Aspect of soil degradation	Soil descriptor
Excess nutrient content in soil	Nitrogen in soil (mg g^{-1})
Acidification	Soil acidity (pH)
Topsoil compaction	Bulk density in topsoil (A-horizon[1]) (g cm^{-3})
Loss of soil biodiversity	***Among those soil descriptors, the Member States should choose at least one:*** ***Community-level physiological profiling (CLPP) to analyse the metabolic activity of microorganisms in a mixed microbial community.*** ***Shifts in microbial populations often indicate upcoming changes in the overall health of the environment.*** ***Metabarcoding (eDNA) to characterise biodiversity, establish diversity thresholds and monitor community changes.*** Member States ***shall*** also select other soil descriptors for biodiversity such as: - metabarcoding of bacteria, fungi, protists and animals; - abundance and diversity of nematodes; - microbial biomass;

- abundance and diversity of earthworms (in cropland);
- invasive alien species and plant pests.

[1] As defined in the FAO Guidelines for Soil Description, Chapter 5 (https://www.fao.org/3/a0541e/a0541e.pdf)

Or. en

Amendment 649
Sarah Wiener

Proposal for a directive
Annex I – Part C

Text proposed by the Commission

Part C: soil descriptors without criteria

Aspect of soil degradation	Soil descriptor
Excess nutrient content in soil	Nitrogen in soil (mg g^{-1})
Acidification	Soil acidity (pH)
Topsoil compaction	Bulk density in topsoil (A-horizon[4]) (g cm^{-3})
Loss of soil biodiversity	Soil basal respiration (mm^3 O_2 g^{-1} hr^{-1}) in dry soil Member States ***may*** also select other optional soil descriptors for biodiversity such as: - metabarcoding of bacteria, fungi, protists and animals; - abundance and diversity of nematodes; - microbial biomass; - abundance and diversity of earthworms (in cropland); - invasive alien species and plant pests

[4] As defined in the FAO Guidelines for Soil Description, Chapter 5 (https://www.fao.org/3/a0541e/a0541e.pdf)

Amendment

Part C: soil descriptors without criteria

Aspect of soil degradation	Soil descriptor
Excess nutrient content in soil	Nitrogen in soil (mg g^{-1})
Acidification	Soil acidity (pH)
Topsoil compaction	Bulk density in topsoil (A-horizon[4]) (g cm^{-3})
Loss of soil biodiversity	Soil basal respiration (mm^3 O_2 g^{-1} hr^{-1}) in dry soil Member States ***shall*** also select other soil descriptors for biodiversity such as: - ***community-level physiological profiling (CLPP) to analyse the metabolic activity of microorganisms in a mixed microbial community. Shifts in microbial populations often indicate upcoming changes in the overall health of the environment;*** - ***metbarcoding (eDNA) to characterise biodiversity, establish diversity thresholds and monitor community changes;*** - ***microbial biodiversity through PLFA profiles;*** - metabarcoding of bacteria, fungi, protists and animals; - abundance and diversity of nematodes; - microbial biomass; - abundance and diversity of earthworms (in cropland); - invasive alien species and plant pests.
Additional soil screening requirements for diffuse pollution.	***Generic chemical screening approaches to assess trends and possible risks, e.g. pollutants of emerging concern.*** ***Use of |SAIO regulation data[4a], and Total Applied Toxicity (TAT) indicator***

[4] As defined in the FAO Guidelines for Soil Description, Chapter 5 (https://www.fao.org/3/a0541e/a0541e.pdf)

[4a] Regulation (EU) 2022/2379 on Statistics on Agricultural Inputs and Outputs

Or. en

Amendment 650
Jan Huitema

Proposal for a directive
Annex I – Part C

Text proposed by the Commission

Part C: soil descriptors without criteria

Aspect of soil degradation	Soil descriptor
Excess nutrient content in soil	***Nitrogen in soil (mg g^{-1})***
Acidification	Soil acidity (pH)
Topsoil compaction	Bulk density in topsoil (A-horizon[1]) (g cm^{-3})
Loss of soil biodiversity	Soil basal respiration (mm^3 O_2 g^{-1} hr^{-1}) in dry soil Member States may also select other optional soil descriptors for biodiversity such as: - metabarcoding of bacteria, fungi, protists and animals; - abundance and diversity of nematodes; - microbial biomass; - abundance and diversity of earthworms (in cropland); - invasive alien species and plant pests

[1] As defined in the FAO Guidelines for Soil Description, Chapter 5 (https://www.fao.org/3/a0541e/a0541e.pdf)

Amendment

Part C: soil descriptors without criteria

Aspect of soil degradation	Soil descriptor
deleted	***deleted***
Acidification	Soil acidity (pH)
Topsoil compaction	Bulk density in topsoil (A-horizon[1]) (g cm^{-3})
Loss of soil biodiversity	Soil basal respiration (mm^3 O_2 g^{-1} hr^{-1}) in dry soil

Member States may also select other soil descriptors for biodiversity such as:

- metabarcoding of bacteria, fungi, protists and animals;
- abundance and diversity of nematodes;
- microbial biomass;
- abundance and diversity of earthworms (in cropland);
- invasive alien species and plant pests.

---

[1] As defined in the FAO Guidelines for Soil Description, Chapter 5 (https://www.fao.org/3/a0541e/a0541e.pdf)

Or. en

Amendment 651
Sarah Wiener

Proposal for a directive
Annex I – Part D

Text proposed by the Commission

Part D: land take and soil sealing indicators

Aspect of soil degradation	Land take and soil sealing indicators
Land take and soil sealing	Total artificial land (km² and % of Member State surface)
	Land take, Reverse land take Net land take (average per year–- in km² and % of Member State surface)
	Soil sealing (total km² and % of Member State surface)
	Member States ***may*** also measure other related optional indicators ***such as***:
	- land fragmentation
	- land recycling rate
	- land taken for commercial activities, logistic hubs, renewable energies, surfaces such as airports, roads, mines
	- consequences of land take such as quantification of loss of ecosystem services, change in floods intensity

Amendment

Part D: land take and soil sealing indicators

Aspect of soil degradation	Land take and soil sealing indicators
Land take and soil sealing	Total artificial land (km² and % of Member State surface)
	Land take, Reverse land take Net land take (average per year–- in km² and % of Member State surface)
	Soil sealing (total km² and % of Member State surface)
	Unsealed area (total km and % of Member State surface)
	Member States ***shall*** also measure other related optional indicators ***including but not limited to***: - land fragmentation - land recycling rate - land taken for commercial activities, logistic hubs, renewable energies, surfaces such as airports, roads, mines - consequences of land take such as quantification of loss of ecosystem services, change in floods intensity

Or. en

Amendment 652
Elsi Katainen

Proposal for a directive
Annex II – Part A

Text proposed by the Commission

Part A: Methodology for determining sampling points

Activity	Minimum criteria for methodology
Determination of soil sampling points (sample survey)	The sample survey shall be designed from a complete sample frame containing the best available information on the soil properties distribution, including but not limited to information resulting from previous national measurements and measurements under the LUCAS programme. The sampling scheme shall be a stratified random sampling optimized on the soil health descriptors. The size of the national sample shall meet the requirement of a maximum percent error (or Coefficient of Variation) of 5% for the estimation of the area having healthy soils.

	The Commission sample for the survey set under Art 6(4) may contribute to a maximum of 20 % of the size of national samples. The allocation and size of the sample shall be determined by applying the Bethel algorithm (Bethel, 1989)[5] accounting for the required maximum estimation error.

[5] Bethel, J. 1989. "Sample Allocation in Multivariate Surveys." Survey Methodology 15: 47–57.

Amendment

Part A: Methodology for determining sampling points

Activity	Minimum criteria for methodology
Determination of soil sampling points ***and layers*** (sample survey)	The sample survey shall be designed from a complete sample frame containing the best available information on the soil properties distribution, including but not limited to information resulting from previous national measurements and measurements under the LUCAS programme. The sampling scheme shall be ***designed with an unbiased and probabilistic manner and*** a stratified random sampling optimized on the soil health descriptors. The size of the national sample shall meet the requirement of a maximum percent error (or Coefficient of Variation) of 5% for the estimation of the area having healthy soils. The Commission sample for the survey set under Art 6(4) may contribute to a maximum of 20 % of the size of national samples. The allocation and size of the sample shall be determined by applying the Bethel algorithm (Bethel, 1989)[5] accounting for the required maximum estimation error.

[5] Bethel, J. 1989. "Sample Allocation in Multivariate Surveys." Survey Methodology 15: 47–57.

Or. en

Amendment 653
Petros Kokkalis

Proposal for a directive
Annex II – Part B

Text proposed by the Commission

Part B: Methodology for determining or estimating the values of soil descriptors

Soil descriptor	Reference methodology	Minimum methodological criteria	Validated transfer function required (if using a methodology different from the reference methodology[6])?
Soil texture (clay, silt and sand content – needed for the determination of other descriptors and related ranges)	Preferred method: ISO 11277:1998 Determination of particle size distribution in mineral soil material – Method by sieving and sedimentation Alternative method: ISO13320:2009 Particle size analysis – Laser diffraction methods		YES
Electrical Conductivity	Option 1: saturated soil paste extract (eEC) measurement method (FAO SOP: GLOSOLAN-SOP-08[7]) Option 2: ISO 11265:1994 Determination of The Specific Electrical Conductivity;		YES
Soil erosion rate		Soil erosion rate estimation shall take into account all actions taken to mitigate or compensate the erosion risk, including post-fire	N/A

mitigation measures.

Soil erosion rate estimation shall include all relevant erosion processes such as erosion by water, wind, harvest and tillage.

Soil erosion by water shall be assessed by considering the following factors:

- soil characteristics (e.g. erodibility, soil crusting, soil roughness),
- climate (e.g. rainfall erosivity – intensity and duration, considering relevant climate change projections for a given area),
- topography (e.g. slope steepness and length),
- vegetation cover, crop type, land use and management practices to control or reduce erosion,
- management practices (e.g. cover crops, reduced tillage, mulching, etc.),
- burned areas.

Soil erosion by wind shall be assessed by considering the following factors:

- soil characteristics (e.g. erodibility),
- climate (e.g. soil moisture, wind speed, evaporation),
- vegetation (e.g. crop type),

		- management practices to control or reduce erosion (e.g. wind breaks).	
Soil Organic Carbon (SOC)	ISO 10694:1995 Determination of organic and total carbon after dry combustion		YES
Bulk density in subsoil (B horizon[8]) or equivalent[9] parameter chosen by Member States	ISO 11272:2017 for determination of dry bulk density		YES
	In case an equivalent parameter is chosen, the methodology shall be either a European or International standard when available; if such standard is not available, the methodology chosen shall either be available in the scientific literature or publicly available.		
Extractable phosphorus	ISO 11263:1994 for spectrometric determination of phosphorus soluble in sodium hydrogen carbonate solution (P-Olsen)		YES
- Concentration of heavy metals in soil: As, Sb, Cd, Co, Cr (total), Cr (VI), Cu, Hg, Pb, Ni, Tl, V, Zn	Potential environmental available content of heavy metals in soils based on ISO 17586:2016 using dilute nitric acid.		YES
- Concentration of a selection of organic contaminants defined by Member States and taking into account		Use European or International standards when available; if such standard is not available, the methodology chosen	N/A

existing EU legislation (e.g. on water quality or pesticides)		shall either be available in the scientific literature or publicly available	
Soil water holding capacity	Methodology to determine the value for one sample point:	Minimum criteria for estimating the total soil water holding capacity of a soil district on a river basin or sub-basin scale:	YES (for point value)
	Option 1: LABORATORY: ISO 11274:2019 for determination of the water-retention characteristic.	- for the area of land not taken estimate the total value of soil water holding capacity	
	Option 2: ESTIMATION: apply methodology described in the scientific article "New generation of hydraulic pedotransfer functions for Europe"[10] based on texture (or particle size distribution) and soil organic carbon.	- for the area of land taken, consider setting the water holding capacity of impervious areas to zero, attributing proportionately intermediate values to semi-impervious and other artificial areas.	
Nitrogen in soil	ISO 11261:1995 for determination of total soil nitrogen using a modified Kjeldahl method		YES
Soil acidity	ISO 10390:2005 for determination of pH in H_2O and $CaCl_2$ extract (pH-H_2O and pH-$CaCl_2$)		YES
Bulk density in "topsoil" (A-horizon[11])	ISO 11272:2017 for determination of dry bulk density		YES
Soil basal respiration	Follow indications described in the scientific article "Microbial biomass and activities in soil as affected by frozen and cold storage"[13]		YES

Member States may also select optional soil biodiversity descriptors such as: - Metabarcoding[12] of bacteria, fungi, protists and animals; - Abundance and diversity of nematodes; - Microbial biomass; - Abundance and diversity of earthworms (in cropland)	Use European or international standards when available; if such standard is not available, the methodology chosen shall either be available in the scientific literature or publicly available.	For other soil biodiversity descriptors: N/A

[5] Bethel, J. 1989. "Sample Allocation in Multivariate Surveys." Survey Methodology 15: 47–57.

[6] The methodologies different from the reference methodology shall either be available in the scientific literature or publicly available.

[7] https://www.fao.org/3/cb3355en/cb3355en.pdf

[8] As defined in the FAO Guidelines for Soil Description, Chapter 5 (https://www.fao.org/3/a0541e/a0541e.pdf)

[9] Equivalent according to the EEA report: Soil monitoring in Europe – Indicators and thresholds for soil health assessments — European Environment Agency (europa.eu)

[10]

[11] As defined in the FAO Guidelines for Soil Description, Chapter 5 (https://www.fao.org/3/a0541e/a0541e.pdf)

[12] Sequencing of DNA barcodes for measuring taxonomical and functional diversity of archaea, bacteria, fungi and other eukaryotes as was done for LUCAS Soil Biodiversity based on https://doi.org/10.1111/ejss.13299

[13] https://www.sciencedirect.com/science/article/abs/pii/S0038071797001259

Amendment

Part B: Methodology for determining or estimating the values of soil descriptors

Soil descriptor	Reference methodology	Minimum methodological criteria	Validated transfer function required (if using a methodology different from the reference methodology[6])?
Soil texture (clay, silt and sand content – needed for the determination of other descriptors and related ranges)	Preferred method: ISO 11277:1998 Determination of particle size distribution in mineral soil material – Method by sieving and sedimentation Alternative method: ISO13320:2009 Particle size analysis – Laser diffraction methods		YES
Electrical Conductivity	Option 1: saturated soil paste extract (eEC) measurement method (FAO SOP: GLOSOLAN-SOP-08[7]) Option 2: ISO 11265:1994 Determination of The Specific Electrical Conductivity;		YES
Soil erosion rate		Soil erosion rate estimation shall take into account all actions taken to mitigate or compensate the erosion risk, including post-fire mitigation measures. Soil erosion rate estimation shall include all relevant erosion processes such as erosion by water, wind, harvest and tillage.	N/A

		Soil erosion by water shall be assessed by considering the following factors: - soil characteristics (e.g. erodibility, soil crusting, soil roughness), - climate (e.g. rainfall erosivity – intensity and duration, considering relevant climate change projections for a given area), - topography (e.g. slope steepness and length), - vegetation cover, crop type, land use and management practices to control or reduce erosion, - management practices (e.g. cover crops, reduced tillage, mulching, etc.), - burned areas. Soil erosion by wind shall be assessed by considering the following factors: - soil characteristics (e.g. erodibility), - climate (e.g. soil moisture, wind speed, evaporation), - vegetation (e.g. crop type), - management practices to control or reduce erosion (e.g. wind breaks).	
Soil Organic Carbon (SOC)	ISO 10694:1995 Determination of organic and total		YES

	carbon after dry combustion		
Bulk density in subsoil (B horizon[8]) or equivalent[9] parameter chosen by Member States	ISO 11272:2017 for determination of dry bulk density		YES
	In case an equivalent parameter is chosen, the methodology shall be either a European or International standard when available; if such standard is not available, the methodology chosen shall either be available in the scientific literature or publicly available.		
Extractable phosphorus	ISO 11263:1994 for spectrometric determination of phosphorus soluble in sodium hydrogen carbonate solution (P-Olsen)		YES
- Concentration of heavy metals in soil: As, Sb, Cd, Co, Cr (total), Cr (VI), Cu, Hg, Pb, Ni, Tl, V, Zn	Potential environmental available content of heavy metals in soils based on ISO 17586:2016 using dilute nitric acid.		YES
- Concentration of a selection of organic contaminants defined by Member States and taking into account existing EU legislation (e.g. on water quality or pesticides)		Use European or International standards when available; if such standard is not available, the methodology chosen shall either be available in the scientific literature or publicly available	N/A

- ***Concentrations of active substances of plant protection products and transformation products of these active substances*** - ***Concentration of veterinary products residues***			
Soil water holding capacity	Methodology to determine the value for one sample point:	Minimum criteria for estimating the total soil water holding capacity of a soil district on a river basin or sub-basin scale:	YES (for point value)
	Option 1: LABORATORY: ISO 11274:2019 for determination of the water-retention characteristic.	- for the area of land not taken estimate the total value of soil water holding capacity	
	Option 2: ESTIMATION: apply methodology described in the scientific article "New generation of hydraulic pedotransfer functions for Europe"[10] based on texture (or particle size distribution) and soil organic carbon.	- for the area of land taken, consider setting the water holding capacity of impervious areas to zero, attributing proportionately intermediate values to semi-impervious and other artificial areas.	
Nitrogen in soil	ISO 11261:1995 for determination of total soil nitrogen using a modified Kjeldahl method		YES
Soil acidity	ISO 10390:2005 for determination of pH in H_2O and $CaCl_2$ extract (pH-H_2O and pH-$CaCl_2$)		YES
Bulk density in "topsoil" (A-horizon[11])	ISO 11272:2017 for determination of dry		YES

	bulk density		
Soil basal respiration	Follow indications described in the scientific article "Microbial biomass and activities in soil as affected by frozen and cold storage"[13]		YES
Member States may also select optional soil biodiversity descriptors such as: - Metabarcoding[12] of bacteria, fungi, protists and animals; - Abundance and diversity of nematodes; - Microbial biomass; - Abundance and diversity of earthworms (in cropland)		Use European or international standards when available; if such standard is not available, the methodology chosen shall either be available in the scientific literature or publicly available.	For other soil biodiversity descriptors: N/A

[5] Bethel, J. 1989. "Sample Allocation in Multivariate Surveys." Survey Methodology 15: 47–57.

[6] The methodologies different from the reference methodology shall either be available in the scientific literature or publicly available.

[7] https://www.fao.org/3/cb3355en/cb3355en.pdf

[8] As defined in the FAO Guidelines for Soil Description, Chapter 5 (https://www.fao.org/3/a0541e/a0541e.pdf)

[9] Equivalent according to the EEA report: Soil monitoring in Europe – Indicators and thresholds for soil health assessments — European Environment Agency (europa.eu)

[10]

[11] As defined in the FAO Guidelines for Soil Description, Chapter 5 (https://www.fao.org/3/a0541e/a0541e.pdf)

[12] Sequencing of DNA barcodes for measuring taxonomical and functional diversity of archaea,

bacteria, fungi and other eukaryotes as was done for LUCAS Soil Biodiversity based on https://doi.org/10.1111/ejss.13299

[13] https://www.sciencedirect.com/science/article/abs/pii/S0038071797001259

Or. en

Amendment 654
Elsi Katainen

Proposal for a directive
Annex II – Part B

Text proposed by the Commission

Part B: Methodology for determining or estimating the values of soil descriptors

Soil descriptor	Reference methodology	Minimum methodological criteria	Validated transfer function required (if using a methodology different from the reference methodology[6])?
Soil texture (clay, silt and sand content – needed for the determination of other descriptors and related ranges)	Preferred method: ISO 11277:1998 Determination of particle size distribution in mineral soil material – Method by sieving and sedimentation Alternative method: ISO13320:2009 Particle size analysis – Laser diffraction methods		YES
Electrical Conductivity	Option 1: saturated soil paste extract (eEC) measurement method (FAO SOP: GLOSOLAN-SOP-08[7])		YES

	Option 2: ISO 11265:1994 Determination of The Specific Electrical Conductivity;		
Soil erosion rate		Soil erosion rate estimation shall take into account all actions taken to mitigate or compensate the erosion risk, including post-fire mitigation measures. Soil erosion rate estimation shall include all relevant erosion processes such as erosion by water, wind, harvest and tillage. Soil erosion by water shall be assessed by considering the following factors: - soil characteristics (e.g. erodibility, soil crusting, soil roughness), - climate (e.g. rainfall erosivity – intensity and duration, considering relevant climate change projections for a given area), - topography (e.g. slope steepness and length), - vegetation cover, crop type, land use and management practices to control or reduce erosion, - management practices (e.g. cover crops, reduced tillage, mulching, etc.), - burned areas.	N/A

		Soil erosion by wind shall be assessed by considering the following factors: - soil characteristics (e.g. erodibility), - climate (e.g. soil moisture, wind speed, evaporation), - vegetation (e.g. crop type), - management practices to control or reduce erosion (e.g. wind breaks).	
Soil Organic Carbon (SOC)	ISO 10694:1995 Determination of organic and total carbon after dry combustion		YES
Bulk density in subsoil (B horizon[8]) or equivalent[9] parameter chosen by Member States	ISO 11272:2017 for determination of dry bulk density		YES
	In case an equivalent parameter is chosen, the methodology shall be either a European or International standard when available; if such standard is not available, the methodology chosen shall either be available in the scientific literature or publicly available.		
Extractable phosphorus	ISO 11263:1994 for spectrometric determination of phosphorus soluble in sodium hydrogen carbonate solution (P-Olsen)		YES

- Concentration of heavy metals in soil: As, Sb, Cd, Co, Cr (total), Cr (VI), Cu, Hg, Pb, Ni, Tl, V, Zn	Potential environmental available content of heavy metals in soils based on ISO 17586:2016 using dilute nitric acid.		YES
- Concentration of a selection of organic contaminants defined by Member States and taking into account existing EU legislation (e.g. on water quality or pesticides)		Use European or International standards when available; if such standard is not available, the methodology chosen shall either be available in the scientific literature or publicly available	N/A
Soil water holding capacity	Methodology to determine the value for one sample point:	Minimum criteria for estimating the total soil water holding capacity of a soil district on a river basin or sub-basin scale:	YES (for point value)
	Option 1: LABORATORY: ISO 11274:2019 for determination of the water-retention characteristic.	- for the area of land not taken estimate the total value of soil water holding capacity	
	Option 2: ESTIMATION: apply methodology described in the scientific article "New generation of hydraulic pedotransfer functions for Europe"[10] based on texture (or particle size distribution) and soil organic carbon.	- for the area of land taken, consider setting the water holding capacity of impervious areas to zero, attributing proportionately intermediate values to semi-impervious and other artificial areas.	
Nitrogen in soil	ISO 11261:1995 for determination of total soil nitrogen using a modified Kjeldahl method		YES
Soil acidity	ISO 10390:2005 for determination of pH in H_2O and $CaCl_2$ extract (pH-H_2O and pH-		YES

	$CaCl_2$)		
Bulk density in "topsoil" (A-horizon[11])	ISO 11272:2017 for determination of dry bulk density		YES
Soil basal respiration	Follow indications described in the scientific article "Microbial biomass and activities in soil as affected by frozen and cold storage"[13]		YES
Member States may also select optional soil biodiversity descriptors such as:			
- Metabarcoding[12] of bacteria, fungi, protists and animals;			For other soil biodiversity descriptors: N/A
- Abundance and diversity of nematodes;		Use European or international standards when available; if such standard is not available, the methodology chosen shall either be available in the scientific literature or publicly available.	
- Microbial biomass;			
- Abundance and diversity of earthworms (in cropland)			

[5] Bethel, J. 1989. "Sample Allocation in Multivariate Surveys." Survey Methodology 15: 47–57.

[6] The methodologies different from the reference methodology shall either be available in the scientific literature or publicly available.

[7] https://www.fao.org/3/cb3355en/cb3355en.pdf

[8] As defined in the FAO Guidelines for Soil Description, Chapter 5 (https://www.fao.org/3/a0541e/a0541e.pdf)

[9] Equivalent according to the EEA report: Soil monitoring in Europe – Indicators and thresholds for soil health assessments — European Environment Agency (europa.eu)

[10]

[11] As defined in the FAO Guidelines for Soil Description, Chapter 5 (https://www.fao.org/3/a0541e/a0541e.pdf)

[12] Sequencing of DNA barcodes for measuring taxonomical and functional diversity of archaea, bacteria, fungi and other eukaryotes as was done for LUCAS Soil Biodiversity based on https://doi.org/10.1111/ejss.13299

[13] https://www.sciencedirect.com/science/article/abs/pii/S0038071797001259

Amendment

Part B: Methodology for determining or estimating the values of soil descriptors

Soil descriptor	Reference methodology	Minimum methodological criteria	Validated transfer function required (if using a methodology different from the reference methodology[6])?
Soil texture (clay, silt and sand content – needed for the determination of other descriptors and related ranges)	Preferred method: ISO 11277:1998 Determination of particle size distribution in mineral soil material – Method by sieving and sedimentation Alternative method: ISO13320:2009 Particle size analysis – Laser diffraction methods		YES
Electrical Conductivity	Option 1: saturated soil paste extract (eEC) measurement method (FAO SOP: GLOSOLAN-SOP-08[7]) Option 2: ISO 11265:1994 Determination of The Specific Electrical		YES

	Conductivity;		
Soil erosion rate		Soil erosion rate estimation shall take into account all actions taken to mitigate or compensate the erosion risk, including post-fire mitigation measures. Soil erosion rate estimation shall include all relevant erosion processes such as erosion by water, wind, harvest and tillage. ***For example RUSLE soil erosion model can be used.*** Soil erosion by water shall be assessed by considering the following factors: - soil characteristics (e.g. erodibility, soil crusting, soil roughness), - climate (e.g. rainfall erosivity – intensity and duration, considering relevant climate change projections for a given area), - topography (e.g. slope steepness and length), - vegetation cover, crop type, land use and management practices to control or reduce erosion, - management practices (e.g. cover crops, reduced tillage, mulching, etc.), - burned areas. Soil erosion by wind shall be assessed by considering the following factors:	N/A

		- soil characteristics (e.g. erodibility), - climate (e.g. soil moisture, wind speed, evaporation), - vegetation (e.g. crop type), - management practices to control or reduce erosion (e.g. wind breaks).	
Soil Organic Carbon (SOC)	ISO 10694:1995 Determination of organic and total carbon after dry combustion		YES
Bulk density in subsoil (B horizon[8]) or equivalent[9] parameter chosen by Member States	ISO 11272:2017 for determination of dry bulk density In case an equivalent parameter is chosen, the methodology shall be either a European or International standard when available; if such standard is not available, the methodology chosen shall either be available in the scientific literature or publicly available.		YES
Extractable phosphorus	ISO 11263:1994 for spectrometric determination of phosphorus soluble in sodium hydrogen carbonate solution (P-Olsen) ***or using acidic ammonium acetate solution***		YES
- Concentration of heavy metals in	Potential environmental		YES

soil: As, Sb, Cd, Co, Cr (total), Cr (VI), Cu, Hg, Pb, Ni, Tl, V, Zn	available content of heavy metals in soils based on ISO 17586:2016 using dilute nitric acid.		
- Concentration of a selection of organic contaminants defined by Member States and taking into account existing EU legislation (e.g. on water quality or pesticides)		Use European or International standards when available; if such standard is not available, the methodology chosen shall either be available in the scientific literature or publicly available	N/A
Soil water holding capacity	Methodology to determine the value for one sample point:	Minimum criteria for estimating the total soil water holding capacity of a soil district on a river basin or sub-basin scale:	YES (for point value)
	Option 1: LABORATORY: ISO 11274:2019 for determination of the water-retention characteristic.	- for the area of land not taken estimate the total value of soil water holding capacity	
	Option 2: ESTIMATION: apply methodology described in the scientific article "New generation of hydraulic pedotransfer functions for Europe"[10] based on texture (or particle size distribution) and soil organic carbon.	- for the area of land taken, consider setting the water holding capacity of impervious areas to zero, attributing proportionately intermediate values to semi-impervious and other artificial areas.	
Nitrogen in soil	ISO 11261:1995 for determination of total soil nitrogen using a modified Kjeldahl method		YES
Soil acidity	ISO 10390:2005 for determination of pH in		YES

	H_2O and $CaCl_2$ extract (pH-H_2O and pH-$CaCl_2$)		
Bulk density in "topsoil" (A-horizon[11])	ISO 11272:2017 for determination of dry bulk density		YES
Soil basal respiration	Follow indications described in the scientific article "Microbial biomass and activities in soil as affected by frozen and cold storage"[13]		YES
Member States may also select optional soil biodiversity descriptors such as:			
- Metabarcoding[12] of bacteria, fungi, protists and animals;			For other soil biodiversity descriptors: N/A
- Abundance and diversity of nematodes;		Use European or international standards when available; if such standard is not available, the methodology chosen shall either be available in the scientific literature or publicly available.	
- Microbial biomass;			
- Abundance and diversity of earthworms (in cropland)			

[5] Bethel, J. 1989. "Sample Allocation in Multivariate Surveys." Survey Methodology 15: 47–57.

[6] The methodologies different from the reference methodology shall either be available in the scientific literature or publicly available.

[7] https://www.fao.org/3/cb3355en/cb3355en.pdf

[8] As defined in the FAO Guidelines for Soil Description, Chapter 5 (https://www.fao.org/3/a0541e/a0541e.pdf)

[9] Equivalent according to the EEA report: Soil monitoring in Europe – Indicators and thresholds

for soil health assessments — European Environment Agency (europa.eu)

[10]

[11] As defined in the FAO Guidelines for Soil Description, Chapter 5 (https://www.fao.org/3/a0541e/a0541e.pdf)

[12] Sequencing of DNA barcodes for measuring taxonomical and functional diversity of archaea, bacteria, fungi and other eukaryotes as was done for LUCAS Soil Biodiversity based on https://doi.org/10.1111/ejss.13299

[13] https://www.sciencedirect.com/science/article/abs/pii/S0038071797001259

Or. en

Justification

Already existing and used method should be recognize. In the Member States, where soils is naturally more acidic, acidic ammonium acetate gives more accurate results.

Amendment 655
Daniel Buda, Dan-Ştefan Motreanu

Proposal for a directive
Annex II – Part C – indent 2 a (new)

Text proposed by the Commission	*Amendment*
	– The establishment of new farms or the development of existing farms should be exempt from being categorized as soil sealing.

Or. en

Amendment 656
Marlene Mortler, Lena Düpont, Peter Jahr, Christine Schneider, Norbert Lins

Proposal for a directive
Annex III

Text proposed by the Commission	*Amendment*
[...]	***deleted***

Or. de

Justification

The provisions on sustainable land management in Article 10 of and Annex III to the proposal are not needed. There are already numerous rules and measures with the same objective. The conditionality requirements of the current CAP constitute comprehensive criteria for sustainable land management. De facto secondary legislation by virtue of the proposal's additional requirements would lead to areas of primary competence such as the CAP and the objective of sovereign food production being undermined.

Amendment 657
Elsi Katainen, Jan Huitema, Ulrike Müller, Asger Christensen, Emma Wiesner, Atidzhe Alieva-Veli

Proposal for a directive
Annex III – subheading 1

Text proposed by the Commission	*Amendment*
SUSTAINABLE SOIL MANAGEMENT PRINCIPLES	***INDICATIVE LIST ON*** SUSTAINABLE SOIL MANAGEMENT PRINCIPLES

Or. en

Justification

The list should be based on the minimum criteria and Member States can expand the indicative list.

Amendment 658
Anne Sander

Proposal for a directive
Annex III – paragraph 1 – introductory part

Text proposed by the Commission	*Amendment*
The following principles shall apply:	The following principles shall apply ***while taking into account the specific environmental features of each territory***:

Or. fr

Amendment 659
Elsi Katainen, Jan Huitema, Ulrike Müller, Asger Christensen, Emma Wiesner, Atidzhe

Alieva-Veli, Martin Hlaváček

Proposal for a directive
Annex III – paragraph 1 – introductory part

Text proposed by the Commission	*Amendment*
The following principles ***shall*** apply:	The following principles ***may*** apply:

Or. en

Justification

The list should be based on the minimum criteria and Member States can expand the indicative list.

Amendment 660
Clara Aguilera, Paolo De Castro

Proposal for a directive
Annex III – paragraph 1 – point a

Text proposed by the Commission	*Amendment*
(a) avoid leaving soil bare by establishing and maintaining vegetative soil cover, especially during environmentally sensitive periods;	(a) avoid***, as far as possible,*** leaving soil bare by establishing and maintaining vegetative soil cover, especially during environmentally sensitive periods ***and being compatible with good local agronomic or forest practices***;

Or. en

Amendment 661
Anne Sander

Proposal for a directive
Annex III – paragraph 1 – point a

Text proposed by the Commission	*Amendment*
(a) avoid leaving soil bare by establishing and maintaining vegetative soil cover, especially during environmentally sensitive periods;	(a) avoid leaving soil bare by establishing and maintaining vegetative soil cover, especially during environmentally sensitive periods***, and***

	taking into account good agronomic and forestry practices;

Or. fr

Amendment 662
Sarah Wiener
on behalf of the Verts/ALE Group

Proposal for a directive
Annex III – paragraph 1 – point a

Text proposed by the Commission	*Amendment*
(a) avoid leaving soil bare by establishing and maintaining vegetative soil cover, especially ***during*** environmentally sensitive ***periods;***	(a) avoid leaving soil bare by establishing and maintaining vegetative soil cover ***ensuring living roots all year round***, especially ***in*** environmentally sensitive ***areas***

Or. en

Amendment 663
Elsi Katainen, Jan Huitema, Ulrike Müller, Asger Christensen

Proposal for a directive
Annex III – paragraph 1 – point a

Text proposed by the Commission	*Amendment*
(a) avoid leaving soil bare by establishing and maintaining vegetative soil cover, especially during environmentally sensitive periods;	(a) avoid leaving soil bare by establishing and maintaining vegetative soil cover ***on agricultural soil***, especially during environmentally sensitive periods;

Or. en

Amendment 664
Clara Aguilera, Paolo De Castro

Proposal for a directive
Annex III – paragraph 1 – point b

Text proposed by the Commission	*Amendment*
(b) minimise physical soil disturbance;	(b) minimise physical soil disturbance ***to foster techniques of no tillage or conservation tillage if local conditions are favourable***;

Or. en

Amendment 665
Sarah Wiener
on behalf of the Verts/ALE Group

Proposal for a directive
Annex III – paragraph 1 – point b

Text proposed by the Commission	*Amendment*
(b) minimise physical soil disturbance;	(b) minimise physical soil disturbance; ***prioritise least soil-disturbing tillage practices***

Or. en

Amendment 666
Anne Sander

Proposal for a directive
Annex III – paragraph 1 – point b

Text proposed by the Commission	*Amendment*
(b) minimise physical soil disturbance;	(b) minimise ***unnecessary*** physical soil disturbance;

Or. fr

Amendment 667
Maria Noichl

Proposal for a directive

Annex III – paragraph 1 – point c

Text proposed by the Commission	*Amendment*
(c) avoid inputs or release of substances into soil that may harm human health or the environment, or degrade soil health;	(c) avoid inputs or release of substances into soil**, such as synthetic pesticides,** that may harm human health or the environment, or degrade soil health;

Or. en

Amendment 668
Sarah Wiener
on behalf of the Verts/ALE Group

Proposal for a directive
Annex III – paragraph 1 – point c

Text proposed by the Commission	*Amendment*
(c) avoid inputs or release of substances into soil that may harm human health or the environment, or degrade soil health;	(c) avoid inputs or release of substances into soil that may harm human ***or animal*** health or the environment, ***above-ground and soil-based biodiversity,*** or degrade soil health;

Or. en

Amendment 669
Petros Kokkalis

Proposal for a directive
Annex III – paragraph 1 – point c

Text proposed by the Commission	*Amendment*
(c) avoid inputs or release of substances into soil that may harm human health or the environment, or degrade soil health;	(c) avoid inputs or release of substances ***, such as pesticides,*** into soil that may harm human health or the environment, or degrade soil health;

Or. en

Amendment 670
Clara Aguilera, Paolo De Castro

Proposal for a directive
Annex III – paragraph 1 – point d

Text proposed by the Commission	*Amendment*
(d) ensure that machinery use is adapted to the strength of the soil, and that the number and frequency of operations on soils are limited so that they do not compromise soil health;	(d) ensure that machinery use is adapted to the strength of the soil, and that the number and frequency of operations on soils are limited so that they do not compromise ***long term*** soil health ***and the productive and ecosystem services that provides***;

Or. en

Amendment 671
Sarah Wiener
on behalf of the Verts/ALE Group

Proposal for a directive
Annex III – paragraph 1 – point d

Text proposed by the Commission	*Amendment*
(d) ensure that machinery use is adapted to the strength of the soil, and that the number and frequency of operations on soils are limited so that they do not compromise soil health***;***	(d) ensure that machinery use is adapted to the strength of the soil, and that the number and frequency of operations on soils are limited so that they do not compromise soil health***, and do not lead to compaction***

Or. en

Amendment 672
Maria Noichl

Proposal for a directive
Annex III – paragraph 1 – point e

Text proposed by the Commission	*Amendment*
(e) when fertilization is applied, ensure	(e) when fertilization is applied, ensure

adaptation to the needs of the plant and trees at the given location and in the given period, and to the condition of soil and prioritize circular solutions that enrich the organic content;	adaptation to the needs of the plant and trees at the given location and in the given period, and to the condition of soil***, reduce and preferably avoid the use of synthetic fertilizers*** and prioritize circular solutions that enrich the organic content;

Or. en

Amendment 673
Nicola Procaccini

Proposal for a directive
Annex III – paragraph 1 – point e

Text proposed by the Commission	*Amendment*
(e) when fertilization is applied, ensure ***adaptation*** to the needs of the plant and trees at the given location and in the given period, and to the condition of soil and prioritize circular solutions that enrich the organic content;	(e) when fertilization is applied, ensure ***integrated nutrient approach, supported by precision farming and adapted*** to the needs of the plant and trees at the given location and in the given period, and to the condition of soil***, in order to drive higher nutrient use efficiency*** and prioritize ***combined and optimized uptake of on-farm, adequate fertilizing and*** circular solutions that ***help to*** enrich the organic content ***and support quality yields***;

Or. en

Amendment 674
Sarah Wiener
on behalf of the Verts/ALE Group

Proposal for a directive
Annex III – paragraph 1 – point e

Text proposed by the Commission	*Amendment*
(e) when fertilization is applied, ensure adaptation to the needs of the plant and trees at the given location and in the given period, and to the condition of soil and prioritize circular solutions that enrich the	(e) ***(e)*** when fertilization is applied, ensure adaptation to the needs of the plant and trees at the given location and in the given period, and to the condition of soil and prioritize circular solutions that enrich

organic content;	the organic content; ***with view to achieving zero nutrient losses while prioritising living roots all year round .***

Or. en

Amendment 675
Clara Aguilera, Paolo De Castro

Proposal for a directive
Annex III – paragraph 1 – point e

Text proposed by the Commission	*Amendment*
(e) when fertilization is applied, ensure adaptation to the needs of the plant and trees at the given location and in the given period, and to the condition of soil and prioritize circular solutions that enrich the ***organic*** content;	(e) when fertilization is applied, ensure adaptation to the needs of the plant and trees at the given location and in the given period, and to the condition of soil and prioritize ***biofertilizers from*** circular solutions that enrich the ***carbon*** content***, structure, fertility and biodiversity in the soil***;

Or. en

Amendment 676
Petros Kokkalis

Proposal for a directive
Annex III – paragraph 1 – point e

Text proposed by the Commission	*Amendment*
(e) when fertilization is applied, ensure adaptation to the needs of the plant and trees at the given location and in the given period, and to the condition of soil and prioritize circular solutions that enrich the organic content;	(e) when fertilization is applied, ensure adaptation to the needs of the plant and trees at the given location and in the given period, and to the condition of soil***, reduce and preferably avoid the use of chemical fertilisers*** and prioritize circular solutions that enrich the organic content;

Or. en

Amendment 677
Elsi Katainen, Jan Huitema, Ulrike Müller, Asger Christensen

Proposal for a directive
Annex III – paragraph 1 – point e

Text proposed by the Commission	*Amendment*
(e) when fertilization is applied, ***ensure*** adaptation to the needs of the plant and trees at the given location and in the given period, and to the condition of soil and prioritize circular solutions that enrich the organic content;	(e) when fertilization is applied, ***ensuring the balanced and integrated nutrient*** adaptation to the needs of the plant and trees at the given location and in the given period, and to the condition of soil and prioritize circular solutions that enrich the organic content;

Or. en

Amendment 678
Daniel Buda, Dan-Ştefan Motreanu

Proposal for a directive
Annex III – paragraph 1 – point e

Text proposed by the Commission	*Amendment*
(e) when fertilization is applied, ensure adaptation to the needs of the plant and trees at the given location and in the given period, and to the condition of soil and prioritize circular solutions that ***enrich the organic content***;	(e) when fertilization is applied, ensure adaptation to the needs of the plant and trees at the given location and in the given period, and to the condition of soil and prioritize circular solutions that ***improve nutrient use efficiency***;

Or. en

Amendment 679
Sarah Wiener
on behalf of the Verts/ALE Group

Proposal for a directive
Annex III – paragraph 1 – point f

Text proposed by the Commission	*Amendment*
(f) in case of irrigation, maximise	(f) ***minimise irrigation and prioritise***

efficiency of irrigation systems and irrigation management and ensure that when recycled wastewater is used, the water quality meets the requirements set out in Annex I of Regulation (EU) 2020/741 of the European Parliament and of the Council[108] and when water from other sources is used, it does not degrade soil health;	***water retention.*** In case of irrigation, maximise efficiency of irrigation systems and irrigation management and ensure that when recycled wastewater is used, the water quality meets the requirements set out in Annex I of Regulation (EU) 2020/741 of the European Parliament and of the Council[108] and when water from other sources is used, it does not degrade soil health;
[108] Regulation (EU) 2020/741 of the European Parliament and of the Council of 25 May 2020 on minimum requirements for water reuse (OJ L 177, 5.6.2020, p. 32).	[108] Regulation (EU) 2020/741 of the European Parliament and of the Council of 25 May 2020 on minimum requirements for water reuse (OJ L 177, 5.6.2020, p. 32).

Or. en

Amendment 680
Sarah Wiener
on behalf of the Verts/ALE Group

Proposal for a directive
Annex III – paragraph 1 – point g

Text proposed by the Commission	*Amendment*
(g) ensure soil protection by the creation and maintenance of adequate landscape features at the landscape level;[109]	(g) ensure soil protection by the creation and maintenance of adequate landscape features at the landscape level; ***ensure soil protection by the creation and maintenance of adequate landscape features at the landscape level, including but not limited to buffer strips, field margins with native flowers, hedgerows, trees, copses, terrace walls, ponds, habitat corridors and stepping stones*** [109]
[109] This principle does not apply to forest soils	[109] This principle does not apply to forest soils

Or. en

Amendment 681
Clara Aguilera, Paolo De Castro

Proposal for a directive
Annex III – paragraph 1 – point g

Text proposed by the Commission	*Amendment*
(g) ensure soil protection by the creation and maintenance of adequate landscape features at the landscape level;[109]	(g) ensure soil protection by the creation and maintenance of adequate landscape features at the landscape level***, adapted to local climate conditions***;[109]
[109] This principle does not apply to forest soils	[109] This principle does not apply to forest soils

Or. en

Amendment 682
Clara Aguilera, Paolo De Castro

Proposal for a directive
Annex III – paragraph 1 – point h

Text proposed by the Commission	*Amendment*
(h) use site-adapted species in the cultivation of crops, plants or trees where this can prevent soil degradation or contribute to improving soil health, also taking into consideration the adaptation to climate change;	(h) use site-adapted species in the cultivation of crops, plants or trees where this can prevent soil degradation or contribute to improving soil health, ***ecosystem functions and production capacities,*** also taking into consideration the adaptation to climate change;

Or. en

Amendment 683
Elsi Katainen, Jan Huitema, Ulrike Müller, Asger Christensen

Proposal for a directive
Annex III – paragraph 1 – point h

Text proposed by the Commission	*Amendment*
(h) use site-adapted species in the cultivation of crops, plants or trees where this can prevent soil degradation or contribute to improving soil health, also taking into consideration the adaptation to climate change;	(h) use site-adapted species in the cultivation of crops, plants or trees where this can prevent soil degradation or contribute to improving soil health, also taking into consideration the ***mitigation and*** adaptation to climate change;

Or. en

Amendment 684
Elsi Katainen, Jan Huitema, Ulrike Müller, Asger Christensen

Proposal for a directive
Annex III – paragraph 1 – point i

Text proposed by the Commission	*Amendment*
(i) ensure ***optimised*** water levels in organic soils so that the structure and composition of such soils are not negatively affected;[110]	(i) ensure ***sufficent*** water levels in organic soils***, based on the scientific knowledge and voluntary manner of land owners and land managers,*** so that the structure and composition of such soils are not negatively affected ***while taking account the social and economical effects***;[110]
[110] This principle does not apply to urban soils	[110] This principle does not apply to urban soils

Or. en

Amendment 685
Sarah Wiener
on behalf of the Verts/ALE Group

Proposal for a directive
Annex III – paragraph 1 – point i a (new)

Text proposed by the Commission	*Amendment*
	(ia) avoid drainage and extraction of

peat, rewet degraded peatland and develop sustainable paludiculture practices

Or. en

Amendment 686
Paolo De Castro, Clara Aguilera, Daniela Rondinelli

Proposal for a directive
Annex III – paragraph 1 – point i a (new)

Text proposed by the Commission	*Amendment*
	(ia) in the case of productive agricultural land, ensure adequate productivity and product quality levels;

Or. en

Amendment 687
Bert-Jan Ruissen

Proposal for a directive
Annex III – paragraph 1 – point j

Text proposed by the Commission	*Amendment*
(j) ***In the case of crop cultivation, ensure*** crop rotation and crop diversity, taking into consideration different crop families, root systems, water and nutrient needs, and integrated pest management;	(j) ***Favour*** crop cultivation, ensure crop rotation and crop diversity, taking into consideration different crop families, root systems, water and nutrient needs, and integrated pest management***, while ensuring that it is adapted to local climate and conditions;***

Or. en

Amendment 688
Clara Aguilera, Paolo De Castro

Proposal for a directive
Annex III – paragraph 1 – point j

Text proposed by the Commission	*Amendment*
(j) in the case of crop cultivation, ***ensure*** crop rotation and crop diversity, taking into consideration different crop families, root systems, water and nutrient needs, and integrated pest management;	(j) in the case of crop cultivation, ***promote*** crop rotation and crop diversity***,especially with the introduction of protein crops***, taking into consideration different crop families, root systems, water and nutrient needs, and integrated pest management***, while ensuring that it is adapted to particular climate and local conditions***;

Or. en

Amendment 689
Annie Schreijer-Pierik

Proposal for a directive
Annex III – paragraph 1 – point j

Text proposed by the Commission	*Amendment*
(j) in the case of crop cultivation, ensure crop rotation and crop diversity, taking into consideration different crop families, root systems, water and nutrient needs, and integrated pest management;	(j) in the case of crop cultivation, ensure crop rotation and crop diversity, taking into consideration different crop families, root systems, water and nutrient needs, and integrated pest management***, ensuring that it is adapted to local climate and conditions***;

Or. en

Amendment 690
Elsi Katainen, Jan Huitema, Ulrike Müller, Asger Christensen

Proposal for a directive
Annex III – paragraph 1 – point j

Text proposed by the Commission	*Amendment*
(j) ***in the case of crop cultivation, ensure*** crop rotation and crop diversity, taking into consideration different crop families, root systems, water and nutrient	(j) ***Local climate and other specificities conditions based*** crop rotation and crop diversity, taking into consideration different crop families, root

needs, and integrated pest management;	systems, water and nutrient needs, and integrated pest management;

Or. en

Amendment 691
Bert-Jan Ruissen

Proposal for a directive
Annex III – paragraph 1 – point k

Text proposed by the Commission	*Amendment*
(k) Adapt livestock movement and grazing time, taking into consideration animal types and stocking density, so that soil health is not compromised and the soil's capacity to provide forage is not reduced;	***deleted***

Or. en

Amendment 692
Annie Schreijer-Pierik

Proposal for a directive
Annex III – paragraph 1 – point k

Text proposed by the Commission	*Amendment*
(k) adapt livestock movement and grazing time, taking into consideration animal types and stocking density, so that soil health is not compromised and the soil's capacity to provide forage is not reduced;	***deleted***

Or. en

Amendment 693
Sarah Wiener
on behalf of the Verts/ALE Group

Proposal for a directive
Annex III – paragraph 1 – point k

Text proposed by the Commission	*Amendment*
(k) adapt livestock movement and grazing time, taking into consideration animal types and stocking density, so that soil health is not compromised and the soil's capacity to provide forage is not reduced;	(k) adapt livestock movement and grazing time, taking into consideration animal types and stocking density, so that soil health is not compromised and the soil's capacity to provide forage is not reduced; ***limiting the total stocking density to one that does not exceed 170 kg of organic nitrogen per year and per hectare of agricultural area***

Or. en

Amendment 694
Clara Aguilera, Paolo De Castro

Proposal for a directive
Annex III – paragraph 1 – point l a (new)

Text proposed by the Commission	*Amendment*
	(la) promote practices to improve crops nutrition and health, based on good soil conditions, such as the use of organic fertilizers, biostimulants, or biological control of soil diseases;

Or. en

Amendment 695
Sarah Wiener
on behalf of the Verts/ALE Group

Proposal for a directive
Annex III – paragraph 1 – point l a (new)

Text proposed by the Commission	*Amendment*
	(la) In case of land use change, avoid losses in the capacity of soils to provide ecosystem services

Or. en

Amendment 696
Clara Aguilera, Paolo De Castro

Proposal for a directive
Annex III – paragraph 1 – point l b (new)

Text proposed by the Commission	*Amendment*
	(lb) promote the organization of farmers, for example through cooperatives, to carry out the same beneficial practices and multiply their impact;

Or. en

Amendment 697
Marlene Mortler, Lena Düpont, Peter Jahr, Christine Schneider, Norbert Lins

Proposal for a directive
Annex IV

Text proposed by the Commission	*Amendment*
PROGRAMMES, PLANS, TARGETS AND MEASURES REFERRED TO IN ARTICLE 10 ***(1) The national restoration plans prepared in accordance with Regulation …/…[111] +.*** ***(2) The strategic plans to be drawn up by Member States under the Common Agricultural Policy in accordance with Regulation (EU) 2021/2115.*** ***(3) The Code of Good Agricultural Practice and the action programmes for designated vulnerable zones adopted in accordance with Directive 91/676/EEC.*** ***(4) The conservation measures and prioritized action framework established for Natura 2000 sites in accordance with***	***deleted***

Directive 92/43/EEC.

(5) The measures for achieving good ecological and chemical status of surface water bodies and good chemical and quantitative status of groundwater bodies included in river basin management plans prepared in accordance with Directive 2000/60/EC.

(6) The flood risk management measures included in the flood risk management plans prepared in accordance with Directive 2007/60/EC.

(7) The drought management plans referred to in the Union Strategy on Adaptation to Climate Change.

(8) The national action programmes established in accordance with the United Nations Convention to Combat Desertification.

(9) The targets set out under Regulation (EU) 2018/841.

(10) The targets set out under Regulation (EU) 2018/842.

(11) The national air pollution control programmes prepared under Directive (EU) 2016/2284 and the monitoring data about air pollution impacts on ecosystems reported under that Directive.

(12) The integrated national energy and climate plan established in accordance with Regulation (EU) 2018/1999.

(13) The risk assessments and disaster risk management planning in accordance with Decision No 1313/2013/EU.

(14) The national actions plans adopted in accordance with Article 8 of Regulation …/…[112] +.

---

[111] *+ OP : please insert in the text the number of Regulation on nature restoration contained in document COM(2022) 304*

[112] + OP : please insert in the text the number of Regulation of the European Parliament and of the Council the sustainable use of plant protection products and amending Regulation (EU) 2021/2115 contained in document COM(2022)305

Or. de

Justification

Consequential amendment - deletion of Article 10(1)

Amendment 698
Elsi Katainen, Jan Huitema, Ulrike Müller, Asger Christensen, Atidzhe Alieva-Veli

Proposal for a directive
Annex IV – subheading 1

Text proposed by the Commission	*Amendment*
PROGRAMMES, PLANS, TARGETS AND MEASURES REFERRED TO IN ARTICLE 10	***INDICATIVE LIST OF*** PROGRAMMES, PLANS, TARGETS AND MEASURES REFERRED TO IN ARTICLE 10

Or. en

Amendment 699
Elsi Katainen, Jan Huitema, Ulrike Müller, Asger Christensen

Proposal for a directive
Annex IV – point 14 a (new)

Text proposed by the Commission	*Amendment*
	(14a) The European Bioeconomy Strategy and possible national bioeconomy strategies

Or. en

Justification

The list of possible synergies should not be exhaustive. However it is also important to

mention bioeconomy strategy.

Amendment 700
Elsi Katainen, Jan Huitema, Ulrike Müller, Asger Christensen

Proposal for a directive
Annex VII – paragraph 1 – introductory part

Text proposed by the Commission	*Amendment*
The design and presentation of the data in the register shall enable the public to track progress in the management of potentially contaminated sites and contaminated sites. The register shall contain and present the following information at site level for the known potentially contaminated sites, contaminated sites, contaminated sites requiring further action, and contaminated sites where action was taken or is being taken:	The design and presentation of the ***anonymized*** data in the register shall enable the public***, when relevant,*** to track progress in the management of potentially contaminated sites and contaminated sites***, while respecting the property right***. The register shall contain and present the following information at site level for the known potentially contaminated sites, contaminated sites, contaminated sites requiring further action, and contaminated sites where action was taken or is being taken:

Or. en