European Parliament

2019-2024



Committee on Agriculture and Rural Development

2023/0232(COD)

6.12.2023

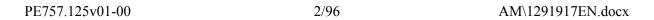
AMENDMENTS 632 - 700

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))

AM\1291917EN.docx PE757.125v01-00



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

Aspect of soil

Text proposed by the Commission

Land areas that shall be

degradation	Son woon.poor	condition		excluded from achieving the related criterion
Part A: soil descr	riptors with criter	ia for healthy soil cor	ndition estab	olished 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)	-		Badlands and other unmanaged natural land areas, except if they represent a significant disaster risk
Loss of soil organic carbon	Soil Organic Carbon (SOC) concentratio n (g per kg)	- For organic soil respect targets a such soils at na level in accorda Article 4.1, 4.2, Regulation (EU	set for tional ance with , 9.4 of	No exclusion
		- For mineral soi SOC/Clay ratio		Non-managed soils in natural land areas
		Member States may corrective factor wh specific soil types of conditions justify it into account the act content in permaner grasslands.	nere or climatic t, taking tual SOC	
Subsoil	Bulk density	Soil texture ²	range	Non-managed soils in natural
compaction	in subsoil (upper part of B or E horizon1); Member States may replace this descriptor	sand, loamy sand, sandy loam, loam	<1.80	land areas
		Sandy clay loam, loam, clay loam, silt, silt loam	<1.75	
	with an equivalent	silt loam, silty	<1.65	

4/96

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parameter (g clay loam per cm3) Sandy also

Sandy clay, silty <1.58

clay, clay loam with 35-45%

clay

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".

Amendment

Aspect of soil	Soil descriptor	Criteria for healthy soil	Land areas that shall be
degradation		condition	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)	$\leq 2 \text{ t ha}^{-1} \text{ y}^{-1}$	Badlands and other unmanaged natural land areas, except if they represent a significant disaster risk

⁺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.

Soil contamination

Concentration s of an EU priority list of pollutants³; heavy metals, pesticides, microplastics, veterinary products, pharmaceutica ls, antimicrobials, POPs, PFAS, PAHs, polychlorinate d biphenyls, PCBs, mineral oil, VOCs and contaminants of emerging

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

Use of |SAIO regulation data⁴ and Total Applied Toxicity (TAT) indicator⁵

Loss of soil organic carbon

Soil Organic Carbon (SOC) concentration (g per kg)

concern

- 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) .../...+
- 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.

No exclusion

Non-managed soils in natural land areas

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Subsoil compaction Bulk density in subsoil (upper part of B or E horizon ⁶); Member States may replace this descriptor with an equivalent	subsoil (upper part of B or E horizon ⁶);	Soil texture ⁷ sand, loamy sand, sandy loam, loam	range <1.80	Non-managed soils in natural land areas
	may replace this descriptor	Sandy clay loam, loam, clay loam, silt, silt loam	<1.75	
	parameter (g per cm ³)	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

Or. en

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.

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 des	criptors with crite	ria for healthy soil c	condition esta	blished 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)	$\leq 2 \text{ t ha}^{-1} \text{ y}^{-1}$		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 corrective factor vispecific soil types conditions justify into account the account in perman grasslands.	where or climatic it, taking ctual SOC	
Subsoil	Bulk density	Soil texture ²	range	Non-managed soils in natural
compaction	in subsoil (upper part of B or E horizon ¹);	sand, loamy sand, sandy loam, loam	<1.80	land areas
	Member States may replace this	Sandy clay loam, loam, clay loam, silt, silt	<1.75	

descriptor with an equivalent parameter (g per cm3) loam

silt loam, silty <1.65 clay loam

Sandy clay, silty <1.58

clay, clay loam with 35-45%

clay

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".

Amendment

Aspect of soil Soil descriptor Criteria for healthy soil 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	Naturally saline land areas; Land areas directly affected by sea level rise
		using another	
		measurement method	

⁺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.

Soil erosion	Soil erosion rate (tonnes per hectare per year)	\leq 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 sorespect targets such soils at n level in accord with Article 4 9.4 of Regulat (EU)/ +	s set for ational dance .1, 4.2,	No exclusion
		- For mineral so SOC/Clay rati 1/13;		Non-managed soils in natural land areas
		Member States mapply a corrective where specific so or climatic condition justify it, taking it account the actual content in permangrasslands.	e factor il types tions nto l SOC	
Subsoil	Bulk density in	Soil texture ²	range	Non-managed soils in
compaction	on subsoil (upper part of B or E horizon ¹); Member States may replace this descriptor with an equivalent parameter (g per cm ³)	sand, loamy sand, sandy loam, loam	<1.80	natural land areas
		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 microplastics in

Presence of agricultural land < 0,1 % of microplastics in soil by mass

Non managed soils in agricultural areas

Or. en

Amendment 636 Elsi Katainen

Proposal for a directive Annex I – Part A

Text proposed by the Commission

Aspect of soil	Soil descriptor	Criteria for healthy soil	Land areas that shall be
degradation		condition	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	Naturally saline land areas; Land areas directly affected by sea level rise
		method	

⁺ 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.

Soil erosion	Soil erosion rate (tonnes per hectare per year)	$\leq 2 \text{ t ha}^{-1} \text{ y}^{-1}$		Badlands and other unmanaged natural land areas, except if they represent a significant disaster risk
Loss of soil organic carbon	Soil Organic Carbon (SOC) concentratio n (g per kg)	- For organic soils targets set for suc national level in a with Articles 4(1) of Regulation (E.	ch soils at accordance , 4(2), 9(4)	No exclusion
		- For mineral soil SOC/Clay ratio >		Non-managed soils in natural land areas
		Member States <i>m</i> corrective factor v specific soil types conditions justify into account <i>the a</i> content <i>in perman grasslands</i> .	where s or climatic it, taking actual SOC	
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	
	sand, loamy sand, sandy loam, loam	<1.80	land areas	
	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 replaces the soil of "bulk density in s with an equivalent it shall adopt a critical healthy soil conditions chosen soil described equivalent to the for "bulk density"	lescriptor ubsoil" at parameter, iterion for ition for the iptor that is criterion set	

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 descript	cors with criteria for	r healthy soil condition establ	ished at Union level
Salinization	Electrical Conductivity (deci-Siemens	< 4 dS m-1 when using saturated soil paste extract (eEC)	Naturally saline land areas; Land areas directly affected by sea level rise

per meter)	measurement method, or
	equivalent criterion if
	using another
	measurement method

Soil erosion	Soil erosion rate (tonnes per hectare per year)	$\leq 2 t ha^{-1} y^{-1}$	Badlands and other unmanaged natural land areas, except if they represent a significant
			disaster risk

			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

Non-managed soils in natural land areas

 $^{^{+}\}mathrm{OP}$: 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.

compaction substantial part hori: Men may this with	Bulk density in subsoil (upper part of B or E horizon ⁶); Member States	Soil texture ⁷ sand, loamy sand, sandy loam, loam	range <1.80	Non-managed soils in natural land areas
	may replace this descriptor with an equivalent	Sandy clay loam, loam, clay loam, silt, silt loam	<1.75	
	parameter (g per cm ³)	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 replaces the soil descriptor "bulk d in subsoil" with an equivalent parame shall adopt a criter healthy soil condit the chosen soil desthat is equivalent to criterion set for "b density in subsoil"	ensity n eter, it rion for tion for scriptor to the oulk	

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

Or. en

Amendment 637 Annie Schreijer-Pierik

Proposal for a directive Annex I – Part A

Text proposed by the Commission

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.

degradation	Son desc riptor	condition	excluded from achieving the related criterion
Part A: soil des	criptors with criter	ria for healthy soil condition esta	ablished 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)	$\leq 2 t ha^{-1} y^{-1}$	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	Bulk density	Soil texture ² range	Non-managed soils in natural
compaction	in subsoil (upper part of B or E horizon¹); Member States may replace this descriptor	sand, loamy <1.80 sand, sandy loam, loam	land areas
		Sandy clay <1.75 loam, loam, clay loam, silt, silt loam	
	with an equivalent	silt loam, silty <1.65 clay loam	
	parameter (g per cm3)	Sandy clay, silty <1.58 clay, clay loam with 35-45% clay	

Criteria for healthy soil Land areas that shall be

Aspect of soil Soil descriptor

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".

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 descrip	tors with criteria fo	r healthy soil condition establ	ished 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)	$\leq 2 \text{ t ha}^{-1} \text{ y}^{-1}$	Badlands and other unmanaged natural land areas, except if they represent a significant disaster risk

⁺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.

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	Bulk density in	Soil texture ²	range	Non-managed soils in
compaction	subsoil (upper part of B or E horizon¹); Member States may replace this descriptor with an equivalent	sand, loamy sand, sandy loam, loam	<1.80	natural land areas
		Sandy clay loam, loam, clay loam, silt, silt loam	<1.75	
	parameter (g per cm ³)	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".

Or. en

Land areas that shall be

disaster risk

excluded from achieving the

Amendment 638 Bert-Jan Ruissen

Aspect of soil

degradation

Proposal for a directive Annex I – Part A

Soil descriptor

per year)

Text proposed by the Commission

Criteria for healthy soil

condition

_			related criterion
Part A: soil des	criptors with criter	ria for healthy soil condition estal	blished 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	$\leq 2 t ha^{-1} y^{-1}$	Badlands and other unmanaged natural land areas, except if they represent a significant

⁺ 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.

Loss of soil Soil Organic 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 s SOC/Clay rat		Non-managed soils in natural land areas
		Member States me corrective factor specific soil types conditions justify into account the content in permagrasslands.	where s or climatic ti, taking actual SOC	
Subsoil	Bulk density	Soil texture ²	range	Non-managed soils in natural
compaction in subsoil (upper par B or E horizon¹); Member States may replace the	(upper part of B or E	sand, loamy sand, sandy loam, loam	<1.80	land areas
	/ *	Sandy clay loam, loam, clay loam, silt, silt loam	<1.75	
	with an equivalent parameter (g per cm3)	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 replaces the soil of "bulk density in san equivalent par shall adopt a crite healthy soil condichosen soil described equivalent to the for "bulk density"	descriptor subsoil" with ameter, it erion for ition for the iptor that is criterion set	

 $^{^{+}\}mathrm{OP}$: please insert in the text the number of Regulation on nature restoration contained in document COM(2022) 304

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

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

Amendment					
Aspect of soil degradation	Soil descriptor	Criteria for health condition	y soil	Land areas that shall be excluded from achieving the related criterion	
Part A: soil descript	tors with criteria for	r healthy soil condi	tion establ	ished at Union level	
Salinization	Electrical Conductivity (deci-Siemens per meter)	< 4 dS m-1 when saturated soil past extract (eEC) measurement met equivalent criterio using another measurement met	hod, or	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 so respect targets such soils at na level in accord with Article 4. 9.4 of Regulat (EU)/+	set for ational lance 1, 4.2,	No exclusion	
		deleted		deleted	
		deleted			
Subsoil	Bulk density in	Soil texture ²	range	Non-managed soils in	
compaction	subsoil (upper part of B or E horizon¹); Member States may replace this descriptor with an equivalent	sand, loamy sand, sandy loam, loam	<1.80	natural land areas	
		Sandy clay loam, loam, clay loam, silt, silt loam	<1.75		
	parameter (g	silt loam, silty	<1.65		

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.

per cm³) clay loam

Sandy clay, silty <1.58 clay, clay loam with 35-45% clay

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".

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

⁺ 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.

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

I alt A. soil des	criptors with crite	ila for ilcartily soil	condition cs	tablished at Officia level
Salinisation	Conductivity (deci-Siemens per meter)	•		Naturally saline land areas; Land areas directly affected by sea level rise
Soil erosion	Soil erosion rate (tonnes per hectare per year)	·		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 sorespect targets ser soils at national laccordance with A.2, 9.4 of Regula/	t for such evel in Article 4.1,	No exclusion
		— For mineral soils: SOC/Clay ratio > 1/13;		Non-managed soils in natural land areas
		Member States may corrective factor we specific soil types of conditions justify into account the account the account standard grasslands.	here or climatic t, taking ctual SOC	
Subsoil	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
compaction		sand, loamy sand, sandy loam, loam	<1.80	Tanu areas
		loam, loam, clay loam, silt, silt	<1.75	
		silt loam, silty clay loam	<1.65	
		Sandy clay, silty clay, clay loam with 35-45% clay	<1.58	
		Clay	<1.47	

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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".

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 descrip	otors with criteria fo	or healthy soil condition estab	lished 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	Land areas directly affected by
Soil erosion	Soil erosion rate (tonnes per hectare per year)	2	Badlands and other unmanaged natural land areas, except if they represent a significant disaster risk
		agricultural areas, but Member States are free to impose stricter limits	
deleted	deleted	deleted	deleted

deleted

deleted

⁺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.

deleted

Subsoil compaction	•	Soil texture ²	Range	Non-managed soils in natural
	subsoil (upper part of B or E		<1.80	land areas
	horizon ¹); Member	sand, sandy		
	States may replace	Sandy clay	<1.75	
	this descriptor	loam, loam, clay	1.70	
	with an equivalent	loam, silt, silt		
	parameter (g per	loam		
	cm ³)	Silt loam, silty	<1.65	
		clay loam	~1 5 0	
		Sandy clay, silty clay, clay loam	<1.58	
		with 35-45%		
		clay		
		Clay	<1.47	
		In case a Member S		
		replaces the soil des		
		'bulk density in sub	SOII	
with an equivalent parameter, it shall adopt a				
		criterion for healthy	-	
		condition for the ch		
		descriptor that is equivalent		
		to the criterion set f	or 'bulk	
	•	density in subsoil'.		

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

Or. it

Amendment 640 Sarah Wiener

Proposal for a directive Annex I – Part B

Text proposed by the Commission

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.

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

	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	- concentration of	Reasonable assurance	No exclusion

contamination

- concentration of Reasonable assurance, No exclusion heavy metals in obtained from soil point soil: As, Sb, Cd, sampling, identification and Co, Cr (total), Cr investigation of (VI), Cu, Hg, Pb, contaminated sites and any Ni, Tl, V, Zn (µg 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/EEC1 shall

remain protected.

- 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

per kg)

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

Amendment

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

<"maximum value"; The Excess nutrient Extractable No exclusion content in soil phosphorus (mg per "maximum value" shall be laid down by the Member kg) State within the range 30-50 mg kg⁻¹ Soil concentration of Reasonable assurance,

contamination heavy metals in soil: As, Sb, Cd, (VI), Cu, Hg, Pb, per kg)

obtained from soil point sampling, identification Co, Cr (total), Cr and investigation of contaminated sites and Ni, Tl, V, Zn (µg 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

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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).

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/EEC¹ shall remain protected.

Use of |SAIO regulation data² and Total Applied Toxicity (TAT) indicator

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	<"maximum value"; The "maximum value"	No exclusion
	per kg)	shall be laid down by the Member State within the range 30-50 mg kg ⁻¹	
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

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

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/EEC³ 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

Concentrati
ons 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

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

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).

No exclusion Excess nutrient Extractable < "maximum value"; The phosphorus (mg per "maximum value" shall be content in soil laid down by the Member kg) State within the range 30-50 mg kg⁻¹ Soil No exclusion concentration of Reasonable assurance, heavy metals in obtained from soil point contamination soil: As, Sb, Cd, sampling, identification and Co, Cr (total), Cr investigation of (VI), Cu, Hg, Pb, contaminated sites and any Ni, Tl, V, Zn (µg other relevant information, that no unacceptable risk per kg) for human health and the environment from soil contamination exists. concentration of Habitats with naturally high a selection of concentration of heavy metals that are included in organic Annex I of Council contaminants Directive 92/43/EEC1 shall established by Member States remain protected. and taking into account existing concentration limits e.g. for water quality and air emissions in Union legislation Reduction of No exclusion Soil water holding The estimated value for soil capacity to capacity of the soil the total water holding retain water sample (% of capacity of a soil district volume of water / by river basin or subbasin volume of saturated is above the minimal soil) 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

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events are mitigated.

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		obtained from soil point sampling, identification and investigation of contaminated sites and	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		

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

Turt B. Son descrip	tors with criteria for in	carriy son condition establis	med at intemper 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

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 contaminatio n	- 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

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).

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/EEC³ 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

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mitigated.

Application rate synthetic fertilizer

Mineral nitrogen (kg ha Frequency of surpassing threshold of 50mg Nitrate L-1 according to Directive 91/676/EEC^{3a}

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

 $^{^3}$ 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).

- 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/EEC³ 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)

Union legislation

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

Amendment

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

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

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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).

content in soil	per kg)	the Member State	
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	No exclusion
		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

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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

•		cartify soff condition establis	
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

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

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).

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/EEC³ 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

Or. en

Amendment 646 Jan Huitema

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).

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.

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.	

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).

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. 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.

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

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).

No exclusion Excess nutrient Extractable < "maximum value"; The "maximum value" content in soil phosphorus (mg per kg) shall be laid down by the Member State within the range 30-50 mg kg-1 Soil No exclusion concentration Reasonable assurance, contamination obtained from soil point of heavy sampling, identification metals in soil: and investigation of As, Sb, Cd, contaminated sites and Co, Cr (total), any other relevant Cr (VI), Cu, information, that no Hg, Pb, Ni, Tl, unacceptable risk for V, Zn (µg per human health and the kg) environment from soil contamination exists. concentration Habitats with naturally high concentration of of a selection heavy metals that are of organic contaminants included in Annex I of Council Directive established by 92/43/EEC³ shall Member States remain protected. and taking into account existing concentration limits e.g. for water quality and air emissions in Union legislation Reduction of soil Soil water holding The estimated value for No exclusion capacity to retain capacity of the the total water holding soil sample (% of capacity of a soil district water volume of water / by river basin or volume of subbasin is above the saturated soil) 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.

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

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).

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.

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-horizon¹) (g cm⁻³)

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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).

Loss of soil biodiversity

Soil basal respiration (mm³ O₂ 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

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-horizon¹) (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;

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

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

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-horizon⁴) (g cm⁻³)

Loss of soil biodiversity Soil basal respiration (mm³ O₂ 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

Amendment

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

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

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-horizon⁴) (g cm⁻³)

Loss of soil biodiversity Soil basal respiration (mm³ O₂ 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;
- metharcoding (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

Or. en

Amendment 650 Jan Huitema

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

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-horizon¹) (g cm⁻³)

Loss of soil biodiversity Soil basal respiration (mm³ O₂ 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

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-horizon¹) (g cm⁻³)

Loss of soil biodiversity Soil basal respiration (mm³ O₂ g⁻¹ hr⁻¹) in dry soil

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

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.

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

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

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.

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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.

Amendment

Part A: Methodology for determining sampling points

Determination of soil sampling points *and layers* (sample

survey)

Activity

Minimum criteria for methodology

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.

Or. en

Amendment 653 Petros Kokkalis

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

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

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		YES
	Alternative method: ISO13320:2009 Particle size analysis – Laser diffraction methods		
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	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),

		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	Potential environmental available content of		YES

- Concentration of a selection of organic contaminants defined by Member States and taking into account

(total), Cr (VI), Cu,

Hg, Pb, Ni, Tl, V, Zn

Use European or N/A
International standards
when available; if such
standard is not available,
the methodology chosen

management practices

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heavy metals in soils

based on ISO 17586:2016 using dilute nitric acid.

shall either be available in existing EU legislation the scientific literature or (e.g. on water quality or pesticides) publicly available Soil water holding Methodology to Minimum criteria for YES (for point capacity determine the value for estimating the total soil value) one sample point: water holding capacity of a soil district on a river basin or sub-basin scale: for the area of land not Option 1: LABORATORY: ISO taken estimate the total 11274·2019 for value of soil water determination of the holding capacity water-retention characteristic. Option 2: for the area of land ESTIMATION: apply taken, consider setting methodology described the water holding in the scientific article capacity of impervious "New generation of areas to zero. hydraulic pedotransfer attributing functions for Europe"10 proportionately based on texture (or intermediate values to particle size semi-impervious and distribution) and soil other artificial areas. organic carbon. Nitrogen in soil ISO 11261:1995 for YES determination of total soil nitrogen using a modified Kjeldahl method Soil acidity ISO 10390:2005 for YES determination of pH in H₂O and CaCl₂ extract (pH-H₂O and pH-CaCl₂) Bulk density in ISO 11272:2017 for YES "topsoil" (Adetermination of dry horizon¹¹) bulk density Soil basal respiration Follow indications YES described in the scientific article "Microbial biomass and activities in soil as affected by frozen and cold storage"13

Member States may also select optional soil biodiversity descriptors such as:

 Metabarcoding¹² 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)

Amendment

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: <u>Soil monitoring in Europe – Indicators and thresholds</u> <u>for soil health assessments — European Environment Agency (europa.eu)</u>

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

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		YES
	Alternative method: ISO13320:2009 Particle size analysis – Laser diffraction methods		
Electrical Conductivity	Option 1: saturated soil paste extract (eEC) measurement method (FAO SOP: GLOSOLAN-SOP-087)		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.	N/A
		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 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		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

account existing EU legislation (e.g. on water quality or pesticides) publicly available

- 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 ₂ O and CaCl ₂ extract (pH-H ₂ O 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

Member States may also select optional soil biodiversity descriptors such as:

 Metabarcoding¹² of bacteria, fungi, protists and animals; For other soil biodiversity descriptors: N/A

YES

- 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)

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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: <u>Soil monitoring in Europe – Indicators and thresholds</u> <u>for soil health assessments — European Environment Agency (europa.eu)</u>

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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

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		YES
	Alternative method: ISO13320:2009 Particle size analysis – Laser diffraction methods		
Electrical Conductivity	Option 1: saturated soil paste extract (eEC) measurement method (FAO SOP: GLOSOLAN-SOP-08 ⁷)		YES

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

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. N/A

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 horizon⁸) or equivalent⁹ 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

Extractable phosphorus

ISO 11263:1994 for spectrometric determination of phosphorus soluble in sodium hydrogen carbonate solution (P-Olsen)

literature or publicly

available.

YES

- Concentration of Potential YES environmental heavy metals in soil: As, Sb, Cd, Co, Cr available content of (total), Cr (VI), Cu, heavy metals in soils Hg, Pb, Ni, Tl, V, Zn based on ISO 17586:2016 using dilute nitric acid. - Concentration of a Use European or N/A International standards selection of organic contaminants defined when available; if such by Member States and standard is not available, taking into account the methodology chosen existing EU legislation shall either be available in (e.g. on water quality the scientific literature or or pesticides) publicly available Soil water holding Methodology to Minimum criteria for YES (for point determine the value for capacity estimating the total soil value) water holding capacity of a one sample point: soil district on a river basin or sub-basin scale: Option 1: for the area of land not LABORATORY: ISO taken estimate the total 11274:2019 for value of soil water determination of the holding capacity water-retention characteristic. Option 2: for the area of land ESTIMATION: apply taken, consider setting methodology described the water holding in the scientific article capacity of impervious "New generation of areas to zero, hydraulic pedotransfer attributing functions for Europe"¹⁰ proportionately based on texture (or intermediate values to particle size semi-impervious and distribution) and soil other artificial areas. organic carbon. ISO 11261:1995 for YES Nitrogen in soil determination of total soil nitrogen using a modified Kjeldahl method Soil acidity ISO 10390:2005 for YES determination of pH in H₂O and CaCl₂ extract (pH-H₂O and pH-

CaCl₂)

Bulk density in "topsoil" (A-

ISO 11272:2017 for determination of dry

YES

horizon¹¹)

bulk density

Soil basal respiration

Follow indications described in the scientific article "Microbial biomass and activities in soil as affected by frozen and YES

cold storage"13

Member States may also select optional soil biodiversity descriptors such as:

 Metabarcoding¹² 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)

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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: <u>Soil monitoring in Europe – Indicators and thresholds</u> <u>for soil health assessments — European Environment Agency (europa.eu)</u>

Amendment

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

\mathcal{E}_{J}	\mathcal{E}	0	
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		YES
	Alternative method: ISO13320:2009 Particle size analysis – Laser diffraction methods		
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		

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

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. N/A

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:

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-	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 horizon⁸) or equivalent⁹ 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) or using acidic ammonium acetate

solution

- Concentration of heavy metals in

Potential environmental

YES

LLS

YES

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

available content of

H₂O and CaCl₂ extract (pH-H₂O and pH-

CaCl₂)

Bulk density in ISO 11272:2017 for "topsoil" (A-horizon¹¹) ulk 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

Member States may also select optional soil biodiversity descriptors such as:

 Metabarcoding¹² of bacteria, fungi, protists and animals; For other soil biodiversity descriptors: N/A

YES

YES

- 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

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

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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

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

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

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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

(a) avoid leaving soil bare by establishing and maintaining vegetative soil cover, especially during environmentally sensitive periods;

Amendment

(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

(a) avoid leaving soil bare by establishing and maintaining vegetative soil cover, especially during environmentally sensitive periods;

Amendment

(a) avoid leaving soil bare by establishing and maintaining vegetative soil cover, especially during environmentally sensitive periods, *and*

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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

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

Amendment

(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

(a) avoid leaving soil bare by establishing and maintaining vegetative soil cover, especially during environmentally sensitive periods;

Amendment

(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

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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

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Annex III – paragraph 1 – point c

Text proposed by the Commission

(c) avoid inputs or release of substances into soil that may harm human health or the environment, or degrade soil health;

Amendment

(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

(c) avoid inputs or release of substances into soil that may harm human health or the environment, or degrade soil health;

Amendment

(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

(c) avoid inputs or release of substances into soil that may harm human health or the environment, or degrade soil health;

Amendment

(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

(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;

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 *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

(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;

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, 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

(e) when fertilization is applied, ensure

Amendment

(e) when fertilization is applied, ensure

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EN

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

(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;

Amendment

(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 onfarm, 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

(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

Amendment

(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

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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

(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;

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 *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

(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;

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, 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

(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;

Amendment

(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-Stefan Motreanu

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

Text proposed by the Commission

(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*;

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 *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

(f) in case of irrigation, maximise

Amendment

(f) minimise irrigation and prioritise

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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 Council¹⁰⁸ and when water from other sources is used, it does not degrade soil health:

t nd e 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).

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

(g) ensure soil protection by the creation and maintenance of adequate landscape features at the landscape level; 109

Amendment

(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

Or. en

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).

¹⁰⁹ This principle does not apply to forest soils

¹⁰⁹ This principle does not apply to forest soils

Amendment 681 Clara Aguilera, Paolo De Castro

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

Text proposed by the Commission

(g) ensure soil protection by the creation and maintenance of adequate landscape features at the landscape level;¹⁰⁹

¹⁰⁹ This principle does not apply to forest soils

Amendment

(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

Or. en

Amendment 682 Clara Aguilera, Paolo De Castro

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

Text proposed by the Commission

(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;

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, *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

(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;

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 *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

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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

(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;

Amendment

(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

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Text proposed by the Commission

(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;

Amendment

(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

(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;

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, 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

(j) in the case of crop cultivation, ensure crop rotation and crop diversity, taking into consideration different crop families, root systems, water and nutrient

Amendment

(j) Local climate and other specificities conditions based crop rotation and crop diversity, taking into consideration different crop families, root

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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

(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;

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; 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

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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 deleted

- (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

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 +.

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^{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

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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

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:

Amendment

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, requiring further action, and contaminated sites where action was taken or is being taken:

Or en