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Proposal for a

**DIRECTIVE OF THE EUROPEAN PARLIAMENT AND OF THE COUNCIL**

**establishing a framework for the protection of soil and amending Directive 2004/35/EC**

(presented by the Commission)

## EXPLANATORY MEMORANDUM

### 1) CONTEXT OF THE PROPOSAL

- **Grounds for and objectives of the proposal**

Soil is essentially a non-renewable resource and a very dynamic system which performs many functions and delivers services vital to human activities and ecosystems survival. Information available suggests that, over recent decades, there has been a significant increase of soil degradation processes, and there is evidence that they will further increase if no action is taken.

Though soil protection provisions exist in the Community *acquis*, there is no specific Community legislation on soil protection. The current proposal aims at filling this gap and has the objective of establishing a common strategy for the protection and sustainable use of soil based on the principles of integration of soil concerns into other policies, preservation of soil functions within the context of sustainable use, prevention of threats to soil and mitigation of their effects, as well as restoration of degraded soils to a level of functionality consistent at least with the current and approved future use.

- **General context**

Soil is under increasing environmental pressure across the Community, driven or exacerbated by human activity, such as inappropriate agricultural and forestry practices, industrial activities, tourism or urban development. These activities are damaging the capacity of soil to continue to perform in full its broad variety of crucial functions. Soil is a resource of common interest to the Community, although mainly private owned, and failure to protect it will undermine sustainability and long term competitiveness in Europe. Moreover, soil degradation has strong impacts on other areas of common interest to the Community, such as water, human health, climate change, nature and biodiversity protection, and food safety.

Decision No 1600/2002/EC laying down the Sixth Community Environment Action Programme includes the objective to protect natural resources and to promote a sustainable use of the soil. Therein the Community committed itself to the adoption of a Thematic Strategy on soil protection to halt and reverse soil degradation.

In its 2002 Communication "Towards a Thematic Strategy on Soil Protection" (COM(2002) 179), the Commission identified the main eight threats to which soils in the EU are confronted. These are erosion, organic matter decline, contamination, salinisation, compaction, soil biodiversity loss, sealing, landslides and flooding.

- **Existing provisions in the area of the proposal**

Soil has not, to date, been subject to a specific protection policy at Community level. Some soil protection aspects can be found scattered in the *acquis*, hence different Community policies can contribute to protect soil. This is the case of many provisions in the existing environmental Community legislation in areas such as water, waste, chemicals, industrial pollution prevention, nature protection and pesticides. Positive effects on the state of agricultural soils are also expected to result from the introduction of cross-compliance requirements related to the introduction of agricultural soil

protection aspects into the reformed Common Agricultural Policy and from the contribution of Rural Development. However, due to their different objectives and scopes, and to the fact that they often aim to safeguard other environmental media, existing provisions, even if fully implemented, yield a fragmented and incomplete protection to soil, as they do not cover all soils and all soil threats identified. Hence, soil degradation still continues.

- **Consistency with the other policies and objectives of the Union**

The proposed legislation, which aims at protecting soil and the preservation of the capacity of soil to perform its environmental, economic, social and cultural functions, is perfectly in line with the objectives of Article 174 of the EC Treaty. It takes account of the diversity of situations in the various regions of the Community. It is based on the precautionary principle and on the principles that preventive action should be taken, that environmental damage should as a priority be rectified at source and that the polluter should pay. It has been based on an analysis of the potential benefits and costs of action or lack of action as well as the respect of the economic and social development of the Community as a whole and the balanced development of its regions.

## 2) CONSULTATION OF INTERESTED PARTIES AND IMPACT ASSESSMENT

- **Consultation of interested parties**

*Consultation methods, main sectors targeted and general profile of respondents*

The 2002 Communication was the subject of favourable conclusions by the other European Institutions which recognised that soil has a major role with respect to long term sustainability in the Community.

Starting February 2003 the Commission organised an open stakeholder consultation and established a very wide platform of more than 400 members divided in five Working Groups and an Advisory Forum with a steering role. In June 2004, the Working Groups finished their very thorough reports which included information on the state of soils in Europe, the pressures, the driving forces for soil degradation and a set of recommendations addressed to the Commission for the development of soil policy at Community level.

In November 2004, the Dutch Presidency of the Council and the Commission held a conference gathering Member States and participants of the stakeholder process who expressed strong support for a framework approach based on Community action.

The Commission carried out an Internet public consultation on possible elements to be included in the Thematic Strategy for Soil Protection for a period of eight weeks. The consultation gathered the replies of 1,206 citizens, 377 soil experts and 287 organisations coming from 25 countries.

*Summary of responses and how they have been taken into account*

European citizens as well as soil experts and organisations majoritarily expressed the view that preventing and mitigating soil degradation in Europe is important or very

important, favoured action taken under the form of a framework adopted at Community level and concrete measures adopted at national or local level.

A comprehensive report on the statistical analysis of all questions, showing also the nationality distribution of respondents, and how the feedback has been taken into account is provided in the Impact Assessment.

Most of the recommendations from the Working Groups as well as concerns expressed in the Internet consultation have been taken on board. Abundant calls for mandatory restrictions on urban and touristic developments have not been endorsed as the Community has limited competences on restricting land use.

- **Collection and use of expertise**

*Domains of scientific expertise concerned*

Soil science, agronomical science, forestry, hydrology, biology, ecology, economy, social science, political science.

*Methodology used*

The proposal is based on the best available scientific and technical knowledge. Such expertise has been gathered through the very comprehensive stakeholder consultation and by contracting two independent studies to assess the socio-economical and environmental impacts of soil degradation as well as the environmental and socio-economical impacts of the measures proposed. The reports drafted by the Working Groups and published by the Commission, this proposal as well as the Impact Assessment reflect fully the results of this collection of expertise.

*Main organisations/experts consulted*

The consultation included national, regional and local administrations, industrial associations, trade organisations, environmental organisations, consumer organisations, science and research institutes, the European Environment Agency, the Joint Research Centre and other Commission services, unions, farmer organisations, land owner organisations as well as many other associations which had European coverage and expressed an interest in soil.

*Summary of advice received and used*

The existence of potentially serious risks with irreversible consequences has been mentioned. There is unanimity on the existence of such risks.

There was unanimous consensus that soil shall be guaranteed the same level of protection as provided to other environmental media, such as air or water, because soil functions are crucial for human and ecosystem survival. It was always highlighted that due to the enormous variability of soil across Europe, a "one-fits-all" approach could not be adopted as the basis for Community soil policy. Most expressed opinions advocated for a flexible system which would allow local specificities of soil and land use to be taken into account. Hence, there was a broad consensus that a framework should be adopted at European level establishing common objectives and principles,

leaving to Member States the adoption of detailed measures at the appropriate administrative and geographical level.

*Means used to make the expert advice publicly available*

The reports drafted by the Working Groups have been published by the OPOCE and are available free of charge also on Internet (<http://ec.europa.eu/comm/environment/soil/index.htm>). The same web site displays the replies to the public questionnaire from experts and organisations.

- **Impact assessment**

The following options, from less to more prescriptive, have been considered:

- (1) Member States are encouraged to take action under a general non-binding Community soil strategy.
- (2) A flexible legal instrument which would take the form of a Soil Framework Directive, ambitious in its scope but not overly prescriptive in its content.
- (3) Legislative proposals for the different soil threats, setting also all targets and means at Community level.

The Commission carried out an Impact Assessment, which is accessible on <http://ec.europa.eu/comm/environment/soil/index.htm>. It sets out in more detail the findings as regards the socio-economic and environmental impacts due to this proposal.

### 3) LEGAL ELEMENTS OF THE PROPOSAL

- **Summary of the proposed action**

The proposed Directive includes:

- The establishment of a common framework to protect soil on the basis of the principles of preservation of soil functions, prevention of soil degradation, mitigation of its effects, restoration of degraded soils and integration in other sectoral policies.
- The requirement to identify, describe and assess the impact of some sectoral policies on soil degradation processes with a view to protect soil functions.
- The requirement for land users to take precautionary measures when their use of the soil can be expected to significantly hamper soil functions.
- An approach to soil sealing to ensure a more rational use of land in accordance with Article 174 of the EC Treaty and to maintain as many soil functions as possible.
- Identification of areas at risk of erosion, organic matter decline, salinisation, compaction and landslides, and establishment of national programmes of measures. The extent of the areas at risk of these threats need to be identified. To ensure a coherent and comparable approach, the identification of risk must be carried out on the basis of common elements. These elements include parameters which are known

to be driving forces for the different threat. Risk reduction targets and programmes of measures to reach those targets will have to be adopted. Programmes can build on standards and measures already identified and implemented in national and Community contexts.

- Measures to limit the introduction of dangerous substances into the soil, to avoid accumulation in soil that would hamper soil functions and create a risk to human health and the environment.
- Setting up an inventory of contaminated sites, a mechanism for funding the remediation of orphan sites, a soil status report, and establishing a national strategy for remediation of the contaminated sites identified. The definition of contaminated sites and a list of potentially soil polluting activities are established. These are the basis for locating the sites which can potentially be contaminated, as a preliminary step to the establishment of an inventory of effectively contaminated sites. This would be complemented by the obligation for seller or prospective buyer to provide a soil status report for any transaction of land where a potentially contaminating activity has taken or is taking place. A similar provision, concerning the energy performance of buildings, already exists in Community legislation (see Article 7 in Directive 2002/91/EC).

- **Legal basis**

The provisions of this Directive relate to environmental protection, and consequently the legal base chosen is Article 175(1) of the EC Treaty.

- **Subsidiarity principle**

The subsidiarity principle applies insofar as the proposal does not fall under the exclusive competence of the Community.

The objectives of the proposal cannot be sufficiently achieved by the Member States for the following reasons.

Soil degradation in one Member State or region can have transboundary consequences. Indeed, dams are blocked and infrastructure is damaged downstream by sediments massively eroded in another country farther upstream. Equally, groundwater bodies flowing through bordering nations can be polluted by contaminated sites on one side of the border. Losses of soil organic matter in one Member State can impair the achievement of the Kyoto protocol targets by the Community. This would imply that the costs to restore environmental quality are borne by a Member State different from that where the soil degrading practice occurred.

Wide differences between national soil protection regimes, in particular as regards soil contamination, can in some cases impose on economic operators very different obligations, thus creating an unbalanced situation for their fixed costs and a distortion of competition in the internal market.

Uptake by food and feed crops of contaminants in the soil may have an impact on the quality of products which are traded freely within the internal market posing a risk for human or animal health. Acting at source at Community level will complement the

quality controls performed at the national level to ensure food safety.

The health of European citizens can be impaired in different ways by soil degradation, some being the direct or indirect exposure to soil contaminants. Equally, casualties may occur in the event of landslides.

Community action will better achieve the objectives of the proposal for the following reasons.

Soil degradation affects other environmental areas for the protection of which Community legislation exists (e.g. water, nature, biodiversity, climate change). Community action on soil protection will close the gaps and ensure a consistent and efficient environmental quality protection across media. Soil protection contributes to ensure food safety and agricultural productivity on the long term, which underpins the Common Agriculture Policy funded by the Community. Having common principles to define what is considered to be a sustainable use of soil, will allow to articulate the research agendas at national and Community level and thus make a more efficient use of research and development funds to fill in the knowledge gaps.

The Community, by acquiring an ambitious and coherent framework which will translate in a better knowledge and management of soil, can play a leading role in the international arena, where other countries are in considerable need of transfer of know-how and technical assistance.

So far, without Community action to underpin the efforts, only nine Member States have specific legislation on soil protection, the others rely on some provisions preserving soil in different other policies. Most of the existing national provisions tackle the problem of soil contamination and, though the other threats are recognised, there is a lack of focus on a wider preservation of soil functions. The best indicator to demonstrate that this objective can be better achieved with a common Community action is that progress achieved in ensuring a sustainable use diverges enormously between Member States.

The proposal aims at achieving common principles, objectives and actions for all Member States to ensure a fair level playing field and to ensure that all Member States are tackling all threats to which soils are confronted in their national territory and do not address soil protection in a partial way.

The proposal therefore complies with the subsidiarity principle.

- **Proportionality principle**

The proposal complies with the proportionality principle for the following reasons.

The proposed instrument is a Directive establishing a framework for the protection of soil and the preservation of its functions. To ensure proportionality, much scope is left to the Member States to identify the most appropriate specific measures at the most appropriate geographical and administrative level. This is crucial to ensure that the regional and local specificities as regards soil variability, land uses, local climatological conditions and socio-economic aspects can be properly taken into account.

The level of intervention is to be decided by Member States, allowing for a more efficient use of their national administrative capabilities. Some additional and financial administrative obligations will arise, in particular for the Member States which have not tackled soil protection at national or regional level. Nevertheless, the environmental, economical and social benefits of the measures, as described in the Impact Assessment, outweigh significantly the costs incurred.

- **Choice of instruments**

Proposed instrument: framework directive.

Other means would not be adequate for the following reason.

A more prescriptive instrument, such as a regulation, would not allow taking into account the variability of soil and would not provide the flexibility needed to reflect local conditions. On the other hand, a non-binding instrument would not ensure the sustainable use of a common natural resource across Europe and would not prevent the distortion of competition caused by very diverging national regimes.

#### **4) BUDGETARY IMPLICATION**

The proposal has no implication for the Community budget.

#### **5) ADDITIONAL INFORMATION**

- **Review/revision/sunset clause**

The proposal includes a review clause.

- **Correlation table**

The Member States are required to communicate to the Commission the text of national provisions transposing the Directive as well as a correlation table between those provisions and this Directive.

- **European Economic Area**

The proposed act concerns an EEA matter and should therefore extend to the European Economic Area.

Proposal for a

**DIRECTIVE OF THE EUROPEAN PARLIAMENT AND OF THE COUNCIL**

**establishing a framework for the protection of soil and amending Directive 2004/35/EC**

(Text with EEA relevance)

THE EUROPEAN PARLIAMENT AND THE COUNCIL OF THE EUROPEAN UNION,

Having regard to the Treaty establishing the European Community, and in particular Article 175(1) thereof,

Having regard to the proposal from the Commission<sup>1</sup>,

Having regard to the opinion of the European Economic and Social Committee<sup>2</sup>,

Having regard to the opinion of the Committee of the Regions<sup>3</sup>,

Acting in accordance with the procedure laid down in Article 251 of the Treaty<sup>4</sup>,

Whereas:

- (1) Soil is essentially a non-renewable resource in that the degradation rates can be rapid whereas the formation and regeneration processes are extremely slow. It is a very dynamic system which performs many functions and delivers services vital to human activities and to the survival of ecosystems. These functions are biomass production, storing, filtering and transforming nutrients and water, hosting the biodiversity pool, acting as a platform for most human activities, providing raw materials, acting as a carbon pool and storing the geological and archeological heritage.
- (2) Soil degradation or soil improvements have a major impact on other areas of Community interest, such as surface water and groundwater protection, human health, climate change, protection of nature and biodiversity, and food safety.

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<sup>1</sup> [...]  
<sup>2</sup> [...]  
<sup>3</sup> [...]  
<sup>4</sup> [...]

- (3) Soil is a natural resource of common interest which is under increasing environmental pressure and is to be protected from degradation in its own right. Decision No 1600/2002/EC of the European Parliament and of the Council of 22 July 2002 laying down the Sixth Community Environment Action Programme<sup>5</sup> includes the objective of protecting natural resources and promoting a sustainable use of soil.
- (4) The Communication of the Commission to the European Parliament and the Council “Towards a Thematic Strategy on Soil Protection”<sup>6</sup> identifies the main eight soil degradation processes to which soils in the EU are confronted. These are erosion, organic matter decline, contamination, salinisation, compaction, soil biodiversity loss, sealing, landslides and flooding. The current scientific knowledge on soil biodiversity and its behaviour is too limited to allow for specific provisions in this Directive aiming at its protection. The prevention and mitigation of the effects of floods have been addressed by the proposal for a Directive of the European Parliament and the Council on the assessment and management of floods<sup>7</sup>.
- (5) Soil variability is very high in the Community and enormous differences exist in its structural, physical, chemical and biological state both within individual profiles and between soils. These diverse conditions and needs in the Community should be taken into account as they require different specific solutions for the identification of areas at risk, definition of targets and execution of appropriate measures to ensure protection of soil.
- (6) Community legislation, for instance in the fields of waste, chemicals, industrial pollution prevention and control, climate change, water, and agriculture and rural development, includes some provisions on soil protection, but these are neither designed nor sufficient to protect all soils against all degradation processes. Hence there is a need for a coherent and effective legislative framework, providing for common principles and objectives aiming at protection and sustainable use of soil in the Community.
- (7) Soil should be used in a sustainable manner which preserves its capacity to deliver ecological, economic and social services, while maintaining its functions so that future generations can meet their needs.
- (8) The aim of this Directive is to ensure the protection of soil, based on the principles of preservation of soil functions, prevention of soil degradation, mitigation of its effects, restoration of degraded soils and integration into other sectoral policies by establishing a common framework and actions.
- (9) A common framework is needed in order to articulate the efforts of Member States to improve the protection of soils and its sustainable use, to control the transboundary soil degradation effects, to protect aquatic and terrestrial ecosystems, and to preclude distortion of competition between economic operators.

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<sup>5</sup> OJ L 242, 10.9.2002, p. 1.

<sup>6</sup> COM(2002) 179.

<sup>7</sup> COM(2006) 15.

- (10) Since the objectives of the action to be taken, namely to establish a common framework for the protection of soil, cannot be sufficiently achieved by the Member States and can therefore be better achieved at Community level by reason of the scale of the problem and its implications in respect of other Community legislation on nature protection, water protection, food safety, climate change, agriculture and areas of common interest, such as human health protection, the Community may therefore adopt measures, in accordance with the principle of subsidiarity as set out in Article 5 of the Treaty. In accordance with the principle of proportionality, as set out in that Article, this Directive does not go beyond what is necessary in order to achieve that objective.
- (11) As some sectoral policies may either exacerbate or mitigate soil degradation processes, further integration of soil protection aspects into such policies is necessary. This Directive should make provision for Member States to identify and assess the impact of these policies on the prevention of soil degradation processes and the protection of soil functions.
- (12) In contrast to air and water, soil is mainly privately owned in the Community. Nevertheless it is a natural resource of common interest that has to be protected for future generations. In the public interest, therefore, land users should be required to take precautionary measures when their use of the soil can be expected to significantly hamper soil functions.
- (13) Sealing is becoming significantly more intense in the Community as a result of urban sprawl and increasing demand for land from many sectors of the economy, and this calls for a more sustainable use of soil. Appropriate measures are needed to limit soil sealing, for instance by rehabilitating brownfield sites, thus reducing the depletion of greenfield sites. Where sealing does occur Member States should provide for construction and drainage techniques that would allow as many soil functions as possible to be preserved.
- (14) A targeted and efficient soil protection policy should be based on the knowledge of where degradation is occurring. It is recognised that certain degradation processes, such as erosion, organic matter decline, compaction, salinisation and landslides, occur only in specific areas which are more at risk of such processes. This requires the identification of such risk areas.
- (15) To ensure a coherent and comparable approach in the different Member States, identification of risk areas for erosion, organic matter decline, compaction, salinisation and landslides should be based on a common methodology which includes elements known to be driving forces for the various degradation processes.
- (16) In the risk areas identified, measures should be taken to prevent further soil degradation by reducing the risk of it occurring and restoring degraded soils in order to preserve soil functions.
- (17) Action is to be taken under the responsibility of Member States, at the most appropriate level, based on the establishment of risk reduction targets and programmes of measures to reach those targets.

- (18) Such programmes of measures should take into account the social and economic impact of the measures envisaged; they should be reviewed periodically and may build on obligations, plans and programmes already set up under Community legislation or international agreements.
- (19) This Directive should contribute to halting desertification, which results from concurrent degradation processes, and soil biodiversity loss, and enhance cooperation in the implementation of the United Nations Convention to Combat Desertification and the Convention on Biological Diversity to which the Community is a party, and will enhance the implementation of these international environmental agreements.
- (20) In compliance with the prevention principle as laid down in Article 174 of the EC Treaty, this Directive should contribute to the prevention and reduction of the introduction of dangerous substances into soil to avoid soil contamination and to preserve soil functions.
- (21) Earlier industrialisation and poor or inappropriate management practices have left a legacy of hundreds of thousands of contaminated sites in the Community which call for a common strategy to manage historical contamination of soil in order to prevent and mitigate harmful effects on human health and the environment.
- (22) In order to successfully prevent and limit risk to human health and the environment stemming from soil contamination, Member States should identify the sites which according to their assessment are posing a significant risk in this regard. Given the number of sites which are likely to be contaminated, their identification requires a systematic step-by-step approach. To monitor progress on the identification of the contaminated sites a timetable is needed.
- (23) To support the identification of contaminated sites and to secure a common approach, it is necessary to establish a common list of activities which can have a significant potential to cause soil contamination. This common list of potentially soil polluting activities may be complemented by other more comprehensive lists adopted at national level.
- (24) The identification of contaminated sites should be reflected in a national inventory of contaminated sites to be updated regularly and made available for the public to consult. Previous and current efforts by Member States to identify contaminated sites should be taken into account.
- (25) In order to assist in the rapid identification of contaminated sites, the owner of a site where, according to official records such as national registers or cadastres, a soil-polluting activity has taken or is taking place, or the prospective buyer should, prior to completing the land transaction, provide relevant information on the status of the soil to the competent authority and to the other party in the transaction. The provision of such information at the time when a land transaction is being planned, will help to speed up the completion of the inventory of contaminated sites. It will also make the prospective buyer aware of the state of the soil and enable him to make an informed choice.

- (26) Taking into account the polluter pays principle, Member States should ensure that action is taken to remediate the contaminated sites identified within their national territory.
- (27) A National Remediation Strategy should be established, in particular for the purposes of setting remediation targets and the order of priority in which sites should be remediated.
- (28) In those contaminated sites where the polluter cannot be found, cannot be held liable for the pollution under national or Community legislation or cannot be made to bear the costs of remediation, also known as orphan sites, responsibility for reducing risk to human health and the environment should fall on the Member States. For those purposes, Member States should put in place specific funding mechanisms to ensure a durable financial source for the remediation of such sites.
- (29) Directive 2004/35/EC of the European Parliament and of the Council of 21 April 2004 on environmental liability with regard to the prevention and remedying of environmental damage<sup>8</sup> establishes that, for orphan sites, remedial action may be taken by the competent authority as a last resort. That Directive should therefore be amended in order to align it with the remediation obligations laid down in this Directive.
- (30) There is little public awareness of the importance of soil protection, and it is therefore necessary to introduce measures to improve knowledge, exchange of information and best practices.
- (31) The success of this Directive relies on close cooperation and coherent action at Community, Member State and local level as well as on information, consultation and involvement of the public, pursuant to Community obligations under the UNECE Aarhus Convention on Access to Information, Public Participation in Decision-making and Access to Justice in Environmental Matters. Thus, for the preparation, modification and review of the programmes of measures on risk areas and the National Remediation Strategies, it is appropriate to provide for the application of Directive 2003/35/EC of the European Parliament and of the Council of 26 May 2003 providing for public participation in respect of the drawing up of certain plans and programmes relating to the environment and amending with regard to public participation and access to justice Council Directives 85/337/EEC and 96/61/EC<sup>9</sup>.
- (32) It is recognised that different risk assessment methodologies for contaminated sites are currently being applied in Member States. In order to move towards a common approach ensuring neutral conditions of competition and a coherent soil protection regime, a thorough exchange of information is needed to establish the suitability of harmonising some of the elements of risk assessment as well as to further develop and improve the methodologies on eco-toxicological risk assessment.
- (33) Provision should be made to allow the rapid adaptation of methods of identification of risk areas in Member States including regularly reviewing the common elements therein.

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<sup>8</sup> OJ L 143, 30.4.2004, p. 56.

<sup>9</sup> OJ L 156, 25.6.2003, p. 17.

- (34) Provisions should be adopted as regards the data exchange formats and data quality criteria and these would need to be consistent with the establishment of any infrastructure for spatial information in the Community.
- (35) This Directive respects the fundamental rights and observes the principles recognised in particular by the Charter of Fundamental Rights of the European Union. In particular, this seeks to promote the integration into Community policies of a high level of environmental protection in accordance with the principle of sustainable development as laid down in Article 37 of the Charter of Fundamental Rights of the European Union.
- (36) The measures necessary for the implementation of this Directive should be adopted in accordance with Council Decision 1999/468/EC of 28 June 1999 laying down the procedures for the exercise of implementing powers conferred on the Commission<sup>10</sup>,

HAVE ADOPTED THIS DIRECTIVE:

## **Chapter I** **General provisions**

### *Article 1* *Subject-matter and scope*

1. This Directive establishes a framework for the protection of soil and the preservation of the capacity of soil to perform any of the following environmental, economic, social and cultural functions:
- (a) biomass production, including in agriculture and forestry;
  - (b) storing, filtering and transforming nutrients, substances and water;
  - (c) biodiversity pool, such as habitats, species and genes;
  - (d) physical and cultural environment for humans and human activities;
  - (e) source of raw materials;
  - (f) acting as carbon pool;
  - (g) archive of geological and archeological heritage.

To that end, it lays down measures for the prevention of soil degradation processes, both occurring naturally and caused by a wide range of human activities, which undermine the capacity of a soil to perform those functions. Such measures include the mitigation of the effects of those processes, and the restoration and remediation

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<sup>10</sup> OJ L 184, 17.7.1999, p. 23. Decision as amended by Decision 2006/512/EC (OJ L 200, 22.7.2006, p. 11).

of degraded soils to a level of functionality consistent at least with the current and approved future use.

2. This Directive shall apply to soil forming the top layer of the earth's crust situated between the bedrock and the surface, excluding groundwater as defined in Article 2(2) of Directive 2000/60/EC of the European Parliament and of the Council<sup>11</sup>.

## *Article 2* *Definitions*

For the purposes of this Directive, the following definitions shall apply:

- (1) 'sealing' means the permanent covering of the soil surface with an impermeable material;
- (2) 'dangerous substances' means substances or preparations within the meaning of Council Directive 67/548/EC<sup>12</sup> and Directive 1999/45/EC of the European Parliament and of the Council<sup>13</sup>.

## *Article 3* *Integration*

In the development of sectoral policies likely to exacerbate or reduce soil degradation processes, Member States shall identify, describe and assess the impacts of such policies on these processes, in particular in the areas of regional and urban spatial planning, transport, energy, agriculture, rural development, forestry, raw material extraction, trade and industry, product policy, tourism, climate change, environment, nature and landscape.

Member States shall make public those findings.

## *Article 4* *Precautionary measures*

Member States shall ensure that any land user whose actions affect the soil in a way that can reasonably be expected to hamper significantly the soil functions referred to in Article 1(1) is obliged to take precautions to prevent or minimise such adverse effects.

## *Article 5* *Sealing*

For the purposes of preserving the soil functions referred to in Article 1(1), Member States shall take appropriate measures to limit sealing or, where sealing is to be carried out, to mitigate its effects in particular by the use of construction techniques and products which will allow as many of those functions as possible to be maintained.

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<sup>11</sup> OJ L 327, 22.12.2000, p. 1.

<sup>12</sup> OJ L 196, 16.8.1967, p. 1.

<sup>13</sup> OJ L 200, 30.7.1999, p. 1.

## **Chapter II**

### **Risk prevention, mitigation and restoration**

#### **SECTION ONE**

#### **IDENTIFICATION OF RISK AREAS**

##### *Article 6*

##### *Identification of risk areas of erosion, organic matter decline, compaction, salinisation and landslides*

1. Within five years from [transposition date], Member States shall identify the areas in their national territory, at the appropriate level, where there is decisive evidence, or legitimate grounds for suspicion, that one or more of the following soil degradation processes has occurred or is likely to occur in the near future, hereinafter “the risk areas”:
  - (a) erosion by water or wind;
  - (b) organic matter decline brought about by a steady downward trend in the organic fraction of the soil, excluding undecayed plant and animal residues, their partial decomposition products, and the soil biomass;
  - (c) compaction through an increase in bulk density and a decrease in soil porosity;
  - (e) salinisation through the accumulation in soil of soluble salts;
  - (f) landslides brought about by the down-slope, moderately rapid to rapid movement of masses of soil and rock material.

For the purposes of that identification, Member States shall, in respect of each of those soil degradation processes, use at least the elements listed in Annex I and shall take into account the effects of those processes in exacerbating greenhouse gas emissions and desertification.

2. The risk areas identified pursuant to paragraph 1 shall be made public and reviewed at least every ten years.

##### *Article 7*

##### *Methodology*

Member States may base the identification of risk areas on empirical evidence or on modelling. If modelling is used, the models must be validated by comparing the results on the basis of empirical data which have not been used for the development of the model itself.

**SECTION TWO**  
**ESTABLISHMENT OF TARGETS AND PROGRAMMES OF MEASURES**

*Article 8*

*Programmes of measures to combat erosion, organic matter decline, compaction, salinisation and landslides*

1. For the purposes of preserving the soil functions referred to in Article 1(1), Member States shall in respect of the risk areas identified in accordance with Article 6, draw up, at the appropriate level, a programme of measures including at least risk reduction targets, the appropriate measures for reaching those targets, a timetable for the implementation of those measures and an estimate of the allocation of private or public means for the funding of those measures.
2. When drawing up and revising the programmes of measures pursuant to paragraph 1, Member States shall give due consideration to the social and economic impacts of the measures envisaged.

Member States shall ensure that measures are cost-effective, technically feasible and shall carry out impact assessments, including cost-benefit analyses, prior to the introduction of the programmes of measures.

Member States shall indicate in their programmes of measures how the measures are to be implemented and how they will contribute to achievement of the environmental targets established.

3. Where an area is at risk from different concurrent soil degradation processes, Member States may adopt a single programme in which appropriate risk reduction targets are to be set for all the risks identified together with the appropriate measures for reaching those targets.
4. The programme of measures shall be drawn up within seven years from [transposition date] and shall be in application no later than eight years after that date.

The programme of measures shall be made public and shall be reviewed at least every five years.

## **Chapter III**

### **Soil contamination**

#### **SECTION ONE**

#### **PREVENTION AND INVENTORY**

##### *Article 9*

##### *Prevention of soil contamination*

For the purposes of preserving the soil functions referred to in Article 1(1), Member States shall take appropriate and proportionate measures to limit the intentional or unintentional introduction of dangerous substances on or in the soil, excluding those due to air deposition and those due to a natural phenomenon of exceptional, inevitable and irresistible character, in order to avoid accumulation that would hamper soil functions or give rise to significant risks to human health or the environment.

##### *Article 10*

##### *Inventory of contaminated sites*

1. Member States shall, in accordance with the procedure laid down in Article 11, identify the sites in their national territory where there is a confirmed presence, caused by man, of dangerous substances of such a level that Member States consider they pose a significant risk to human health or the environment, hereinafter “contaminated sites”.

That risk shall be evaluated taking into account current and approved future use of the land.

2. Member States shall establish a national inventory of contaminated sites, hereinafter “the inventory”. The inventory shall be made public and reviewed at least every five years.

##### *Article 11*

##### *Identification procedure*

1. Each Member State shall designate a competent authority to be responsible for the identification of contaminated sites.
2. Within five years from [transposition date], the competent authorities shall have identified the location of at least the sites where the potentially soil-polluting activities referred to in Annex II are taking place or have taken place in the past.

For those purposes, the activities referred to in point 2 of Annex II shall be considered independently of the thresholds specified in Annex I to Council Directive 96/61/EC<sup>14</sup>, except for the activities carried out by micro-enterprises, as defined in

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<sup>14</sup> OJ L 257, 10.10.1996, p. 26.

point 3 of Article 2 in the Annex to Commission Recommendation 2003/361/EC<sup>15</sup>, and those relative to the rearing of livestock.

The identification shall be reviewed at regular intervals.

3. In accordance with the following time-table, the competent authorities shall measure the concentration levels of dangerous substances in the sites identified in accordance with paragraph 2, and where the levels are such that there may be sufficient reasons to believe that they pose a significant risk to human health or the environment, an on-site risk assessment shall be carried out in relation to those sites:
  - (a) within five years from [transposition date], for at least 10% of the sites;
  - (b) within 15 years from [transposition date], for at least 60% of the sites;
  - (c) within 25 years from [transposition date], for the remaining sites.

*Article 12*  
*Soil status report*

1. Where a site is to be sold on which a potentially polluting activity listed in Annex II is taking place, or for which the official records, such as national registers, show that it has taken place, Member States shall ensure that the owner of that site or the prospective buyer makes a soil status report available to the competent authority referred to in Article 11 and to the other party in the transaction.
2. The soil status report shall be issued by an authorised body or person appointed by the Member State. It shall include at least the following details:
  - (a) the background history of the site, as available from official records;
  - (b) a chemical analysis determining the concentration levels of the dangerous substances in the soil, limited to those substances that are linked to the potentially polluting activity on the site;
  - (c) the concentration levels at which there are sufficient reasons to believe that the dangerous substances concerned pose a significant risk to human health or to the environment.
3. Member States shall establish the methodology necessary for determining the concentration levels referred to in paragraph 2(b).
4. The information contained in the soil status report shall be used by the competent authorities for the purposes of identifying contaminated sites in accordance with Article 10(1).

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<sup>15</sup> OJ L 124, 20.5.2003, p. 36.

## **SECTION TWO REMIEDIATION**

### *Article 13 Remediation*

1. Member States shall ensure that the contaminated sites listed in their inventories are remediated.
2. Remediation shall consist of actions on the soil aimed at the removal, control, containment or reduction of contaminants so that the contaminated site, taking account of its current use and approved future use, no longer poses any significant risk to human health or the environment.
3. Member States shall set up appropriate mechanisms to fund the remediation of the contaminated sites for which, subject to the polluter pays principle, the person responsible for the pollution cannot be identified or cannot be held liable under Community or national legislation or may not be made to bear the costs of remediation.

### *Article 14 National Remediation Strategy*

1. Member States shall, on the basis of the inventory and within seven years from [transposition date], draw up a National Remediation Strategy, including at least remediation targets, a prioritisation, starting with those sites which pose a significant risk to human health, a timetable for implementation, and the funds allocated by the authorities responsible for budgetary decisions in the Member States in accordance with their national procedures.

Where containment or natural recovery are applied, the evolution of the risk to human health or the environment shall be monitored.

2. The National Remediation Strategy shall be in application and be made public no later than eight years after [transposition date]. It shall be reviewed at least every five years.

## **Chapter IV Awareness raising, reporting and exchange of information**

### *Article 15 Awareness raising and public participation*

1. Member States shall take appropriate measures to raise awareness about the importance of soil for human and ecosystem survival, and promote the transfer of knowledge and experience for a sustainable use of soil.

2. Article 2(1), (2), (3) and (5) of Directive 2003/35/EC shall apply to the preparation, modification and review of the programmes of measures on risk areas referred to in Article 8 and the National Remediation Strategies referred to in Article 14.

*Article 16*  
*Reporting*

1. Member States shall make the following information available to the Commission within eight years from [transposition date], and every five years thereafter:
  - (a) a summary of the initiatives taken pursuant to Article 5;
  - (b) the risk areas established pursuant to Article 6(1);
  - (c) the methodology used for risk identification pursuant to Article 7;
  - (d) the programmes of measures adopted pursuant to Article 8 as well as an assessment of the efficiency of the measures to reduce the risk and occurrence of soil degradation processes;
  - (e) the outcome of the identification pursuant to Article 11(2) and (3) and the inventory of contaminated sites established pursuant to Article 10(2);
  - (f) the National Remediation Strategy adopted pursuant to Article 14;
  - (g) a summary of the initiatives taken pursuant to Article 15 as regards awareness raising.
2. The information referred to in paragraph 1(b) shall be accompanied by metadata and shall be made available as documented digital georeferenced data in a format that can be read by a geographic information system (GIS).

*Article 17*  
*Exchange of information*

Within one year from [entry into force], the Commission shall set up a platform for the exchange of information between Member States and stakeholders on the risk area identification pursuant to Article 6 and on risk assessment methodologies for contaminated sites currently in use or under development.

**Chapter V**  
**Final provisions**

*Article 18*  
*Implementation and adaptation to technical progress*

1. The Commission may, in accordance with the regulatory procedure with scrutiny referred to in Article 19(3), adapt Annex I to technical and scientific progress.

2. Where, on the basis of the exchange of information referred to in Article 17, a need to harmonise the risk assessment methodologies for soil contamination is identified, the Commission shall adopt common criteria for soil contamination risk assessment in accordance with the regulatory procedure with scrutiny referred to in Article 19(3).
3. Within four years after [date of entry into force], the Commission shall adopt, in accordance with the regulatory procedure referred to in Article 19(2), the necessary provisions on data and metadata quality, utilisation of historical data, methods, access, and data-exchange formats for the implementation of the provisions of Article 16.

*Article 19*  
*Committee*

1. The Commission shall be assisted by a committee, hereinafter “the Committee”.
2. Where reference is made to this paragraph, Articles 5 and 7 of Decision 1999/468/EC shall apply, having regard to the provisions of Article 8 thereof.  
  
The period laid down in Article 5(6) of Decision 1999/468/EC shall be set at three months.
3. Where reference is made to this paragraph, Article 5a, paragraphs 1 to 4 and Article 7 of Decision 1999/468/EC shall apply.
4. The Committee shall adopt its rules of procedure.

*Article 20*  
*Commission report*

1. The Commission shall publish a first evaluation report on the implementation of this Directive within two years of receiving the programmes of measures and National Remediation Strategies.  
  
The Commission shall publish further reports every five years thereafter.  
  
It shall submit the reports to the European Parliament and to the Council.
2. The reports provided for in paragraph 1 shall include a review of progress in the implementation of this Directive based on an assessments made by the Commission pursuant to Article 16.

*Article 21*  
*Review*

The Commission shall review this Directive at the latest [15 years after the date of entry into force] and shall, where appropriate, propose any necessary amendments.

*Article 22*  
*Penalties*

The Member States shall lay down the rules on penalties applicable to infringements of the national provisions adopted pursuant to this Directive and shall take all measures necessary to ensure that they are implemented. The penalties provided for must be effective, proportionate and dissuasive. The Member States shall notify those provisions to the Commission by the date specified in Article 24 at the latest and shall notify it without delay of any subsequent amendment affecting them.

*Article 23*  
*Amendment to Directive 2004/35/EC*

In Article 6 of Directive 2004/35/EC, paragraph 3 is replaced by the following:

“3. The competent authority shall require the remedial measures to be taken by the operator. Subject to Article 13(1) of Directive xx/xx/xx, if the operator fails to comply with the obligations laid down in paragraph 1 or 2(b), (c) or (d) of this Article, or cannot be identified or is not required to bear the costs under this Directive, those measures may be taken by the competent authority itself.”

*Article 24*  
*Transposition*

1. Member States shall bring into force the laws, regulations and administrative provisions necessary to comply with this Directive by [24 months after the date of entry into force] at the latest. They shall forthwith communicate to the Commission the text of those provisions and a correlation table between those provisions and this Directive.

When Member States adopt those provisions, they shall contain a reference to this Directive or be accompanied by such a reference on the occasion of their official publication. Member States shall determine how such reference is to be made.

2. Member States shall communicate to the Commission the text of the main provisions of national law which they adopt in the field covered by this Directive.

*Article 25*

*Entry into force*

This Directive shall enter into force on the twentieth day following that of its publication in the *Official Journal of the European Union*.

*Article 26*

*Addressees*

This Directive is addressed to the Member States.

Done at Brussels,

*For the European Parliament*  
*The President*

*For the Council*  
*The President*

**ANNEX I**

SECTION 1 COMMON ELEMENTS FOR THE IDENTIFICATION OF AREAS AT RISK OF EROSION
Soil typological unit (STU) (soil type)
Soil texture (STU level)
Soil density, hydraulic properties (STU level)
Topography, including slope gradient and slope length
Land cover
Land use (including land management, farming systems and forestry)
Climate (including rainfall distribution and wind characteristics)
Hydrological conditions
Agro-ecological zone

SECTION 2 COMMON ELEMENTS FOR THE IDENTIFICATION OF AREAS AT RISK OF SOIL ORGANIC MATTER DECLINE
Soil typological unit (STU) (soil type)
Soil texture/clay content
Soil organic carbon (total and humus concentration)
Soil organic carbon (stock)
Climate (including rainfall distribution and wind characteristics)
Topography
Land cover
Land use (including land management, farming systems and forestry)

SECTION 3 COMMON ELEMENTS FOR THE IDENTIFICATION OF AREAS AT RISK OF COMPACTION
Soil typological unit (STU) (soil type)
Topsoil and subsoil texture (STU level)
Topsoil and subsoil bulk density (STU level)
Soil organic matter (STU level)
Climate
Land cover
Land use (including land management, farming systems and forestry)
Topography

SECTION 4 COMMON ELEMENTS FOR THE IDENTIFICATION OF AREAS AT RISK OF SALINISATION
Soil typological unit (STU) (soil type)
Soil texture (STU level)
Soil hydraulic properties
Irrigation areas, chemical properties of irrigated water and type of irrigation techniques
Groundwater information
Climate

SECTION 5 COMMON ELEMENTS FOR THE IDENTIFICATION OF AREAS AT RISK OF LANDSLIDES
Soil typological unit (STU) (soil type)
Occurrence/density of existing landslides
Bedrock
Topography
Land cover
Land use (including land management, farming systems and forestry)
Climate
Seismic risk

## **ANNEX II**

### **List of potentially soil polluting activities**

1. Establishments where dangerous substances are or were present in quantities equal to or in excess of the amounts indicated in Parts 1 and 2, column 2 of Annex I to Council Directive 96/82/EC (Seveso)<sup>16</sup>.
2. Activities listed in Annex I to Council Directive 96/61/EC.
3. Airports.
4. Ports.
5. Former military sites.
6. Petrol and filling stations.
7. Dry cleaners.
8. Mining installations not covered by Council Directive 96/82/EC, including extractive waste facilities as defined in Directive 2006/21/EC of the European Parliament and of the Council<sup>17</sup>.
9. Landfills of waste as defined in Council Directive 1999/31/EC<sup>18</sup>.
10. Waste water treatment installations.
11. Pipelines for the transport of dangerous substances.

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<sup>16</sup> OJ L 10, 14.1.1997, p. 13.

<sup>17</sup> OJ L 102, 11.4.2006, p. 15.

<sup>18</sup> OJ L 182, 16.7.1999, p. 1.