



# Is the European Union protecting soil? A critical analysis of Community environmental policy and law



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## ARTICLE INFO

### Article history:

Received 21 October 2016  
 Received in revised form 3 February 2017  
 Accepted 6 February 2017  
 Available online 6 March 2017

### Keywords:

Soil protection  
 European Union  
 Legislation

## ABSTRACT

Although preserving soil health is essential for sustainability, over the last decade, there has been a significant increase in soil degradation in the European Union (EU) and, based on available information, this trend will not reverse in the long run. While the Union has adopted ambitious policy objectives addressing soil threats, there is not to date an EU soil-specific legislation, but various aspects of soil protection are scattered across many EU policy areas. This paper contributes to evaluating the status of soil protection within the EU environmental legislation, by creating an inventory of the relevant provisions and analyzing their features. It emerges that soil threats are not comprehensively regulated by the EU legislator and soil protection looks like the by-product of several provisions which mainly set preventive, qualitative and non strictly binding measures.

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## 1. Introduction

Preserving soil health is essential for sustainability, since soil performs several vital functions: it provides us with food, biomass and raw materials; it serves as a platform for human activities, landscape and heritage; it plays a role as a habitat and gene pool; it is second only to the oceans as a global carbon sink; it stores, filters and transforms many substances, such as water, minerals and organic matter. We cannot effectively protect biodiversity, fight desertification, mitigate climate change, preserve the quality of coastal and marine ecosystems and control the quality and quantity of water flow without addressing soil quality issues. It comes, therefore, at no surprise that most of the strategies recently adopted by the EU in different environmental policy areas highlight that soil preservation is a prerequisite for meeting the related objectives (EC, 2011a; EC, 2011b; EC, 2013a; EC, 2014a; EP and Council, 2013a).

Available information suggests, however, that, over the last decade, there has been a significant increase in soil degradation processes<sup>1</sup> in Europe (see e.g. EC, 2012; EEA, 2015a), including erosion, organic matter decline, contamination, sealing, landslides and floods, compaction, salinisation and biodiversity decline. For example, the soil loss rate by water erosion in the EU has been recently estimated exceeding the average soil formation rate by a factor of

1.6 (Panagos et al., 2015, p. 446); between 1990 and 2006 artificial surface in the Union increased by 8.8% and, on average, 51% of artificial surfaces are sealed (JRC, 2015, p. 80); there are 2.5 million of identified contaminated sites caused by point pollution in Europe and their estimated number is 11.7 million (JRC, 2015, p. 94); over 325 major river floods have been reported for Europe since 1980, of which more than 200 occurred during the last 15 years (EEA, 2012, p. 21); European national databases in 2010 contained over 633,000 landslides and the total amount of landslides occurred in Europe is assumed to be more than twice this number (JRC, 2012b, p. 62). The future does not look brighter. According to the European Environment Agency (EEA, 2015b, pp. 59–62), land use and soil functions are characterized by deteriorating trends, both in the short (5–10 years) and long (20+ years) run.

While the EU is increasingly recognizing the importance of soil protection in strategic terms, there is still no agreement on how best to proceed to reduce soil threats and improve the delivery of soil ecosystem services. After the failure of the proposal for a Soil Framework Directive (SFD; EC, 2006a), the introduction of binding legislation is still one of the policy options under discussion. Any development of Community action (especially of new legislation) should take into account of the different policy instruments in place in the EU and its Member States, as well as of their level of implementation. But, getting a comprehensive picture of soil legislation is a difficult task, since it is highly fragmented across governance levels and policy domains.

This paper contributes to evaluating the status of soil protection within the EU environmental legislation. Following a brief

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<sup>1</sup> For the purpose of this article, soil degradation includes both soil loss and deterioration of its functions.

overview of late developments in EU soil policy, an analysis is provided of the legislation that is relevant to soil protection and of the related features. It emerges that soil threats are not comprehensively addressed by the EU legislator and soil protection looks like the by-product of several provisions which mainly set preventive, qualitative and non strictly binding measures. Moreover, it is suggested that, even in case the EU action is to be limited to applying the integration principle and setting soil policy objectives, a framework legislation is needed, at least to define soil basic terms and clarify the meaning, principles and priorities of soil protection.

## 2. The EU response to soil degradation: policy overview

An attempt to design a Community framework for soil protection had been made by the European Commission, through the proposal for a SFD (EC, 2006a), which was part of the so-called Soil Thematic Strategy (EC, 2006b), provided by the Sixth Environment Action Programme (6th EAP; EP and Council, 2002). The 6th EAP established the objective to promote a sustainable use of the soil and announced the endorsement of a Soil Thematic Strategy (EP and Council, 2002, Art. 6.1 and Art. 6.2c).<sup>2</sup> The Strategy, adopted in 2006, was built around four pillars: legislation (proposal for a SFD); integration of soil protection in the formulation and implementation of national and Community policies; promotion of research to close the knowledge gap in certain areas of soil protection; and awareness raising (EC, 2006b, p. 6).

The proposed SFD, besides defining soil (EC, 2006a, Art. 1.2) and recognizing its functions (EC, 2006a, Art. 1.1), shaped a comprehensive approach to soil protection, based on three sets of measures:

- precautionary and preventive measures: land users were required to take precautions to prevent or minimise the adverse effects of their actions on soil functions (EC, 2006a, Art. 4). Member States were to limit sealing (or mitigate its effects; EC, 2006a, Art. 5), as well as the introduction of dangerous substances on or in the soil (EC, 2006a, Art. 9);
- identification of risk areas and contaminated sites: Member States were required to map risk areas for erosion, organic matter decline, compaction, salinisation and landslides (EC, 2006a, Art. 6.1) and to prepare an inventory of contaminated sites (EC, 2006a, Art. 10);
- operative measures for risk areas and contaminated sites: Member States were to adopt programmes of measures for risk areas (EC, 2006a, Art. 8) and draw up national remediation strategies (EC, 2006a, Art. 14), ensuring that contaminated sites were remediated (EC, 2006a, Art. 13).

The costs directly derived from the proposed directive were estimated to be up to €290 million per year for the EU-25 in the first five years and up to €240 million per year in the following 20 years (EC, 2006c, p. 60), while the benefits could not be quantified, since they were supposed to come from a better knowledge of the extent and location of the soil threats.

The proposed SFD was rejected by a minority of Member States (Germany, France, Austria, the Netherlands and the UK) within the Council on grounds of subsidiarity, excessive cost, administrative burden, and technical arguments regarding the delineation of risk areas (Council of the EU, 2007a, p. 8). The proposal was finally withdrawn by the European Commission in 2013 (EC, 2013b).

While no progress was being made on the proposed SFD, the EU endorsed some strategic documents setting ambitious soil policy

objectives. These concern contamination, the loss of soil organic matter (SOM), erosion, floods, biodiversity decline and sealing and many require these threats to be remediated or reduced by 2020–2050 (see Table 1). In order to meet them, the Seventh Environment Action Programme (7th EAP) suggested the introduction of soil targets and land planning objectives (EC and Council 2013, paragraph 28vi) and urged the Union to reflect on how soil quality issues could be addressed within a binding legislative framework (EP and Council 2013a, paragraph 25). To this end, the Commission has established an expert group with Member States, but attitudes towards the adoption of a new legislative proposal remain, so far, quite heterogeneous: while some countries are in favour (e.g. Belgium and Italy), provided that the new legislation is not unnecessarily prescriptive, others (e.g. Austria and the Netherlands) promote alternative instruments such as the update of the Soil Thematic Strategy or the creation of a pan-European network to exchange experiences and knowledge on soil-related issues (EC, 2015, Annex). With the aim of supporting the achievement of the objectives on land take, soil erosion and organic matter decline, specific targets have also been proposed by the European Commission (EC, 2011c, p. 79).<sup>3</sup>

The EU is increasingly emphasising the importance of soil protection in strategic terms, but there is still not to date an EU soil-specific legislation. Due to its cross-cutting nature, various aspects of soil protection are, however, scattered across many EU policy areas, such as agriculture, environment, regional policy, research and innovation, etc. It is to these legislative provisions that I want now to draw my attention.

## 3. An inventory of the EU environmental legislation addressing soil degradation: methodology

The present paper contributes to reviewing the integration of soil protection aspects into the EU environmental legislation. Taking an empirical legislative approach, an inventory of the EU environmental legislation in force that is relevant to soil protection has been created. In particular, 39 pieces of legislation and 50 provisions have been examined and information has been collected on their nature and content.

The inventory is based on a broad review of the EU environmental legislation in force, using as main sources, along with previous works on this topic (ECOLOGIC, 2004; Farmer, 2012, Chapter 13; Glæsner et al., 2014; Altvater et al., 2015, p. 21), the European Commission 'Summaries of EU legislation'<sup>4</sup>; and the websites of the Commission's directorates-general.<sup>5</sup> Since the EU legislation is continually evolving, the cut-off date for the study is March 2016.

In the following, I summarize the scope and limitations of the research. The analysis covers seven environmental and resource policy areas: air, biodiversity, chemicals, energy, waste, water and 'other' (including 'horizontal' environmental legislation, environmental legislation that cannot be classified under the abovementioned policy areas and legislation pertaining to environment-related sectors, such as agriculture).

With regard to agriculture, most of the provisions belonging to the common agriculture policy (CAP) regulations (EP and Council, 2013b, 2013c, 2013d, 2013e, 2013f) are 'directly relevant' to soil protection, according to the definition provided below. Therefore,

<sup>3</sup> Besides the 'no net land take' by 2050, the document (EC, 2011c, p. 79) suggested to set the following targets to be met by 2020: the area of land in the EU that is subject to soil erosion of more than 10 tonnes per hectare per year should be reduced by at least 25% and SOM levels should not be decreasing overall and should increase for soils with currently less than 3.5% organic matter.

<sup>4</sup> <<http://eur-lex.europa.eu/browse/summaries.html?locale=en>> accessed September 2016.

<sup>5</sup> <<http://ec.europa.eu/about/ds.en.htm>> accessed September 2016.

<sup>2</sup> The 6th EAP also provided for the adoption of other six thematic strategies (covering air, waste prevention and recycling, marine environment, pesticides, natural resources, and urban environment), most of which affect soil and its protection.

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