***Minireview Article***

# Analysis of the Legislation on Soil Protection in the European Union and Romania


## ABSTRACT

Soil is one of the most complex natural systems on the planet, a key component of the geographical environment, and a biological complex that is constantly changing; at the same time, the soil is the equivalent of a multifunctional system on which all the essential functions of life on Earth rest. As such, soil protection must be a primary concern for the community, as the conservation of soil resources itself requires more than ever transposition in legislative terms. Thus, on the protection of soils from the point of view of the legislation of the European Union and Romania, we proposed to make an analysis noting, through this paper, the main provisions of the Acquis Communautaire (directives, strategies, decisions, and orders of the relevant ministry, etc.), which come to ensure an interface between the current use of soils, agronomy and their protection for future generations. The results of the scientific approach undertaken were limited to the achievement of a correlation between EU and national legislation, which also represented graphically in the form of a chronologically ordered blockchain (a repeating bending process).



*Keywords: Acquis Communautaire; sustainable agriculture; soil protection; legislation.*


## 1. INTRODUCTION

Soil - one of the essential components of the land - is a very complex and often underestimated element, full of life; in fact, protecting Europe's land and soil resources is key to a sustainable future [1,2]. So here is the latest response from the European Community to the soil. Naturally, this vision is embraced by all the Member States of the European Union, implicitly harmonized at the level of the Acquis Communautaire.

Increasing the demands on the fertile soil that provides food must not lead to its depletion because the future is the earth that supports us. The role of soils in the nutrient cycle in nature [3], the role of soils in climate change [4], or the role of soils in the sustainable development goals of the community must not be altered [5]. The soil resource - the most important natural resource of a nation that ensures its independence and food security - is included in the category of non-renewable natural resources [6].

Intensive agriculture, pollution, and the impact of climate change can lead to a loss of soil quality, as soil functions are progressively diminished through competition with building construction, roads, or landfills. Without the management of this resource, there is no future, no progress, developed countries being fewer dependent states. As such, soil protection must be a primary concern for the community, as the conservation of soil resources itself requires more than ever transposition in legislative terms. Thus, on the protection of soils from the point of view of the legislation of the European Union and Romania, we set out to

make an analysis noting in this paper the main provisions of the Acquis Communautaire (directives, strategies, decisions, and orders of the relevant ministry, etc.), which come to ensure an interface between the current use of soils and their protection for future generations.

## 2. MATERIAL AND METHODS

This paper was outlined in consultation with the Acquis Communautaire (directives, strategies, decisions, and orders of the relevant ministry, laws and emergency ordinances, etc), which provides an interface between the current and correct use of soils, agronomy, and soil resources protection for future generations. Both the elements that constitute the legislative framework of the European Union in strict and direct relation to the protection of soil resources and the elements that constitute the existing harmonized legislative framework at the level of Romania were considered.

Moreover, to be able to follow closely and make a correlation between the European and national legislative framework, it was necessary to create and develop SmartArt graphics, which would support the guideline of the history of legislative concerns for the protection and judicious use of soil resources. Moreover, the correlation aimed to emphasize, where appropriate, the existence of a link between European soil protection directives and regulations and the corresponding national legislative framework, which emerged as a natural harmonization of the European one.

Because the follow-up of the correlation between the European and the national legislative framework was not well outlined in terms of research methodology (which involved the natural phase of documenting and consulting the sites of the main bodies with responsibilities and responsibilities in legislation), there were many problems in the approach taken. Most issues that have interfered with and altered the legislative correlation have been blamed on the lack of transparency or restriction of public access to information, the lack of direct correlation between European legislation and its national equivalent, or the fragmentation and alteration of the national legislative framework.

The latter issue was most encountered on the websites of organizations that took the information in question from official websites and altered it by inadequate translation, inconsistency in the full takeover of the legislative text, or framing in another category than that stipulated by the parent law.

## 3. RESULTS AND DISCUSSION

### 2.1 European legislation on land use and soil resources protection

According to the provisions of art. 174 of the Amsterdam Treaty, Member States must consider a high level of environmental protection [7], pursuing certain key objectives, such as preserving, protecting, and improving the quality of the environment, protecting human health, prudent and rational use of natural resources and last but not least, the international promotion of measures designed to deal with regional or global environmental problems. The legislative document regulates a unitary framework in the field of environmental protection and is in line with the fundamental principles of the original Community law and does not contravene their provisions.

To protect soil quality at the EU level, the European Commission prepared, in Brussels, 22.06.2006, the Communication entitled "Thematic Strategy for Soil Protection" (COM/2006/0231) [8] and the "Impact Assessment of the Strategy" (SEC/2006/0620) [9] that

a framework directive in the field of soil protection should be adopted, given the important role of soil in addressing such as climate change, biodiversity loss, desertification, erosion, floods, and landslides, as well as ensuring safe and sufficient food production [1, 4]. Although a thematic strategy for soil protection was developed at the EU level in 2006, there is still no binding general framework to strategically define soil protection policy priorities or parameters. The results on soil protection in other laws are largely derived because of achieving environmental objectives that are not explicitly focused on the soil, such as reducing pollution, offsetting GHG emissions, etc.

Results should be clearly described in a concise manner. Results for different parameters should be described under subheadings or in separate paragraph. Table or figure numbers should be mentioned in parentheses for better understanding. The discussion should not repeat the results but provide detailed interpretation of data. This should interpret the significance of the findings of the work. Citations should be given in support of the findings. The results and discussion part can also be described as separate, if appropriate.

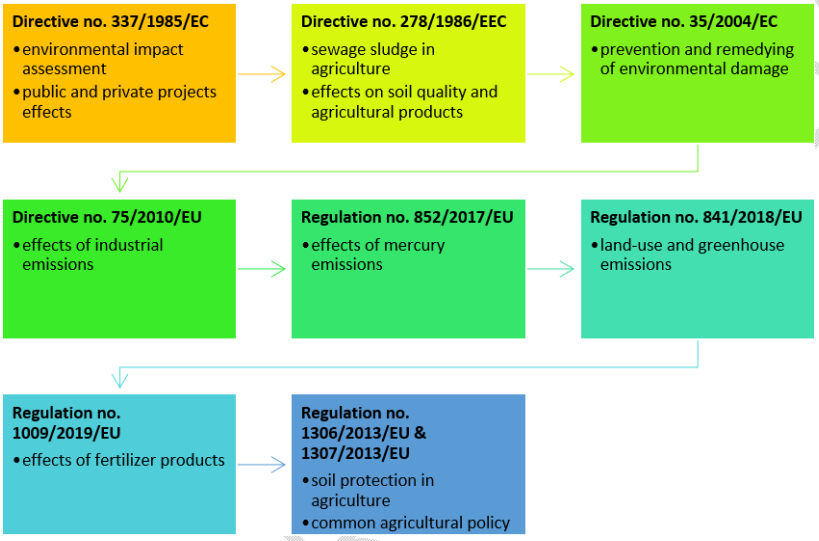


**Fig. 1. The main legislation in the EU on soil protection and sustainable land use**

Among the regulations that touch tangentially on the issue of soil protection, we present the most relevant ones below:

- The EIA Directive (337/1985/EEC) has been in force since 1985 and has been amended three times in 1997, 2003, and 2009 [10]. This Directive applies to the environmental impact assessment of those public and private projects that are likely to have significant effects on the environment. The environmental impact assessment will identify, describe and assess properly the direct and indirect effects of a project on the following factors: human beings, fauna, flora, soil, water, air, climate and landscape, material goods, etc.

- Directive 97/11/EC brought the Directive in line with the UN ECE Espoo Convention on EIA in a Transboundary Context.

- Directive 2003/35/EC was seeking to align the provisions on public participation with the Aarhus Convention on public participation in decision-making and access to justice in environmental matters.

- Directive 2009/31/EC amended Annexes I and II of the EIA Directive, by adding projects related to the transport, capture, and storage of CO2 [11].

- The sewage sludge directive (278/1986/EEC) [12] aims to encourage the use of sewage sludge in agriculture and to regulate its use in such a way as to prevent harmful effects on soil, vegetation, animals, and humans. The use of sewage sludge must not affect the quality of soil and agricultural products. For this purpose, the use of untreated sludge on agricultural land shall be prohibited unless it is injected or incorporated into the soil. Treated sludge is defined as being subjected to biological, chemical, or thermal treatment, long-term storage, or any other appropriate process to significantly reduce fermentability and the health hazards arising from its use [11].

- Directive 35/2004/EC on environmental liability concerning the prevention and remedying of environmental damage establishes a framework based on the polluter pays principle to prevent and remedy environmental damage [13]. In addition to a common framework for remedying damage to water or natural habitats, it sets out the most appropriate measures to remedy the damage to the land.

- Directive 75/2010/EU on industrial emissions is the main instrument regulating emissions of pollutants from industrial installations [14]. It aims to achieve a high level of protection of human health and the environment as a whole by reducing harmful industrial emissions across the EU. It provides an integrated approach to the prevention and control of emissions to air, water, and soil, waste management, energy efficiency, and accident prevention and ensures that the operation of a plant does not lead to deterioration in soil and groundwater quality.

- Regulation 852/2017/EU covers the entire life cycle of mercury. It lays down measures and conditions relating to the use, storage, and trade in mercury, its compounds and mixtures, the manufacture and use and trade in mercury-containing products, and the management of mercury waste [15]. The directive aims to ensure a high level of protection of human health and the environment against anthropogenic emissions and emissions of mercury and its compounds.

- Regulation 841/2018/EU on the inclusion of greenhouse gas emissions and land use disposal, land-use change, and forestry in the climate and energy framework for 2030, sets out a binding commitment for each Member State to ensure that emissions from land use are fully offset by an equivalent removal of CO2 from the atmosphere [16].

- Regulation 1009/2019/EU sets out the definition of "EU fertilizer products" and lays down rules on their making available on the market [17]. Among other things, it defines thresholds for the presence of contaminants in fertilizers, especially cadmium, to minimize soil pollution.

- The Common Agricultural Policy and four associated regulations set out how the various elements work (financing, management, and monitoring of the common agricultural policy - Regulation 1306/2013/EU [18], and rules for direct payments to farmers - Regulation 1307/2013/EU [19]). It is also an important economic driver for EU-wide agricultural decisions and has the potential to promote soil protection in agriculture and forestry through the implementation of associated measures and obligations by the Member States and land managers.

Soil is one of the basic resources for agricultural and forestry production. It aims at the sustainable management of natural resources and climate action, and the pursuit of climate change mitigation and adaptation, which are relevant for the protection and improvement of soil quality. In 2012, the European Commission published a policy report on the implementation of the strategy and ongoing activities. The report provides an overview of the actions taken by the European Commission to implement the four pillars of the Strategy, namely awareness-raising, research, integration, and legislation. It also shows trends in soil degradation both in Europe and globally, as well as challenges to ensure protection.

Following the withdrawal of the legislative proposal due to opposition from a minority of Council countries, in 2015 the Commission set up a panel of experts mandated by the Member States to reflect on how soil quality issues could be addressed using targeted, risk-based risk. on a binding legal framework. Given the cross-sectoral nature of soil issues and the diversity of environmental and socio-economic pressures and governance conditions across Europe, there are many different policy instruments at the EU and Member State level that either explicitly address threats to soil or soil functions, or by default provide some form of soil protection.

Recently, a soil strategy has been introduced at the EU level in addition to these directives and regulations [20]. The EU's new soil strategy for 2030 sets out a framework and concrete measures to protect and restore soils and to ensure that they are used sustainably. It sets out a vision and goals for achieving healthy soils by 2050, with concrete actions by 2030. The EU Soil Strategy for 2030 replaces the former Thematic Strategy for Soil Protection in 2006. The strategy identifies the main threats to EU soil, such as erosion, floods, landslides, loss of soil organic matter, salinization, contamination, and loss of soil biodiversity.

## 2.2 Romanian legislation on land use and soil resources protection

For Romania, soil protection is a matter of national interest, and it is necessary to adopt an adequate legislative framework, meant to ensure unitary coordination of activities in these fields based on the most precise norms and provisions. The purpose of this legislative recommendation is to regulate the norms, measures, and mandatory unitary actions on knowledge, protection, improvement, and sustainable use, including the assessment of bioproduction capacity and systematic monitoring of soil quality in Romania.

In Romania, a full member state of the European Union, since 2007, the issue of soil has faithfully overlapped with that existing at the central level, under the auspices of the European Environment Agency. Thus, the soil as a dynamic natural body, composed of solid mineral and organic compounds, water, air, and living organisms [21], is also the heart of terrestrial ecosystems, being considered the fundamental life support [22].

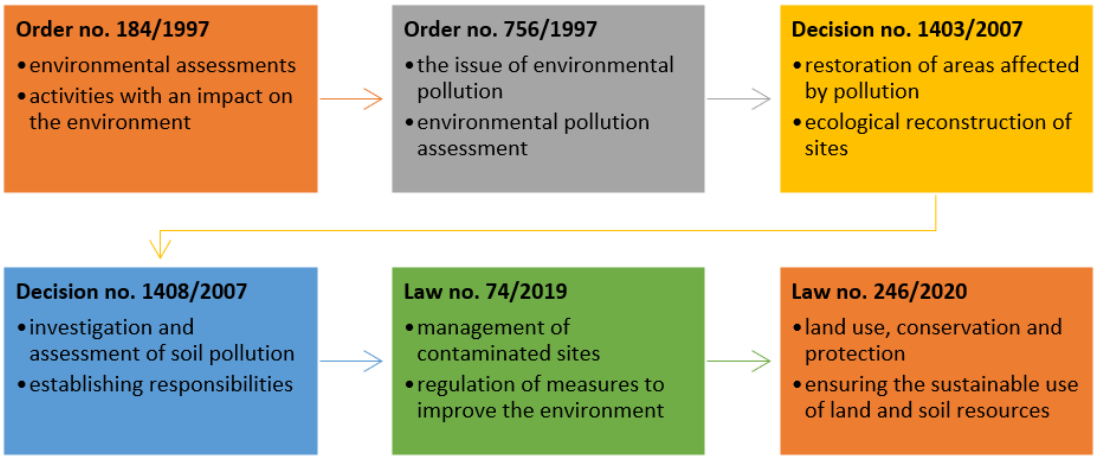


**Fig. 2. The main legislation in Romania on soil protection and sustainable land use**

Given that the soil is a basic natural resource, the correct use, conservation, and protection of which is a crucial condition for providing food for the population and protecting natural systems [2,5], we have compiled below a list of the main legislative provisions. which enshrine soil protection activities, namely:

- Order no. 184/1997 for the approval of the Environmental Assessment Procedure details the implementation procedure, the types, areas, and content of the environmental assessments required in the authorization process, as well as the change of owner, destination, or cessation of economic and social activities with environmental impact [23];

- Order no. 756/1997 for the approval of the Regulation on the assessment of environmental pollution also affects the issue of soil pollution [24];

- Decision no. 1403/2007 on the restoration of areas where the soil, subsoil, and terrestrial ecosystems have been affected establishes the legal framework for carrying out the activities of cleaning, remediation, and/or ecological reconstruction of the areas that have been affected [25];

- Decision no. 1408/2007 on the modalities of investigation and assessment of soil and subsoil pollution regulates the modalities of investigation and assessment of soil and subsoil pollution, to identify the damages caused and to establish the responsibilities for environmental restoration [26];

- Law no. 74/2019 on the management of potentially contaminated and contaminated sites aims to protect human health and the environment from the effects of soil contamination by regulating measures to improve the quality of environmental factors affected by the presence of pollutants at levels that pose a significant risk to human health and the environment [27].

- Law no 246/2020 on land use, conservation, and protection regulates activities on the use, conservation, improvement, assessment of productive capacity, economic recovery, soil protection, and integrated soil quality monitoring, in the context of sectoral policies to ensure the sustainable use of this non-renewable resource [21].

## 4. CONCLUSION

As expected, there is a wide range of legislation in the European Union, and the Acquis Communautaire is reflected in a long-standing scientific concern that has stood the test of time in shaping current environmental policies and strategies. Following the scientific literature, but especially the various regulations that are either directly or only tangentially related to the protection of soil resources, I found that European legislation is still deficient in the soil, it is not as protected as the other elements of the environment, water, air and/or biodiversity. Equally, we found that in Romania, only a few institutions deal with soil research and protection: the profile universities, the Research Institute for Pedology-Agrochemistry, and the county offices of pedology and agrochemistry. The first two have primary research responsibilities for the development of concepts and operational methods, and the county offices apply this scientific and operational knowledge in the territory. Soil protection legislation is visibly and inevitably subject to European regulations, where soil protection is often related to European biodiversity and natural resources protection policies.

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