

Review

Legislation Concerning the Soil and Subsoil Protection in România

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Abstract

Appeared on the European agenda in the early 1970s, environmental concern becomes one with the distinct signal from the *Club of Rome*, on diminishing natural resources and deterioration of water quality, air and soil. Creating Community environmental policy was made two years later (1972), developing as one of the most important Community policies. Its importance stems from the fact that environmental policy has become horizontal EU policy, environmental issues are considered binding on other EU policies. Regulations on procedures for investigation and assessment of soil and subsoil remediation in areas where soil, subsoil and terrestrial ecosystems were affected and those relating to protection of soil, subsoil and terrestrial ecosystems, are established by decisions of government, the proposal central public authority for environmental protection.

Keywords: environment, natural resources, policy, EU

1. Introduction

Soil, subsoil and terrestrial ecosystems, through appropriate management, conservation, organization and planning is mandatory for all holders, by title or no title.

Soil is defined as the most recent formation of the lithosphere surface, represented by a succession of layers (horizons) that were formed by turning rocks and minerals under the action of physical, chemical and biological area contact the atmosphere lithosphere [1].

Soil is composed of mineral particles, organic matter, water, air and living organisms, is a very dynamic system that meets many functions and is vital for the survival of human activities and ecosystems. As an interface between earth, air and water, soil is a non-renewable resource that fulfills several vital functions [12].

Functions of soil are:

- Food production / biomass
- Storing, filtering and transformation of many substances (including water, carbon, nitrogen)
- Source of biodiversity, habitats, species and genes
- Serves as a platform/physical environment for people and human activities
- Source of raw materials, coal field
- Geological and archaeological heritage

The main processes of land degradation worldwide, affecting in varying degrees of intensity, large areas of land (ICPA), are:

- Water and wind erosion (which causes loss of fertile soil layer from the surface, terrain deformation, clogging and sedimentation)
- Compacting
- Excess water
- Depletion of soil organic matter and nutrients
- Salinization

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- Acidification
- Pollution
- Loss of biodiversity
- Sealing
- Landslides and floods

In the field of soil and subsoil, soil and subsoil Protection Bureau meets the following objectives:

- Implementation of specific environmental legislation protecting underground soil
- Effective collaboration with other authorities, institutions
- Reduction of pollution of soil and subsoil in Romania
- Identification of contaminated sites by type of polluting activities
- Identification of areas affected / at risk from landslides for different reasons
- Increase professional staff of NEPA, REPA and EPA in the protection of soil, subsoil.

The main functions and powers of the Office of the soil and subsoil are:

- Building a database of contaminated sites nationwide situation
- Building a database for managing contaminated sites
- Participation in organizing the monitoring of soil and subsoil and the quality of non-renewable natural resources
- Building a database on ecological restoration methods applied nationally
- Collaboration with the Programs, Projects, International Relations, Communication, to ensure liaison with the European Environment Agency, the National and Federal environmental agencies of EU Member States or associated with other professional bodies in the country and abroad, with the central public authority for environmental protection
- Organizing staff training REPA / EPA in the protection of soil and subsoil [12].

2. The main legal provisions on protection of soil and subsoil

So far, no increased community actions, only the new Environmental Strategy contains specific soil protection legislation, others relying on some provisions to protect soil in other sectoral policies.

Government Decision no. 1408/23.11.2007 on procedures for investigation and assessment of soil and subsoil. The first stage is carried out preliminary inventory of contaminated sites. However, this decision shall be governed by rules of investigation and assessment of soil and subsoil, the

aim of identifying damage to their responsibilities for environmental rehabilitation and geological setting. Preliminary identification of contaminated sites is carried out by NEPA (subordinate institutions) and annual reports of OSPA.

After identification of contaminated sites contaminated sites is approved list (History, orphan, abandoned and contaminated current) and the decision on the need for geological investigation and evaluation of environmental pollution in the affected areas [4].

Depending on the *types of polluting activities*, according to preliminary contamination situation in Romania so far contaminated sites were identified following:

- *Steel, ferrous and nonferrous metallurgy* - 8 contaminated sites with a total area of 89961.60 hectares;
- *Mining*- 170 contaminated sites with a total area of 2725.46 hectares;
- *Oil industry* - (including mining areas, separators, pipelines, processing facilities, warehouses, waste oil pits, filling stations etc.). - 232 sites contaminated with a total area of 2664.78 hectares;
- *Electricity* - 10 sites contaminated with a total area of 1700.28 hectares;
- *Industrial waste* (chemical, machine building, building material, etc..) - 110 sites contaminated with a total area of 954.92 hectares;
- *Landfill waste, street, industrial* - 475 sites contaminated with a total area of 684.62 hectares;
- *Farms* - 47 sites contaminated with a total area of 30.90 hectares [13]

Government Decision no. 1403/26.11.2007 on the restoration of the soil, subsoil and terrestrial ecosystems have been affected.

The government decision regulating the activities of cleaning, repair and/or ecological restoration of areas where the soil, subsoil and terrestrial ecosystems were affected [3].

Geological environmental remediation process is:

- Removal of contamination sources on site
- Isolation and decontamination of contaminated sites
- Limiting the spread and eliminate possibilities of geological and environmental pollutants to reach limit values for permissible concentrations of pollutants.

In the *ecological reconstruction* of the soil affected by different processes should be considered general and specific measures for agricultural and forest soils.

General measures will target:

- Application of research results in soil science and ecosystem research
- Review the structure of the utilizations
- Establish measures to prevent and reduce land degradation
- Setting up perimeters for improvement
- Continued monitoring of soil quality status.

Law no. 138/2004 Land improvements, republished in 2009

Land improvements for:

- The protection of any land and any construction categories to flooding, landslides and erosion
- Ensuring adequate soil moisture to allow or stimulate plant growth, including vitipomicole plantations, agricultural crops and forest
- Ensuring improvement acid soils, salt and sand, and protection against pollution [6].

Directive 91/676/EEC on the protection against pollution by nitrates from agricultural sources.

This Directive requires the development and implementation of action plans and integrated programs of good farming practices ecologically valid measures of assessment and monitoring.

The main objectives of the Directive relate to:

- Reduce pollution caused or induced by nitrates from agricultural sources
- Preventing soil pollution by nitrates
- Streamlining and optimizing the use of chemical and organic fertilizers containing nitrogen compounds

Factors involved in the mechanisms of nitrate pollution from agricultural sources:

- Soil structure and texture, which influences the rate of water infiltration into soil
- Slope of the plot - hilly terrain increases the risk of leakage through the flow of fertilizer and quickly transfer them to surface waters
- Distance plot of land in relation to the hydrographic
- Precipitation - this factor is conditioned by the intensity and distribution of rain
- Thermal regime in winter (cold winters and dry and wet winters) influence the rate of mineralization of soil organic nitrogen
- Nature and land cover, vegetation affects the ability to extract nitrogen. Bare soil, fallow in winter is a risk factor for nitrogen pollution
- Irrigation practices [2].

Order no. 344/2004 - environmental protection and in particular soil, when used from sewage sludge in agriculture.

Technical rules set out in Order 344/204 aim:

- Unlocking the potential of sewage sludge agrochemical

- Prevent and reduce harmful effects on soil, water, vegetation, animals and man

Regarding the use of sludge in agriculture, this order includes several prohibitions related to this activity, as follows:

- Prohibiting the use of sludge when the concentration of one or more heavy metals in soil exceeds the limit values
- Can be used in agriculture sludge
- Prohibiting the use of sludge or delivery for use on:
 - ⇒ land used for grazing;
 - ⇒ land for growing vegetables and shrubs;
 - ⇒ land of fruit crops with 10 months before harvest and during harvest [8].

Law no. 85/18.03.2003 (Articles 51, 53) - the closure of mines

Closure objectives

In terms of closure, the waste will be managed on the following objectives:

1. Reduces the risk of waste:
 - Placing the waste vacuum extraction excavation back as far as possible and as far as this corresponds to environmental standards at Community level
 - Placing topsoil on the former sites after mine closure or reuse topsoil elsewhere.
2. Ensure safe storage of short-term and long term waste extraction, by choosing a design solution that:
 - Requires a minimum of planning control and storage management
 - Prevents or at least minimize the negative effects of long-term
 - Provides long-term geotechnical stability of any structures or impoundments or landfills that rise above the original topographic surface [5].

Order no. 242/197 of 26 March 2005 approving the organization of the National Integrated monitoring soil

Specific activities of the institution of reference (ICPA) managing soil Monitoring

- Organization and management of national integrated monitoring system of soil
- Accurate identification and delineation of vulnerable areas and potentially vulnerable to nitrate pollution from agricultural sources
- Supervision and monitoring levels of nitrates and other nitrogen compounds in soil and groundwater

- Preparation of cadastral maps and polluted areas, vulnerable and potentially vulnerable
- Organizing, managing and monitoring network management
- Organization, conduct and management of computer network and national database
- Establish management plans and programs of organic waste from livestock in vulnerable areas and potentially vulnerable to nitrate pollution
- Establishing the technical framework for developing action plans and fertilization plans in vulnerable areas and potentially vulnerable [9].

Emergency Ordinance no. 68 - 28/06/2007

on environmental liability with regard to preventing and remedying environmental damage [11].

Law no. 265/29.06.2006 approving Government Emergency Ordinance no. 195 of 22 procedure for issuing a permit integrated environment [7].

3. Conclusions

So far, the soil was not a specific protection policies at EU level. The draft directive would define a common strategy for soil protection, based on the following principles:

- The integration of soil in other sectoral policies
- Preventing threats to soil and mitigation
- Maintaining soil functions by identifying and defining priority areas for action programs
- Identification and remediation of contaminated sites.

References

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[3] ***, HG nr. 1403/26.11.2007 privind refacerea zonelor în care solul, subsolul și ecosistemele terestre au fost afectate.

[4] ***, HG nr. 1408/23.11.2007 privind modalitățile de investigare și evaluare a poluării solului și subsolului

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